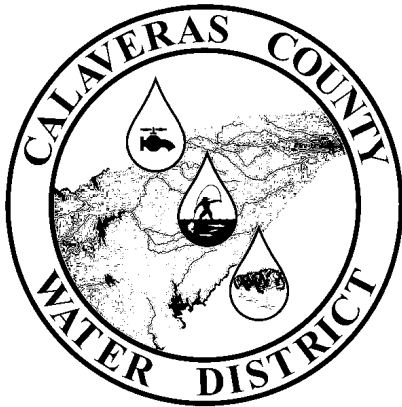


PROJECT MANUAL

NEW MAINTENANCE AND WAREHOUSE BUILDING PROJECT CCWD CIP No. 11101

Issued for Public Bids
February 24, 2020



Proposals to be received at the office of:

Calaveras County Water District
120 Toma Court
San Andreas, California 95249
Phone: (209) 754-3543

No Later Than 2:00 PM, Wednesday, April 15, 2020

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**SECTION 00100
NOTICE INVITING BIDS**

**CALAVERAS COUNTY WATER DISTRICT
NEW MAINTENANCE AND WAREHOUSE
BUILDING PROJECT
CCWD CIP #11101**

Separate sealed Bids for the construction of the New Maintenance and Warehouse Building Project will be received at the office of the Calaveras County Water District at 120 Toma Court, San Andreas, CA 95249 **until 2:00 PM local time on Wednesday, April 15, 2020**, at which time Bids will be publically opened and read aloud.

This New Maintenance and Warehouse Building Project will be located adjacent to the District's main office on George Reed Drive in San Andreas. The new building will be approximately 9,600 SF with three service bays for equipment repairs, warehouse space and internal offices for maintenance staff. The District has provided prospective bidders with site grading, drainage, site work, utility plans and preliminary building design plans. Final building design plans would be prepared by the Contractors Metal Building Manufacture, stamped by a registered professional engineer and submitted for District Approval.

There are three separate bid schedules, bidders can submit bids on one or all of the bid schedules. Bidders do not require to submit on every bid schedule. The successful bidder will be selected on the basis of the lowest overall bid or lowest individual bid schedule. The three bid schedules are divided into (A) Site Work, Grading, Drainage, and Paving (B) Metal Building and Concrete Foundation (C) Internal Walls, Electrical, Lighting and HVAC.

The Contract Documents may be examined at the following locations:

Calaveras County Water District
120 Toma Ct. / P.O. Box 846 (US Mail)
San Andreas, CA 95249
Contact: Alesia Danner / Phone: (209) 753-3181

Dodge Data & Analytics
4300 Beltway Place, Suite 180
Arlington TX, 76018
Phone: (800) 393-6343

Sacramento Regional Builders Exchange
5370 Elvas Avenue
Sacramento, CA 95819
Phone: (916) 442-8991

Placer County Builders Exchange
10656 Industrial Ave, Suite 160
Roseville, CA 95678
Phone: (916) 771-7229

Builders' Exchange of Stockton
4561 Quail Lakes Drive, Suite B-2
Stockton, CA 95207
Phone: (209) 478-1000

Bay Area Builders Exchange
3055 Alvarado Street
San Leandro, CA 94577
Phone: (510) 483-8880

Valley Builders Exchange
1118 Kansas Avenue
Modesto, CA 95351
Phone: (209) 522-9031

Central CA Builders Exchange
1244 N Mariposa Street
Fresno, CA 93703
Phone: (559) 237-1837

Prospective Bidders for Schedule A should hold a Class A General Engineering Contractor's license issued by the State of California and be skilled, experienced and regularly engaged in the type of work called for under this Contract. Prospective Bidders for Schedule B and C should hold a Class B General Building Contractor's license issued by the State of California and be skilled, experienced and regularly engaged in the type of work called for under this Contract. All bidders and subcontractors shall be registered with the California Department of Industrial Relations (DIR) pursuant to Labor Code Section 1725.5 to be qualified to bid on this project or to be listed as a subcontractor for this project pursuant to Public Contract Code Section 4104.

Copies of the Contract Documents will be available starting **Monday, February 24, 2020** at the office of the Calaveras County Water District at the address listed below upon payment of **\$50.00** (non-refundable) for each set. Recipient shall pay all charges for postage, FedEx, UPS, etc.

For further information or questions concerning these documents should be directed to:

Calaveras County Water District
120 Toma Court
P.O. Box 846 (*for all U.S. Mail*)
San Andreas, CA 95249
Phone (209) 754-3181 / Fax (209) 754-9620
Attn: Alesia Danner

A non-mandatory pre-bid meeting will be held on **Tuesday, March 24, 2020 at 10:00 A.M.** at CCWD's main office at 120 Toma Ct., San Andreas, CA. Bidders are required to inspect the site of work prior to submitting a bid.

Date of Initial Advertisement: **February 24, 2020**

**SECTION 00200
INSTRUCTIONS TO BIDDERS**

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ARTICLE 1 - DEFINED TERMS

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
- A. Issuing Office--The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.

ARTICLE 2 - COPIES OF BIDDING DOCUMENTS

- 2.01 Complete sets of the Bidding Documents in the number and for the sum, if any, stated in the Advertisement for Bids may be obtained from the Issuing Office. The cost of the Bidding Documents is non-refundable.
- 2.02 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.03 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

ARTICLE 3 - QUALIFICATIONS OF BIDDERS

3.01 The Bidder and his subcontractors are required to have a valid, active license issued by the California, Contractors State License Board. Schedule A Bidder shall have a Class A, General Engineering Contractor license and be skilled, experienced and regularly engaged in the type of work called for under this Contract. Schedule B and C Bidder shall have a Class B, General Building Contractor license and be skilled, experienced and regularly engaged in the type of work called for under this Contract. To demonstrate Bidder's qualifications to perform the Work, within five days of Owner's request, Bidder shall submit written evidence such as financial data, previous experience, present commitments, and such other data. The Bidder shall submit a list of projects and corresponding references for a least three (3) or more projects completed within the past 5-8 years that demonstrate experience and qualifications relevant to the current project for which a bid has been submitted.

ARTICLE 4 - EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

4.01 Subsurface and Physical Conditions

A. The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Bidding Documents.
2. Those drawings of physical conditions in or relating to existing surface and subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Bidding Documents.

B. Copies of reports and drawings referenced in Paragraph 4.01.A will be made available by Owner to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in Paragraph 4.02 of the General Conditions has been identified and established in Paragraph 4.02 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions or information contained in such reports or shown or indicated in such drawings.

4.02 Underground Facilities

A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

4.03 Hazardous Environmental Condition

A. The Supplementary Conditions identify those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that Engineer has used in preparing the Bidding Documents.

B. Copies of reports and drawings referenced in Paragraph 4.03.A will be made available by Owner to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in Paragraph 4.06 of the General Conditions has been identified and established in Paragraph 4.06 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

4.04 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated conditions appear in Paragraphs 4.02, 4.03, and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective

Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work appear in Paragraph 4.06 of the General Conditions.

4.05 On request, Owner will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all applicable Laws and Regulations relative to locating of excavation and utility.

4.06 Additional Owner Provided Information

A. Reference is made to the Supplementary Conditions for the identification of the general nature of other work that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) that relates to the Work contemplated by these Bidding Documents. On request, Owner will provide to each Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such other work.

B. Paragraph 9.12.B of the General Conditions states that if an Owner Safety program exists it will be noted in the Supplementary Conditions.

4.07 It is the responsibility of each Bidder before submitting a Bid to:

A. Examine and carefully study the Bidding Documents, the other related data identified in the Bidding Documents, and any Addenda;

B. Visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;

C. Become familiar with and satisfy Bidder as to all Federal, State, and local Laws and Regulations that may affect cost, progress, and performance of the Work;

D. Carefully study all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in Paragraph 4.02 of the General Conditions, and (2) reports and drawings of Hazardous Environmental Conditions at the Site which have been identified in the Supplementary Conditions as provided in Paragraph 4.06 of the General Conditions;

E. Obtain and carefully study (or accept consequences of not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;

F. Agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;

G. Become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;

- H. Correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;
 - I. Promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder; and
 - J. Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.
- 4.08 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

ARTICLE 5 - PRE-BID CONFERENCE

- 5.01 A non-mandatory pre-bid conference will be held on **Tuesday, March 24, 2020 at 10:00 A.M. local time** at the Calaveras County Water District's main office at 120 Toma Court, San Andreas, CA 95249. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the job walk. Engineer will transmit to all prospective Bidders of record such Addenda as Engineer considers necessary in response to questions arising at the job walk. Oral statements may not be relied upon and will not be binding or legally effective.

ARTICLE 6 - SITE AND OTHER AREAS

- 6.01 The Site is identified in the Bidding Documents. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by Contractor.

ARTICLE 7 - INTERPRETATIONS AND ADDENDA

- 7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by Engineer as having received the Bidding Documents. Questions received less than five days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 7.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by Owner or Engineer.

ARTICLE 8 - BID SECURITY

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount not less than 5 percent of Bidder's maximum Bid price and in the form of a certified check or bank money order or a Bid Bond (EJCDC No. C-430, 2013 Edition) issued by a surety meeting the requirements of Paragraphs 5.01 and 5.02 of the General Conditions.
- 8.02 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may annul the Notice of Award and the Bid security of that Bidder will be forfeited. The Bid security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Agreement or 91 days after the Bid opening, whereupon Bid security furnished by such Bidders will be returned.
- 8.03 Bid security of other Bidders whom Owner believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

ARTICLE 9 - CONTRACT TIMES

- 9.01 The number of days within which, or the dates by which, the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

ARTICLE 10 - LIQUIDATED DAMAGES

- 10.01 Provisions for liquidated damages are set forth in the Agreement.

ARTICLE 11 - SUBSTITUTE AND "OR-EQUAL" ITEMS

- 11.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, or "or-equal" materials and equipment as described in paragraph 6.05 of the General Conditions, or those substitute materials and equipment approved by Engineer and identified by Addendum. The materials and equipment described in the Bidding Documents establish a standard of required type, function and quality to be met by any proposed substitute or "or-equal" item. Request for Engineer's clarification of materials and equipment considered "or-equal" prior to the Effective Date of Agreement must be received by the Engineer at least 10 days prior to the date for receipt of Bids. No item of material or equipment will be considered by Engineer as a substitute unless written request for approval has been submitted by Bidder and has been received by Engineer at least 15 days prior to the date for receipt of Bids. Each such request shall conform to the requirements of Paragraph 6.05 of the General Conditions. The burden of proof of the merit of the proposed item is upon Bidder. Engineer's decision of approval or disapproval of a proposed item will be final. If Engineer approves any proposed substitute item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner.

ARTICLE 12 - SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 12.01 Each bidder must submit bids identifying all subcontractors according to the Subcontractor Listing Law Section 4104 of the California Public Contract Code; nothing in this Article shall be deemed to supersede those requirements.
- 12.02 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to Owner in advance of a specified date prior to the Effective Date of the Agreement, the

apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if requested by Owner. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, without an increase in the Bid.

- 12.03 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest responsible Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Paragraph 6.06 of the General Conditions.
- 12.04 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.
- 12.05 The Contractor shall not award work to Subcontractor(s) in excess of the limits stated in SC 7.06.

ARTICLE 13 - PREPARATION OF BID

- 13.01 The Bid Form is included with the Bidding Documents. Additional copies may be obtained from Engineer.
- 13.02 All blanks on the Bid Form shall be completed in ink and the Bid signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each [section, Bid item, alternative, adjustment unit price item, and unit price item] listed therein, or the words "No Bid," "No Change," or "Not Applicable" entered.
- 13.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be provided on the Bid Form.
- 13.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be provided on the Bid Form.
- 13.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.
- 13.06 A Bid by an individual shall show the Bidder's name and business address.
- 13.07 A Bid by a joint venture shall be executed by each joint venture in the manner indicated on the Bid Form. The official address of the joint venture must be provided on the Bid Form.
- 13.08 All names shall be printed in ink below the signatures.
- 13.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers and dates of which shall be filled in on the Bid Form.

- 13.10 The postal and email addresses and telephone number for communications regarding the Bid shall be shown.
- 13.11 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state or locality where the Project is located or Bidder shall covenant in writing to obtain such qualification prior to award of the Contract and attach such covenant to the Bid Form. Bidder's state contractor license number shall also be shown on the Bid Form.

ARTICLE 14 - BASIS OF BID; COMPARISON OF BIDS

14.01 Unit Price

- A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid schedule.
- B. The total of all bid prices will be the sum of the products of the estimated quantity of each item and the corresponding unit price. The final quantities and Contract Price will be determined in accordance with Paragraph 11.03 of the General Conditions.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. The bid total will be used to determine whose bid is the lowest price, as provided in Section 19. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

14.02 Allowances

- A. For cash allowances the Bid price shall include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with paragraph 11.02.B of the General Conditions.

ARTICLE 15 - SUBMITTAL OF BID

- 15.01 The Bid Form (Section 00410) is to be completed and submitted with all of the attachments outlined in Article 7 of the Bid Form (Section 00410).
- 15.02 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the Advertisement for Bids and shall be enclosed in an opaque sealed envelope plainly marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation "BID ENCLOSED." When using the mail or other delivery system, the Bidder is totally responsible for the mail or other delivery system delivering the Bid at the place and prior to the time indicated in the Advertisement for Bid. A mailed Bid shall be addressed to Owner at the address in Article 1.01 of the Bid Form.

ARTICLE 16 - MODIFICATION AND WITHDRAWAL OF BID

- 16.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.
- 16.02 After the date and time for the opening of Bids, Bids may only be withdrawn as provided in Public Contract Code Section 510 et seq.

ARTICLE 17 - OPENING OF BIDS

- 17.01 Bids will be opened at the time and place indicated in the Advertisement for Bids and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the Bids and alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 18 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, at its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT

- 19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to be non-responsible. Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.
- 19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.
- 19.03 In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- 19.04 In evaluating Bidders, Owner will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.
- 19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.
- 19.06 If the Contract is to be awarded, Owner will award the Contract to the responsible Bidder whose Bid, conforming with all the material terms and conditions of the Instructions to Bidders, is lowest, price and other factors considered. If detailed in the Bid Form, factors such as discounts, transportation costs, and life cycle costs may be used to determine which bidder, if any, is to be offered the award.

ARTICLE 20 - CONTRACT SECURITY AND INSURANCE

- 20.01 Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it shall be accompanied by such bonds.

ARTICLE 21 - SIGNING OF AGREEMENT

21.01 When Owner gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within 15 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner. Within ten days thereafter, Owner shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

ARTICLE 22 - SALES AND USE TAXES

22.01 Contractor shall pay all sales, use and other taxes as specified in Paragraph 6.10 of the General Conditions.

ARTICLE 23 – AGENCY REQUIREMENTS

26.01 Not Used

26.02 Payment and retainage will comply with the contract agreement section 6.02 “Progress Payments; Retainage.” Bidders are notified that this contract does not permit retainage to be placed in escrow nor to be invested for the benefit of the contractor.

26.03 Bidders are notified that this contract does not provide for substitution of securities for any monies withheld by the Owner to ensure performance under the contract.

26.04 Bidders are notified of the requirement for affirmative action to ensure equal employment opportunity (Executive Order No. 11246) as set forth in the Equal Opportunity Requirements found in paragraph 18.10 of the General Conditions.

ARTICLE 24 – WAGE RATE REQUIREMENTS

24.01 Prevailing Wages: Notice is hereby given that, pursuant to Section 1773 of the Labor Code of the State of California, the Owner has obtained from the Director of the Department of Industrial Relations the general prevailing rate of per diem wages and the general prevailing rate for holidays and overtime work for each craft, classification, or type of worker required to execute the Contract. A copy of said prevailing rate of per diem wages is on file in the principal office of the Owner, to which reference is hereby made for further particulars. Said prevailing rate of per diem wages will be made available to any interested party upon request, and a copy thereof shall be posted at each job site.

24.02 Statutory Penalty for Failure to Pay Minimum Wages: In accordance with Section 1775 (a) through (c) of the California Labor Code, the Contractor shall as a penalty to the State of political subdivision on whose behalf a Contract is made or awarded, forfeit not more than two hundred dollars (\$200.00) for each calendar day or portion thereof, for each worker paid less than the prevailing wage rates as determined by the director for the work or craft in which the worker is employed for any public work done under the contract by the contractor or, except as provided in subdivision 1775 (b), by any subcontractor under the contractor.

24.03 Statutory Penalty for Unauthorized Overtime Work: In accordance with Section 1813 of the California Labor Code, the Contractor shall as a penalty to the State or political subdivision on whose behalf the Contract is made or awarded, forfeit twenty-five dollars (\$25.00) for each worker employed in the execution of the Contract by the respective contractor or subcontractor for each calendar day during which said worker is required or permitted to work more than 8 hours in any one calendar day and 40 hours in any one calendar week in violation of provisions of Sections 1810-1815 of the California Labor Code.

- 24.04 Apprenticeship Requirements: Contractor agrees to comply with Sections 1777.5, 1777.6 and 1777.7 of the California Labor Code relating to the employment of apprentices. The responsibility for compliance with these provisions is fixed with the prime contractor for all apprenticeship occupations. Under these sections of the law, Contractors and Subcontractors must employ apprentices in apprenticeship occupations, where journeymen in the craft are employed on the public work, in a ratio of not less than one apprentice hour for each five journeymen hours (unless an exemption is granted in accordance with 1777.5) and Contractors and Subcontractors shall not discriminate among otherwise qualified employees as indentured apprentices on any public work solely on the ground of race, religious creed, color, national origin, ancestry, sex, or age, except as provided in 3077 of the Labor Code. Only apprentices, as defined in 3077, which provides that an apprentice must be at least 16 years of age, who are in training under apprenticeship standards and who have signed written apprentice agreements will be employed on public works in apprenticeship occupations.
- 24.05 Payroll Records: Contractor shall keep accurate payroll records in format specified by the Division of Labor Standards Enforcement. Said information shall include, but not be limited to, a record of the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and actual per diem wages paid to each journeyman, apprentice, or worker employed by the Contractor. Copies of such record shall be made available for inspection at all reasonable hours, and a copy shall be made available to employee or his authorized representative, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards in compliance with California Labor Code, Section 1776. Contractor and subcontractors shall furnish and submit electronic certified payroll records directly to the Labor Commissioner, and duplicate copies available to Owner.

ARTICLE 25 – REGISTRATION WITH DEPARTMENT OF INDUSTRIAL RELATIONS

- 25.01 This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. No contractor or subcontractor may be listed on a bid proposal for a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code Section 1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code Section 1771.1(a)]. No contractor or subcontractor may be awarded a contract for public work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code Section 1725.5.
- 25.02 This bid is subject to Labor Code Section 1771.1 (a) through (d) as follows:
- (a) A contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in this chapter, unless currently registered and qualified to perform public work pursuant to Section 1725.5. It is not a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.
 - (b) Notice of the requirement described in subdivision (a) shall be included in all bid invitations and public works contracts, and a bid shall not be accepted nor any contract or subcontract entered into without proof of the contractor or subcontractor's current registration to perform public work pursuant to Section 1725.5.
 - (c) An inadvertent error in listing a subcontractor who is not registered pursuant to Section 1725.5 in a bid proposal 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) Within 24 hours after the bid opening, the subcontractor is registered and has paid the penalty registration fee specified in subparagraph (E) of paragraph (2) of subdivision (a) of Section 1725.5., (3) The subcontractor is replaced by another registered subcontractor pursuant to Section 4107 of the Public Contract Code.

- (d) Failure by a subcontractor to be registered to perform public work as required by subdivision (a) shall be grounds under Section 4107 of the Public Contract Code for the contractor, with the consent of the awarding authority, to substitute a subcontractor who is registered to perform public work pursuant to Section 1725.5 in place of the unregistered subcontractor.

ARTICLE 26 – SUBCONTRACTOR LISTING LAW

- 26.01 In accordance with Section 4104 of the California Public Contract Code, each bidder, in his or her bid, shall set forth the name and the location of the place of business of each subcontractor who will perform work or labor or render service to the prime contractor in or about the construction of the work or improvement, or a subcontractor licensed by the State of California who, under subcontract to the prime contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of one percent of the prime contractor's total bid.
- 26.02 In accordance with Section 4107 of the California Public Contract Code, no contractor whose bid is accepted shall without consent of the owner either: (a) substitute a person as a subcontractor in place of the subcontractor listed in the original bid; or (b) permit a subcontract to be voluntarily assigned or transferred or allow it to be performed by anyone other than the original subcontractor listed in the original bid; or (c) sublet or subcontract any portion of the work in excess of one-half of one percent of the prime contractor's total bid as to which his or her original bid did not designate a subcontractor.
- 26.03 Penalties for failure to comply with the foregoing sections of the California Public Contract Code are set forth in Sections 4106, 4110, and 4111 of the Public Contract Code. A prime contractor violating this law violates his or her contract and the awarding authority may exercise the option, in its own discretion, of (1) canceling his or her contract or (2) assessing the prime contractor a penalty in an amount of not more than 10 percent of the amount of the subcontract involved, and this penalty shall be deposited in the fund out of which the prime contract is awarded. In any proceedings under this section the prime contractor shall be entitled to a public hearing and to five day's notice of the time and place thereof.

END OF SECTION

**SECTION 00410
BID FORM**

TABLE OF ARTICLES

- Article 1 - Bid Recipient
- Article 2 - Bidder's Acknowledgments
- Article 3 - Bidder's Representations
- Article 4 - Bidder's Certification
- Article 5 - Basis of Bid
- Article 6 - Time of Completion
- Article 7 - Attachments to Bid
- Article 8 - Defined Terms
- Article 9 - Bid Submittal
- Bid Schedule
- Descriptions of Bid Items

ARTICLE 1- BID RECIPIENT

- 1.01 This Bid is submitted to: Calaveras County Water District at the main office located at 120 Toma Court, San Andreas, California 95249, **no later than 2:00 PM, April 15, 2020.**
- 1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2- BIDDER'S ACKNOWLEDGEMENTS

- 2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3- BIDDER'S REPRESENTATIONS

- 3.01 In submitting this Bid, Bidder represents that:
 - A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged.

Addendum No.	Addendum Date
_____	_____
_____	_____
_____	_____
_____	_____

- B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.

- C. Bidder is familiar with and is satisfied as to all Federal, State and local Laws and Regulations that may affect cost, progress and performance of the Work.
- D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in SC-4.02, and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in SC-4.06 as containing reliable “technical data.”
- E. Bidder has considered the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder’s safety precautions and programs.
- F. Based on the information and observations referred to in Paragraph 3.01.E above, Bidder does not consider that any further examinations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of the Work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.
- J. Bidder will submit written evidence of its authority to do business in the State or other jurisdiction where the Project is located not later than the date of its execution of the Agreement.

ARTICLE 4- BIDDER’S CERTIFICATION

4.01 Bidder further represents that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 - 1. “Corrupt practice” means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.

2. “fraudulent practice” means an intentional misrepresentation of facts made to (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5- BASIS OF BID

- 5.01 Bidder will complete the Work in accordance with the Contract Documents for the price(s) provided in the attached bid schedule (at the end of this section).
- 5.02 Unit Prices have been computed in accordance with Paragraph 11.03.B of the General Conditions
- 5.03 Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents.
- 5.04 Bid Prices are for work that has been furnished and installed by the Contractor and is fully completed. The bid items as described and provided are for bidding and payment purposes and do not in any way limit the Contractor’s responsibility to perform all work that may be reasonably inferred from the plans, specifications and other bid documents to produce the intended result.
- 5.05 All specified cash allowances are included in the price(s) set forth above and have been computed in accordance with Paragraph 11.02 of the General Conditions.
- 5.06 If “additive” or “deductive” Bid Items are included in the Bid- clearly identify the method for applying the alternates and the basis for award of the contract.

ARTICLE 6- TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7- ATTACHMENTS TO THIS BID

- 7.01 The following documents are attached to and made a condition of this Bid:
 - A. Non-Collusion Affidavit (**Section 00420**);
 - B. Required Bid security in the form of a Bid Bond (**Section 00430**) or Certified Check;
 - C. List of Subcontractors (**Section 00470**);

ARTICLE 8- DEFINED TERMS

8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders (Section 00200), General Conditions (Section 00700), Supplementary Conditions (Section 00800), and Engineer’s Supplemental Conditions (Section 00900).

ARTICLE 9- BID SUBMITTAL

9.01 This Bid is submitted by: _____

Bidder’s Business address: _____

Phone: _____ Facsimile: _____

Submitted on _____, _____.

State Contractor License No. _____

DIR Registration No. _____

Employer’s Tax ID No. _____

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____
(Individual’s signature)

Doing business as: _____

A Partnership

Partnership Name: _____ (SEAL)

By: _____
(Signature of general partner – attach evidence of authority to sign)

Name (typed or printed): _____

A Corporation

Corporation Name: _____
_____ (SEAL)

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability): _____

By: _____
(Signature – attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Attest: _____
(Signature of Corporate Secretary)

Date of Qualification to do business is ____________.

A Joint Venture

Name of Joint Venturer: _____

First Joint Venturer Name: _____
_____ (SEAL)

By: _____
(Signature of first joint venture partner – attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Second Joint Venturer Name: _____
_____ (SEAL)

By: _____
(Signature of second joint venture partner – attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

BID SCHEDULE A

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QTY</u>	<u>UNIT PRICE</u>	<u>BID PRICE</u>
1A	MOBILIZATION & DEMOBILIZATION <i>FOR BID SCHEDULE A ACTIVITIES.</i>	LS	1	\$ _____	\$ _____
2A	GRADING PERMIT <i>ACTUAL COST OF GRADING PERMIT</i>	LS	1	\$ 1,297.00	\$ 1,297.00
3A	STORM WATER POLLUTION PREVENTION (SWPPP/BMP)	LS	1	\$ _____	\$ _____
4A	DEMOLITION, CLEARING AND STRIPPING	LS	1	\$ _____	\$ _____
5A	STORM DRAINS	LF	580	\$ _____	\$ _____
6A	DRAINAGE INLETS (36" DROP INLET)	EA	4	\$ _____	\$ _____
7A	SIDEWALK WITH CURB/GUTTER <i>SIDEWALK ON GEORGE REED DRIVE. INCLUDES ACCESSIBLE CURB RAMPS.</i>	LS	1	\$ _____	\$ _____
8A	FLOOR DRAINS PIPING AND INDUSTRIAL SUMPS	LS	1	\$ _____	\$ _____
9A	CONCRETE FLATWORK WITH REINFORCEMENT. <i>(DOES NOT INCLUDE BUILDING SLAB)</i>	SF	7,830	\$ _____	\$ _____
10A	ASPHALT PAVING	TON	300	\$ _____	\$ _____
11A	CLASS 2 AGGREGATE BASE <i>(UNDER SITE CONCRETE, BUILDING SLABS, SIDEWALKS, AND ASPHALT)</i>	TON	1,655	\$ _____	\$ _____

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QTY</u>	<u>UNIT PRICE</u>	<u>BID PRICE</u>
12A	EARTHWORK – SITE CONSTRUCTION <i>(INCLUDES ALL EARTHWORK AND GRADING REQUIRED FOR PROJECT EXCEPT BUILDING COLUMNS FOOTINGS)</i>	LS	1	\$ _____	\$ _____
13A	CHAIN LINK FENCING (6-FT FENCE WITH 3 STRANDS OF BARBED WIRE) <i>INSTALLED PER CCWD STANDARD DRAWING G07</i>	LF	230	\$ _____	\$ _____
14A	30-FT WIDE ORNAMENTAL MOTOR OPERATED GATE <i>SAME STYLE AS EXISTING GATES AT CCWD HEADQUARTERS</i>	LS	1	\$ _____	\$ _____
15A	6-FT HIGH ORNAMENTAL MAN GATE. <i>SAME STYLE AS EXISTING GATES AT CCWD HEADQUARTERS</i>	EA	3	\$ _____	\$ _____
16A	¼ TON RIP RAP ROCK SLOPE PROTECTION	TON	45	\$ _____	\$ _____
17A	NEW 1" WATER FROM EXISTING METER TO BUILDING	LS	1	\$ _____	\$ _____
18A	NEW GAS AND ELECTRICAL SERVICE LINES FROM EXISTING VAULT TO BUILDING.	LS	1	\$ _____	\$ _____
19A	SANITARY SEWER SYSTEM	LF	280	\$ _____	\$ _____
20A	BURIED DOWNSPOUT DRAIN LINES	EA	4	\$ _____	\$ _____
21A	2" PVC COMMUNICATION CONDUITS	LS	1	\$ _____	\$ _____

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QTY</u>	<u>UNIT PRICE</u>	<u>BID PRICE</u>
TOTAL BID AMOUNT ALL ITEMS (1A to 21A) (NUMERICAL)				\$.

DOLLARS

TOTAL BID AMOUNT SCHEDULE A (WRITTEN)

BID SCHEDULE B

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QTY</u>	<u>UNIT PRICE</u>	<u>BID PRICE</u>
1B	MOBILIZATION & DEMOBILIZATION <i>FOR BID SCHEDULE B ACTIVITIES.</i>	LS	1	\$	\$
2B	BUILDING PERMIT. <i>ACTUAL COST OF BUILDING PERMIT</i>	LS	1	\$ 6,800.00	\$ 6,800.00
3B	METAL BUILDING MATERIALS DELIVERY. <i>CANNOT EXCEED 25% OF TOTAL VALUE OF SCHEDULE B. INCLUDES COST OF METAL BUILDING DESIGN.</i>	LS	1	\$	\$
4B	METAL BUILDING CONCRETE SLAB AND FOOTINGS.	LS	1	\$	\$
5B	METAL BUILDING CONSTRUCTION. <i>COMPLETE METAL BUILDING</i>	LS	1	\$	\$
6B	3-INCH REMOVABLE GUARD POST <i>CCWD STANDARD DWG G12</i>	EA	34	\$	\$
TOTAL BID AMOUNT ALL ITEMS (1B to 6B) (NUMERICAL)				\$.

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QTY</u>	<u>UNIT PRICE</u>	<u>BID PRICE</u>
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DOLLARS

TOTAL BID AMOUNT SCHEDULE B (WRITTEN)

BID SCHEDULE C

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QTY</u>	<u>UNIT PRICE</u>	<u>BID PRICE</u>
1C	MOBILIZATION & DEMOBILIZATION <i>FOR BID SCHEDULE C ACTIVITIES. CANNOT EXCEED 10% OF TOTAL AMOUNT FOR SCHEDULE C.</i>	LS	1	\$ _____	\$ _____
2C	WOOD FRAMING	LS	1	\$ _____	\$ _____
3C	COLD FORMED METAL FRAMING	LS	1	\$ _____	\$ _____
4C	INTERIOR FINISHES	LS	1	\$ _____	\$ _____
5C	BUILDING INSULATION (INTERIOR WALLS/CEILING)	LS	1	\$ _____	\$ _____
6C	PLUMBING	LS	1	\$ _____	\$ _____
7C	INTERIOR DOORS AND WINDOWS	LS	1	\$ _____	\$ _____
8C	LIGHTING	LS	1	\$ _____	\$ _____
9C	ELECTRICAL	LS	1	\$ _____	\$ _____
10C	HVAC	LS	1	\$ _____	\$ _____

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QTY</u>	<u>UNIT PRICE</u>	<u>BID PRICE</u>
TOTAL BID AMOUNT ALL ITEMS (1C to 10C) (NUMERICAL)				\$	_____.

DOLLARS

TOTAL BID AMOUNT SCHEDULE C (WRITTEN)

DESCRIPTIONS OF BID ITEMS – SCHEDULE A

Note: Bid items listed herein for bidding and payment purposes do not limit Contractor's responsibility to perform all work required under this contract, on drawings, in specifications, or reasonably inferred or interpreted to be necessary to complete the work.

BID ITEM NO.1A – MOBILIZATION & DEMOBILIZATION (FOR BID SCHEDULE A ACTIVITIES)

This item consist of preparatory work and operations, including, but not limited to those necessary for the movement of personnel, equipment, supplies, and incidentals to the site; securing bonds and insurance, establishing a field office (if applicable) and staging areas; preparing schedules and sequencing plans, submitting shop drawings; and for all other work and operations to be performed, or costs incurred, prior to beginning the Work. Contractor shall provide and maintain portable toilet(s) on-site for use by employees. Demobilization shall include, but not limited to, removal of all waste materials, debris, final cleanup of construction and staging areas, and issuance of maintenance bond. (*Note: This bid item not to exceed ten percent (10%) of the total Contract Sum.*)

BID ITEM NO.2A – GRADING PERMIT

This item is to cover the cost of Grading Permit Fees from Calaveras County Department of Public Works. The Contractor is to complete County of Calaveras Department of Public Works Grading Permit Application and submit it to Public Works along with relevant plan sheets and Fee of \$1,297.00. Payment will be made as a lump sum.

BID ITEM NO.3A – STORM WATER POLLUTION PREVENTION (SWPPP/BMP'S)

This item includes all labor, materials, equipment for preparing, furnishing, installing and maintaining a project specific Storm Water Pollution Prevention Plan (SWPPP) and Best Management Practices (BMP's) to comply with the Construction General Permit 2009-0009-DWQ (amended by 2010-0014-DWQ and 2012-0006-DWQ). SWPPP shall be filed electronically with State's Storm Water Monitoring and Report Tracking System (SMARTS), prepared by a Qualified SWPPP Developer (QSD) and implemented under direction of a Qualified SWPPP Practitioner (QSP) licensed by the California Stormwater Quality Association (CASQA). All work shall be according to the latest version of the CASQA Construction BMP Online Handbook, which is available on their website www.casqa.org. BMP's shall be provided for run-on control, soil stabilization, erosion control, sediment control, tracking control, wind erosion, material pollution prevention and waste management, and stockpile management. Each day if trenching, excavating and/or tracking dirt onto roads, all trench spoils and excess waste excavated materials shall be removed and area mechanically swept and/or vacuumed to thoroughly clean all pavement surfaces. Contractor's operations shall preserve existing vegetation not in the immediate construction zone and shall not be conducted in a method/manner that allows spoil or backfill materials to directly enter into any creeks, stream, drainage or roadside ditches. All existing drainages shall be protected during construction and cleaned of all trench spoil, debris and returned to free flowing, functional condition upon project closeout. All disturbed soil areas shall be stabilized by appropriate BMP's as soon as possible so each completed area can be closed out and removed from the SWPPP permit. After demobilization, Contractor's responsibility shall continue during guarantee period until a Notice of Termination (NOT) is filed and accepted by the Regional Board.

BID ITEM NO.4A – DEMOLITION, CLEARING AND STRIPPING

This item includes all labor, equipment and materials for removal of weeds, stumps, shrubs, bush, surface rock, debris, pavements, and concrete at all locations identified for new construction and new grading and/or site work. Cost for removal and legal disposal of materials offsite shall be included in this item. Payment will be made as Lump Sum.

BID ITEM NO.5A –STORM DRAIN

This item includes all labor, equipment and materials to furnish and install by open-cut trench method and according to the project drawing and specifications new 24" Storm Drains including all fittings, flared end sections, concrete encasements, accessories, and concrete collar connections. Trenches to be constructed by open-cut method and backfilled according to CCWD Standard Detail G05. All materials shall comply with relevant Caltrans Standard Specifications Division V11 -Drainage. Payment will be made by Linear Feet of Storm Drain Pipe Installed.

BID ITEM NO.6A – DRAINAGE INETS (36” DROP INLET)

This item includes all labor, equipment and materials to furnish and install new 36” Precast Concrete Drainage Inlets. Precast Concrete Drainage Inlets should be precast with custom pipe penetrations or thin wall knock outs. Inlet should be Caltrans G2 Inlet or Equal with base of inlet channeled with minor concrete. Payment will be made for each of the Drainage Inlets installed.

BID ITEM NO.7A SIDEWALK

Contractor shall provide all labor, equipment and materials to furnish and install concrete sidewalks where shown on the plans including the Accessible Curb Ramps and Transitions to existing sidewalk/AC Dikes. Sidewalks shall be five and one-half feet wide and constructed of Class B Concrete, unless otherwise approved per Calaveras County Code Section 12.02.200 M for Industrial Areas. Payment will be made as a lump sum.

BID ITEM NO.8A FLOOR DRAIN LINES AND INDUSTRIAL SUMP

Contractor shall provide all labor, equipment and materials to furnish and install building floor drains and industrial sump as shown on the plans. The 1,500-gallon sump shall be traffic rated and lined with T-Lock Protective Coating. The floor drains are to be adjusted to exact grade after the building slab has been formed. Payment will be made as a lump sum.

BID ITEM NO.9A – CONCRETE SITE WORK

Contractor shall provide all labor, equipment and materials to furnish and install Concrete Site Work. Work includes pouring and finishing reinforced concrete around the new building. The contractor is responsible for placing control joints and reinforcements in the concrete to prevent cracking. Concrete shall be minimum of 5” thick and as shown on the drawings. Concrete that cracks at locations other than contraction joints prior to 1-year warranty period expiring will be replaced by the contractor at no additional cost to District. Payment will be made by the Square Feet of Concrete Placed.

BID ITEM NO.10A – ASPHALTIC CONCRETE PAVING

Paving materials, equipment, spreading and compacting procedures shall conform to Section 39, Caltrans Standard Specifications and these specifications. The Contractor shall provide all labor, equipment and materials for saw-cutting, grinding, removal, disposal of existing pavement and replacement with new hot mix asphaltic concrete paving within streets, driveways, parking lots, and other paved areas. In roads, work shall be as directed and approved by the County Public Works. A clean, straight saw cut shall be made along all edges between new and existing pavement. All water and slurry generated during saw cutting work shall be immediately vacuumed and removed to prevent migration off the pavement and stop it from entering storm drains, drainages, etc. Joints shall be treated/primed/sprayed with a tack coat of asphalt emulsion prior to placement of adjacent hot mix asphalt. Final pavement shall be placed with a paver machine and compacted to the compaction level intended by the mix design. Contractor shall paint parking stalls as shown on the drawings. Parking blocks to be install at accessible parking spaces. Final paving thickness shall be determined in the field by CCWD; minimum thickness of placed and compacted AC paving shall be 2.5-inches. Payment shall be for weight of hot mix AC paving delivered (submit daily truck tags) and placed and meeting quality standards; finished surface shall be thoroughly compacted, smooth and free from ruts, humps, depressions or irregularities. *(Note: For any load, District may deduct if a significant amount of hot mix is wasted/unusable and not incorporated into work).*

BID ITEM NO.11A – CLASS 2 AB

Class 2 AB materials, equipment, spreading and compacting procedures shall conform to Section 26, Caltrans Standard Specifications and these specifications. Thickness of placed and compacted AB shall be 3-Inches under sidewalks, 5-Inches under Concrete Flatwork, 6” under Building Slab and 9-1/2 Inches under Asphalt unless otherwise directed by CCWD. At the direction of CCWD Class 2 AB maybe placed on other unimproved areas of the project. Payment for Class 2 AB will be paid by the Ton based on the theoretical weight of 2.0 Tons/Cubic Yard for in-place material.

BID ITEM NO.12A – EARTHWORK-SITE CONSTRUCTION

This work consists of excavation, filling, compacting, and grading for earthen embankments, building pads, roadways, parking areas, areas adjacent to structures, slope rounding, benching, and removal of unsuitable materials

from the roadbed and beneath fill areas. It is the intent of this bid item to provide all earthwork whether shown or not shown needed to complete the project. All cut slopes should be no steeper than 3:1 and fill slopes no steeper than 4:1 (Horizontal: Vertical). Materials for building fills will be generated from the materials onsite. Payment will be made as a lump sum.

BID ITEM NO.13A – CHAIN LINK FENCE (6-FT FENCE WITH 3 STRANDS OF BARBED WIRE)

This work consists of furnishing and installing new 6-Ft Chain Link Fence with 3 Strands of Barbed Wire at the locations shown on the drawings. The fencings should be installed as shown on Calaveras County Water District General Details G07 for Chain Link Fencing. The contractor should provide the required hardware to securely connect the Chain Link Fencing to Ornamental Gates and Existing Fencing. Payment will be made by Linear Feet of Chain Link Fence Installed.

BID ITEM NO.14A – 30-FT ORNAMENTAL GATES

This work consists of furnishing and install new 30-FT Ornamental Automatic Vehicle Gate. The Automatic Gate should be similar in style and function to the existing Automatic Gate on the Northwest side of CCWD Headquarters. The automatic gate controls should be compatible with existing gate controls so that same key fobs and remote controls will work on all gates. Payment will be made as a Lump Sum.

BID ITEM NO.15A –ORNAMENTAL MAN GATES

This work consists of furnishing and install new ornamental man gates. The Ornamental Man Gate should be similar in style and function to the existing Ornamental Man Gate on the East side of CCWD Headquarters. The gate security lock should be compatible with existing gate controls so that same key fobs will work on all gates. Man, gates shall have panic push bar opener. Payment will be made for each Ornamental Man Gate Installed.

BID ITEM NO.16A –1/4 TON RIP RAP

This work consists of furnishing and install ¼ Ton Rock Slope Protection (RSP). Work shall conform to Caltrans Section 72 Slope Protection. ¼ Ton Rock shall have nominal diameter of 18” and shall be placed per Caltrans Method B at the locations shown on the drawings. Payment for ¼ Ton Rip Rap will be paid by the ton, contractor shall provide CCWD copy scale tickets showing weight of materials placed.

BID ITEM NO.17A – 1” WATER TO BUILDING FROM METER

This item includes all labor, equipment and materials for new 1” water line from existing meter box to the building including installation of 1” Backflow Prevention Device per Calaveras Public Utilities District Standards, and new traffic rated meter box. Piping shall be polyethylene PE4710 piping. Trenches to be constructed by open-cut method and backfilled according to Calaveras County Water District Detail G05. Payment will be made as a Lump Sum.

BID ITEM NO.18A – NEW GAS AND ELECTRICAL SERVICE LINES FROM EXITING VAULT TO BUILDING

This item includes all labor, equipment and materials for new electrical and gas lines from the existing utility vault and gas stub to the building. The lines should be installed per the requirements of PG&E. The contractor will be responsible for coordinating with PG&E to schedule field meetings and inspections. CCWD will pay any fees to the utility owners. Payment will be made as Lump Sum.

BID ITEM NO.19A – SANITARY SEWER SYSTEM

Contractor shall provide all labor, equipment and materials to furnish and install 4” SDR35 gravity sewer line, 1,000-gallon pump tank, pumping equipment, electrical conduits/conductors and 2” HDPE discharge piping as shown on the drawings. Minimum grade for gravity sewer pipes shall be 2% throughout. Payment will be made as Lump Sum for the Sanitary Sewer System.

BID ITEM NO.20A – BURIED DOWNSPOUT DRAINS

Contractor shall provide all labor, equipment and materials to furnish and install Buried Downspout Drains from building downspouts to drainage. Where the downspout drains enters drainage structure, core drill concrete drainage box and provide water tight connection with a rubber gasket or cement grout. Down spouts drains shall

be buried minimum of 8” below pavement section and shall be 3” Schedule 80 PVC or SDR35 Pipe. Payment will be made for each downspout drain installed.

BID ITEM NO.21A – 2-INCH COMMUNICATION CONDUITS

Contractor shall provide all labor, equipment and materials to furnish and install 2” PVC communication conduits and traffic rated pull boxes as shown on the drawings from the new building to the existing antenna and existing main office. The communication conduits shall have pull tape and burial marking tape. The work and materials shall comply with Section 86 of the Caltrans Standard Specifications. Payment will be made as Lump Sum for the 2-Inch Communication Conduits.

DESCRIPTIONS OF BID ITEMS – SCHEDULE B

Note: Bid items listed herein for bidding and payment purposes do not limit Contractor’s responsibility to perform all work required under this contract, on drawings, in specifications, or reasonably inferred or interpreted to be necessary to complete the work.

BID ITEM NO.1B – MOBILIZATION / DEMOBILIZATION (FOR SCHEDULE B ACTIVITIES)

This item consist of preparatory work and operations, including, but not limited to those necessary for the movement of personnel, equipment, supplies, and incidentals to the site; securing bonds and insurance, establishing a field office (if applicable) and staging areas; preparing schedules and sequencing plans, submitting shop drawings; and for all other work and operations to be performed, or costs incurred, prior to beginning the Work. Contractor shall provide and maintain portable toilet(s) on-site for use by employees. Demobilization shall include, but not limited to, removal of all waste materials, debris, final cleanup of construction and staging areas, and issuance of maintenance bond. *(Note: This bid item not to exceed ten percent (10%) of the total Contract Schedule B.)*

BID ITEM NO.2B – BUILDING PERMIT

This item is to cover the cost of Building Permit Fees from Calaveras County Department of Public Works. Any unused fees collected by the building department are to be returned to CCWD at the completion of the project. The item is to be paid as lump sum amount of \$6,800.

BID ITEM NO.2B – METAL BUILDING MATERIAL DELIVERY

This item consists of Metal Building Design by Licensed Professional Engineer, Fabrication and Delivery of the Metal Building from building Manufacture. Partial Payments may be made once engineered metal building plans are approved by Calaveras County Building Department and CCWD. The Engineered Metal Building design plans shall include the foundation plans, and identify the location of internal walls. The building shall be manufactured as a complete system from single vendor. Payment will be made as a Lump Sum for a complete building package. *(Note: This bid item not to exceed twenty five percent (25%) of the total Contract for Schedule B)*

BID ITEM NO.4B – METAL BUILDING SLAB AND FOUNDATION

Contractor shall provide all labor, equipment and materials to furnish and install Concrete Building Slab and Foundation. Work includes, footing excavation, vapor barrier, pouring, finishing, curing and sealing reinforced concrete within the building. Fine grading (+/- 0.1 Feet) the underlaying base as needed shall be included in this item. The contractor is responsible for placing control joints and reinforcements in the concrete to prevent uncontrolled cracking. All concrete shall be minimum 5 Sack Class A Concrete Mix. Concrete that cracks outside of the control joints prior to 1-year warranty period expiring will be replaced by the contractor at no cost to CCWD. This work cannot be started until the Engineered Metal Building Design is approved by Calaveras County Building department. Payment will be made as Lump Sum for Metal Building Slab and Foundation.

BID ITEM NO.5B – METAL BUILDING CONSTRUCTION

Contractor shall provide all labor, equipment and materials to furnish and install Engineered Metal Building including complete appurtenant items. Work includes but not limited to completion of building structural framing, roofing, sliding, downspouts, ridge vents, insulation, weather-stripping, casework, doors, roll up doors, door hardware, skylights, glazing and other miscellaneous items on the Construction Plans and Specifications. All

supports should be on the perimeter of the building, internal posts or supports are not allowed. Payment for this item will be made as a lump sum.

BID ITEM NO.6B – 3-INCH REMOVABLE GUARD POST

Contractor shall provide all labor, equipment and materials to furnish and install removable guard post at vehicle entrances. The guard post shall be 3-Inch Schedule 40 Steel Post Painted Yellow in 4-Inch Steel Sleeve extending 2” above concrete. The guard post shall be installed as shown in CCWD Standard Drawing G12. Installation of 4-Inch steel sleeve in concrete should be coordinated other items of work to prevent conflicts. Payment will be made for each of the Guard Post Installed.

DESCRIPTIONS OF BID ITEMS – SCHEDULE C

Note: Bid items listed herein for bidding and payment purposes do not limit Contractor’s responsibility to perform all work required under this contract, on drawings, in specifications, or reasonably inferred or interpreted to be necessary to complete the work.

BID ITEM NO.1C – MOBILIZATION / DEMOBILIZATION (FOR SCHEDULE C ACTIVITIES)

This item consist of preparatory work and operations, including, but not limited to those necessary for the movement of personnel, equipment, supplies, and incidentals to the site; securing bonds and insurance, establishing a field office (if applicable) and staging areas; preparing schedules and sequencing plans, submitting shop drawings; and for all other work and operations to be performed, or costs incurred, prior to beginning the Work. Contractor shall provide and maintain portable toilet(s) on-site for use by employees. Demobilization shall include, but not limited to, removal of all waste materials, debris, final cleanup of construction and staging areas, and issuance of maintenance bond. *(Note: This bid item not to exceed ten percent (10%) of the total Contract Schedule B.)*

BID ITEM NO.2C – WOOD FRAMING AND DECKING

Contractor shall provide all labor, equipment and materials to furnish and install wood framed internal walls, pressure treated baseplate, shear walls and wood sheathed for future second floor. Shear walls to be installed per the shear wall details and at locations shown on the plans. Maximum spacing of studs is 16” on center. Payment for this item will be made as a lump sum.

BID ITEM NO.3C – COLD FORMED METAL FRAMING

Contractor shall provide all labor, equipment and materials to furnish and install cold formed metal framing for internal partition walls with studs spaced at maximum of 16” on center. This work includes attaching sill tracks to slab foundation, installing framing members, bracing, bridging, and installing framing between studs for mechanical, electrical, and plumbing fixtures. Cold formed metal framing to be full height of metal building. Payment for this item will be made as a lump sum.

BID ITEM NO.4C – INTERIOR FINISHES

Contractor shall provide all labor, equipment and materials to furnish and install interior finishes including but not limited to Gypsum Board, Tile, Bathroom Accessories, Paints/Stains, Internal Doors, and Internal Windows. Payment for this item of work will be made as a lump sum.

BID ITEM NO.5C – BUILDING INSULATION (INTERNAL WALLS)

Contractor shall provide all labor, equipment and materials to furnish and install R-19 Wall Cavity Fill Batt insulation in the walls and R-38 Cavity Batt insulation in Ceilings at locations identified on the floor plans. Payment for this item will be made as a lump sum.

BID ITEM NO.6C – LIGHTING

Contractor shall provide all labor, equipment and materials to furnish, install and test a complete lighting system for the building. All lighting fixtures to be Commercial Quality LED Lighting fixtures manufactured by Sylvania, General Electric or Philips. Payment for this item will be made a lump sum.

BID ITEM NO.7C – ELECTRICAL

Contractor shall provide labor, equipment and materials to design, furnish, install, and test a complete electrical system for the project. The contractor will be responsible for coordinating with PG&E to schedule field meetings, inspections and installation of meters. Payment for this item will be made as a lump sum.

BID ITEM NO.8C – HVAC

Contractor shall design, furnish, install and test heating, ventilation and air conditioning system needed for a complete building as shown on the drawings and described in the specifications. The heating and air conditioning shall be split system with combination heat pump and air conditioning system. Payment for this item will be made as a lump sum. Ridge mounted vents are not included in this item.

**SECTION 00420
NON-COLLUSION AFFIDAVIT**

NON-COLLUSION DECLARATION TO BE EXECUTED
BY
BIDDER AND SUBMITTED WITH BID
(Public Contract Code Section 7106)

State of California
County of _____

The undersigned declares:

I am the _____ of _____, the party making the foregoing bid.

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

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

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed:

By _____

Subscribed and sworn to before me on _____
(date)

(Notary Public)

(SEAL)

**SECTION 00430
BID BOND**

Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

BIDDER (*Name and Address*):

SURETY (*Name and Address of Principal Place of Business*):

OWNER (*Name and Address*):

BID

Bid Due Date:

Description (*Project Name and Include Location*):

BOND

Bond Number:

Date (*Not earlier than Bid due date*):

Penal sum

_____ \$ _____
(Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

BIDDER

SURETY

Bidder's Name and Corporate Seal (Seal)

Surety's Name and Corporate Seal (Seal)

By: _____
Signature

By: _____
Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Note: Above addresses are to be used for giving any required notice. Provide execution by any additional parties, such as joint venturers, if necessary.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
 - 3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2 All Bids are rejected by Owner, or
 - 3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

**SECTION 00500
AGREEMENT BETWEEN
OWNER AND CONTRACTOR**

THIS AGREEMENT is by and between CALAVERAS COUNTY WATER DISTRICT (“Owner”) and _____ (“Contractor”).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

This New Maintenance and Warehouse Building Project will be located adjacent to the District’s main office on George Reed Drive in San Andreas. The new building will be approximately 9,600 SF with three service bays for equipment repairs, warehouse space and internal offices for maintenance staff. The District has provided prospective bidders with site grading, drainage, site work, utility plans and preliminary building design plans. Final building design plans would be prepared by the Contractors Metal Building Manufacture, stamped by a registered professional engineer and submitted for District Approval.

There are three separate bid schedules, bidders can submit bids on one or all of the bid schedules. Bidders do not require to submit on every bid schedule. The successful bidder will be selected on the basis of the lowest overall bid or lowest individual bid schedule. The three bid schedules are divided into (A) Site Work, Grading, Drainage, and Paving (B) Metal Building and Concrete Foundation (C) Internal Walls, Electrical, Lighting and HVAC.

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows:

SAN ANDREAS HEADQUARTERS
MAINTENANCE AND WAREHOUSE PROJECT
CIP #11101

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by Calaveras County Water District, 120 Toma Ct, San Andreas CA.

3.02 The Owner has designated Charles Palmer, P.E. (as “Engineer”) to act as Owner’s representative, assuming all duties and responsibilities, and having rights and authority assigned to Engineer in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Contract Times: Days*

A. Unless otherwise allowed by the Engineer, no excavations, trenching or other ground disturbing work shall occur after December 15th or before April 15th and the project will be shut down and winterized for this period. An allowance will be made for this winterization period and used in calculating and adjusting date(s) of substantial and final completion.

B. After the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, the Work will be substantially completed for Schedule A: 196 calendar days, Schedule B: 154 calendar days, and Schedule C: 280 calendar days and all work completed and ready for final

payment in accordance with Paragraph 15.06 of the General Conditions within 340 calendar days after the date when the Contract Times commence to run.

4.03 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):
1. Substantial Completion: Contractor shall pay Owner \$1,000 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
 2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$500 for each day that expires after such time until the Work is completed and ready for final payment.
 3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

ARTICLE 5 – CONTRACT PRICE

- 5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:
- A. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit with an initial contract amount of \$_____.
- B. As provided in Paragraph 13.03 of the General Conditions, estimated quantities for unit price work are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer and the final contract amount adjusted accordingly.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

- A. Applications for Payment shall be submitted by the Contactor in accordance with Article 15 of the General Conditions and is to be processed by Engineer as provided for in the General Conditions.

6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 15th or 30th day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.
1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract
 - a. 95% percent of Work completed (with the balance being retainage).
 - b. 95% percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 95% percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 100% percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.

ARTICLE 7 – INTEREST

- 7.01 All amounts not paid when due shall bear interest at a rate in accordance with applicable law.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

- 8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:

- A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
- B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
- E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.
- F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 *Contents*

- A. The Contract Documents consist of the following:
1. This Agreement (00500).
 2. Project Manual / Divisions 0 through 16:
 - a. Contractor’s Bid Form (00410) and Bid Bond (00430).
 - b. List of Subcontractors (00470)
 - c. Performance (00610), Payment (00615) and Maintenance (00650) Bonds
 - d. General Conditions (00700) and Supplementary Conditions (00800)
 - e. All Other Specifications and Content of the Project Manual
 3. Project Drawings: As issued and advertised for Bids and titled the “San Andreas Headquarter, Maintenance and Warehouse Project, CIP No.11101.”
 4. Addenda (numbers ___ to ___, inclusive), as issued during the bid period and prior to the date of the public bid opening and as acknowledged/enumerated by the Contractor on the Bid Form.
 5. Notice to Proceed, Work Change Directives, Change Orders, or Field Orders, not attached hereto, which may be delivered or issued on or after the Effective Date of the Contract.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above). There are no Contract Documents other than those listed above in this Article 9, and the Contract Documents may only be amended, modified, or supplemented as provided for in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 *Terms*

- A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

10.02 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 *Severability*

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 *Contractor’s Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;
2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

10.06 *Other Provisions*

- A. Owner stipulates that if the General Conditions that are made a part of this Contract are based on EJCDC® C-700, Standard General Conditions for the Construction Contract, published by the Engineers Joint Contract Documents Committee®, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or "track changes" (redline/strikeout), or in the Supplementary Conditions.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on _____ (which is the Effective Date of the Contract).

OWNER:

CONTRACTOR:

By: _____

By: _____

Title: _____

Title: _____

(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

License No.: _____
(where applicable)

(If Owner is a corporation, attach evidence of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)

**SECTION 00510
NOTICE OF AWARD**

Date: _____

Project: Ebbetts Pass Water System Techite Pipeline Replacement Project	
Owner: Calaveras County Water District	Owner's Contract No.: 11084
Contract:	Engineer's Project No.:
Bidder:	
Bidder's Address: <i>[send Notice of Award Certified Mail, Return Receipt Requested]</i>	

You are notified that your Bid dated _____ for the above Contract has been considered. You are the Successful Bidder and are awarded a Contract for _____

[Indicate total Work, alternates, or sections of Work awarded.]

The Contract Price of your Contract is _____ Dollars (\$_____).

[Insert appropriate data if unit prices are used. Change language for cost-plus contracts.]

_____ copies of the proposed Contract Documents (except Drawings) accompany this Notice of Award.

_____ sets of the Drawings will be delivered separately or otherwise made available to you immediately.

You must comply with the following conditions precedent within [15] days of the date you receive this Notice of Award.

1. Deliver to the Owner [_____] fully executed counterparts of the Contract Documents.
2. Deliver with the executed Contract Documents the Contract security [Bonds] as specified in the Instructions to Bidders (Article 20), General Conditions (Paragraph 5.01), and Supplementary Conditions (Paragraph SC-5.01).
3. Other conditions precedent:

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Contract Documents.

Owner

By: _____
Authorized Signature

Title

**SECTION 00550
NOTICE TO PROCEED**

Date: _____

Project: San Andreas Headquarters Maintenance and Warehouse Project	
Owner: Calaveras County Water District	Owner's Contract No.: 11011
Contract:	Engineer's Project No.:
Contractor:	
Contractor's Address: <i>[send Certified Mail, Return Receipt Requested]</i>	

You are notified that the Contract Times under the above Contract will commence to run on _____. On or before that date, you are to start performing your obligations under the Contract Documents. In accordance with Article 4 of the Agreement, the date of Substantial Completion is _____, and the date of readiness for final payment is _____ [(or) the number of days to achieve Substantial Completion is _____ calendar days, and the number of days to achieve readiness for final payment is 340 calendar days.

Before you may start any Work at the Site, Paragraph 2.01.B of the General Conditions provides that you and Owner must each deliver to the other (with copies to Engineer and other identified additional insureds and loss payees) certificates of insurance which each is required to purchase and maintain in accordance with the Contract Documents.

Also, before you may start any Work at the Site, you must:

_____ *[add other requirements].*

	Owner
	Given by:
	Authorized Signature
	Title
	Date

**SECTION 00610
PERFORMANCE BOND**

CONTRACTOR *(name and address)*:

SURETY *(name and address of principal place of business)*:

OWNER *(name and address)*:

Calaveras County Water District
P.O. Box 846 / 120 Toma Court
San Andreas, CA 95249

CONSTRUCTION CONTRACT

Effective Date of the Agreement:
Amount:
Description *(name and location)*:

BOND

Bond Number:
Date *(not earlier than the Effective Date of the Agreement of the Construction Contract)*:
Amount:
Modifications to this Bond Form: None See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

_____ *(seal)*
Contractor's Name and Corporate Seal

_____ *(seal)*
Surety's Name and Corporate Seal

By: _____
Signature

By: _____
Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:

3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor

under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

7.2 additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and

7.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

CIP 11101
San Andreas Headquarters
Maintenance and Warehouse Project

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

14.2 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

14.3 Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

14.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

14.5 Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

16. Modifications to this Bond are as follows:

00610-4

Performance Bond
February 24, 2020

CIP 11101
San Andreas Headquarters
Maintenance and Warehouse Project

00610-5

Performance Bond
February 24, 2020

**SECTION 00615
PAYMENT BOND**

CONTRACTOR *(name and address)*:

SURETY *(name and address of principal place of business)*:

OWNER *(name and address)*:

Calaveras County Water District
P.O. Box 846 / 120 Toma Court
San Andreas, CA 95249

CONSTRUCTION CONTRACT

Effective Date of the Agreement:
Amount:
Description *(name and location)*:

BOND

Bond Number:
Date *(not earlier than the Effective Date of the Agreement of the Construction Contract)*:
Amount:
Modifications to this Bond Form: None See Paragraph 18

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

_____ *(seal)*
Contractor's Name and Corporate Seal

_____ *(seal)*
Surety's Name and Corporate Seal

By: _____
Signature

By: _____
Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond shall arise after the following:
 - 5.1 Claimants who do not have a direct contract with the Contractor,
 - 5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2 Pay or arrange for payment of any undisputed amounts.
 - 7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction

performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work including, but not limited to, costs to repair or replace Contractor's defective work, and any amounts owed to Owner, including amounts owed for damages Owner incurred, or for liquidated damages.

10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be

deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

16. Definitions

16.1 **Claim:** A written statement by the Claimant including at a minimum:

1. The name of the Claimant;
2. The name of the person for whom the labor was done, or materials or equipment furnished;
3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
4. A brief description of the labor, materials, or equipment furnished;
5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
7. The total amount of previous payments received by the Claimant; and
8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

16.2 **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has the right to assert a stop notice or bond claim as provided in the California Civil Code. The intent of this Bond shall be to include

without limitation in the terms of “labor, materials, or equipment” that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor’s subcontractors, and all other items for which a mechanic’s lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

16.4 **Owner Default:** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.

17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

18. Modifications to this Bond are as follows:

SECTION 00620
CONTRACTOR'S APPLICATION FOR PAYMENT

The Contractor's application for payment shall be made using the attached Engineers Joint Contract Documents Committee (EJCDC) Form C-620. For each application for payment to be deemed complete, the Contractor shall prepare, sign and submit all pages: 1) Summary, 2) Lump Sum Work, 3) Unit Price Work and 4) Stored Materials. The District reserves the right to not accept progress payment requests that do not utilize the requested format.

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**SECTION 00625
CERTIFICATE OF SUBSTANTIAL COMPLETION**

Owner: CALAVERAS COUNTY WATER DISTRICT	Owner's Contract No.: CIP #11101
Contractor: _____	Contractor's Project No.:
Engineer: Charles Palmer, District Engineer	Engineer's Project No.:
Project: Maintenance and Warehouse Project	Contract Ref.:

This [preliminary] [final] Certificate of Substantial Completion applies to:

- All Work The following specified portions of the Work:

Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Work or portion thereof designated above is hereby established, subject to the provisions of the Contract pertaining to Substantial Completion. The date of Substantial Completion in the final Certificate of Substantial Completion marks the commencement of the contractual correction period and applicable warranties required by the Contract.

A punch list of items to be completed or corrected is attached to this Certificate. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work shall be as provided in the Contract, except as amended as follows: *[Note: Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.]*

Amendments to Owner's responsibilities: None
 As follows

Amendments to Contractor's responsibilities: None
 As follows:

The following documents are attached to and made a part of this Certificate: *[Refer to attached Punch List]*

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents, nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract.

EXECUTED BY ENGINEER:	RECEIVED:	RECEIVED:
By: _____ (Authorized Signature)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____

**SECTION 00650
MAINTENANCE BOND**

The CALAVERAS COUNTY WATER DISTRICT, State of California, on _____, _____, awarded to _____ hereinafter designated as the "Principal", a Construction Agreement for the construction of the project

**CALAVERAS COUNTY WATER DISTRICT
SAN ANDREAS HEADQUARTERS
MAINTENANCE SHOP & WAREHOUSE**

The Principal and _____ as Surety, are held and firmly bound unto the CALAVERAS COUNTY WATER DISTRICT, in the amount of _____ Dollars (\$ _____), which is equivalent to twenty percent (20%) of the Construction Agreement amount, 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, and successors, jointly and severally, firmly by these presents.

The condition of this obligation is such that if the above bonded Principal, his or its heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by, and well and truly keep and faithfully perform the covenants, conditions and agreements in the said Construction Agreement and any alterations made as therein provided, on his or their part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning and shall indemnify and save harmless, the CALAVERAS COUNTY WATER DISTRICT, its 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, and Principal and Surety, in the event suit is brought on this bond, will pay to the CALAVERAS COUNTY WATER DISTRICT such reasonable attorney's fees as shall be fixed by the court.

As a condition precedent to satisfactory completion of the said Construction Agreement, the above obligation in said amount shall hold good for a period of TWO (2) YEARS after completion and acceptance of the said work, during which time if the above bonded Principal, his or its heirs, executors, administrators, successors or assigns shall fail to make full, complete, and satisfactory repair and replacements or totally protect the CALAVERAS COUNTY WATER DISTRICT from loss or damage made evident during said period of two (2) years from the date of acceptance of said work, and resulting from or caused by defective materials or faulty workmanship in the execution of the work done, the above obligation in the said sum shall remain in full force and effect. However, anything in this paragraph to the contrary notwithstanding, the obligation of the Surety thereunder shall continue so long as any obligation of the Principal remains.

The said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Construction Agreement or to the work to be performed thereunder or the specifications accompanying the same shall, in any way, affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Construction Agreement or to the work or specifications. Said Surety hereby waives the provisions of Sections 2819 and 2845 of the Civil Code of the State of California.

The above parties have executed this instrument under their seals on _____, _____, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

(SEAL)

Principal

Signature for Principal

Title of Signature

(SEAL)

Surety

Signature for Surety

Title of Signature

(SEAL AND NOTARIAL ACKNOWLEDGMENT OF SURETY)

**SECTION 00700
STANDARD GENERAL CONDITIONS OF THE
CONSTRUCTION CONTRACT**

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term’s singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer’s decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer’s decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer has declined to address. A demand for money or services by a third party is not a Claim.
 11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et

seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.
35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.
38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or

(b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.

45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 *Terminology*

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:*
 1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day:*
 1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:*
 1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or

- c. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).
- E. *Furnish, Install, Perform, Provide:*
- 1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
 - 2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
 - 3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
 - 4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words "furnish," "install," "perform," or "provide," then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. *Bonds:* When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Contractor's Insurance:* When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner's Insurance:* After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:
1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
 2. a preliminary Schedule of Submittals; and
 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
 2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
 3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing

from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 *Reference Standards*

- A. Standards Specifications, Codes, Laws and Regulations
 - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 - 2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies:*

- 1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
- 2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification

or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
 - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.
- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to such date.

4.03 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of

delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 2. abnormal weather conditions;
 3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
 4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.
- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.
- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 Availability of Lands

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 Use of Site and Other Areas

- A. *Limitation on Use of Site and Other Areas:*
 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for

which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading of Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
 - 1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
 - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
 - 3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
 - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
 - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 - 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
 2. is of such a nature as to require a change in the Drawings or Specifications; or
 3. differs materially from that shown or indicated in the Contract Documents; or
 4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;
- then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.
- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
 2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or

- b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph 5.04.A.
3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
 4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
 1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
 2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
 - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.
- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or

Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.

E. *Possible Price and Times Adjustments:*

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
 - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
 - d. Contractor gave the notice required in Paragraph 5.05.B.
2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 *Hazardous Environmental Conditions at Site*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
2. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.

- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.
- H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.
- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.H shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other

professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.
- E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverages, and

endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 *Contractor's Insurance*

- A. *Workers' Compensation:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
 - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
 - 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).
 - 4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
 - 1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
 - 2. claims for damages insured by reasonably available personal injury liability coverage.

3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content:* Contractor’s commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage:
 - a. Such insurance shall be maintained for three years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
 2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor’s contractual indemnity obligations in Paragraph 7.18.
 3. Broad form property damage coverage.
 4. Severability of interest.
 5. Underground, explosion, and collapse coverage.
 6. Personal injury coverage.
 7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
 8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, “Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured” or its equivalent.
- D. *Automobile liability:* Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer’s liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor’s pollution liability insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Contractor’s operations and completed operations. This insurance shall be maintained for no less than three years after final completion.
- G. *Additional insureds:* The Contractor’s commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor’s professional liability insurance:* If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or

related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.

- I. *General provisions:* The policies of insurance required by this Paragraph 6.03 shall:
1. include at least the specific coverages provided in this Article.
 2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
 3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
 4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
 5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.
- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 *Property Insurance*

- A. *Builder's Risk:* Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."
 2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage

(other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.

3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
 4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
 5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
 6. extend to cover damage or loss to insured property while in transit.
 7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
 8. allow for the waiver of the insurer's subrogation rights, as set forth below.
 9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
 10. not include a co-insurance clause.
 11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
 12. include performance/hot testing and start-up.
 13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
- C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner:* If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.

- E. *Additional Insurance*: If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:
 - 1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 - 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and

settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 Supervision and Superintendence

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.02 Labor; Working Hours

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.03 Services, Materials, and Equipment

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.04 “Or Equals”

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or “or equal” item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.
1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an “or equal” item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3) it has a proven record of performance and availability of responsive service; and
 - 4) it is not objectionable to Owner.
 - b. Contractor certifies that, if approved and incorporated into the Work:
 - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor’s Expense:* Contractor shall provide all data in support of any proposed “or equal” item at Contractor’s expense.
- C. *Engineer’s Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each “or-equal” request. Engineer may require Contractor to furnish additional data about the proposed “or-equal” item. Engineer will be the sole judge of acceptability. No “or-equal” item will be ordered, furnished, installed, or utilized until Engineer’s review is complete and Engineer determines that the proposed item is an “or-equal”, which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer’s Determination:* Neither approval nor denial of an “or-equal” request shall result in any change in Contract Price. The Engineer’s denial of an “or-equal” request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an “or-equal” item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 *Substitutes*

- A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.
1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an

acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - a. shall certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design,
 - 2) be similar in substance to that specified, and
 - 3) be suited to the same use as that specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
 - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from that specified, and
 - 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.

- F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.
- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.
- O. Nothing in the Contract Documents:
 - 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
 - 2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.08 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work

7.09 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.10 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.12 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
 - 1. all persons on the Site or who may be affected by the Work;
 - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.

- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
- G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.13 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

7.16 *Shop Drawings, Samples, and Other Submittals*

- A. *Shop Drawing and Sample Submittal Requirements:*
 1. Before submitting a Shop Drawing or Sample, Contractor shall have:
 - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

- c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
 - 2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
 - 3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.
 - 1. *Shop Drawings:*
 - a. Contractor shall submit the number of copies required in the Specifications.
 - b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.
 - 2. *Samples:*
 - a. Contractor shall submit the number of Samples required in the Specifications.
 - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.
 - 3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- D. *Engineer's Review:*
 - 1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
 - 2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
 - 3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
 - 4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless

Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.

5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.
8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
 1. observations by Engineer;
 2. recommendation by Engineer or payment by Owner of any progress or final payment;
 3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. use or occupancy of the Work or any part thereof by Owner;
 5. any review and approval of a Shop Drawing or Sample submittal;
 6. the issuance of a notice of acceptability by Engineer;
 7. any inspection, test, or approval by others; or
 8. any correction of defective Work by Owner.
- D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

7.19 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals

prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.
- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
 - 1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 - 2. an itemization of the specific matters to be covered by such authority and responsibility; and

3. the extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.
- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.
- D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

- 9.02 *Replacement of Engineer*
- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.
- 9.03 *Furnish Data*
- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.
- 9.04 *Pay When Due*
- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.
- 9.05 *Lands and Easements; Reports, Tests, and Drawings*
- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.
- 9.06 *Insurance*
- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.
- 9.07 *Change Orders*
- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.
- 9.08 *Inspections, Tests, and Approvals*
- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.
- 9.09 *Limitations on Owner's Responsibilities*
- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- 9.10 *Undisclosed Hazardous Environmental Condition*
- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.
- 9.11 *Evidence of Financial Arrangements*
- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents (including obligations under proposed changes in the Work).
- 9.12 *Safety Programs*
- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10 – ENGINEER’S STATUS DURING CONSTRUCTION

10.01 *Owner’s Representative*

- A. Engineer will be Owner’s representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner’s representative during construction are set forth in the Contract.

10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor’s executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer’s efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer’s visits and observations are subject to all the limitations on Engineer’s authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during or as a result of Engineer’s visits or observations of Contractor’s Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer’s consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

10.04 *Rejecting Defective Work*

- A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

- A. Engineer’s authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.
- B. Engineer’s authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.
- C. Engineer’s authority as to Change Orders is set forth in Article 11.
- D. Engineer’s authority as to Applications for Payment is set forth in Article 15.

10.06 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.07 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations,

Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

10.09 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.

ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
 - 1. *Change Orders:*
 - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
 - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.
 - 2. *Work Change Directives:* A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented

by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.

3. *Field Orders*: Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.02 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.03 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

11.04 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
 1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
 2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or
 3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).

- C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit shall be determined as follows:
1. a mutually acceptable fixed fee; or
 2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.01.C.2.a and 11.01.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;
 - d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
 - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
 - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.
 1. *Procedures*: Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise

Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.

2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.
 3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- B. *Resolution of Certain Change Proposals:* If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

11.07 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
 4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

11.08 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12 – CLAIMS

12.01 *Claims*

- A. *Claims Process:* The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and

3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. *Submittal of Claim:* The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
 - C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.
 - D. *Mediation:*
 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.
 3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
 - E. *Partial Approval:* If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
 - F. *Denial of Claim:* If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
 - G. *Final and Binding Results:* If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

- A. *Purposes for Determination of Cost of the Work:* The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:

1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
 2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included:* Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
 2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
 3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
 4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
 5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.

- e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
 - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.
 - g. The cost of utilities, fuel, and sanitary facilities at the Site.
 - h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
 - i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.
- C. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:
- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
 - 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
 - 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
 - 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
 - 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.
- D. *Contractor's Fee:* When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.
- E. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

13.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

- B. *Cash Allowances*: Contractor agrees that:
 - 1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 - 2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

13.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:
 - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
 - 2. there is no corresponding adjustment with respect to any other item of Work; and
 - 3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
 - 1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 - 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
 - 3. by manufacturers of equipment furnished under the Contract Documents;
 - 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
 - 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.
- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.

- E. *Preservation of Warranties*: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages*: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

- A. Engineer has the authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
 - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
 - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not

give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 *Progress Payments*

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments:*
 - 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
 - 2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.
- C. *Review of Applications:*
1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
 2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
 3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
 4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
 5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
 6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, requiring correction or replacement;

- b. the Contract Price has been reduced by Change Orders;
- c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
- d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
- e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due:*

- 1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner:*

- 1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
 - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. the Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. the Contract Price has been reduced by Change Orders;
 - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
 - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - l. there are other items entitling Owner to a set off against the amount recommended.
- 2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed

to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner,

Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.
2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. *Application for Payment:*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
 - d. a list of all disputes that Contractor believes are unsettled; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in

liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of Application and Acceptance:*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.

D. *Payment Becomes Due:* Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 1. correct the defective repairs to the Site or such other adjacent areas;
 2. correct such defective Work;
 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and

4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
 1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
 2. enforce the rights available to Owner under any applicable performance bond.

- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.
- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this Article:
 - 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
 - 2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this Article, Owner or Contractor may:
 - 1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
 - 2. agree with the other party to submit the dispute to another dispute resolution process; or
 - 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18 – MISCELLANEOUS

18.01 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
 - 1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
 - 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 *Computation of Times*

- A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

18.07 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

**SECTION 00800
SUPPLEMENTARY CONDITIONS**

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC No. C-700 (2013 Edition). All provisions which are not so amended or supplemented remain in full force and effect. The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof. The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

SC-1.01.A.8 Add the following language to the end of Paragraph 1.01.A.8:

The Change Order form to be used on this Project is EJCDC No. C-941 (Section 00840). Agency approval is required before Change Orders are effective.

SC-1.01.A.48 Add the following language at the end of the last sentence of Paragraph 1.01.A.48:

A Work Change Directive cannot change Contract Price or Contract Times without a subsequent Change Order.

SC-1.01.A.49 Add the following new Paragraph after Paragraph 1.01.A.48:

Abnormal Weather Conditions- Conditions of extreme or unusual weather for a given region, elevation, or season as determined by Engineer. Extreme or unusual weather that is typical for a given region, elevation or season should not be considered Abnormal Weather Conditions.

SC-2.01 Delete Paragraphs 2.01 B. and C. in their entirety and insert the following in their place:

B. Evidence of Contractor's Insurance: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner copies of the policies of insurance (including all endorsements, and identification of applicable self-insured retentions and deductibles) required to be provided by Contractor in Article 6. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

C. Evidence of Owner's Insurance: After receipt from Contractor of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor copies of the policies of insurance to be provided by Owner under Article 6 (if any). Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

SC-2.02.A Amend the first sentence of Paragraph 2.02.A to read as follows:

Owner shall furnish to Contractor three copies of the Contract Documents (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF).

SC-2.03 A.2 Preliminary Schedule of Submittals, add:

The Contractor shall provide submittals for all equipment and materials to be furnished on the project; and any other submittals as may be specifically called for by the contract documents.

SC-4.01.A Amend the last Paragraph of 4.01.A by striking out the following words:

In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.

SC-4.04 A. For Progress Schedule, add Paragraph 3 as follows:

3. Every two (2) weeks, the Contractor shall provide an updated three (3) week “look ahead” schedule that details in advance the activities scheduled to occur on the project in the subsequent three (3) week period; this schedule shall allow reasonable time for coordinating construction activities with required public and agency notifications, scheduling Owner’s personnel requirements, calling in advance for special inspection dates, and scheduling surveyors, technicians and other professionals necessary to monitor and facilitate the work. The Owner may hold progress payments if Contractor refuses to provide necessary “look ahead” schedules; these schedules are not necessary if Owner and Contractor agree no work will be occurring within a specific period.

SC-4.05.C.2 Amend Paragraph 4.05.C.2 by striking out the following text: “abnormal weather conditions;” and inserting the following text:

Abnormal Weather Conditions;

SC-5.03. Add the following new paragraphs immediately after Paragraph 5.03.B

- C. In the preparation of Drawings and Specifications, Engineer relied upon the following reports of exploration and tests of subsurface conditions at the Site:
 1. Geotechnical Study (if issued in Appendix or by Addendum)
- D. In the preparation of Drawings and Specifications, Engineer relied upon the following drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground Facilities) which are at or contiguous to the Site:
 1. There are no separate figures or drawings except as included in reports as referenced above.
- E. Copies of reports and drawings itemized in SC-5.03.C and SC-5.03.D that are not included with Bidding Documents may be examined at the office of the Calaveras County Water District, 120 Toma Court, San Andreas, CA 95249 / Phone: (209) 754-3543 during regular business hours (8:00 AM to 4:00 PM). These reports and drawings are not part of the Contract Documents, but the “technical data” contained therein upon which the Contractor may rely as identified and established above are incorporated therein by reference. Contractor is not entitled to rely upon other information and data utilized by Engineer in the preparation of the Drawings and Specifications.

SC-5.06. Delete Paragraphs 5.06.A and 5.06.B in their entirety and replace with following:

- A. No reports or explorations or tests of Hazardous Environmental Conditions at or contiguous to the Site are known to the Owner or Engineer.

SC-6.03. Add the following new paragraph immediately after Paragraph 6.03.J:

- K. The limits of liability for insurance required by paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:
 1. Workers’ Compensation, and related coverages under paragraphs 6.03.A.1 and A.2 of the General Conditions:
 - a. State: Statutory

- b. Employer's Liability \$1,000,000
- 2. Contractor's *Commercial General Liability* under paragraphs 6.03.B and 6.03.C of the General Conditions:
 - a. General Aggregate \$2,000,000
 - b. Products - Completed Operations Aggregate \$1,000,000
 - c. Personal and Advertising Injury \$1,000,000
 - d. Each Occurrence (Bodily Injury and Property Damage) \$1,000,000
 - e. Excess or Umbrella Liability
 - 1) General Aggregate \$2,000,000
 - 2) Each Occurrence \$2,000,000
- 2. *Automobile Liability* under paragraph 6.03.D of the General Conditions:
 - a. Combined Single Limit \$1,000,000
- 3. Property Damage liability insurance will provide Explosion, Collapse and Underground (X, C, U) coverages where applicable.
- 4. Contractual Liability coverage required by paragraph 6.03.C.2 of the General Conditions shall be provided as part of the *Commercial General Liability* coverage.
- 5. The Owner and Engineer (including all their designated officers, employees, representatives and agents) are to be included as additional insureds including but not limited to:
 - a. Calaveras County Water District
 - b. County of Calaveras / Encroachment Permit
 - c. Nordahl Land Surveying
 - d. Condor Earth Technologies, Inc.

SC-6.06 Delete paragraph 6.06B. and 6.06C. in its entirety.

SC-7.02 B. Working Hours, add:

The Owner may require the Contractor to work Saturday and Sunday or extended evening hours when service interruption would otherwise cause disruptions to customers beyond regular work hours.

SC-7.04.A Amend the third sentence of the paragraph by striking out the following words:

Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item is permitted.

SC-7.04.A.1 Amend the last sentence of Paragraph a.3 by striking out "and:" and adding a period at the end of Paragraph a.3.

SC-7.04.A.1 Delete paragraph 7.04.A.1.a.4 in its entirety.

SC-7.06.A Amend Paragraph 7.06.A by adding the following text to the end of the Paragraph:

The Contractor shall not award work valued at more than fifty percent of the Contract Price to Subcontractor(s), without prior written approval of the Owner.

SC-7.06.B Delete Paragraph 7.06.B in its entirety.

SC-7.08 Amend Paragraph 7.0 8 by adding the following text to the end of the Paragraph:

For encroachments on County roads, the Contractor shall obtain permits except the District will pay direct governmental charges and inspection fees. In submitting a bid, the Contractor shall fully assess encroachments and traffic control needs and include associated costs in the bid items.

SC-7.11 A. Record Documents, delete and replace as follows:

The Contractor shall maintain in a safe place at the Site one printed record copy (or in electronic format on a laptop computer or tablet device) of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and neatly and accurately annotated in red ink to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference in the field. Owner may require that copies of markups and annotations on drawings be submitted along with monthly progress payment requests to allow Owner to incorporate changes in to the record drawings. Upon completion of the Work, Contractor shall deliver copies of all remaining record documents to Engineer that are not previously submitted.

SC-7.18 Replace Paragraph 7.18 in entirety with the following text:

Indemnification

To the fullest extent permitted by law, Contractor shall indemnify, defend, and hold harmless Owner, and any of their agents and consultants, and each of their directors, officers, agents, and employees (“Indemnitees”) for any actual or alleged damage or losses relating to or arising out of Contractor’s performance under this Contract or in any way relating to the Work. Contractor’s defense and indemnity obligation shall include, but not be limited to, Contractor indemnifying, defending, and holding Indemnitees harmless from all actual or alleged liability, claims, damages, losses, expenses, and other costs, including costs of defense and attorneys’ and expert fees, arising out of or resulting from or in connection with the performance of the Work, both on and off the project site. However, Contractor shall not be liable for any such claims, damages, losses, expenses, liability and other costs that are caused by the sole negligence, willful misconduct, or active negligence of Indemnitees.

In any and all claims against the Indemnitees by any employee of Contractor, any Subcontractor, any supplier, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligations under this Agreement shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor, or any Subcontractor, or any Supplier or other person under Worker’s Compensation acts, disability benefit acts, or other employee acts.

Additionally, Contractor shall defend, indemnify, and hold Indemnitees harmless from and against: (1) any and all claims, liabilities, loss, damage, costs, or expenses, including reasonable attorneys' fees, awards, and judgments, arising by reason of any claims, liens, stop notices, or bond claims for labor, materials, or equipment used or furnished to be used in connection with the Work, or union trust fund payments arising from or relating to the Work, and (2) all incidental or consequential damages resulting to Owner from such claims, liens, stop notices or bond claims. Contractor shall cause the effect of any such claim, suit, stop notice, or lien to be removed from the Project within ten days after written demand to do so is made by Owner. If Contractor fails to do so, Owner may use whatever means it deems appropriate to cause the suit, stop notice or lien to be removed or dismissed. All resulting cost and expense incurred by Owner shall be immediately due and payable to Owner by Contractor.

SC-7.20 Add the following new Paragraph after Paragraph 7.19.

Contractor shall either provide electronic transmittal or provide three (3) printed copies of each submittal; one (1) copy to be returned with Engineer’s comments. Submittals shall be organized, securely bound, accompanied by a transmittal, and systematically numbered and titled adding postscript letters “A”, “B” or “C” for each subsequent resubmittal. Shop drawings containing unrelated items are not acceptable unless taken together comprise a

manufacturer's package or closely related scope of supply. Contractor may fax or email information with approval of Engineer. Engineer will complete review and return comments for each submittal or resubmittal within seven (7) to fourteen (14) days and up to thirty (30) days if more complex (e.g. electrical equipment, process equipment, structural systems). Engineer will return comments marked with one course of action to be carried out by Contractor as follows:

- A. No Exceptions Taken: Shop drawing is approved to be furnished as submitted
- B. Furnish As Noted: Shop drawing is approved and resubmittal is not required given that the Contractor makes corrections as noted by Engineer's comments.
- C. Revise & Resubmit: Shop drawing is not approved by the Engineer; Contractor shall resubmit the shop drawing after revising information according to Engineer's comments.
- D. Rejected/Resubmit: Shop drawing rejected because Engineer finds it materially differs from specifications and contract requirements; Contractor is to verify requirements and resubmit shop drawing accordingly.

SC-10.03. Add the following language at the end of paragraph 10.03:

At any time before or during construction, the Owner may designate one or more persons as a Resident Project Representative provided that the Contractor is notified in writing and Owner clearly defines their duties, responsibilities and limits of authority. If a consultant is utilized, their duties and responsibilities should be equally stated in a Professional Services Agreement executed for this specific Project between the District and the Consultant.

SC-11.06.A Amend the first sentence of Paragraph 11.06.A. to read as follows:

Procedures: Contractor shall submit each Change Proposal to the Engineer prior to commencing any work for which Contractor believes it is entitled to an adjustment in Contract Time or Contract Price. If the need for an adjustment in Contract Time or Contract Price arises after the scope of work has commenced then Contractor shall notify Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision.

SC-11.07.C Add the following new Paragraph after Paragraph 11.07.B:

All Contract Change Orders must be concurred in by Agency before they are effective.

SC-13.02.C Delete Paragraph 13.02.C in its entirety.

SC-15.01.B Replace Paragraph 15.01.B in entirety with the following text:

B. Applications for Payments

1. Applications for Payment shall indicate the percentage of completion of each portion of the Work as of the end of the period covered by the application for payment.
2. Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

Take that portion of the Contract Price properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Price allocated to that portion of the Work in the schedule of values, less retainage of five percent (5%);

Add that portion of the Contract Price properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of five percent (5%);

Subtract the aggregate of previous payments made by the Owner.

3. Each Application for payment shall be in such form and contain such information and substantiation of the portion of the Contract Price allocable to the portion of the Work covered thereby as herein required and as the Owner may reasonably require, and shall, include, without limitation, the following:

(a) A lien waiver in compliance with the requirements of California Civil Code Section 8132 from Contractor and from each Subcontractor and vendor of any tier for the Work and materials that are subject of the Application for Payment and that matches invoice amount. The lien waiver may be conditioned upon receipt of the payment applied for less applicable retention.

(b) An unconditional lien waiver in compliance with the requirements of California Civil Code Section 8134 from Contractor and from each Subcontractor and vendor of any tier covering Work and materials which covers all previous Applications for Payment.

(c) Contractor's certification that the Work covered by the Application for Payment has been completed in accordance with the Contact Documents and all applicable laws.

(d) A detailed, current lien release log, listing all lien releases (both conditional and unconditional) provided to date by Contractor, Subcontractors and Vendors listing the individual amounts by pay period and the total received by each.

(e) A detailed, current change order log that includes all potential, approved and voided change orders.

(f) An updated overall Project schedule for review and approval by the Owner. The update should include all activities with percent completes through the current pay period. Any logic changes should be clearly identified with a detailed explanation and list of reasons for each change.

4. The Contractor warrants and guarantees that title to all Work, materials and equipment covered by an application for payment, whether incorporated in the Project or not, will pass to the Owner upon receipt of such payment by the Contractor free and clear of all liens, claims, security interests or encumbrances, hereinafter referred to as "liens."

5. The Owner's progress payment, occupancy or use of the Project, whether in whole or in part, shall not be deemed an acceptance of any Work not conforming to the requirements of the Contract Documents.

SC-15.01.D.1 Delete Paragraph 15.01.D.1 in its entirety and insert the following in its place:

The Application for Payment with Engineer's recommendation will be presented to the Owner and Agency for consideration. If both the Owner and Agency find the Application for Payment acceptable, the recommended amount less any reduction under the provisions of Paragraph 15.01.E will become due thirty (30) days after the Application for Payment is presented to the Owner, and the Owner will make payment to the Contractor.

SC-15.02.A Amend Paragraph 15.02.A by striking out the following text:

"no later than seven days after the time of payment by Owner" and insert "no later than the time of payment by Owner."

SC-15.06.A.3 Delete the language in Paragraph 15.06A.3. in its entirety and replace the paragraph with the following language:

Before issuance of final payment, Contractor must provide to the Owner satisfactory evidence that all payrolls, materials bills and other indebtedness connected with the Work have been paid or otherwise satisfied.

SC-19 Add Article 19 titled “FEDERAL REQUIREMENTS”

SC 19.03 Conflict of Interest

A. Contractor may not knowingly contract with a supplier or manufacturer if the individual or entity who prepared the plans and specifications has a corporate or financial affiliation with the supplier or manufacturer. Owner’s officers, employees, or agents shall not engage in the award or administration of this Contract if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when: (i) the employee, officer or agent; (ii) any member of their immediate family; (iii) their partner or (iv) an organization that employs, or is about to employ, any of the above, has a financial interest in Contractor. Owner’s officers, employees, or agents shall neither solicit nor accept gratuities, favors or anything of monetary value from Contractor or subcontractors.

SC 19.04 Gratuities

A. If Owner finds after a notice and hearing that Contractor, or any of Contractor’s agents or representatives, offered or gave gratuities (in the form of entertainment, gifts, or otherwise) to any official, employee, or agent of Owner or Agency in an attempt to secure this Contract or favorable treatment in awarding, amending, or making any determinations related to the performance of this Contract, Owner may, by written notice to Contractor, terminate this Contract. Owner may also pursue other rights and remedies that the law or this Contract provides. However, the existence of the facts on which Owner bases such findings shall be an issue and may reviewed in proceedings under the dispute resolution provisions of this Contract.

B. In the event this Contract is terminated as provided in paragraph 19.04.A, Owner may pursue the same remedies against Contractor as it could pursue in the event of a breach of this Contract by Contractor. As a penalty, in addition to any other damages to which it may be entitled by law, Owner may pursue exemplary damages in an amount (as determined by Owner) which shall not be less than three nor more than ten times the costs Contractor incurs in providing any such gratuities to any such officer or employee.

SC-19.05 Audit and Access to Records

A. Owner, Agency, the Comptroller General of the United States, or any of their duly authorized representatives shall have access to any books, documents, papers, and records of the Engineer which are pertinent to the Agreement, for the purpose of making audits, examinations, excerpts, and transcriptions. Engineer shall maintain all required records for three years after final payment is made and all other pending matters are closed.

SC- 19.06 Small, Minority and Women’s Businesses

A. Not applicable to this contract.

SC-19.07 Anti-Kickback

A. Contractor shall comply with the Copeland Anti-Kickback Act (18 U.S.C. 874 and 40 U.S.C. 276c) as supplemented by Department of Labor regulations (29 CFR Part 3, “Contractors and Subcontractors on Public Buildings or Public Works Financed in Whole or in Part by Loans and Grants of the United States.”) The Act provides that Contractor or subcontractor shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public facilities, to give up any part of the compensation to which they are otherwise entitled. Owner shall report all suspected or reported violations to Agency.

SC-19.08 Clean Air and Pollution Control Acts

A. In conducting work, the Contractor shall not violate any applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h) and 42 U.S.C. 7401 et.seq.), section 508 of the Clean Water Act (33 U.S.C. 1368) and Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15).

SC-19.09 State Energy Policy

A. Contractor shall comply with the Energy Policy and Conservation Act (P.L. 94-163) and utilize mandatory standards and policies relating to energy efficiency, contained in any applicable State Energy Conservation Plan.

SC-19.10 Equal Opportunity Requirements

A. This contract does not mandate specific equal opportunity goals or quotas.

SC-19.11 Restrictions on Lobbying

A. Contractor and each subcontractor shall comply with Restrictions on Lobbying (Public Law 101-121, Section 319) as supplemented by applicable Agency regulations. This Law applies to the recipients of contracts and subcontracts that exceed \$100,000 at any tier under a Federal loan that exceeds \$150,000 or a Federal grant that exceeds \$100,000. If applicable, Contractor must complete a certification form on lobbying activities related to a specific Federal loan or grant that is a funding source for this Contract. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Certifications and disclosures are forwarded from tier to tier up to the Owner. Necessary certification and disclosure forms shall be provided by Owner.

SC-19.12 Environmental Requirements

When constructing a project involving trenching and/or other related earth excavations, Contractor shall comply with the following environmental constraints:

A. Wetlands - When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert wetlands.

B. Floodplains - When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert 100 year floodplain areas delineated on the latest Federal Emergency Management Agency Floodplain maps, or other appropriate maps, i.e., alluvial soils on NRCS Soil Survey maps.

C. Historic Preservation - Any excavation by Contractor that uncovers an historical or archaeological artifact shall be immediately reported to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further direction issued by Agency after consultation with the State Historic Preservation Officer (SHPO).

D. Endangered Species - Contractor shall comply with the Endangered Species Act, which provides for protection of endangered and/or threatened species and critical habitat. Should any evidence of the presence of endangered and/or threatened species or their critical habitat be brought to the attention of Contractor, Contractor will immediately report this evidence to Owner and a representative of Agency. Construction shall be temporarily halted pending notification process and further directions issued by Agency after consultation with the U.S. Fish and Wildlife Service.

E. Mitigation Measures - If the project had an Environmental Report, Environmental Assessment, or Environmental Impact Statement to meet Federal NEPA or State CEQA environmental requirements, compliance with the mitigation measures, if any, in that document are hereby included as a condition of this contract.

F. The contractor is required to comply with the environmental permits and documents listed below. Copies of documents and permits that are not included with the Bidding Documents will be made available by electronic media or may be examined at the office of the Calaveras County Water District, 120 Toma Court, San Andreas, CA 95249 during normal business hours (8 AM to 4 PM) and/or reviewed on the listed websites.

1. Construction General Permit 2009-009-DWQ for Storm Water Discharges Associated with Construction and Land Disturbance (www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml)
2. Statewide Low Risk General Order 2003-0003-DWQ for Discharges to Land (e.g. construction dewatering of excavations) with a Low Threat to Water Quality or Low Risk Waiver R5-2013-0145
www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wgo/wgo2003-0003.pdf
www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2013-0145_res.pdf
3. Central Valley Regional Water Quality Control Board, Low or Limited Threat General NPDES Permit (e.g. for dewatering or chlorinated discharges to any surface or jurisdictional waters of the United States)
www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0074.pdf
www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0073.pdf

SC-20 Add the following new paragraph: “ARTICLE 20 - PROJECT SIGN”

SC-20.01 Contractor will place a temporary construction project sign at a location designated by the Engineer. This sign measuring 4' x 8', will be made of 3/4" exterior grade plywood and adhere to the format and details given in Section 00810. The sign will be prepared by a professional sign maker.

SC-21 Add Article 21 titled “CALIFORNIA STATE REQUIREMENTS”

SC-21.01 This project is a “public works” project as defined in California Labor Code Section 1720 through 1743. In accordance with California Labor Code Article 1725.5, Contractor and all subcontractors are required to be registered with the California Department of Industrial Relations (DIR) in order to bid or be listed on a bid and/or work on a public works project.

SC-21.02 Specific contract clauses mandated by Department of Industrial Relations (DIR):

- A. Every Contractor [*and subcontractor*] will be required to secure the payment of workers compensation to his or her employees conforming to Labor Code Section 1860.
- B. The Contractor shall post the applicable prevailing wage rate on the project site according to Labor Code Section 1771.4.

SC-21.03 In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the Contractor or Subcontractor offers and agrees to assign to the 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. Section 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, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the Contractor, without further acknowledgment by the parties.

SC-21.04 Prevailing Wages: Notice is hereby given that, pursuant to Section 1773 of the Labor Code of the State of California, the Owner has obtained from the Director of the Department of Industrial Relations the general prevailing rate of per diem wages and the general prevailing rate for holidays and overtime work for each craft, classification, or type of worker required to execute the Contract. A copy of said prevailing rate of per diem wages is on file in the principal office of the Owner, to which reference is hereby made for further particulars. Said prevailing rate of per diem wages will be made available to any interested party upon request, and a copy thereof shall be posted at each job site.

SC-21.05 Statutory Penalty for Failure to Pay Minimum Wages: In accordance with Section 1775 (a) through (c) of the California Labor Code, the Contractor shall as a penalty to the State of political subdivision on whose behalf a Contract is made or awarded, forfeit not more than two hundred dollars (\$200.00) for each calendar day or portion thereof, for each worker paid less than the prevailing wage rates as determined by the director for the work or craft in which the worker is employed for any public work

done under the contract by the contractor or, except as provided in subdivision 1775 (b), by any subcontractor under the contractor.

- SC-21.06** Statutory Penalty for Unauthorized Overtime Work: In accordance with Section 1813 of the California Labor Code, the Contractor shall as a penalty to the State or political subdivision on whose behalf the Contract is made or awarded, forfeit twenty-five dollars (\$25.00) for each worker employed in the execution of the Contract by the respective contractor or subcontractor for each calendar day during which said worker is required or permitted to work more than 8 hours in any one calendar day and 40 hours in any one calendar week in violation of provisions of Sections 1810-1815 of the Labor Code.
- SC-21.06** Apprenticeship Requirements: Contractor agrees to comply with Sections 1777.5, 1777.6 and 1777.7 of the California Labor Code relating to the employment of apprentices. The responsibility for compliance with these provisions is fixed with the prime contractor for all apprenticeship occupations. Under these sections of the law, Contractors and Subcontractors must employ apprentices in apprenticeship occupations, where journeymen in the craft are employed on the public work, in a ratio of not less than one apprentice hour for each five journeymen hours (unless an exemption is granted in accordance with 1777.5) and Contractors and Subcontractors shall not discriminate among otherwise qualified employees as indentured apprentices on any public work solely on the ground of race, religious creed, color, national origin, ancestry, sex, or age, except as provided in 3077 of the Labor Code. Only apprentices, as defined in 3077, which provides that an apprentice must be at least 16 years of age, who are in training under apprenticeship standards and who have signed written apprentice agreements will be employed on public works in apprenticeship occupations.
- SC-21.07** Payroll Records: Contractor shall keep accurate payroll records in format specified by the Division of Labor Standards Enforcement. Said information shall include, but not be limited to, a record of the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and actual per diem wages paid to each journeyman, apprentice, or worker employed by the Contractor. Copies of such record shall be made available for inspection at all reasonable hours, and a copy shall be made available to employee or his authorized representative, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards in compliance with California Labor Code, Section 1776. Contractor and subcontractors shall furnish and submit electronic certified payroll records directly to the Labor Commissioner, and duplicate copies available to Owner.
- SC-21.08** Contractor shall be responsible for marking all excavations and notifying Underground Service Alert (USA) North at least 48-hours before digging, and follow all other provisions of California Government Code Sections 4216 through 4216.9. Contractor shall maintain an active USA North ticket number for the entire duration of the excavation.
- SC-21.09** Unless otherwise indicated in the Contract Documents, all utility lines, conduits, wires, or structures shall be maintained by the Contractor and shall not be disturbed, disconnected, or damaged by him during the progress of the Work, provided, that should the Contractor in the performance of the Work disturb, disconnect, or damage any of the above, all expenses arising from such disturbance or in the replacement or repair thereof shall be borne by the Contractor. However, in accordance with Section 4215 of the California Government Code, the Contractor shall be compensated for all costs of relocating and repairing damage to main or trunkline utility facilities located on the work site and for costs of operating equipment on the work site necessarily idled during such work where the Contractor has exercised reasonable care in removing or relocating utility facilities which are inaccurately indicated in the Contract Documents.
- SC-21.10** This project is subject to provisions of Assembly Bill 626 regarding resolution of change orders as set forth in Public Contract Code §9204.

**SECTION 00830
WORK CHANGE DIRECTIVE**

Work Change Directive No.

Date of Issuance: _____ Effective Date: _____
Owner: _____ Owner's Contract No.: _____
Contractor: _____ Contractor's Project No.: _____
Engineer: _____ Engineer's Project No.: _____
Project: _____ Contract Name: _____

Contractor is directed to proceed promptly with the following change(s):
Description:

Attachments: *[List documents supporting change]*

Purpose for Work Change Directive:

Directive to proceed promptly with the Work described herein, prior to agreeing to changes on Contract Price and Contract Time, is issued due to: *[check one or both of the following]*

- Non-agreement on pricing of proposed change.
 Necessity to proceed for schedule or other Project reasons.

Estimated Change in Contract Price and Contract Times (non-binding, preliminary):

Contract Price \$ _____ [increase] [decrease].
Contract Time _____ days [increase] [decrease].

Basis of estimated change in Contract Price:

- Lump Sum Unit Price
 Cost of the Work Other

RECOMMENDED:	AUTHORIZED:	RECEIVED:
By: _____ Engineer (Authorized Signature)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____

Approved by Funding Agency (if applicable)

By: _____ Date: _____
Title: _____

**SECTION 00840
CHANGE ORDER FORM**

Change Order No. _____

Date of Issuance:	Effective Date:
Owner:	Owner's Contract No.:
Contractor:	Contractor's Project No.:
Engineer:	Engineer's Project No.:
Project:	Contract Name:

The Contract is modified as follows upon execution of this Change Order:

Description:

Attachments: *[List documents supporting change]*

CHANGE IN CONTRACT PRICE	CHANGE IN CONTRACT TIMES <i>[note changes in Milestones if applicable]</i>
Original Contract Price: \$ _____	Original Contract Times: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: \$ _____	[Increase] [Decrease] from previously approved Change Orders No. to No. ___: Substantial Completion: _____ Ready for Final Payment: _____ days
Contract Price prior to this Change Order: \$ _____	Contract Times prior to this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] of this Change Order: \$ _____	[Increase] [Decrease] of this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
Contract Price incorporating this Change Order: \$ _____	Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for Final Payment: _____ days or dates

RECOMMENDED:

ACCEPTED:

ACCEPTED:

By: _____ Engineer (if required)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____

Approved by Funding Agency

By: _____ Date: _____
Title: _____

**SECTION 00900
SPECIAL CONDITIONS**

1. PROJECT COORDINATION AND COOPERATION

This project requires coordination and cooperation between all contractors on the site. The contractors are to work together to construct the project in orderly sequence.

Generally, one Prime Contractor will be assigned to the project at a time. CCWD may allow another Contractor to work onsite if their operations do not reasonably impact the other Contractors activities.

2. PROJECT SCHEDULE AND MILESTONES

The project contains internal milestones and total contract calendar days for each Bid Schedule. These milestones are designed to provide a timeline for the work. Weather dependent activities should be scheduled when possible during the dry season from April 15th to December 15th. Each Contractor(s) is to provide detailed schedule within 5 days of Notice to Proceed. The detailed schedule should include the Milestones listed below and all other tasks. Calaveras County Building Department can take up to 5 weeks to review plans, please include this review time in the schedule.

MILESTONES:

Notice to proceed (NTP)

Contractor(s) to submit detailed schedule: 5 Calendar Days from NTP

Building manufacture to begin metal building design: 5 Calendar Days from NTP

Contractor to apply for Grading Permit from Calaveras County Public Works: 5 Calendar Days from NTP

Contractor to submit Service Request to PG&E: 14 Calendar Days from NTP

Shop drawings submitted to CCWD for Drainage and Site Utilities: 21 Calendar Days from NTP

Shop drawings submitted to CCWD for Electrical Systems: 28 Calendar Days from NTP

Shop drawings submitted to CCWD for HVAC Systems: 28 Calendar Days from NTP

Shop drawings submitted to CCWD Title 24 Compliance: 28 Calendar Days from NTP

Engineered shop drawings submitted to CCWD for Metal Building/Foundation: 28 Calendar Days from NTP

Shop Drawings submitted to CCWD for concrete slab control joints: 28 Calendar from NTP.

Complete site grading and building pad: 63 Calendar Days from NTP.

Complete building slab and foundations: 91 Calendar Days from NTP

Metal building delivery: 98 Calendar Days from NTP

Complete metal building: 154 Calendar Days from NTP

Complete site concrete/asphalt: 196 Calendar Days from NTP

Complete interior walls, electrical, and HVAC: 280 Calendar Days from NTP.

Substantial Completion (Occupancy from Calaveras County): 300 Working Days from NTP

Final Completion (Punchlist Complete): 340 Working Days from NTP

3. EXISTING UTILITIES

San Andreas Headquarters
Maintenance Shop & Warehouse

Special Conditions
00900-1

February 24, 2020

The Contractor shall mark excavations, call Underground Service Alert (USA) 48-hrs before digging and follow all other provisions of California Government Code Section 4216 through 4216.9. The Contractor shall verify location of all existing utilities and, to the extent necessary to prevent damage by Contractor's work, shall hand dig, pothole and protect existing utilities.

4. CONSTRUCTION STAKING

CCWD will provide one (1) set of stakes and marks to establish grades for the project. CCWD will provide one (1) set of stakes and marks to establish drainage. CCWD will provide one (1) set of stakes and marks to establish building corners. CCWD will provide one (1) set of stakes and marks to establish site concrete work. The Contractor shall submit a detailed construction staking request and call CCWD fourteen (14) days in advance. All stakes provided by CCWD shall be carefully preserved by the Contractor; if stakes are destroyed, damaged or lost, the Contractor shall replace and restore them as necessary for construction.

5. SOIL COMPACTION TESTS

CCWD will provide soil compaction tests. The Contractor shall halt heavy equipment operation to allow personnel access to perform tests. Passing tests shall be paid by CCWD. For each failing compaction test, the Contractor shall reimburse CCWD two-hundred fifty dollars (\$250.00), which will be deducted from progress payments.

6. TEMPORARY SANITARY FACILITIES

The Contractor shall furnish and maintain temporary sanitary facilities, i.e., portable toilets, at the construction site for the duration of the Project.

7. CONSTRUCTION WATER

All water used in construction will be clean and free from harmful substances. The water system in the vicinity of the project is operated by Calaveras Public Utilities District (CPUD). The contractor will need to secure and pay for a temporary hydrant meter from CPUD for construction water.

8. CAUTION – OVERHEAD UTILITIES

Overhead power and other overhead utilities are at the project site. The Contractor shall use caution when operating heavy equipment in the vicinity of overhead utilities and should post appropriate temporary construction signs in hazardous locations.

9. CAUTION – CONSTRUCTION SPEED LIMIT/TRAFFIC/NOISE

Within the project area there are multiple other businesses and pedestrians. The Contractor and subcontractors shall maintain 25 mph speed limit on George Reed Drive and speed limit onsite of less than 10 mph. Construction traffic shall enter the site through George Reed Drive, no construction traffic is allowed through the existing main office entrances. CCWD holds board meetings in the adjacent building twice a month, contractor will be required to suspend noise creating activities during the open board meeting sessions.

10. FIRE HAZARDS

The project area is a high fire hazard area. The Contractor shall use caution in clearing and removing weeds, vegetation, and brush from the construction zone and staging areas. All equipment and crew trucks shall have Fire Extinguishers.

11. CONTRACTOR'S USE OF SITE

The work site shall be kept in a clean and orderly condition, removing spillage from hauling operations daily and applying water to control dust. Contractor shall assume full responsibility for protection and safekeeping of products and materials stored on the site. The staged materials shall not interfere with the public right-of-way. The Contractor shall secure and pay for use of additional storage areas as necessary and not stage or store materials on private property without permission from the owner. The Contractor shall secure the site when not present to eliminate site hazards and maintain public safety. Contractor shall steel plate excavations and provide temporary security fencing around site safety hazards.

12. PRESERVATION OF PROPERTY

Any existing improvements and facilities adjacent to the work and not scheduled to be removed – such as trees, shrubs, driveways, mail boxes, pole lines, fences, signs, survey markers, monuments, buildings, structures, conduits and utilities – shall be protected from injury or damage. If injured or damaged, it's condition shall be replaced or restored to as good or better as upon entering work.

13. PRESERVATION OF TREES

The Contractor shall only remove those trees specifically designated for removal in the contract (shown on drawings or listed in specifications). Tree branches that extend over the work and must be removed shall be cut off by a professional tree service company at the bole in a workmanlike manner. Otherwise, the Contractor shall obtain the Engineer's specific approval prior to removing any additional trees. During construction, delineate and avoid root compaction by limiting size of heavy equipment used within tree areas. Within drip zone, monitor excavations to minimize damage to large roots and cut away large roots obstructing work with hand pruning saw. Do not rip or pull on large tree roots with heavy equipment.

14. NESTING BIRDS

A pre-construction nesting bird survey shall be conducted by the District within 14 days prior to the commencement of construction during the nesting season (1st February thru 31st August). Pre-construction nesting surveys are not required for construction activity outside the nesting season. If active nests are found, for construction a no-disturbance buffer established by a qualified biologist shall be observed around the nest. This buffer shall be maintained until the fledglings are capable of flight and become independent of the nest tree, to be determined by the biologist. No further measures are necessary once the young are independent of the nest.

15. CULTURAL RESOURCES DISCOVERY

In the event that any subsurface deposits believed to be cultural or human in origin are discovered during construction, the Constructor must halt all work within a 100-foot radius of the discovery and immediately notify the District. A qualified professional archaeologist and/or tribal monitor shall be consulted to evaluate the significance of the find, and may reduce the no-work radius as appropriate, using professional judgment. If the professional archaeologist and/or tribal monitor determines that the find does not represent a cultural resource, the Contractor may resume work immediately with no agency notifications. If archaeologist and/or tribal monitor believes the cultural resource could be eligible for NRHP or CRHR, the no-work radius shall be maintained until consulting with SHPO on appropriate treatment measures.

16. HUMAN REMAINS DISCOVERY

If human remains are found, or remains that are potentially human, all work will stop within a 100' radius until an archaeologist establishes further measures to protect the discovery from disturbance (AB 2641).

The archaeologist shall notify the Calaveras County Coroner (per §7050.5 of the Health and Safety Code). The provisions of §7050.5 of the California Health and Safety Code, §5097.98 of the California Public Resources Code, and Assembly Bill 2641 will be implemented. If the Coroner determines the remains are Native American and not a crime scene, then the Coroner will notify the Native American Heritage Commission (NAHC), which then will designate a Native American Most Likely Descendant (MLD) for the project. The designated MLD will have 48-hrs from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with recommendations of the MLD, then the NAHC can mediate. If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed. This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located. Work may not resume within the no-work radius, until the treatment measures have been completed to mitigate risk to the resource.

17. AIR QUALITY

In order to reduce emissions related to construction equipment and vehicle use, the Contractor will implement the following measures during construction: A) maintain all construction equipment in proper tune according to manufacturer's specifications, B) maximize, to the extent feasible, the use of diesel construction equipment meeting the California Air Resource Board's 1996 or newer certification standard for off-road heavy-duty diesel engines, C) utilize heavy equipment equipped with or install diesel oxidation catalysts, catalyzed diesel particulate filters, or other approved emission reduction retrofit devices, D) minimize length of time construction equipment is left idling.

END

**SECTION 02100
DEMOLITION, CLEARING, GRUBBING AND STRIPPING**

PART 1 GENERAL

1.1 SCOPE

It is the intent of these Contract documents and the responsibility of the Contractor to furnish, provide, and perform, all demolition, clearing, grubbing, and stripping (whether shown or not shown) needed for a complete project and building installation, at no additional cost to Owner.

1.2 DESCRIPTION

Work Included: Demolition, clearing, grubbing, and stripping required for this work includes, but is not necessarily limited to:
Removal of weeds, surface rock, and all debris at all locations identified for new construction and new grading and/or site work.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 02200: Earthwork
- B. Section 02223: Trenching, Backfilling, and Compacting
- C. Section 02225: Structure Excavation and Backfill

1.3 LIMITS OF WORK

Perform demolition, clearing, grubbing, and stripping operations to the following limits:

- A. Demolition: Perform demolition of existing facilities as designated on the contract drawings.
- B. Clearing: Perform clearing operations throughout the project site, as required for completion of the work designated on the contract drawings.
- C. Grubbing: Perform grubbing operations at all locations identified for clearing.
- D. Stripping: Perform stripping operations at the following locations identified for demolition, new construction, and new grading and/or site work.
- E. Debris Removal: Remove and dispose of debris and debris piles on the property.

1.4 PROJECT CONDITIONS

- A. Dust Control: Use all means necessary to prevent the spread of dust during performance of the work; thoroughly moisten all surfaces as required to prevent dust being a nuisance to the public, neighbors, and concurrent performance of other work on the site. Wind in excess of 10 MPH causing dust to leave site will require Contractor to limit dust causing activities.
- B. Burning: On-site burning will not be permitted.

- C. Protection: Use all means necessary to protect existing objects designated to remain and, in the event of damage, immediately notify the CCWD Construction Manager and make all repairs and replacements necessary for approval by the CCWD Construction Manager at no additional cost to the Owner.

PART 2 MATERIALS

2.1 TEMPORARY BARRICADES

Unless otherwise specifically approved by the CCWD Construction Manager, use only new and solid lumber of utility grade or better to construct temporary barricades around the objects designated to remain.

2.2 EXPLOSIVES

Do not use explosives on this work unless approved by the CCWD Construction Manager.

2.3 OTHER MATERIALS

All other material, not specifically described but required for proper completion of the work of this Section, shall be as selected by the Contractor subject to approval of the CCWD Construction Manager.

PART 3 EXECUTION

3.1 PREPARATION

- A. Notification: Notify the CCWD Construction Manager at least two full working days prior to commencing the work of this section.
- B. Site Inspection
 - a. Prior to all work of this section, carefully inspect the entire site and all objects designated to be removed and to be preserved. The drawings do not purport to show all objects existing on the site. Before commencing the work of this section, verify with the CCWD Construction Manager all objects to be removed and all objects to be preserved.
 - b. Locate all existing inactive utility lines to be encountered by the new work and determine all requirements for disconnecting and capping. Abandonment of piping requires capping at each end or plugging with concrete to the satisfaction of the CCWD Construction Manager.
 - c. Locate all existing active utility lines traversing the site and determine the requirements for their protection.
- C. Scheduling
 - a. Schedule all work in a careful manner with all necessary consideration for neighbors, operation of existing facilities, and the public.

- b. Avoid interference with the use of, and passage to and from, adjacent buildings and facilities.
- D. Disconnection of Utilities: Before starting site operations, disconnect or arrange for the disconnection of all utility services designated to be removed, performing all such work in accordance with the requirements of the utility company or Owner involved.
- E. Protection of Utilities: Preserve in operating condition all active utilities traversing the site and designated to remain.

3.2 CLEARING AND GRUBBING

A. Clearing, Grubbing, and Stripping

- a. The Contractor shall restrict clearing and grubbing to the areas designated for new construction or adjustment of grades on the plans. Surrounding trees shall be protected from damage.
- b. Remove and dispose of trees, snags, stumps, shrubs, brush, limbs, and other vegetative growth to the limits defined in Section 1.3. Remove all evidence of branches greater than 1-inch in diameter of thickness. Remove and dispose of trash piles and rubbish. Protect structures and piping above and below ground, trees, shrubs, and vegetative growth and fencing which are not designated for removal or which exist outside project limits.
- c. Where limbs or roots of trees designated to remain extend into work areas, the limbs or roots shall be trimmed in accordance with the provisions of this section. Remove all surface rocks and all stumps, roots, and vegetation within the limits of construction. Roots shall be removed to at least 2.5 feet below proposed finish grade. After grubbing, strip the organic material to the limits defined in Section 1.3 to a depth of not less than 2-inches. Upon completion of the stripping operation, the remaining material, if utilized for structural fill, shall not exceed a concentration of organics in excess of 5 percent by dry weight. Dilution shall be accomplished by means of disking.

3.3 STRUCTURE DEMOLITION

- A. All concrete and rock shall be removed to a depth of at least 2.5 feet below the finished grade unless otherwise noted. Concrete not removed shall be broken to prevent entrapment of water, as directed by the CCWD Construction Manager. Concrete includes all reinforcement and embedded items. Existing concrete structures below new structural foundations shall be completely removed.
- B. Rubble and broken concrete will not be allowed to be used as fill materials.

3.7 REMOVAL OF DEBRIS

- A. Remove all debris from the site and leave the site in a neat and orderly condition to the approval of the CCWD Construction Manager. Debris shall become the property of the Contractor and legally disposed of offsite.

- B. Removal of demolished materials shall be included in the earthwork bid item and shall not be paid on a unit cost basis.

END OF SECTION

SECTION 02200 EARTHWORK

PART 1 GENERAL

1.1 SCOPE

It is the intent of these Contract documents and the responsibility of the Contractor to furnish, provide, perform, and install all earthwork (whether shown or not shown) needed for a complete project and building installation, at no additional cost to Owner.

1.2 DESCRIPTION

The work of this section consists of excavation, filling, compaction, and grading for earthen embankments, facilities pad, roadways, areas adjacent to structures, slope rounding, benching, and removal of unsuitable material from the roadbed and beneath fill areas.

1.3 RELATED WORK SPECIFIED ELSEWHERE

Section 02100: Demolition, Cleaning, Grubbing, and Stripping

Section 02223: Trenching, Backfilling, and Compacting

Section 02225: Structure Excavation and Backfill

1.4 DEFINITIONS

Well Graded: Well graded as used in this section defines a mixture of soil particle sizes that have no specific concentration or lack thereof of one or more sizes. Well graded is used to help define a material that, when properly compacted, produces a strong and relatively incompressible soil.
Relative Compaction:

Relative compaction is defined as the ratio, in percent, of the as compacted dry density to the laboratory maximum dry density. The laboratory maximum dry density is defined in accordance with ASTM D1557, latest edition. In-place density will be determined in accordance with ASTM D3017 or D2922, latest edition.

Standard Specifications: Where reference is made to Standard Specifications, reference shall mean: State of California, Business and Transportation Agency, Department of Transportation (Caltrans), Standard Specifications, latest edition, excluding measurement and payment items.

1.5 QUALITY ASSURANCE

Testing required to determine compliance for the work of this section will be the responsibility of the Owner and at the Owner's expense. The Contractor shall cooperate by rerouting equipment or by temporarily closing the immediate work area being tested. Areas where test results indicate noncompliance shall be corrected before placing additional fill. Retesting of previously failing test areas will be back charged to the Contractor in accordance with the Geotechnical Engineer's current rate schedule.

1.6 PROJECT CONDITIONS

Maintain fills, slopes, and ditches within the limits of the new construction until final acceptance. Repair areas damaged as a result of water erosion or construction. Take necessary precautions to prevent the entrance of soils and other materials into streambeds, lakes, or water courses.

PART 2 MATERIALS

2.1 GENERAL

Material shall be free from detrimental quantities of organic materials and free of all debris, muck, and other unsuitable materials. Frozen material will not be permitted as fill.

2.2 ONSITE SOIL

Fill may consist of onsite soil provided it contains no rocks larger than 3 inches. Fill should be free of debris and vegetation. Engineer must observe the placement and compaction of any rocky fill material.

The onsite soil fill shall be uniformly moisture-conditioned to within 2 percent of the optimum moisture content, placed in horizontal lifts not greater than 8-inches in loose thickness, and compacted.

2.3 AGGREGATE BASE

Aggregate base shall be Class 2 Aggregate Base conforming to Caltrans Standard Specifications.

2.4 WATER FOR COMPACTION/DUST CONTROL

Water for compaction and dust control shall be clean and free of oil, acids, salts, and other deleterious substances. Water shall be supplied by the Contractor at no additional expense to the Owner.

PART 3 EXECUTION

3.1 GENERAL

The Contractor shall do all grading, filling-in or excavating as required to completely grade the site to lines and grades shown, and to provide for the indicated drainage. Where finish grade corresponds practically with existing grade, the ground shall be worked-up and graded-off evenly with existing grade.

3.2 STRIPPING

Perform clearing, grubbing, and stripping in accordance with Section 02100.

3.3 ORIGINAL GROUND PREPARATION

Perform all excavation of every description, regardless of the type, nature, or condition of material encountered as specified, shown on the contract drawings, or required to accomplish the construction.

- A. Scarification and Recompaction: Following site stripping, grubbing, and any required overexcavation, areas to receive engineered fill or concrete slabs supported-on-grade shall be scarified to a depth of 8 inches, uniformly moisture-conditioned to within 2 percent of optimum moisture content, and compacted to at least 90 percent relative compaction or 95% relative compaction if expansive clays are present. Scarification and recompaction may not be necessary if weathered rock is present as determined by the Engineer. Within pavement areas (asphaltic cement and concrete) the subgrade shall be scarified to a minimum depth of 8 inches and compacted to at least 95 percent relative compaction.
- B. If the Contractor excavates below the required grade by chance, the Contractor shall fill the over-excavation at no cost to the Owner.

3.4 GENERAL FILL COMPACTION

- A. Soils used for engineered fill shall be uniformly moisture-conditioned to between 1% and 4% above optimum moisture content and placed in 8-inch maximum loose lifts. Unless otherwise noted on the drawings, compaction shall be as follows:
 - a. Relative Compaction
 - i. Beneath Structures 95%
 - ii. Upper 6 inches of pavement subgrade 95%
 - iii. Fill deeper than 10 feet 95%

3.5 SLOPE FINISHING

- A. Fill slopes shall be over-built and cut back into firm material to finish grade.

3.13 EROSION AND SEDIMENT CONTROL

The site shall be protected from erosion and sediment transport at all times utilizing a combination of best management practices (BMP)

- A. Temporary Erosion and Sediment Control: Stormwater BMPs shall be employed in a system such that erosion and sediment transport shall be significantly minimized from unprotected earthwork activities. Track walking shall be utilized on all embankment slopes. Refer to the contract drawings for location of all drainage ditches, desilting/sedimentation basins, asphalt concrete roads, landscaped areas, and graveled areas.

END OF SECTION

SECTION 02223 TRENCHING, BACKFILLING, AND COMPACTING

PART 1 GENERAL

1.1 SCOPE

It is the intent of these Contract documents and the responsibility of the Contractor to furnish, provide, perform, and install all trenching, backfilling, and compacting (whether shown or not shown) needed for a complete project and building installation, at no additional cost to Owner.

1.2 DESCRIPTION: The work of this section consists of trenching and backfilling for the construction and installation of pipelines, conduits and cables. All trenching will be open cut, unless otherwise approved in writing. It includes all clearing and grubbing, trenching or tunneling, construction of cribbing and cofferdams, incidental work, and providing specified backfill.

1.3 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 02100: Demolition, Clearing, Grubbing, and Stripping
- B. Section 02200: Earthwork
- C. Section 02513: Asphalt Concrete Paving
- D. Section 03100: Concrete

1.3 SUBMITTALS

- A. Submit six copies of a report from a testing laboratory verifying that backfill material conforms to the specified gradations of characteristics for granular material, and imported sand.
- B. Submit method of compaction in pipe zone including removal sequence of shoring where used.
- C. Provide written description of barricading, shoring, cribbing, bracing, and sloping precautions.

1.4 PROJECT CONDITIONS

- A. Obtain all required permits and licenses before installing utilities under existing roads and follow the rules and requirements of the authority having jurisdiction.
- B. Arrange construction sequences to provide the shortest practical time that the trenches will be open to avoid hazard to the subcontractors, and public, and to minimize the possibility of trench collapse.

1.5 TESTING FOR COMPACTION

- A. The CCWD will test for compaction approximately 50 feet of trench and at locations determined by the CCWD Construction Manager.

- B. Relative compaction is defined as the ratio, in percent, of the as-compacted dry density to the laboratory maximum dry density. The laboratory maximum dry density is defined in accordance with ASTM D1557, latest edition. As-compacted dry density will be determined in accordance with ASTM D3017 or D2922, latest edition.

1.6 TRENCH ZONE

The trench zone includes the portion of the trench from the top of the pipe zone to the bottom of the street zone in paved areas or to the existing surface in unpaved areas.

1.7 PIPE ZONE

The pipe zone shall include the full width of trench from the bottom of the pipe or conduit to a horizontal level above the top of the pipe, as shown on the contract drawings. Where multiple pipes or conduits are placed in the same trench, the pipe zone shall extend from the bottom of the lowest pipes to a horizontal level above the top of the highest or topmost pipe.

1.8 PIPE BASE OR BEDDING

The pipe base or bedding shall be defined as a minimum 6-inches thick layer of material immediately below the bottom of the pipe or conduit and extending over the full trench width in which the pipe is bedded.

PART 2 MATERIALS

2.1 PIPE BASE AND PIPE ZONE MATERIAL FOR PIPES 2-INCH AND LARGER WATER MAINS AND SITE DRAINAGE CULVERTS – CLASS 2 AGGREGATE BASE

Pipe zone material for 2-inch and larger water mains, and site drainage culverts shall be ¾-inch Maximum Class 2 Aggregate Base conforming to Section 26 of the State (Caltrans) Standard Specifications. For other all other utilities, this is an alternative to Imported Sand where approved by Construction Manager, otherwise Design/Builder to provide Imported Sand.

2.2 PIPE BASE AND PIPE ZONE MATERIAL – PG&E

Design/Builder shall provide material approved by PG&E for installation of PG&E main electrical service including bedding and backfill.

2.3 IMPORTED SAND - PIPE BASE AND PIPE ZONE

For all utilities except as noted in 02223 – 2.1 and 2.2
Imported sand used for the pipe base and pipe zone shall be free of clay or organic material and have the following gradation:

Sieve Size Percent Passing By Weight

3/8-INCH	100
No. 4 90 –	100
No. 30 12 –	50
No. 100 5 –	20
No. 200 0 –	10

Imported sand shall have a sand equivalent not less than 28 per ASTM D2419.

2.3 TRENCH ZONE MATERIAL

Trench zone material shall consist of material conforming to Sections 02200.2.2 and 02200.2.3 as approved by the Geotechnical Engineer.

2.4 CEMENT SLURRY - PIPE BASE AND PIPE ZONE ALTERNATIVE

Cement slurry backfill shall consist of Type I or II Portland cement, imported sand, and sufficient water for workability, per Caltrans Specification. The mix shall produce a minimum 28-day strength of 50 PSI and a minimum 1×10^{-6} cm/sec permeability. Submit a mix design and confirming test results per Section 01300.

2.5 REFILL FOR FOUNDATION STABILIZATION

Refill shall meet the material requirements specified for pipe zone. As an alternative, crushed rock, enveloped in geotextile fabric may be utilized.

2.6 CONCRETE FOR PIPE ENCASEMENT, THRUST BLOCKS, AND COLLARS

- A. Concrete for pipe encasement and thrust blocks shall be Class C per Section 03100, unless otherwise shown in the drawings.
- B. Provide thrust blocks at fittings in pipe having rubber gasket bell and spigot or unrestrained mechanical joints as directed by the CCWD Construction Manager. Provide thrust blocks, tees and elbows 45° and greater, or as noted on contract plans and in the general or specific pipe specifications.
- C. See the details in the drawings for thrust block sizes. Install thrust blocks based on the test pressures given in the drawings.

2.7 WATER FOR COMPACTION

Water for compaction shall be clean and free of oil, acids, salts, and other deleterious substances. Water shall be supplied by the Contractor at no additional expense to the Owner.

PART 3 EXECUTION

3.1 COMPACTION REQUIREMENTS

Unless otherwise shown in the drawings or otherwise described in the specifications for the particular type of pipe installed, relative compaction in pipe trenches shall be as follows:

- A. Pipe Bedding Zone: 90% relative compaction.
- B. Pipe and Conduit Zone: 95% relative compaction.
- C. Trench Zone Not Beneath Paving or Aggregate Base Access Roadways: 90% relative compaction.
- D. Backfill in Trench Zone in Paved Areas or Within Limits of Aggregate Base Roadways: 90% relative compaction. Increase compaction to 95% for upper 6" of backfill in pavement areas.
- E. Refill for Foundation Stabilization: 90% relative compaction.

- F. Refill for Over excavation: 90% relative compaction
- G. Where compaction tests indicate a failure to meet the specified compaction, the additional tests every 50 feet in each direction until the extent of the failing area is identified. Rework the entire failed area until the specified compaction has been achieved.

3.2 MATERIAL REPLACEMENT

Remove and replace any trenching and backfilling material which does not meet the specifications, at the Contractors expense.

3.3 SLOPING, SHEETING, SHORING, AND BRACING OF TRENCHES

Contractor is responsible for the trench stability and shoring design. Trenches shall have sloping, sheeting, shoring, and bracing conforming with 29CFR1926, Subpart P – Excavations, CAL/OSHA requirements, and the General Conditions.

3.4 SIDEWALK, PAVEMENT, AND CURB REMOVAL

Cut bituminous and concrete pavements regardless of the thickness and curbs and sidewalks prior to excavation of the trenches with a pavement saw or pavement cutter. Width of the pavement cut shall be at least equal to the required width of the trench at ground surface. Haul pavement and concrete materials from the site. Do not use for trench backfill.

3.5 TRENCH WIDTHS

Trench widths in the pipe zone shall be as shown in the drawings. If no details are shown, the maximum width shall be 24 inches greater than the pipe outside diameter. Comply with 29CFR Part 1926 Subpart P – Excavations. Trench width at the top of the trench will not be limited except where width of excavation would undercut adjacent structures and footings. In such case, width of trench shall be such that there is at least 2 feet between the top edge of the trench and the structure or footing.

3.6 TRENCH EXCAVATION

- A. All excavations should be implementable with an excavator hoe with the possible addition of a pneumatic hammer. Perform all excavation of every description, regardless of the type, nature, or condition of material encountered as specified, shown on the contract drawings, or required to accomplish the construction.
- B. Excavate the trench to the lines and grades shown in the drawings with allowance for pipe thickness, sheeting and shoring if used, and for pipe base or special bedding. If the trench is excavated below the required grade, refill any part of the trench excavated below the grade at no additional cost to the Owner with foundation stabilization material. Place the refilling material over the full width of trench in compacted layers not exceeding 8 inch loose lifts to the established grade with allowance for the pipe base or special bedding.

3.7 DEWATERING

Provide and maintain means and devices to remove and dispose of all water entering the trench excavation during the time the trench is being prepared for the pipelaying, during the laying of

the pipe, and until the backfill at the pipe zone has been completed. These provisions shall apply at all times during daytime as well as overnight hours. Dispose of the water in a manner to prevent damage to adjacent property and in accordance with regulatory agency requirements. Do not drain trench water through the pipeline under construction. Do not allow groundwater to rise around the pipe until jointing compound has set hard.

3.8 LOCATION OF EXCAVATED MATERIAL

During trench excavation, place the excavated material only within the working area. Do not obstruct any roadways or streets. Conform the federal, state, and local codes governing the safe loading of trenches with excavated material. All trenches shall be backfilled at the end of each day's operation. Trench patching with asphalt concrete shall be completed within 24 hours of trench backfill.

3.9 LENGTH OF OPEN TRENCH

Limit the length of open trench to 50 feet in advance of pipelaying or amount of pipe installed in one working day, whichever is less, and not more than 50 feet in the rear of pipelaying, except as modified by encroachment permit requirements. At the end of each working day, the trench shall be backfilled to match existing surface.

3.10 FOUNDATION STABILIZATION

- A. After the required excavation has been completed, the Owner and/or Agency will inspect the exposed subgrade to determine the need for any additional excavation. It is the intent that additional excavation be conducted in all areas within the influence of the pipeline where unacceptable materials exist at the exposed subgrade. Over excavation shall include the removal of all such unacceptable materials that exists directly beneath the pipeline to the required trench width and to the depth required. Backfill the trench to subgrade of pipe base with refill material for foundation stabilization. Place the foundation stabilization material over the full width of the trench and compact in layers not exceeding 6-inches deep to the required grade. Foundation stabilization work shall be executed in accordance with a change order.
- B. Refill used by the Contractor for his convenience will not receive any additional payment.

3.11 INSTALLING BURIED PIPING

- A. Install pipes per the detailed piping specification for the particular type of pipe and per the following.
- B. Handle pipe in such a manner as to avoid damage to the pipe. Do not drop or dump pipe into trenches under any circumstances.
- C. Inspect each pipe or fitting prior to placing into the trench. Inspect the interior and exterior protective coatings. Patch damaged areas in the field with material recommended by the protective coating manufacturer. Clean ends of pipe thoroughly. Remove foreign matter and dirt from inside of pipe and keep clean during and after installation.
- D. Grade the bottom of the trench to the line and grade to which the pipe is to be laid, with

allowance for pipe thickness and bedding depth. Remove hard spots that would prevent a uniform thickness of bedding. Place the specified thickness pipe base material over the full width of trench. Grade the top of the pipe base ahead of the pipelaying to provide firm, continuous, uniform support along the full length of pie, and compact to the relative compaction specified herein. After laying each section of the pipe, check the grade and alignment and correct any irregularities prior to laying next joint.

- E. Excavate bell holes at each joint to permit proper assembly and inspection of entire joint. Fill the area excavated for the joints with the bedding material specified or detailed in the drawings.
- F. When installing pipe, do not deviate more than 1-inch from line or 1/4 -inch from grade. Measure elevation at the pipe invert. The Contractor shall verify pipe grade at not more than 50 feet intervals, in the presence of the Owner's Representative.
- G. After pipe has been bedded, place pipe zone material simultaneously on both sides of the pipe, in maximum 8-inch loose lifts, keeping the level of backfill the same on each side. Carefully place the material around the pipe so that the pipe barrel is completely supported and that no voids or compacted areas are left beneath the pipe. Use particular care in placing material on the underside of pipe to prevent lateral movement during subsequent backfilling.
- H. For pipe sizes greater than 12-inches in diameter, no more backfill material than the lesser of 6-inches or 1/3rd of the pipe diameter shall be placed prior to shovel slicing. Sufficient care shall be taken to prevent movement of the pipe during shovel slicing. Shovel slicing shall be witnessed by the Field Inspector and/or Geotechnical Engineer.
- I. Compact each lift to the relative compaction specified herein.
- J. Push the backfill material carefully onto the backfill previously placed in the pipe zone. Do not permit free fall of the material until at least 2 feet of cover is provided over the top of the pipe. Do not drop sharp, heavy pieces of material directly onto the pipe or the tamped material around the pipeline. Do not operate heavy equipment over the pipe until at least 3.5 feet of backfill has been placed and compacted over the pipe.
- K. When pipelaying is not in progress, including the noon hours, close the open ends of pipe. Do not allow trench water, animals, or foreign material to enter the pipe.
- L. Remove and dispose of all water entering the trench during the process of pipelaying. Keep the trench dry until the pipelaying and jointing are completed.

3.12 BACKFILL COMPACTION

Compact per the detailed piping specification for the particular type of pipe and per the following:

- A. Compact trench backfill to the specified relative compaction. Compact by using mechanical compaction or hand tamping. Do not use high impact hammer-type or heavy equipment except where the pipe manufacturer warrants in writing that such use will not damage the pipe. Ponding or jetting is not allowed.

- B. Compact material placed within 12-inches of the outer surface of the pipe by hand tamping only.
- C. Do not use any axle-driven or tractor-drawn compaction equipment within 5 feet of building walls, foundations, or other structures.

3.13 CEMENT SLURRY BACKFILL

When cement slurry backfill is utilized, pipe shall be supported by mounding imported backfill material or sandbags filled with imported backfill material. Pipe shall not be supported on wooden or concrete blocks.

3.14 ROCK EXCAVATION

Contractor shall excavate, hammer, and/or remove rock by all means necessary at no additional cost to Owner.

END OF SECTION

SECTION 02225
Structure Excavation and Backfill

PART 1 GENERAL

1.1 SCOPE

It is the intent of these Contract documents and the responsibility of the Contractor to furnish, provide, perform, and install all structure excavation and backfill (whether shown or not shown) needed for a complete project and building installation, at no additional cost to Owner.

1.2 DESCRIPTION

The work of this section consists of all structure excavation and backfill required to complete the work, including rock excavation and furnishing select or imported backfill. It includes disposal of surplus or unsuitable material.

1.3 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 02100: Demolition, Clearing, Grubbing and Stripping
- B. Section 02200: Earthwork

1.4 QUALITY ASSURANCE

The Engineer will perform compaction test, the contractor should notify Engineer or Engineers representative at least 48 hours in advance of compaction activities. Areas where test results indicate noncompliance shall be corrected before placing additional backfill.

1.5 RELATIVE COMPACTION TEST

- A. The Engineer shall test for compaction every 100 feet or less in each direction and at locations determined by the CCWD Construction Manager.
- B. Relative compaction is defined as the ratio, in percent, of the as-compacted dry density to the laboratory maximum dry density. The laboratory maximum dry density is defined in accordance with ASTM D1557, latest edition. As-compacted dry density is defined in accordance with ASTM D3017 or D2922, latest edition.
- C. Where compaction tests indicate a failure to meet the specified compaction, the Engineer will take additional tests every 50 feet in each direction until the extent of the failing area is identified. Rework the entire failed area until the specified compaction has been achieved at no cost to the Owner.

PART 2 MATERIALS

- 2.1 **ENGINEERED FILL:** See Section 02200 for material requirements.
- 2.2 **CRUSHED ROCK:** See Section 02200 for material requirements.
- 2.3 **AGGREGATE BASE:** See Section 02200 for material requirements.

PART 3 EXECUTION

3.1 STRUCTURAL EXCAVATION

- A. General: All excavation for structures shall be done to the dimensions and levels indicated on the drawings or specified herein.
- B. Under all structures, the Contractor shall:
 - 1. Excavate to subgrade, remove and dispose of organic material and unsuitable soils including expansive clay soil.
 - 2. Scarify the surface a minimum depth of 8 inches, bring the moisture content to within 2 percent of optimum, and compact to 90 percent minimum relative compaction.
 - 3. Place Engineered Fill in 8-inch maximum lifts to obtain subgrade elevations. Bring the fill moisture content to within 2 percent of optimum and compact to not less than 90 percent relative compaction. Compact portions of fill deeper than 10 feet to at least 95% relative compaction and at a moisture content of at least 1 percent above optimum.
- C. Under all pavements, the Contractor shall:
 - 1. Excavate to below subgrade, remove and dispose of organic material and unsuitable soils.
 - 2. Scarify the surface a minimum depth of 8 inches; bring the moisture content to within 2 percent of optimum and compact to 90 percent relative compaction.
 - 3. Place engineered fill in 6-inch maximum lifts to obtain subgrade elevations. Compaction shall be performed at a moisture content of at least 2 percent above optimum to 90 percent minimum relative compaction.
 - 4. Compact portions of fill deeper than 10 feet and upper 6 inches of pavement subgrade to at least 95% relative compaction.
- D. Excavation shall be made to such width outside the lines of the structure to be constructed therein as may be required for proper working methods, the erection of forms and the protection of the work. Care shall be taken to preserve the foundation surfaces shown on the drawings in an undisturbed condition.
- E. Bracing, Sheeting, and Shoring: Care shall be exercised in excavating for lower footings not to disturb bearing under higher adjacent footings or structures. Existing structures and pipe work shall be adequately braced and cared for so that no damage will result.
- F. Unsuitable Materials: To suit field conditions, excavation below the depths shown may be ordered, but changes may only be made as directed. Soft, spongy, or unsuitable bearing material of any kind shall be entirely removed down to solid bearing soil and replaced with an engineered fill as specified herein.
- G. Dewatering: Any water that may be encountered or that may accumulate in excavations shall be removed and kept out by pumping or other approved methods, and all construction shall be carried on in the dry. Water shall be kept down until structures are complete to above water, safe from uplift and horizontal water pressure and the backfill has been placed.

3.3 ENGINEERED FILL

- A. General: All soil under structures, pavements, embankments, and at other locations where indicated on the drawings shall be made using engineered fill sub-base, carefully controlled and compacted on a prepared surface.
- B. Surface Preparation: The surface on which fill is to be placed shall be free of all vegetation, debris, or other objectionable material, and all large roots shall be grubbed out to a depth of at least 2 feet below footing, slab, or pavement elevations and suitably beyond the limits of the proposed improvements for constructability. The surface shall be scarified to a depth of 6 inches, brought to a moisture content between 1 and 2 percent of optimum and compacted to 90% relative compaction. It may be necessary to adjust the moisture content of the subgrade soil by watering or aeration to bring the moisture content of the soil near optimum in order that the specified densities can be obtained. Surface preparation may not be necessary if weathered rock is present as determined by the Geotechnical Engineer.
- C. Placement of Fill:
 - 1. Fill materials shall be spread in a maximum of 8-inch lifts and shall have a specified uniform moisture content. If necessary to obtain uniform distribution of moisture, water shall be added to each layer by sprinkling and the soil disced, harrowed, or otherwise manipulated after the water is added. If the material is too wet, the moisture content shall be reduced as necessary by spreading and aerating.
 - 2. Field density tests shall be used to check the compaction of the backfill materials. Sufficient tests shall be made on each layer by the CCWD Construction Manager to assure adequate compaction throughout the entire area. If the dry densities are not satisfactory, the Contractor will be required to increase the weight of the roller or the number of passes as required to produce the specified densities.
 - 3. Where trenches must be excavated in Engineered Fill these trenches shall be backfilled with the fill materials excavated. The backfill shall be placed in 8 inch layers and each layer compacted with pneumatic tampers to provide densities as specified for engineered fill. Backfill placed adjacent to walls shall be placed in a similar manner to that specified for backfill in excavated trenches.
 - 4. No fill shall be placed during weather conditions which will alter the moisture content of the fill materials sufficiently to make adequate compaction impossible. After placing operations have been stopped because of adverse weather conditions, no additional fill material shall be placed until the last layer compacted has been checked and found to be compacted to the specified densities.

3.4 ONSITE SOIL

Onsite soil may be used as backfill as approved and observed by the Engineer. The Contractor shall excavate, hammer and/or remove rock.

END OF SECTION

SECTION 02445
Fencing

PART 1 GENERAL

1.1 DESCRIPTION

The work of this section consists of furnishing and installing wrought iron new gates as shown and called for on the drawings.

Chain link fencing shall be installed per CCWD Standard Specifications and CCWD Standard Drawing No. G07

1.2 SAMPLES AND APPROVAL OF MATERIALS

Certificates of compliance indicating that the materials conform to the requirements of these Specifications shall be submitted and approved prior to any fabrication or installation. Submit product literature, drawings (including layout of fence and gates with dimensions) technical information and samples.

PART 2 MATERIALS

2.1 Products from qualified manufacturers having a minimum of 5 years' experience manufacturing ornamental picket fencing will be acceptable if they meet the following specifications for design, size, gauge of metal parts and fabrication.

- A. Pickets: Galvanized square steel tubular members manufactured per ASTM A-924/A-924M, having a 45,000 psi (310 MPa) yield strength and hot-dip galvanized per ASTM A653/A653M with a G90 zinc coating, 0.90 oz/ft² (0.27 kg/M²). Picket Size ¾" (19mm). Pickets are spaced 3-15/16" maximum (100 mm) face to face.
- B. Rails: 1-1/2" (38mm) x 1-3/8" (35mm) x 1-1/2" (38mm), 11 gauge [0.120" (3.05mm)] thick galvanized steel "U" channel per ASTM A-653/A-653M, having a 50,000 psi (344 MPa) yield strength and G90 zinc coating, 0.90 oz/fl² (0.27 kg/M²).
- C. Posts: Galvanized square steel tubular members manufactured per ASTM A-653/A-653M having a 45,000 psi (310 MPa) yield strength and G90 zinc coating, 0.90 oz/fl². Posts are coated with zinc on the inside and outside. (Posts that are zinc coated on the outside and painted on the inside are unacceptable).
- D. Finish: All pickets, rails, posts, fittings and accessories are polyester powder coated individually after drilling and layout to ensure maximum corrosion protection. (Coating of assembled sections is unacceptable). All ferrous components are given a 4-stage "Power Wash" pre-treatment process that cleans and prepares the galvanized surface to assure complete adhesion of the finish coat. All metal is polyester resin based powder coating applied by the electrostatic spray process, minimum 2.5 mils. The finish is then cured in a

2.2 GATES

- A. Two ornamental man gates.
- B. One 6-foot-high, 30 feet long, motor operated, ornamental sliding gate with key pad and timer operation.

2.3 SETTING MATERIAL

Concrete: Minimum 28-day compressive strength of 3000 psi (20 MPa).

PART 3 EXECUTION

3.1 EXAMINATION

Verify areas to receive fencing are completed to final grades and elevations.

3.2 GATE INSTALLATION

- A. Install gates plumb, level and secure for full opening without interference.
- B. Attach hardware by means, which will prevent unauthorized removal.
- C. Adjust hardware for smooth operation.

3.3 ACCESSORIES

Install post caps and other accessories to complete fence.

Gate shall be similar in style to gates at adjacent CCWD Main Office. They should be operational with same key control system.

END OF SECTION

SECTION 02513
Asphalt Concrete Paving

PART 1 GENERAL

1.1 DESCRIPTION

This section includes materials, testing, and installation of asphalt concrete pavement, aggregate base course, herbicide, and tack coat.

It is the intent of these Contract documents and the responsibility of the Contractor to furnish, provide, perform, and install all asphalt concrete paving needed for a complete building installation including, but not limited to, entrance roads, and parking areas.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 02200: Earthwork

1.3 SUBMITTALS

Submit copies of a report from a testing laboratory verifying that aggregate material conforms to the specified gradations or characteristics.

1.4 STANDARD SPECIFICATIONS

Where reference is made to State Specifications, reference shall mean California Department of Transportation (Caltrans) Standard Specifications and, where appropriate, the Calaveras County Transportation Department Standards

In case of conflict between any requirements set forth in this Section and any provisions of the Calaveras County Transportation Department Standards, the most stringent requirement will govern.

PART 2 MATERIALS

2.1 ASPHALT CONCRETE PAVING

Asphalt concrete paving shall conform to Type B in Section 39 of the State Specifications, having ½-inch-maximum medium grading with paving grade asphalt PG 64-16 unless otherwise directed by the CCWD Construction Manager.

2.2 AGGREGATE BASE COURSE

Aggregate base shall be Class 2 aggregate base, ¾-inch-maximum size per Section 26 of the State Specifications. Aggregate shall contain no detectable asbestos.

2.3 TACK COAT

Tack coat shall be a paint binder of asphaltic emulsion per Section 94 of the State Specifications.

2.4 ASPHALT BINDER

02513-1

Asphalt binder to be mixed with aggregate shall be paving asphalt grade PG 64-16 conforming to Section 92 of the State Specifications.

2.5 AGGREGATE FOR ASPHALT CONCRETE

Aggregate shall be Type B per Section 39-2.02 of the State Specifications. Aggregate shall contain no detectable asbestos.

2.7 PAINT FOR TRAFFIC AND PARKING LOT STRIPING AND MARKING

Provide white paint per Section 84 of the State Specifications.

PART 3 EXECUTION

3.1 INSTALLATION

Producing, hauling, placing, compacting, and finishing of asphalt concrete shall conform to Section 39 of the State Specifications.

3.2 CONNECTIONS WITH EXISTING PAVEMENT

Where new paving joins existing paving, saw cut the existing surfaces 12 inches back from the joint line full depth. Dispose of waste material offsite. Tack prior to placing the asphalt concrete. Meet lines shall be straight and the edges vertical. Paint the edges of meet line cuts with liquid asphalt or emulsified asphalt prior to placing asphalt concrete. After placing the asphalt concrete, seal the meet line by painting with a liquid asphalt or emulsified asphalt and then immediately cover with clean, dry sand.

3.3 PREPARATION OF SUBGRADE

- A. Scarify subgrade to a depth of 12-inches below finished subgrade elevation and compact to 95% minimum relative compaction. Shape subgrade to line, grade, and cross section shown in the drawings. The subgrade shall be considered to extend over the full width of the base course.
- B. The finished subgrade shall be within a tolerance of 0.05 of a foot of the grade and cross section shown and shall be smooth and free from irregularities and at the specified relative compaction.

3.4 PLACING AGGREGATE BASE COURSE

Place aggregate base course to a minimum thickness as specified on the Construction Plans. Compact to 95% relative compaction. Install in accordance with Section 26 of the State Specifications.

3.5 COMPACTION OF AGGREGATE BASE AND LEVELING COURSES

Compaction and rolling shall begin at the outer edges of the surfacing and continue toward the center. Apply water uniformly throughout the material to provide moisture for obtaining the specified compaction. Compact each layer to the specified relative compaction before placing the

next layer.

3.6 PLACING TACK COAT

Apply tack coat on surfaces to receive finish pavement at the rate of 0.10 gallon per square yard per Section 39-4.02 in the State Specifications. Apply tack coat to metal or concrete surfaces that will be in contact with the asphalt concrete paving.

3.7 PLACING ASPHALT PAVING

Install in accordance with Section 39-6 in the State Specifications.

3.8 COMPACTION OF ASPHALT CONCRETE PAVING

Compact until roller marks are eliminated and a density of 92% minimum to 98% maximum has been attained per ASTM D2041. Compacting equipment shall conform to the provisions of Section 39-5.02, "Compacting Equipment" in the State Specifications.

3.9 SURFACE TOLERANCE

- A. Finished grades shall not deviate more than 0.01 foot in 12 feet in elevation parallel with the road centerline and 0.02 foot in 12 feet in elevation transverse to the centerline from the grades indicated in the drawings.
- B. After paving has been installed and compacted, spray water over the entire paved area. Correct any areas where water collects and does not drain away.

3.10 APPLYING PAINT FOR TRAFFIC AND PARKING LOT STRIPING AND MARKING

Apply in accordance with Section 84 of the State Specifications.

3.11 PAYMENT

Payment for asphalt concrete paving and aggregate base shall be by the ton.

END OF SECTION

SECTION 02550
Onsite Utility Piping Provisions

PART 1 GENERAL

1.1 SCOPE

This section contains general provisions applicable to onsite utility piping (water, gas, and wastewater). Where specific requirements for a particular type of pipe are different than those in this section, the specific requirements shall govern.

It is the intent of these Contract documents and the responsibility of the Contractor to furnish, provide, perform, and install all piping (underground, aboveground, and within the building) needed for a complete building installation including, but not limited to, water, sewer, and gas at no additional cost to Owner.

1.2 RELATED WORK IN OTHER SECTIONS

- A. Section 02100: Demolition, Clearing, Grubbing, and Stripping
- B. Section 02223: Trenching, Backfilling, and Compacting
- C. Section 02555: Plastic Pipe

1.3 DRAWINGS

Drawings are diagrammatic and show the general design, arrangement and extent of the systems. Do not scale drawings for roughing in measurements, nor use as shop drawings. Make field measurements and prepare shop drawings as required. Coordinate work with shop drawings of other specification divisions.

1.4 SUBMITTALS

- A. Submittals shall be provided for the following items plus any additional items required in the specifications for the particular types of pipe:
 - 1. Piping and jointing materials
 - 2. Fittings
 - 3. Specialties
 - 4. Fabrication drawings of all major runs of pipe and all pipe which cannot be fabricated in the field.

PART 2 MATERIALS

2.1 GENERAL

Pipe sizes are minimum nominal inside diameter unless otherwise noted. All sizes of pipe shall be as called out on the drawings and specified herein. All pipe and fittings delivered to the job

site shall be clearly marked to identify the material, class, thickness, and manufacturer. All material shall be new and free of blemishes

2.2 PIPING MATERIALS

- A. The construction plans list the pipe materials that can be selected at the Contractors option for each service, except where the drawings call for a specific pipe material or coordination with the utility (PG&E) for service details.

PART 3 EXECUTION

3.1 HAULING, UNLOADING AND DISTRIBUTING PIPE

- A. During loading, transportation and unloading, every precaution shall be taken to prevent injury to the pipe, coating, and lining. No pipe shall be dropped from cars or trucks, or allowed to roll down slides without proper retaining ropes. Each pipe shall rest on suitable pads, strips, skids or blocks securely wedged or tied in place. Padding shall be used on car or truck stakes, skids, etc., to prevent damage to the pipe during transportation and handling. Any pipe damaged shall be replaced or repaired as approved by the CCWD Construction Manager at no additional cost to the Owner.
- B. Each section of pipe shall be delivered in the field as near as practicable to the place where it is to be installed. Pipes shall be distributed along the side of trench opposite to the spoil bank within easy reach of the installing crew.
- C. Where it is necessary to move the pipe longitudinally along the trench, it shall be done in such a manner as not to injure the pipe. Pipe shall not be rolled or dragged on the ground. Where pipe is placed on stockpiles, it shall be neatly piled and blocked with strips between tiers.

3.2 INSTALLATION OF PIPELINES AND FITTINGS

- A. Trenching and Backfill
 - 1. Except as otherwise noted on the plans or specified herein, all excavation and backfilling for piping shall be as specified in Section 02223, "Trenching, Backfilling, and Compacting".
 - 2. Pipelines located in or under fill areas shall not be placed until the fill has been constructed and compacted to an elevation at least one (1) foot above the elevation of the top of the pipe.
 - 3. All backfill other than where concrete encasement is required, for pipe lines installed under structures, slabs, footings, and paving shall be made with sand and fine gravel, thoroughly compacted in place to not less than 95% of maximum density.
- B. Grades and Elevations
 - 1. All piping and appurtenances shall be installed in the position and to accurate lines, elevations, and grades as shown on the plans or specified herein. Where possible, piping shall be sloped to permit complete drainage. All pipelines shall

be rigidly supported and braced by approved hangers, brackets, or other devices. When temporary supports are used, they shall be sufficiently rigid to prevent any shifting or distortion of the piping or related work.

2. Furnish all fittings necessary for the satisfactory alignment and arrangement of piping and all necessary unions and cleanouts.

2. An invert grade rod shall be used in laying all lines below ground.

C. Pipe Joints

1. Pipe shall be cleaned of dirt and scale prior to installation and all joints swabbed clean before jointing. Ends of all pipe shall be closed or plugged at the end of each day's work or otherwise as necessary to prevent the entrance of foreign materials.

2. The Contractor shall perform all work of cutting pipe and special castings necessary to the assembly, erection and completion of the work. All pipe shall be cut and reamed to fit accurately with smooth edges.

3.3 CLEANING AND FLUSHING

A. All pipelines shall be cleaned of all soil, dirt, rocks, and other debris and objectionable material.

B. Pipelines 24-inches in diameter and smaller shall be cleaned first by pulling a tightly fitting cleaning ball or swab through the pipe. Pipelines larger than 24-inches in diameter may be cleaned manually or with a cleaning ball or swab.

C. After initial cleaning, flush the interior of all piping. Upon completion of flushing, completely drain systems at all low points; remove, clean, and replace all strainer baskets and refill systems.

Piping to meet requirements of local utility companies, plumbing codes and local code requirements.

END OF SECTION

SECTION 02550
Plastic Pipe

PART 1 GENERAL

1.1 SCOPE

It is the intent of these Contract documents and the responsibility of the Contractor to furnish, provide, perform, and install all plastic pipe (whether shown or not shown) needed for a complete project and building installation, at no additional cost to Owner.

1.2 DESCRIPTION

The work of this section consists of furnishing and installing polyvinyl chloride pipe, and fittings.

1.3 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01300: Submittals
- B. Section 02223: Trenching, Backfilling, and Compacting
- C. Section 02550: Onsite Utility Piping Provisions

1.4 QUALITY ASSURANCE REFERENCES

This section contains references to some or all of the following documents, most recent edition. They are a part of this section as specified and modified. In case of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

<u>Reference</u>	<u>Title</u>
ASTM D1248	Polyethylene Plastics Molding and Extrusion Materials.
ASTM D1784	Rigid Polyvinyl Chloride (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
ASTM D1785	Polyvinyl Chloride (PVC) Plastic Pipe, Schedules 40, 80, and 120
ASTM D2241	Polyvinyl Chloride (PVC) Pressure-Rated Pipe (SDR series)
ASTM D2464	Threaded Polyvinyl Chloride (PVC) Plastic Pipe Fittings, Schedule 80
ASTM D2466	Polyvinyl Chloride (PVC) Plastic Pipe Fittings, Schedule 40
ASTM D2467	Socket-Type Poly Vinyl Chloride (PVC) Plastic Pipe Fittings, Schedule 80
ASTM D2564	Solvent Cements for Polyvinyl Chloride (PVC) Plastic Pipe and Fittings
ASTM D3034	Type PSM Polyvinyl Chloride (PVC) Sewer Pipe and Fittings
ASTM D4101	Propylene Plastic Injection and Extrusion Materials
ASTM F402	Practice for Safe Handling of Solvent Cements and Primers Used for Joining Thermoplastic Pipe and Fittings

PART 3 EXECUTION

3.1 INSTALLATION OF PIPE AND FITTINGS

- A. General: In accordance with manufacturer's recommendations and ASTM D2321, whichever is more stringent.
- B. Pipe and fittings shall be of the sizes indicated. Clean pipe interior of all foreign matter before installing. Pipe shall be square cut with fine tooth saw or other cutter or knife designed for use with plastic pipe. Remove burrs by smoothing edges with a knife, file, or sandpaper. Replace any section of pipe found to be defective or damaged with new acceptable pipe. Handle pipe carefully to prevent gouging or scratching. Any length of pipe having a gouge, scratch, or other permanent indentation more than 10 percent of the wall thickness in depth shall be rejected.

3.2 INSTALLATION OF SOLVENT WELD JOINT TYPE PIPE

In accordance with the recommendations of the pipe manufacturer and the following supplementary requirements:

- A. Do not solvent weld joints if it is raining, if atmospheric temperature is below 40 degrees F or above 90 degrees F, if the pipe is exposed to direct sunlight.
- B. Test fit dry pipe and fittings before applying cement. Pipe should enter socket without forcing at least one-third but not more than two-thirds the depth of socket. Fittings that are looser or tighter shall not be used. Thoroughly clean and dry the pipe end and socket of fitting with methyl ethyl ketone, acetone, or similar cleaner. Apply cement evenly to outside surface and end of pipe and inside surface of socket. Avoid excess application of cement but insure complete coverage of all bonding surfaces. Mark depth of socket on pipe to guide application of cement and insure full insertion of pipe. Insert pipe in socket, twisting pipe or fitting approximately ½ turn as pipe is being seated in socket. Make sure pipe is fully seated providing a bond between end of pipe and shoulder of socket. Immediately wipe excess cement from pipe leaving no more than a 1/8-inch fillet at fitting end. Hold assembled joint in place for approximately 15 seconds and allow to set for 30 minutes before moving. Avoid rough handling for 48 hours. Longer periods may be required in cold or wet weather.

3.4 TESTING

- A. Testing of all installed pipelines shall be in conformance with the latest version of the CCWD Design and Construction Standards and as directed by the CCWD Construction Manager.

END OF SECTION

SECTION 03300
Concrete and Reinforcing Steel

PART 1 -GENERAL

1.1 DESCRIPTION

This section describes the submittal, material, installation, and testing requirements for furnishing and placing formwork, reinforcement, and concrete. It also describes finishing and curing requirements, placement tolerances, and testing and repair procedures.

Except as otherwise provided herein, the design and erection shall be in accordance with the applicable provisions of the latest ACI 318 and the concrete "Manual of Concrete Practice".

It is the intent of these Contract documents and the responsibility of the Contractor to provide all concrete and reinforced concrete needed for a complete project and building installation unless specifically excluded from the scope of work.

Scope of work includes all concrete including, but not limited to, structural concrete, nonstructural concrete, reinforced concrete, non-reinforced concrete, electrical light pedestals, equipment pads, pedestals, ductbank concrete, and all other concrete.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 02200 - Earthwork
- B. Section 02225 - Structure Excavation & Backfill

1.4 SUBMITTALS

- A. Concrete
 - 1. **Minimum concrete compressive strength shall be 4,000 psi at 28 days.**
 - 2. Prepare and submit proposed mix designs along with test results from within the last year signed by a laboratory currently certified by CCRL and actively participating in their sample proficiency program verifying that the components and final products meet the requirements of ACI MCP and these specifications. Mix designs shall include fine, coarse, and combined aggregate gradations.
 - 3. Provide certificates that the cement used complies with ASTM C150 and these specifications.
 - 4. Provide delivery tickets for ready-mix concrete or weighmaster certificates per ASTM C94, including cement weights, aggregate size, the amount of water added at the plant and record of pours. Record the amount of water added on the job on the delivery ticket. Water added at the plant shall account for moisture in both the coarse and fine aggregates.
- B. Reinforcing Steel Shop Drawings

1. Before starting concrete work, submit drawings complying with requirements of ACI MCP (latest edition), detailed in accordance with ACI SP66, and adapted to the proposed placement schedule, showing size, dimension, bending, placing, and construction joint details. Submit drawing showing locations of all construction joints. Submit type, size, and location of all slab and bar supports. Submit all reinforcement for a particular structure as a single complete submittal package. Shop fabrication shall not begin until corrected drawings bearing the CCWD Construction Manager's review stamp.
 2. The Contractor shall be wholly and completely responsible for the accuracy of the lists and for furnishing and placing reinforcing steel in accordance with the details shown on the plans and as specified
 3. Submit certified copies of mill test reports for each lot or heat of all reinforcing steel.
- C. Aggregate Base Under Slabs:
1. Submit gradation per Caltrans Standard Specification.
- D. Shoring: If shoring the structure is required, submit drawings and structural calculations signed and sealed by a Civil or Structural Engineer registered in the State of California showing anticipated loads, members, connections, and anchorage of the proposed shoring system.

PART 2 MATERIALS

2.1 CONCRETE

- A. General: Materials shall conform to Standard Specifications, this specification and as approved by the CCWD Construction Manager.
- B. Portland Cement: Use domestic portland cement that conforms to Standard Specifications "Type II Modified". Use only one brand of cement in any individual structure. Do not use cement that is damaged, partially set, lumpy, or caked. Reject the entire contents of the sack or container that contains such cement. Do not use salvaged or reclaimed concrete.
- C. Water: Water for washing aggregates and for mixing and curing concrete shall be clean, free from oil, acid, alkalis, vegetable matter, or other deleterious substances. No salt or sea water or water containing excessive amount of sodium sulphate, magnesium sulphate or magnesium chloride shall be used.
- D. Coarse Aggregate: The coarse aggregate shall consist of clean, hard, dense, tough and durable natural gravel, crushed gravel, or crushed rock, conforming to Standard Specifications. It shall be free from oil, organic matter or other deleterious substances.
- E. Fine Aggregate: Fine aggregate shall consist of hard, durable, uncoated natural sand or other approved material, conforming to Standard Specifications. It shall be free from oil or other deleterious substances.

- F. Fly Ash: Fly ash shall conform to ASTM C618, Class F or N, except that the loss on ignition shall be limited to 1%.
- G. Admixtures
 - 1. A water reducing agent such as Pozzoloth, WRDA, or equal shall be used in all concrete. The admixture shall conform to ASTM C494. Proportioning and mixing shall be as recommended by the manufacturer.
 - 2. Admixtures causing accelerated setting of cement in concrete shall not be used.
 - 3. Air entraining admixtures with demonstrated compatibility with the concrete mix shall be used as required as a moderate addition to the water reducing agent to obtain the specified percent air in the resultant concrete. The Contractor shall submit data verifying that the admixtures are compatible with the mix. Air-entraining admixture shall conform to ASTM C260.

2.2 REINFORCING

- A. Reinforcing Steel Bars: Deformed Bars shall be in accordance with ASTM A615, including Supplementary Requirement S1, Grade 60, and free from rust, scale, oil, or frost. No. 3 bars may be Grade 40.
- B. Welded Wire Fabric: Shall be of gauge and mesh size shown and shall meet the requirements of ASTM A185 for plain wire fabric or ASTM A497 for deformed wire fabric. Wire fabric shall be free from rust, scale, oil, and frost.
- C. Reinforcement supported from formwork shall rest on Class 1 (plastic protected) bar supports, as specified in "Manual of Standard Practice" by the Concrete Reinforcing Steel Institute (CRSI), Chapter 3.
- D. Reinforcement supported from the ground shall rest on 3-inch high precast concrete blocks not less than 4 inches square, and having a compressive strength equal to the specified compressive strength of the concrete being placed. The precast blocks shall have been cured as specified for concrete and shall contain soft steel wires embedded therein for fastening to the reinforcing.
- E. Details of concrete reinforcement not shown on drawings shall be in accordance with CRSI Manual of Standard Practice.

2.3 PATCHING GROUT (Dry Pack)

Patching grout shall consist of neat Portland cement, water, and sand passing a No. 8 sieve. The ratio of cement to sand shall be one part Portland cement to two parts sand. Add sufficient water to form a damp formable consistency.

2.5 FORM RELEASE

Form release shall be non-staining and in accordance with Corps of Engineers Specification CE 204 Section 3.03K. Burke Release #1 V.O.C. manufactured by Edoco, or equal.

2.6 NONSHRINK GROUT

Nonshrink grout shall conform to the Corps of Engineers Specification for Nonshrink Grout, CRD-C588, and to these specifications. Use a nongas-liberating type, cement base, premixed product requiring only the addition of water for the required consistency. Grout shall be Masterflow 713, as manufactured by Master Builders Company, Cleveland, OH, Upcon by Upco Co., Cleveland, OH, or equal.

2.7 EPOXY GROUT

The epoxy shall consist of a two component bonding compound. Epoxy shall be Gantrex K3, GER Grout, Custom Building Products 100% solids epoxy, or equal.

2.8 JOINT MORTAR BED

Mortar or grout placed on horizontal construction joints shall be a mixture of cement, sand, and water in the same proportions used in the concrete but with the coarse aggregate omitted.

2.9 JOINT SEALANT

A. Joint sealant shall be a multipart, gray, nonstaining, nonsagging, polyurethane sealant, which cures at ambient temperature to a firm, flexible, resilient, tear-resistant rubber. Sealant shall meet ASTM C920 for horizontal joints and for vertical joints, and in addition, is recommended by the manufacturer for continuous immersion in water. Sealant shall be RC 270 of Products Research and Chemical Corporation, Mamico International Vulkem 227, Multi-Chem MC287, or equal.

B. Technical Requirements

Consistency

Tack free time
Pot life
Hardness
Elongation
Tensile strength
Peel strength on concrete
Temperature service
Immersion in water

Gun Grade

24 hours at 75 Degees F and 50% R. H.
1 to 3 hours
35 shore A, +/- 5
500%
ASTM D412 300 psi
No loss of bond after 24 hours at 150% elongation
-40 degrees F to 155 degrees F
Continuous

2.10 BACKING ROD FOR EXPANSION JOINTS

Backing rod shall be an extruded closed-cell polyethylene foam rod, such as Minicel backer rod, manufactured by Industrial Systems Department, Plastic Products Group of Hercules, Inc., Middletown, Delaware; Ethafoam SB, as manufactured by Dow Chemical Company, Midland, Michigan; or equal. The rod shall be 1/4-inch larger in diameter than the joint width. Where possible, provide full length sections for the joint and minimize splices. Apply backing rod and bond breaker tape in expansion joints.

2.11 BOND BREAKER TAPE

Bond breaker tape shall be an adhesive-backed glazed butyl or polyethylene tape which will adhere to the premolded joint material or concrete surface. The tape shall be the same width as the joint. The tape shall be compatible with the sealant.

2.12 EXPANSION JOINT FILLERS (Walkways and Sidewalks)

Asphalt impregnated, premolded type, ASTM D1751, ½-inch by depth of slab minus ½-inch.

2.13 PREMOLDED JOINT FILLER

Joint filler shall be preformed, non-extruded type constructed of closed-cell neoprene conforming to ASTM D1752, Type I, as manufactured by W. R. Grace Company of Cambridge, MA; W. R. Meadows, Inc., Elgin, IL; or equal.

2.14 STEEL EXPANSION JOINT DOWELS

Steel expansion joint dowels shall conform to one of the following:

- A. Epoxy coated steel bar dowels with a 12-mil coating thickness. Steel bar dowels shall conform to ASTM A36 or ASTM A615, plain rounds, Grade 60. Epoxy coating shall be in conformance with ASTM A775; or,
- B. Stainless-steel bar dowels conforming to ASTM A276, Type 302.

2.15 EXPANDED POLYSTYRENE FILLER BLOCK

Expanded polystyrene filler blocks for future construction and expansion joints shall be Styrofoam SM brand as manufactured by Dow Chemical Company, or equal.

2.16 PREFORMED CONTROL JOINT

Preformed control joint shall be a one-piece, flexible, PVC joint former, such as Kold-Seal Zip-Per Strip KSF-150-50-50, manufactured by Vinylex, Corp., Knoxville, Tennessee, or a one-piece steel strip with preformed groove, such as Keyed Kold Retained Kap, manufactured by Burke Concrete Accessories, Inc., San Mateo, CA, or equal. Provide the preformed control joint material in full length unspliced pieces.

2.17 FLOOR HARDENER

Liqui-Hard by W.R. Meadows; Lapidolith by Sonneborn Building Products, Division of Contech, Inc., Minneapolis, Minnesota, or equal. Hardener shall be compatible with curing method used.

2.18 CURING MATERIALS

- A. Sheet Materials: ASTM C171, 4 mil polyethylene film or waterproof paper.
- B. Spray Applied Membrane Forming Liquids: Meet or exceed requirements of ASTM C309, Type 1-D, Class B, except that the loss of water, when tested, shall be not more

than 0.15 kilograms per square meter in 24 hours, nor more than 0.45 kilograms per square meter in 72 hours. Shall be a water-base, resin cure with fugitive dye meeting California Air Regulation Board requirements. Products by Burke, W.R. Meadows, Inc., or equal.

- C. Burlap Mats: Burlap mats shall conform to AASHTO M182.

2.19 BONDING AGENT

Concresive 1001-LPL, manufactured by Adhesive Engineering Company, San Carlos, CA, No. 705 Bonding Adhesive, Upco Co., Cleveland, OH, or equal.

2.20 CONCRETE GROUT

Grout shall consist of Portland cement, fine aggregate, coarse aggregate, and air entraining agent, and water which shall conform to the requirements of Section 90 of the Standard Specifications, as modified herein. Grout shall contain a minimum of seven sacks (658 pounds of Portland cement) per cubic yard. Maximum slump shall be four (4) inches. Coarse aggregate shall be 3/8-inch pea gravel. Grading shall be set forth in Section 90 of the Standard Specifications.

PART 3 EXECUTION

3.1 CONCRETE MIX COMPOSITION

- A. Concrete Composition: Concrete shall consist of Portland cement, fine aggregate, coarse aggregate, an air entraining agent, and water which shall conform to the requirements of Section 90 of the Standard Specifications, and as modified herein.
- B. Submittal of Proposed Mix Design
 - 1. The proposed mix design, with samples of fine and coarse aggregate and any admixtures to be used in concrete, shall be submitted along with the concrete mix design submittal in accordance with Section 01300.
 - 2. The grading or proportioning of the fine and coarse aggregates in the mix shall be changed whenever necessary or desirable, in the opinion of the CCWD Construction Manager, to secure the required economy, workability, density, impermeability or strength, and no additional compensation because of such changes shall be allowed.
- C. Concrete Mix: Concrete shall have a minimum compressive strength of 4,000-psi @ 28-days. Mix shall contain not less than 7 sacks Portland cement and have a 2 to 4-inch slump, 3% air and 0.45 water/cement ratio.
- D. Aggregate Sizing
 - 1. Grading and quality requirements shall be as set forth in Section 90 of the Caltrans Standard Specifications.
 - 2. Use 1-inch x No.4 size coarse aggregate

3.2 MEASURING MATERIALS

Materials shall be measured by weighing except as otherwise specified or where other methods are specifically authorized by the CCWD Construction Manager. Scales shall be approved by the CCWD Construction Manager and have been certified by the local Sealer of Weights and Measures within one year of use. Each size of aggregate and the cement shall be weighed separately. The accuracy of all weighing devices shall be such that successive quantities can be measured to within one percent of the desired amount. Cement in standard packages (sacks) need not be weighed, but bulk cement and fractional packages shall be weighed.

3.3 CONCRETE MIXING & DELIVERY

- A. All concrete shall be machine mixed at the site, or delivered to the site by transit mixers under conditions approved by the CCWD Construction Manager.
- B. No concrete shall be placed in the work after it has started to set. No concrete can be placed more than one hour after it has been mixed.
- C. If transit mix is used, the rate of delivery, haul time, mixing time and hopper capacity shall be such that all mixed concrete delivered shall be placed in the forms within one hour from the time of introduction of cement and water to the mixer. All concrete shall be kept continuously agitated until discharged in the hopper at the job site.
- D. Ready-mixed concrete shall be batched, mixed, and transported in accordance with ASTM C94 and Chapter 7 of ACI 301. Plant equipment and facilities shall conform to the "Check List for Certification of Ready Mixed Concrete Production Facilities" of the National Ready Mixed Concrete Association.

3.4 CONCRETE HANDLING AND PLACEMENT

- A. Excavations and Formwork
 - 1. Excavations shall be kept free from water while concrete is being placed, cured and finished therein. Fresh concrete shall be protected at all times from running water.
 - 2. The order of placing concrete in all parts of the work shall be acceptable to the CCWD Construction Manager. In order to minimize the effects of shrinkage, the concrete shall be placed in units as bounded by construction joints shown. The placing of units shall be done by placing alternate units in a manner such that each unit placed shall have cured at least 5 days for hydraulic structures and 2 days for all other structures before the contiguous unit or units are placed, except that the corner sections of vertical walls shall not be placed until the 2 adjacent wall panels have cured at least 10 days for hydraulic structures and 4 days for all other structures.
 - 3. Before placing concrete, all form work shall be cleaned of dirt and construction debris, water-drained, reinforcement securely and properly fastened in its correct position, forms at construction joints re-tightened, all ducts, sleeves, hangers, pipes, conduits, bolts, wires, etc., installed. No concrete shall be placed before the forms and all work that is to be embedded have been set and observed by the CCWD Construction Manager.

B. Concrete Placement

1. The working schedule and schedule of placement shall be as shown on the plans and worked out in conjunction with the CCWD Construction Manager. The schedule shall be worked out prior to commencement of work, and shall be rigidly adhered to.
2. Concrete shall be conveyed from the mixer to the place of final deposit as rapidly as practicable by methods which will prevent the separation or loss of the materials. The concrete shall be deposited in the forms as nearly as practicable in its final position to avoid rehandling. Use of vibrators for extensive shifting of the mass of fresh concrete will not be permitted.
3. Concrete shall be placed and consolidated by methods that will not cause segregation of the aggregates and will result in a dense homogeneous concrete which is free of voids and rock pockets. All concrete shall be used while fresh and before it has taken an initial set. Retempering any partially hardened concrete with additional water will not be permitted.
4. Surfaces on which concrete is to be placed shall be dampened with water immediately before placing concrete, except where there is a moisture retarder at slabs on grade.
5. Concrete shall not be deposited on frozen or ice-coated ground nor on ice-coated forms, reinforcing steel, embedded items or construction joints.
6. Where pavement or surfacing is to be placed around or adjacent to manholes or drainage inlets which will be located within traffic lanes, such structures shall not be constructed to final grade until after the pavement or surfacing has been placed around these locations.
7. Where a schedule for placing concrete is shown on the plans no deviation will be permitted there from unless approved in writing by the CCWD Construction Manager.
8. Mixed concrete, after being deposited, shall be consolidated until all voids are filled and free mortar appears on the surface. The concrete shall be placed as nearly as possible in its final position and the use of vibrators for extensive shifting of the mass of fresh concrete will not be permitted.
9. Except for concrete used in cast-in-place piles, fresh concrete shall not be permitted to fall from a height greater than 4 feet without the use of adjustable length pipes, tubes or double belting placed to prevent segregation of the concrete. Double belting shall not be used unless the thickness of the member is less than 16 inches.
10. In vertical sections, concrete shall be deposited continuously in horizontal layers of 24 inches maximum depth so as to maintain a horizontal plastic surface until the completion of the unit. No concrete shall be deposited on concrete which has hardened sufficiently to cause the formation of seams and planes of weakness within the section.
11. Concrete for horizontal members or sections shall not be placed until the concrete in the supporting vertical members or sections is no longer plastic and has been in place at least two hours.
12. In all slabs, concrete shall be deposited in a continuous or monolithic operation to the full thickness of the slab. Each batch shall be dumped against previously placed concrete and not away from it, and shall not be dumped in separate piles and then worked together.
13. The concrete in each integral part of the structure shall be placed continuously, and work will not be allowed to commence on any such part unless sufficiently

inspected and approved material for the concrete is on hand, and forces and equipment are sufficient to complete the part without interruption in the placing of the concrete.

C. Concrete Vibrating

1. Consolidate concrete by means of high frequency internal vibrators within 15 minutes after it is deposited in the forms. The vibrators shall not be attached to or held against the forms or the reinforcing steel. The vibrating shall be done with care and in such manner that displacement of reinforcement, ducts, and embedded items is avoided.
2. All concrete shall be consolidated by vibration so that the concrete is thoroughly worked around the reinforcement, around embedded items, and into corners of forms, eliminating all air or stone pockets which may cause honeycombing, pitting, or planes of weakness.
3. Internal vibrators used shall be the largest size and the most powerful that can be properly used in the work, as described in Table 5.1.4 of ACI 309. They shall be operated by competent workmen. Use of vibrators to transport concrete within forms shall not be allowed. The vibrator shall be inserted vertically at uniform spacing over the entire area of the placement. The distance between insertions shall generally be about 1½ times the radius of action, or such that the area visibly affected by the vibrator overlaps the adjacent just-vibrated area by a few inches. In slabs, the vibrator shall be sloped toward the horizontal as necessary to operate in a fully embedded position.
4. The vibrator shall penetrate rapidly to the bottom of the layer, and at least 6 inches into the preceding layer if there is such. At each insertion, the vibrator shall be held stationary for a time sufficient to consolidate the concrete but not cause segregation, generally from 5 to 15 seconds. The vibrator shall then be withdrawn slowly, at the rate of approximately 3 inches per second.
5. A spare vibrator in good working condition shall be kept on the job site during all concrete placing operations. Where the concrete is to have an as-cast finish, a full surface of mortar shall be brought against the form by the vibration process, supplemented if necessary by spading to work the coarse aggregate back from the formed surface.
6. The use of external vibrators for consolidating concrete will be permitted when the concrete is inaccessible for adequate consolidation provided the forms are constructed sufficiently rigid to resist displacement or damage from external vibration.

D. Cold Weather Requirements

1. Provide adequate equipment for heating concrete materials and protecting concrete during freezing or near-freezing weather in accordance with ACI 306 and the following paragraphs.
2. When the temperature of the surrounding atmosphere is 40 degrees F or is likely to fall below this temperature, use heated mixing water not to exceed 140 degrees F. Do not allow the heated water to come in contact with the cement before the cement is added to the batch.
3. When placed in the forms during cold weather, maintain concrete temperature at not less than 55 degrees F for the first five days after placing, and above 35 degrees F for the remainder of the curing period. Provide thermometers to

indicate the ambient temperature and the temperature 2 inches inside the concrete surface.

4. There will be no additional reimbursement made to the Contractor for costs incurred for placing concrete during cold weather.

E. Hot Weather Requirements

1. During hot weather, give proper attention to ingredients, production methods, handling, placing, protection, and curing to prevent excessive concrete temperatures or water evaporation in accordance with ACI 305 and the following paragraphs.
2. When the weather is such that the temperature of the concrete as placed would exceed 90 degrees F, use ice or other means of cooling the concrete during mixing and transportation so that the temperature of the concrete as placed will not exceed 90 degrees F.
3. Take precautions when placing concrete during hot, dry weather to eliminate early setting of concrete. This includes protection of reinforcing from direct sunlight to prevent heating of reinforcing, placing concrete during cooler hours of the day, and the proper and timely application of specified curing methods.
4. There will be no additional reimbursement to the Contractor for costs incurred for placing concrete in hot weather.

3.5 BONDING TO EXISTING CONCRETE

Existing concrete is concrete placed prior to this contract or concrete placed during this contract which has cured at least 28 days. Coat the contact surface with an approved epoxy bonding compound. The method of preparation and application of the bonding compound shall conform to the manufacturer's printed instructions and recommendations for specific application of the product.

3.6 FORMWORK

- A. Arrange formwork construction to allow for proper sequencing and removal without damage. Use orderly and symmetrical panel arrangement with minimum number of joints. Before proceeding, secure approval of formwork and procedures.
- B. Lumber, prefabricated wood panels, metal, or plastic-lined panels shall be sound and free from any defects that will mar or detract from the surface of the finished concrete. Construct forms sufficiently tight to prevent loss of mortar. Design forms to withstand vibrator action. Treat forms with a nonstaining material to eliminate absorption of water and to act as a form release agent.
- C. Thoroughly remove all dirt, mortar, and foreign matter before each use. Where the bottom of the form is inaccessible from within, provide access panels to permit thorough removal of extraneous material before placing concrete.
- D. Kerf wood forms inserted for architectural treatment to accommodate swelling without pressure on the concrete.
- E. Chamfer all exposed horizontal and vertical edges or other corners $\frac{3}{4}$ -inch, both interior and exterior of structures.
- F. Earth trench forms for walls and footings below existing and final grades may be used, if approved after inspection of the trenches, provided the sides are clean, even, vertical, true, and provided the bottoms are level, clean, and without fill, and the width is increased two (2) inches.

- G. Where tolerances are not shown elsewhere, permissible deviations from established lines, grades, and dimensions are listed below:
1. Variation from the Plumb
 - a. In the lines and surfaces of columns, piers, walls and in any other vertical members: in 10 feet, 1/4-inch; in any story or 20 feet maximum, 3/8-inch; in 40 feet or more, 3/4-inch.
 - b. For exposed corners and other conspicuous lines: in any bay or 20 feet maximum, 1/4-inch; in 40 feet or more, 1/2-inch.
 2. Variation from the Level or from the Grades Shown
 - a. In floors, ceilings, and beam soffits: in 10 feet, 1/4-inch; in any bay or 20 feet maximum, 3/8-inch; in 40 feet or more, 3/4-inch; in floors to receive tile, maximum of 1/8" in 10 feet.
 - b. For exposed lintels, sills, parapets, horizontal grooves and other conspicuous lines: in any bay or 20 feet maximum, 1/4-inch; in 40 feet or more, 1/2-inch.
 3. Variation of the linear building lines from established position in plan and related position of columns, walls and partitions: In any bay or 20 feet maximum, 1/2-inch; in 40 feet or more, 1 inch.
 4. Variation in tank, channel or structural lines in 10 feet, 1/4-inch; in 20 feet, 3/8 inch; in 40 feet or more, 1/2-inch.
 5. Variation in the sizes and locations of sleeves, floor openings and wall openings: 1/4-inch.
 6. Variation in cross-sectional dimensions of columns, beams and piers, and in the thickness of slabs and walls: minus, 1/4-inch; plus, 3/8-inch.
 7. Footings
 - a. Variation in Dimensions in Plan: Minus, 1/2-inch; plus, 2-inch.
 - b. Misplacement or Eccentricity: 2 percent of the footing width in the direction of misplacement but not more than 2 inches.
 - c. Misplacement or Eccentricity of Footings Supporting Masonry Or Concrete: 1/2-inch.
 - d. Reduction in Thickness: Minus 5 percent of specified thickness.
 8. Variation in Steps
 - a. In a Flight of Stairs: rise, 1/8-inch; tread, 1/4-inch.
 - b. In Consecutive Steps: rise, 1/16-inch; tread, 1/8-inch.
 9. Variation from established lines and grades in sidewalks, plazas, outdoor concrete slabs, curb and gutter sections: in 10 feet, 1/4-inch; in 1 foot, 1/8-inch.
- H. Where tolerances are not met, the Owner's Representative may require removal and replacement at no cost to the Owner.

3.7 REINFORCEMENT

- A. Design: The reinforcement design shown on drawings provides maximum spacing and minimum size of reinforcement.
- B. Shop Drawings – The contractor shall detail the reinforcement and preparing placing and bending details per CRSI Manual of Standard Practices. Location of Concrete Control Joints and Construction joints should be identified on the Reinforcement Shop Drawings. Prior to starting concrete work, submitted detailed shop drawings shall be approved by the CCWD Construction Manager.

- C. Bending: In accordance with CRSI Manual of Standard Practice, Chapter 7.
- D. Placement: Place reinforcement accurately as shown. Adequately secure metal reinforcement in position by concrete or metal chairs and spacers, in accordance with CRSI Manual of Standard Practice, Chapter 8. Distance between the steel and the surface, as shown; otherwise, in accordance with Chapter 8. In walls, use bolsters between form and reinforcement to prevent lateral displacement of reinforcement and to insure proper concrete cover.
- E. Splices: Locate splices of reinforcement as shown. For any splices not shown, assume Class B splice. Stagger splice in adjacent horizontal bars. Lap adjacent sheets of wire mesh a minimum of 6 inches and wire securely.
- F. Inspection: After reinforcement has been placed, it shall be inspected and approved before placing concrete.
- G. Conditions of Surfaces: At time concrete is placed, all metal reinforcement shall be free from rust, scale, frost, or other coatings that would destroy or reduce the bond.
- H. Welding Reinforcement: Do not weld reinforcing steel unless specifically approved by the CCWD Construction Manager. Welding to be in accordance with ASTM A706.

3.8 JOINTS AND EMBEDDED ITEMS

- A. Construction Joint
 - 1. Obtain approval for joints and locate them where they least impair the strength of the structure. Unless otherwise shown on the drawings, joints in walls and columns shall be at the underside of floors, slabs or beams, and at the top of footings or floor slabs. Make joints perpendicular to the main reinforcement.
 - 2. Continue all reinforcing steel and mesh across construction joints.
 - 3. Forms and reinforcing shall be cleaned of drippings, debris, etc., by means of compressed air. Surfaces of the hardened concrete shall be cleaned to the satisfaction of the CCWD Construction Manager and wet as required before placing of new concrete. Just before starting the new pour, all free water shall be removed and the horizontal surfaces shall be covered with at least a 4-inch thickness of concrete composed of cement and fine aggregate, omitting the coarse aggregate.
- B. Expansion Joints
 - 1. Install expansion joint fillers to ½-inch below slab.
 - 2. Where shown, load transfer dowels shall consist of plain bars with one half coated with an approved antibond coating. The coated half shall be sleeved. No other reinforcement or metal shall extend continuously through the joint.

C. **Joint Filler**

1. **All building floor joints shall be filled with a high strength caulk and shall match the color of the floor finish.**

C. Other Embedded Items

1. Prior to concreting, place all required sleeves, inserts, anchor bolts and embedded items.
2. Give all trades whose work is related to the concrete ample notice and opportunity to introduce embedded items before concrete is placed.
3. Position expansion joint material, waterstops, and embedded items accurately and support them against displacement. Fill voids in sleeves, inserts, and anchor slots temporarily with readily removable material to prevent the entry of concrete.

3.9 FORM REMOVAL

Carefully remove forms to insure the complete safety of the structure. Where the structure is supported by shoring, the beam sides, columns, or other vertical forms may be removed after 24 hours of concrete placement, provided the concrete will not be injured.

3.10 CONSTRUCTION LOADS ON STRUCTURAL SLABS

No construction materials and equipment shall be allowed on structural slabs until the concrete has reached the 28-day compressive strength. Any request to place materials on slab prior to reaching 28-day compressive strength must be approved by CCWD Construction Manager.

3.11 REPAIRING AND PATCHING

- A. Clean, thoroughly dampen and patch all tie holes and all repairable defects immediately after form removal.
- B. All honeycombed and other defective concrete shall be removed to sound concrete with edges perpendicular to the surface. Surface imperfections greater than 3/8 inch in any dimension shall be removed and the affected areas neatly patched. Dampen the area to be patched and an area at least 6 inches wide surrounding it to prevent absorption of water from the patching mortar. Mix patching grout to the consistency of thick cream and brush it well into the surface.
- C. Make the patching mortar of the same material and approximately the same proportions as used for the concrete, omitting the coarse aggregate. The resultant mortar shall consist of not more than 1 part cement to 2½ parts sand by damp loose volume.
- D. Do not use more mixing water than necessary for handling and placing. Mix the patching mortar in advance and allow to stand with frequent manipulation with a trowel, without adding water, until it has reached the stiffest consistency that will permit placing.
- E. After surface water has evaporated from the area to be patched, brush the patching grout well into the surface. When the patching grout begins to lose the water sheen, apply the premixed patching mortar. The mortar shall be thoroughly consolidated into place and struck off to leave the patch slightly higher than the surrounding surface. To permit

initial shrinkage, leave the patch undisturbed for at least 1 hour before finishing it. Keep the patched area damp for 7 days. Do not use metal tools in finishing a patch in a formed wall which will be exposed.

- F. Tie Holes: Clean thoroughly by mechanical abrading, dampen, then fill solid with patching mortar. Mortar shall match color of concrete. Fill tie holes prior to finishing.

3.12 FINISHES FOR SURFACES

Concrete surfaces shall be finished in accordance with the interior finish schedule:

- A. Troweled Finish – Building Slab Floors, Site Concrete Work, Troughs, Drainage Aprons, and all other exposed concrete except for concrete to receive Coarse Broom Finish.
- B. Coarse Broom Finish – Exterior Walkways, and Exterior Stoops

3.13 SLAB FINISHING

- A. Screeding: After concrete has been thoroughly consolidated, screed slabs to the desired elevation and contours by means of accurately placed edge forms and intermediate screed strips.
- B. Floated Finish
 1. Place, consolidate, strike off, and level concrete, but do not work it further until ready for floating. Begin floating when water sheen has disappeared and when the surface has stiffened sufficiently.
 2. During or after the first floating, check planeness of surface with a 10-foot straightedge applied at not less than two different angles, and then cut down all high spots and fill all low spots to achieve a true plane within ¼-inch in 10 feet.
 4. Refloat slab immediately to a uniform sandy texture.
- C. Troweled Finish: Float finish slab as described above, then steel trowel by machine or by hand. Additional trowellings shall be done by hand after the surface has hardened sufficiently. Final trowelling shall produce a ringing sound from the trowel and the finished surface shall be free of trowel marks, uniform in texture, and appearance shall be planed to the tolerance specified under Floated Finish. Trowelled finish shall occur at tank floors (except where grout topping or fillets will follow), troughs, channels, clear wells, and all building floor slabs.
- D. Coarse Broom Finish: Immediately after floating, give slabs for exterior walkways and exterior stoops a coarse transverse scored texture by drawing a broom across the surface.

3.14 FLOOR HARDENER

- A. All building floors not scheduled for floor covering, Non-slip Floor Finish, or Broom finish shall receive hardener.
- B. Apply hardener after floors have cured, in accordance with the manufacturer's recommendations.
- C. Floors shall receive three applications of hardener, mixed and applied as specified for heavy duty floors as shown on contract drawings.

3.15 CURING AND PROTECTION

- A. General: Beginning immediately after placement, protect concrete from drying, excessively hot and cold temperatures and mechanical injury. Keep moisture loss to a minimum until cement has hydrated and concrete is hard. Keep concrete constantly moist during the curing period. Follow color admixture manufacturer's recommendations for integrally colored concrete.
- B. Curing
 - 1. Formed Surfaces: Keep forms wet. Cool metal forms exposed to the sun with water. If curing compound is used, apply in accordance with manufacturer's instructions. Curing compound shall not be used on any wall/slab scheduled to be coated.
 - 2. Duration of Curing: 7 days minimum.
- C. Protection
 - 1. In cold weather, maintain the moisture conditions but also, by heating or covering, maintain the temperature of the concrete between 50 degrees F and 70 degrees F for entire curing period.
 - 2. In hot weather take immediate steps to protect newly finished concrete from drying effects of wind and sun, and maintain temperature of the air surrounding the concrete uniform within 5 degrees F in any one hour or 50 degrees F in any 24 hour period.
 - 3. During curing period, protect concrete from mechanical damage, loading, shock and vibration.

3.16 NONSHRINK GROUT

Use nonshrink grout to fill sleeves and voids under equipment bases. Grout shall be mixed and used in accordance with manufacturer's recommendations. Exposed edges shall be smooth, straight and even.

3.17 ADHESIVE AND POWDER ANCHORS

Install in strict conformance to manufacturer's printed instructions. Do not cut or damage existing reinforcing bars. Where reinforcing bars are encountered, move anchor location or core hole as approved by the CCWD Construction Manager.

3.18 CONCRETE TESTING

Concrete testing shall be performed by the Contractor in accordance with the following:

- A. One set of four concrete test cylinders shall be taken for every 50 cubic yards or fraction thereof of each concrete mix design placed each day. The CCWD Construction Manager has the option to direct the required test specimens to be taken as he deems necessary to insure the concrete meets the specification.
- B. Specimens shall be taken, cured, and tested for compressive strength in accordance with ASTM C31, ASTM C39, and ASTM C172, respectively.

- C. Determine the concrete slump by ASTM C143 with each strength test sampling and as required to establish consistency.
- D. Determine air content of the concrete using ASTM C231 to verify the percentage of air in the concrete immediately prior to depositing in the forms with each set of cylinders taken and as required to establish consistency.
- E. Determine drying shrinkage in accordance with ASTM C157, as modified by SEAOC, at 7, 14, 21, and 28 days of drying after the wet cure period. A minimum of three sets of three shrinkage bars shall be cast over the project duration. The CCWD Construction Manager has the option to increase or decrease the testing frequency as he deems necessary to insure the concrete meets the specifications. Shrinkage of concrete at 28 days drying age shall not exceed 0.045 percent.
- F. Test reports shall be sent to the CCWD Construction Manager with copies to the Design/Builder.
- G. Concrete which fails to meet strength, slump, air, or shrinkage requirements may be rejected by the CCWD Construction Manager before, during, or after placement.
- H. Test one cylinder at 7 days for information; test two cylinders at 28 days for acceptance; and hold one cylinder for verification. Strength acceptance will be based on the average of the strengths of the two cylinders tested at 28 days. If one cylinder of a 28-day test manifests evidence of improper sampling, molding, or testing, other than low strength, discard it and use the fourth cylinder for the test result.
- I. The average value of the two cylinders tested at 28-days shall be equal to or greater than the specified 28-day strength. No test shall be less than 90 percent of the specified 28-day strength.
- J. If the average 28-day strength tests fail to meet the specified minimum compressive strength, the concrete will be assumed to be defective and one set of three cores from each area may be taken as selected by the Owner and in accordance with ASTM C42. If the average compressive strength of the set of three concrete cores fails to equal 90% of the specified minimum compressive strength or if any single core is less than 75% of the minimum specified compressive strength, the concrete will be considered defective. The Owner may require additional coring, nondestructive load testing, or repair of defective concrete. Costs of coring, testing of cores, load testing, and required repairing pertaining thereto shall be paid by the Contractor at no extra cost to the Owner.

3.19 DAMAGED OR DEFECTIVE CONCRETE

- A. Remove damaged or defective concrete before completion and acceptance of the work and replace with acceptable concrete, at no additional cost to the Owner.
- B. **Cracks in exposed building floor, outside control joints, are not acceptable. Cracked concrete shall be removed and replaced within the area bound by joints.**

END OF SECTION

03300-16

SECTION 05400
Cold Formed Metal Framing

PART 1 -GENERAL

1.1 SCOPE:

It is the intent of these Contract documents and the responsibility of the Contractor to furnish, provide, perform, and install all cold formed metal framing (whether shown or not shown) needed for a complete project and building installation, at no additional cost to Owner.

A. Section Includes:

1. Load bearing and non-load-bearing metal stud wall framing.
2. Anchorage, bridging and bracing.
3. Metal joint framing with anchorage and bridging.

1.2 REFERENCES:

- A. Design and Manufacturers: Meet requirements of AISC Specification for the Design of Light Gage Cold Formed Steel Structural Members, latest edition.
- B. Welding: Meet requirements of AWS D1.1.

1.3 SUBMITTALS:

- A. Product Data: Copies of manufacturer's specifications covering all materials to be used with all materials and accessories plainly identified.
- B. Detailed erection procedures.

1.4 QUALITY ASSURANCE:

- A. Erector Qualifications: Minimum of three years successful experience on comparable coldformed metal framing work.
- B. Welder Qualifications: Currently qualified in accordance with AWS D1.1. Certification required.

PART 2 PRODUCTS

2.1 MATERIAL:

A. Framing Members:

1. Studs and Track: Head and sill track and header members to be unpunched track, same gage as studs or one gage heavier.
 - a. All studs to be stamped or marked with ASTM standard, Grade, and gage.

2. Steel: All framing members to be formed from steel conforming to the following:
 - a. 18 Gage and Lighter Galvanized: ASTM A446, Grade A.
 - b. 16 Gage and Heavier, Galvanized: ASTM A446, Grade D.
3. Stud Bridging:
 - a. 18 gage or heavier channel studs of same width as studs noted on the drawings.
 - b. Continuous minimum 11/2" cold rolled channels positioned through stud punch-outs.

PART 3 EXECUTION

3.1 ERECTION:

- A. Align head and sill tracks according to wall or partition location. Secure with screws, powder driven fasteners or welding at 24" on center.
- B. Studs:
 1. Place studs 16" on center, minimum, or at tighter spacing as noted, and not more than 2" from abutting walls and at each side of openings.
 2. Provide deflection allowance below supported horizontal building framing in ceiling or head track for nonloadbearing framing.
- C. Joists: Weld all joints and connections in accordance with drawings and manufacturer's recommendations.
- D. Bridging and Diagonal Bracing: Attach all bridging and diagonal bracing by welding capable of resisting a transverse lateral load force of 500 lbs. minimum.
- E. Miscellaneous Framing and Furring:
 1. Provide all necessary framing, furring, etc., for special framing at specialty items.
 2. Attach cross studs or furring channels to studs for attachment of fixtures behind lavatory basins, toilet and bathroom accessories, grab bars and other items anchored to partitions or walls.
 3. Install framing between studs for attachment of electrical boxes and other mechanical and electrical items.

END OF SECTION

SECTION 06100
Rough Carpentry

PART 1 -GENERAL

1.1 SUMMARY

It is the intent of these Contract documents and the responsibility of the Contractor to furnish, provide, perform, and install all rough carpentry (whether shown or not shown) needed for a complete project and building installation, at no additional cost to Owner.

- A. Work of this Section includes but is not limited to the following:
1. Wood Boards
 - a. Select
 - b. Common
 2. Dimension Lumber
 - a. Structural light framing
 - b. Light framing
 - c. Studs
 - d. Decking
 - e. Structural joists and planks
 3. Timbers
 - a. Beams and Stringers
 - b. Posts and Timbers
 4. Wood treatments
 5. Accessories including, but not limited to, metal connector plates, structural connectors, Fasteners
- B. Related Documents and Sections: Examine Contract Documents for requirements that directly affect or are affected by Work of this Section. A list of those Documents and Sections include, but is not limited to the following:
1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and DIVISION 01 General Requirements, Specification Sections, apply to this Section.
 2. SECTION 06160, WOOD SHEATHING

1.2 REFERENCES

- A. Definitions per as follows:
1. Certified Wood: Independent third party certified forests; trees and lumber meeting FSC or PEFC member principles and criteria from forests complying with responsibly managed forest standards that meet broad social, economic and environmental goals.
 2. Dimension Lumber: A product of the saw mill and planing mill of nominal 2 in. through 4 in. thick and 2 or more inches wide usually not further manufactured other than by sawing, re-sawing, passing lengthwise through a standard planing machine, crosscutting to length, and matching.

3. Engineered Wood Products: Wood fibers and/or particles that have been bonded with synthetic resins under heat and pressure that are formed into panels or boards.
4. Mechanically Graded Lumber: Machine stress-rated lumber (MSR) or machine evaluated lumber (MEL) and grade stamped.
5. S4S. Lumber that is dressed/surfaced on all four (4) sides.
6. S2S. Lumber that is dressed/surfaced on two (2) sides.
7. Visually Graded Lumber: Lumber visually graded by trained graders for appearance and strength factors. Lumber is marked for: Number, size, and position of knots and holes; Bark on edges; Decay; Checks and splits; Machining defects; Twisting, bowing, and warp; Species.

B. Referenced Standards as follows:

1. ALSC. American Lumber Standard Committee; www.alsc.org
 - a. Lumber Grading Rules
2. ANSI. American National Standards Institute; www.ansi.org
3. ASTM. ASTM International; www.astm.org
 - a. ASTM D245, Establishing Structural Grades and Related Allowable Properties for Visually Graded Lumber
 - b. ASTM D1990, Establishing Allowable Properties for Visually Graded Dimension Lumber from In-Grade Tests of Full-Sized Specimens
 - c. ASTM D6570, Standard Practice for Assigning Allowable Properties for Mechanically Graded Lumber
4. AWI. Architectural Woodwork Institute
 - a. AWI -Quality Standards, 8th Edition, Version 1.0, 2003
 - b. AWI / AWMAC / WI – Architectural Woodwork Standards – 2009, 1st Edition
5. AWP. American Wood Preservers Association; www.awpa.com
6. CARB. California Air Resources Board, a department of the California Environmental Protection Agency; www.arb.ca.gov
7. EPA. U.S. Environmental Protection Agency; www.epa.gov
8. HMA. Hardwood Manufacturers Association; www.hardwoodinfo.com
9. ICC. International Code Council; www.iccsafe.org
10. ICC/ES. International Code Council / Evaluation Service; www.icc-es.org
11. ISO/IEC. International Organization for Standardization, International Electrotechnical Commission; www.iec.ch/
12. NFPA. National Fire Protection Association; www.nfpa.org
13. NHLA. National Hardwood Lumber Association; www.natlhardwood.org
14. UL. Underwriters Laboratories Inc.; www.ul.org

1.3 SUBMITTALS

- A. Product Data as follows: Submit manufacturer's printed descriptions of materials, components, treatment systems, performance criteria, fasteners, brackets, hangers, gusset plates, adhesives, finishes, use limitations, recommendations and installation information.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Delivery, Storage and Handling per industry and fabricator guidelines and as follows:
1. Delivery and Acceptance Requirements
 - a. Deliver materials to Project site in an undamaged condition, in original bundles and bearing intact labels.

- b. Inspect shipped materials on delivery to ensure compliance with requirements of Contract Documents and to ensure that products are undamaged and properly protected. 1). Reject damaged goods, and accept properly ordered, protected and undamaged goods.
- 2. Storage and Handling Requirements
 - a. Protect wood materials and accessories from soiling, damage, and deterioration, handling with proper care in proportion to the fragility and hazard of each product and its finished surfaces.
 - b. Protect materials during shipping, handling, storage and installation from exposure to harmful conditions including, but not limited to, weather, vandalism, extreme changes in temperature, dryness or humidity, denting, chipping, gouging, warping, peeling, moisture, construction operations, and other damage.
 - c. Store product materials from exposure to harmful conditions including, but not limited to, weather, vandalism, extreme changes in temperature, direct sunlight, dryness or humidity, water, construction operations, and other damage.

PART 2 -PRODUCTS

2.1 MANUFACTURERS / FABRICATORS

- A. Product Options -Lumber Categories:
 - 1. BOARDS. Size classifications:
 - a. Select grade
 - 1). B & Better
 - 2). C Select
 - 3). D Select
 - b. Common grade
 - 1). No. 1
 - 2). No. 2
 - 3). No. 3 (sheathing or sub-flooring)
 - 4). No. 4 (sheathing or sub-flooring)
 - 5). No. 5
 - 2. DIMENSION LUMBER. Size classifications:
 - a. Structural light framing
 - 1). Grade: Select structural
 - 2). Grade: No. 1
 - 3). Grade: No. 2
 - 4). Grade: No. 3
 - b. Light framing
 - 1). Grade: Construction
 - 2). Grade: Standard
 - 3). Grade: Utility
 - c. Studs
 - d. Decking
 - 1). Select
 - 2). Commercial
 - e. Structural joists and planks
 - 1). Grade: Select structural
 - 2). Grade: No. 1
 - 3). Grade: No. 2
 - 4). Grade: No. 3

3. TIMBERS. Size classifications:
- a. Beams and Stringers
 - 1). Grade: Dense Select structural
 - 2). Grade: Dense No. 1
 - 3). Grade: No. 1
 - 4). Grade: No. 2
 - b. Posts and Timbers
 - 1). Grade: Dense Select structural
 - 2). Grade: Dense No. 1
 - 3). Grade: No. 1
 - 4). Grade: No. 2

2.2 DESCRIPTION

A. Regulatory Requirements

- 1. Mechanically Graded Lumber: Machine stress-rated lumber (MSR) or machine evaluated lumber (MEL) and grade stamped as conforming to the American Lumber Standard or SPIB and ASTM D6570.
- 2. Visually Graded Lumber: Lumber visually graded by trained graders for appearance and strength factors according to PS20 rules as enforced by regional organization.
 - a. WWPA G5: Western Wood Products Association.
 - b. WCLIB 17: West Coast Lumber Inspection Bureau. .
 - c. NELMA Grading Rules: Northeastern Lumber Manufacturers Association.
 - d. RIS Grade Use: Redwood Inspection Service (RIS) Of The California Redwood Association (CRA).
 - e. NHLA Rules: National Hardwood Lumber Association.

2.3 MATERIALS

A. Structural and Framing Lumber:

- 1. Douglas Fir Larch
- 2. Factory mark each piece of lumber with grade stamp of inspection agency indicating grade, species, moisture content at time of surfacing, and mill.
- 3. For exposed lumber, mark grade stamp on end or back of each piece, or omit grade stamp and provide certificates of grade compliance issued by inspection agency.

B. Studs

- 1. Exterior walls shall have minimum 2x6 studs.
- 2. Interior walls shall have minimum 2x4 studs.

C. Roof /Deck Sheathing

- 1. Plywood radiant barrier roof sheathing.

2.4 ACCESSORIES

- A. Fasteners: Of appropriate type, length and durability for wood product used to securely fasten to the substrate or other wood product for the intended life, exposure, and use of the unit.
- B. Multipurpose Construction Adhesive: Formulation complying with ASTM D3498 that is recommended for indicated use by adhesive manufacturer.

PART 3 -EXECUTION

3.1 FIELD CONDITIONS

- A. Do not install rough carpentry materials that are wet, moisture damaged, or mold damaged.
- B.
 - 1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, warping, or irregular shape.
 - 2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.
 - 3. Remove damaged materials and replace with Architect acceptable materials.
- B. Existing Conditions
 - 1. Locate concealed framing, blocking and reinforcements that support woodwork and document on shop drawings before work is enclosed.

3.2 PREPARATION

- 1. Layout installation by marking extents of each item, and anchoring / fastening locations coordinated with blocking or other structural support.
 - a. Marks shall be covered up and hidden by installation.
 - b. Locate areas out-of-level and correct.
- 2. Protect adjacent conditions as follows:
 - a. Protect adjacent substrates, installed work and existing items from damage by construction operations with temporary but effective means.
- 3. Product Preparation: Handle products in accordance with manufacturer's instructions and warranty requirement including, but not limited to:
 - a. Remove shipping / storage protection
 - b. Acclimatize product to installation location.
 - c. Strictly adhering to manufacturer's handling and installation safety requirements.

3.4 ERECTION / INSTALLATION

- A. Installation per the Construction Plans and the following:
 - 1. General:
 - a. Place rough carpentry to indicated levels and lines, with members plumb, aligned, cut, and fitted.
 - b. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit.
 - c. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.

- d. Install wood framing per ANSI / AF&PA NDS-2005, unless otherwise noted.
- e. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities.
- f. For perimeter blocking anchorage spacing requirements refer to FM Data Sheet 1-49.
- g. Fasten or anchor materials and units in a concealed manner with fasteners appropriate to use and anticipated durability. Attach rough carpentry work to substrate securely by anchoring and fastening as indicated, complying with ICC Table 2304.9.1, Fastening Schedule, and ICC-ES / ESR-1539, which may supersede the ICC National Evaluation Report NER-272.
 - 1). Do NOT use chromium-plated metal fasteners and anchors.
 - 2). Use only stainless steel or ASTM G185 galvanized fasteners with treated lumber.
 - 3). Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials.
 - 4). Make tight connections between members.
 - 5). Install fasteners without splitting wood; do not countersink nail heads, unless otherwise indicated.
 - 6). Place fasteners, when exposed, aligned in straight rows parallel with edges of members for exposed work, with fasteners evenly spaced, and with adjacent rows staggered.

3.5 FIELD QUALITY CONTROL

- A. Site Inspections: as follows:
 - 1. Inspect framing installation for plumbness of walls and floor flatness.
 - a. Maximum 1/4 inch in 10 feet of height, and 1/2 inch out of level over 30 feet.
- B. Non-Conforming Work per General Conditions and as follows:
 - 1. Remove, Repair and Reinstall or Restore in Place damaged items.
 - a. Finish touch-up damaged surface finishes.
 - b. Apply EPA registered treatment to water-damaged treated lumber.
 - 2. Replace damaged materials or items with New if repair not acceptable to CCWD Construction Manager.

3.5 PROTECTION

- A. Protect installed work from weather, vandalism and construction operations damage until Final Completion or Owner occupancy, whichever comes first.

END OF SECTION

SECTION 06160
Wood Sheathing

PART 1 -GENERAL

1.1 SUMMARY

It is the intent of these Contract documents and the responsibility of the Contractor to furnish, provide, perform, and install all wood sheathing (whether shown or not shown) needed for a complete project and building installation, at no additional cost to Owner.

- A. Work of this Section consists of composite wood panel sheathing and includes, but is not limited to, the following:
 - 1. Exterior wood panel sheathing
 - 2. Engineered wood panel products
 - 3. Structural panels
 - 4. Accessories including, but not limited to, metal connector plates, structural connectors, fasteners

- B. Related Documents and Sections: Examine Contract Documents for requirements that directly affect or are affected by Work of this Section. A list of those Documents and Sections include, but is not limited to the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and DIVISION 01 General Requirements, Specification Sections, apply to this Section.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's printed descriptions of materials, components, manufacturing standards followed, prefinishes, treatment systems, adhesives, glues, resins, mechanical fastening, performance criteria, usage limitations, and installation recommendations.

1.3 QUALITY ASSURANCE

- A. Regulatory Requirements
 - 1. Engineered Wood: APA trademark
 - 2. International Organization for Standards (ISO) 14001, 9001, and 9002 compliant.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Delivery, Storage and Handling per manufacturer's written recommendations, and DIVISION 01 requirements.

PART 2 - PRODUCTS

2.1 MANUFACTURERS / FABRICATORS

- A. Product Options
 - 1. Subflooring
 - 2. Underlayment

3. Wall Sheathing
 - a. Diaphragms
 - b. Shear Walls
4. Roof Sheathing
5. Plywood, face-veneers bonded to core of:
 - a. Plywood, 3, 5, 7 or more plies
 - b. Particleboard
 - c. MDF
 - d. HDF
 - e. Composite cross-bands with plywood inner core

B. APA Rated Products: APA Panel Handbook & Grade Glossary; APA Technical Papers

1. APA Rated Sheathing
 - a. Grade (Face-Back)
 - b. Exposure Durability Bond Classification (Form TT-009) Rating
 - c. Span rating
 - d. Thickness
 - e. Edge Joint /Treatment
 - f. Glue Resin
 - g. Plies: 3, 4, or 5
2. APA Rated Siding:
 - a. Surface Treatment
3. APA Rated Sturd-I-Floor
4. APA Rated Sturd-I-Wall
5. Fastener:
 - a. Screws: Flat head wood #8, #6, or #4
 - b. Nails
6. Accessories: Clips, flashing

2.2 DESCRIPTION

- A. Regulatory Requirements
1. CPA EPP Certified MDF, Particleboard and Hardboard; < 0.20 ppm formaldehyde emissions per ASTM E1333.
 2. No Added Urea-Formaldehyde (NAF) MDF, Particleboard and Hardboard.
 3. Ultra-Low Emitting (ULEF) MDF, Particleboard and Hardboard.

3.1 FIELD CONDITIONS

- A. Do not install composite wood panels materials that are wet, moisture damaged, or mold damaged.

3.2 EXAMINATION, PREPARATION AND INSTALLATION

- A. Examination, preparation and installation per manufacturer's current written instructions, industry standards, and DIVISION 01 requirements.
1. Proceed with installation only after unsatisfactory conditions have been corrected and installation area properly prepared.
 2. Layout installation by marking extents of each item, and anchoring / fastening locations coordinated with blocking or other structural support.

3. Install composite wood panel sheathing per ANSI / AF&PA NDS-2005, manufacturer's written instructions, and SECTION 061003
 - a. Place composite wood panels to indicated levels and lines, with surfaces plumb, aligned, cut, and fitted.
 - b. Fit composite wood panels to other construction; scribe and cope as needed for accurate fit, but allowing for movement forces.
 - c. Provide blocking and framing as indicated and as required to support facing, materials, fixtures, specialty items, and trim.
 - d. Fasten or anchor composite wood panel materials in a manner with fasteners appropriate to use and anticipated durability. Attach composite wood panel work to substrate securely by anchoring and fastening as indicated, complying with ICC Table 2304.9.1, Fastening Schedule, and ICC-ES / ESR-1539.

3.3 CLEANING, MAINTENANCE AND PROTECTION

- A. Provide Initial Maintenance per manufacturer's recommendations.

END OF SECTION

SECTION 06200
Finish Carpentry and Millwork

PART 1 -GENERAL

1.1 WORK OF THIS SECTION

- A. **It is the intent of these Contract documents and the responsibility of the Contractor to furnish, provide, perform, and install all finish carpentry and millwork (whether shown or not shown) needed for a complete project and building installation, at no additional cost to Owner.**
- B. The WORK of this Section includes providing finish carpentry, millwork and appurtenances.

1.2 RELATED SECTIONS

- A. The WORK of the following Sections applies to the WORK of this Section. Other Sections of the Specifications, not referenced below, shall also apply to the extent required for proper performance of this WORK.
 - 1. Section 06100 Rough Carpentry

1.3 CODES

- A. The WORK of this Section shall comply with the current editions of the following codes:
 - 1. Uniform Building Code
 - 2. State of California, Building Code, "Title 24" for seismic force requirements.

1.4 SPECIFICATIONS AND STANDARDS

- A. Except as otherwise indicated, the current editions of the following apply to the WORK of this Section:
 - 1. Fed. Spec. FF-B-561C Bolts, (Screw), Lag
 - 2. Fed. Spec. FF-B-588C(1) Bolts, Toggle and Expansion Sleeve, Screw
 - 3. Fed. Spec. FF-N-105B(3) Int.Amd. Nails,Brads,Staples,Spiles;Wire,Cut andWrought
 - 4. Fed. Spec. FF-S-111D Screw,Wood
 - 5. U.S. Commercial Std. CS-35 Pine Plywood
 - 6. U.S. Commercial Std. CS-157 Hardwood Plywood
 - 7. Product Std. PS 1 Softwood Plywood
 - 8. Product Std. PS 58 Hardboard
 - 9. ANSI/NWWDA I.S.-1 Wood Flush Doors
 - 10. WIC WIC Flush Door Standards
 - 11. WIC Manual of Millwork, Woodwork Institute of California
 - 12. UL-10 Standard for Fire Test Door and Assemblies

1.5 SHOP DRAWINGS AND SAMPLES

- A. The following shall be submitted:
 - 1. Manufacturer's product data including catalogue cuts of doors, door frames, and finish hardware.

2. Samples of finish hardware products to be utilized.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Storage: The Contractor shall provide a clean, dry, secure storage area.

PART 2 – PRODUCTS

2.1 GENERAL

- A. General: A WIC Certificate of Compliance Certification shall be issued prior to delivery. It shall certify that the products fully meet all the requirements of the WIC Grade indicated and these Specifications.
- B. Products: Products shall be new, of current manufacture, and shall be the products of reputable manufacturers specializing in the manufacture of such products.
- C. Manufacturer's Recommendations: Products (such as finish hardware) shall be recommended by the WIC and the manufacturer for the application indicated.

2.3 WOOD PRODUCTS

- A. Softwoods: Softwoods shall be vertical grain Douglas fir or white pine, meeting WIC Custom Grade, Premium Grade and Laboratory Grade requirements. Douglas fir shall conform to WCLIB Standard Grading and Dressing Rules No. 16.

2.6 FINISH HARDWARE

- A. Finish hardware shall be top quality hardware with US 26D finish unless otherwise indicated. Hardware shall be as listed in WIC "Manual of Millwork," Supplement No.1 to Sections 14 & 15

2.7 WOOD DOORS

- A. Wood doors and transom panels shall be flush solid core construction unless indicated otherwise.
 - 1. Wood doors shall be flush minimum 1-3/4-inch thick solid core doors as indicated on the Construction Plans.
 - 2. Solid core doors shall be 5-ply or 7-ply glued vertical block or strip-type lumber core construction and complying with fire-code rating requirements.
- B. Fire rated doors shall bear UL label for fire test-door and assemblies and shall comply with UL 10.
- C. Adhesives shall conform to CS 171; Type I (waterproof) for exterior doors; and Type II (waterresistant) core assembly and Type I face assembly for interior doors.

2.12 DOOR FRAMES AND HARDWOOD TRIM

- A. Door frames, chair rails, and hardwood trim shall be as shown on the Construction Plans.

3.3 INSTALLATION

- A. The WORK shall be shop-fabricated and assembled based on actual field dimensions and shall be delivered to the job site ready for installation.
- B. Wood grounds and blocking of the sizes and shapes necessary for casework and millwork shall be provided.
- C. WORK shall be neatly scribed to other construction and securely attached in place with concealed fastenings where possible or with finish nails.
- C. Exposed nail heads and screw heads shall be set or countersunk before putty is applied.
- E. Exposed surfaces shall be dressed and sanded to smooth, uniform finish, free of marks and other blemishes and ready for finish work.

3.4 FINISHING

- A. Finish any wood casework exposed trim or feature parts as specified or as necessary to match casework.

END OF SECTION

SECTION 15700
(Commercial) Building Insulation

PART 1 -GENERAL

1.1 SUMMARY:

It is the intent of these Contract documents and the responsibility of the Contractor to furnish, provide, perform, and install all building insulation (whether shown or not shown) needed for a complete project and building installation, at no additional cost to Owner.

A. This Section includes the following work:

1. **Installation of R-17 Reflective (Both Sides) Insulation and Vapor Barrier System on Metal Building Walls.**
2. **Installation of R-38 roof/ceiling blanket insulation and vapor barrier system and R-19 wall cavity fill batt insulation. (Internally wood framed areas).**

1.2 SUBMITTALS

- A. Product Data and Manufacturer's Installation Recommendations: For each product specified.
- B. Samples: For each type of insulation required.
- C. Product Certificates: Signed by manufacturer certifying that products furnished comply with requirements.
- D. Research and Evaluation Reports: Evidence of compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
- E. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency or per ASTM methodology for insulation products.
- F. Evidence of installer qualifications.
 1. Provide information concerning installer experience which is similar in scope and scale to requirements of the Project, including location of work and persons to be contracted as references.

1.3 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of building insulation through one source from a single manufacturer.
- B. Fire-Test-Response Characteristics: Provide insulation and related materials with the fire-test response characteristics indicated, as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.

1. Surface-Burning Characteristics: ASTM E 84.
2. Fire-Resistance Ratings: ASTM E 119.
3. Combustion Characteristics: ASTM E 136.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by the following:
1. Company Name: Owens Corning, Johns Manville (Batt Insulation)
 2. Company Name: Reflectix, Inc. (Reflective Insulation)
 3. Or approved equal

2.03 ATTACHMENT DEVICES AND RELATED ACCESSORIES

- A. Mechanical Fasteners: Type recommended by insulation manufacturer.
1. Impaling Pins and Clips: Corrosion-resistant spindle anchor and self-locking washer type consisting of perforated metal plates with spindle welded to center and self-locking washers.
- B. Fasteners and/or Adhesive for insulation on Metal Building is per recommendations of Metal Building Manufacture and Insulation Manufacture
- C. Adhesive for Adhesive Attachment of Insulation: Comply with type, application method, and fire-performance requirements of insulation manufacturer and authority having jurisdiction.
- D. Insulation on Metal Building walls to be attached as recommended by Metal Building Manufacture and Insulation.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine the areas and conditions where building insulation is to be installed and identify any conditions detrimental to the proper and timely completion of the work.
1. Do not proceed with the work until unsatisfactory conditions are corrected.

3.2 PREPARATION

- A. Clean substrates of substances harmful to insulation or vapor retarders, including removing projections capable of puncturing vapor retarders or of interfering with insulation attachment.
- B. Clean all surfaces on which adhesives are used to install insulation so they are free of dirt, grime, grease, oil or other substances which would be detrimental to proper bond of adhesive.

3.3 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions and recommendation applicable to products and application indicated.
- B. Coordinate and schedule work of this section with the work of other sections so as not to delay the Project.
- C. Install insulation in as large a component as practical and to cover entire areas, closely butted together at sides, ends, and against walls, and structural members.
- D. Extend insulation to the full thickness over the entire area to be insulated. Neatly cut and fit insulation tightly around obstructions, projections such as pipes, conduits, hangers and other elements, and fill voids with insulation. Remove debris in conflict with insulation installation.
- E. Do not install any insulation that becomes damaged during the course of installation or is no longer in a physical condition to function for the use intended and replace with new material.
- F. Exercise care to avoid damage and soiling of faces on insulation units which will remain exposed to view. Abut joints accurately with adjoining surfaces set flush.
- G. Install vapor-retarder faced units with vapor retarder to the side of construction indicated. Do not obstruct ventilation spaces. Seal all joints and ruptures in vapor retarders with joint tape to ensure vapor-tight installation prevent vapor migration.
- H. Where insulation is impaled on spindle-type insulation hangers, provide fasteners at openings for the particular application not less than 2 inches from corners or edges and not more than 12 inches on centers. Attach insulation in a manner to ensure stability and eliminate sagging.
- I. Apply a single layer of insulation to the required thickness, unless a double layer is required, to make up the total required thickness. Concealed layers of material must not have a vapor retarder facing.

3.6 INSTALLATION OF BATT AND BLANKET INSULATION

- A. Install insulation in accordance with ASTM C 1320 "Standard Practice for Installation of Mineral Fiber Batt and Blanket Thermal Insulation for Light Frame Construction."
- B. Install blankets in cavities formed by framing members as follows:
 - 1. Use blanket widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill cavity, provide lengths that will produce a snug fit between ends.
 - 2. Place blankets in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
 - 3. For wood or metal-framed wall cavities where cavity heights exceed 96 inches, provide mechanical support to unfaced and faced blankets.

4. Position the vapor retarder towards the "warm-in-winter" side, except as Indicated otherwise, and tape joints with 4 inch wide vapor retarder sealing tape applied over vapor retarder.

END OF SECTION

SECTION 08110
Steel Doors and Frames

PART 1 -GENERAL

1.1 SCOPE

It is the intent of these Contract documents and the responsibility of the Contractor to furnish, provide, perform, and install all the interior and exterior doors and frames of the building needed for a complete project and building installation at no additional cost to Owner.

1.2 SECTION INCLUDES

- A. Steel doors.
- B. Steel frames

1.3 REFERENCES

- A. ASTM A568 - Standard Specification for Steel Sheet, Carbon, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, General Requirements for.
- B. ASTM A591 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
- C. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- D. ASTM A924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
- E. ASTM A1008 - Standard Specification for Steel Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
- F. ASTM A1011 - Standard Specification for Steel Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
- G. ANSI/SDI A250.3 - Test Procedure and Acceptance Criteria for Factory Applied Finish Painted Steel Surfaces for Steel Doors and Frames.
- H. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames, Frame Anchors and Hardware Reinforcings.
- I. ANSI/SDI A250.6 Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames.
- J. ANSI/SDI A250.8 - SDI-100 Recommended Specifications for Standard Steel Doors and Frames; 1998.
- K. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel

Surfaces for Steel Doors and Frames.

- L. ANSI/SDI A250.11 - Recommended Erection Instructions for Steel Frames (Formerly SDI-105).
- M. DHI A115.1G - Installation Guide for Doors and Hardware.
- N. SDI 111 - Recommended Standard Details for Steel Doors & Frames.
- O. ANSI/NFPA 252 - Fire Tests of Door Assemblies.
- P. ANSI/UL 10B - Fire Tests of Door Assemblies.
- Q. ANSI/UL 10C - Positive Pressure Fire Tests of Door Assemblies.
- R. ANSI/UL 1784 - Air Leakage Tests of Door Assemblies
- S. UL - Building Materials Directory; Underwriters Laboratories Inc.
- T. WH - Certification Listings; Warnock Hersey International Inc.
- U. NFPA 80 - Fire Doors and Fire Windows.

1.4 SUBMITTALS

- A. Submit manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- B. Shop Drawings:
 - 1. Show all openings in the door schedule and/or the Drawings.
 - 2. Provide details of door design, door construction details and methods of assembling sections, hardware locations, anchorage and fastening methods, door frame types and details, anchor types and spacing, and finish requirements.
 - 3. Provide door, frame, and hardware schedule in accordance the Construction Plans and these specifications.
- C. Selection Samples: For each finish product specified, complete sets of color chips representing manufacturer's full range of available colors and finishes.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Provide all products from a single manufacturer who is a member of the Steel Door Institute.
- B. Doors and frames shall conform to the requirements of ANSI A250.8-1998 (SDI-100) and other specifications herein named.
- C. Fire Rated Doors and Frames: Ratings as indicated on Door Schedule, when tested in

accordance with NFPA 252, UL 10B or UL 10C.

1. Labeled by UL, WH, or other agency acceptable to the authorities having jurisdiction.

1.6 DOOR NOTES

- A. Exterior doors shall be equipped with panic hardware and a self-closure.
- B. All exit doors/exit access doorways shall be equipped with panic hardware.
- C. Storefront doors: Vistawall 500 wide stile doors, 1 inch tempered insulated glass, standard bronze handle, concealed closer, continuous hinge, von duprin panic hardware, align panic hardware with horizontal door mullion.
- D. Furnish and install "This Door to Remain Unlocked During Business Hours" sign above exterior doors.
- E. All door hardware shall be lever type meeting the requirements of Title 24.
- F. Door operating hardware and deadbolts shall be installed 30 inch to 44 inch above the finish floor.
- G. All doors shall be fully weather stripped.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers: Products shall be manufactured by a member of the Steel Door Institute, 30200 Detroit Road, Cleveland, Ohio 44145. ASD. Tel: (440) 899-0010, Fax: (440) 892-1404. Steel Door Institute Members are as follows:
 1. Amweld Building Products, LLC.
 2. Ceco Door Products.
 3. Curries Company.
 4. Deansteel Manufacturing Co.
 5. Door Components Inc.
 6. Mesker Door, Inc.
 7. MPI Manufacturing
 8. Pioneer Industries, Inc.
 9. Republic.
 10. Security Metal Products Corp.
 11. Steelcraft.
- B. Substitutions: Or equal.

2.2 MATERIALS

- A. Doors, frames, frame anchors, and hardware reinforcing for each of the levels and models specified shall be provided to meet the requirements of the performance levels specified. The material used in manufacturing these products and components shall comply with ANSI/SDI A250.8. Hardware reinforcing on doors and frames shall

comply with ANSI/SDI A250.6. The physical performance levels shall be in accordance with ANSI/SDI A250.4.

- B. All steels used to manufacture doors, frames, anchors, and accessories shall meet at least one or more of the following requirements:
 - 1. Cold rolled steel shall conform to ASTM A1008 and A568.
 - 2. Hot rolled, pickled and oiled steel shall comply with ASTM A1011 and A568.
 - 3. Hot dipped zinc coated steel shall be of the alloyed type and comply with ASTM A924 and A653.
 - 4. Steel Sheet, Electrolytic Zinc-Coated shall conform to ASTM A591.

2.3 FRAMES

- A. Provide Levels and Models in accordance with ANSI/SDI A250.8
- B. Interior frames: Frame configuration and depth as indicated. Minimum thickness as follows:
 - 1. Level 1 Standard duty: For use with:
 - a. Door Model 1 (full flush design): 0.042 inch (1.0 mm) minimum steel frame thickness.
- C. Exterior frames: Provide in accordance with ANSI/SDI A250.8 in the frame configuration and depth as indicated. Minimum thickness as follows:
 - 1. Level 1 Standard duty: For use with:
 - a. Door Model 1 (full flush design): 0.042 inch (1.0 mm) minimum steel frame thickness.
 - 2. **Frames must me compatible with Steel Building.**
- D. Provide face welded type frames.
- E. Minimum hardware reinforcing gages shall comply with Table 4 of ANSI/SDI A250.8.

2.4 FABRICATION

- A. Fabricate doors and frames in accordance with ANSI/SDI A250.8.
- B. Prime finish: Doors and frames shall be thoroughly cleaned, and chemically treated to insure maximum paint adhesion. All surfaces of the door and frame exposed to view shall receive a factory applied coat of rust inhibiting primer, either air-dried or baked-on. The finish shall meet the requirements for acceptance stated in ANSI/SDI A250.10 "Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames."
- C. Factory applied finish: Meet the performance requirements and acceptance criteria as stated in ANSI/SDI A250.3. Color shall be:
 - 1. As selected from the manufacturer's standard colors.
- D. The clearance measured from the bottom of the door to the bottom of the frame

(undercut) shall be a maximum of 3/4 inch (19.1 mm) unless otherwise specified. Fire door undercuts shall comply with ANSI/NFPA 80, "Fire Doors and Fire Windows."

3.2 INSTALLATION

- A. Install frames plumb, level, rigid, and in true alignment in accordance with ANSI A250.11 and DHI A115.1G.
- C. Install fire rated doors and frames in accordance with NFPA 80.
- C. All frames other than slip-on types shall be fastened to the adjacent structure so as to retain their position and stability. Drywall slip-on frames shall be installed in prepared wall openings in accordance with manufacturer's instructions.

3.3 ADJUST AND CLEAN

- A. Adjust doors for proper operation, free from binding or other defects.
- B. Clean and restore soiled surfaces. Remove scraps and debris and leave site in a clean condition.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 08520
Windows

PART 1 GENERAL

1.1 SCOPE

It is the intent of these Contract documents and the responsibility of the Contractor to furnish, provide, perform, and install all windows needed for a complete project and building installation, at no additional cost to Owner.

- A. Furnish and install vinyl architectural windows complete with hardware and related components as shown on drawings and specified in this section.
- B. Glass and Glazing
 - 1. All units shall be factory glazed and tempered.
- C. Single Source Requirement
 - 1. All products shall be by the same manufacturer.

1.02 Testing and Performance Requirements

- A. Test Units
 - 1. Air, water, and structural test unit shall conform to requirements set forth in AAMA/NWWDA 101/I.S.2 – 97.
- B. Test Procedures and Performances
 - 1. Windows shall conform to all AAMA/NWWDA 101/I.S.2 - 97 SH-HC50 performance grade requirements.

1.03 Quality Assurance

- A. Provide test reports from AAMA accredited laboratories certifying the performance
- B. Test reports shall be accompanied by a letter of product certification from the National Accreditation Management Institute stating that the tested window meets or exceeds the referenced criteria for the appropriate AAMA/NWWDA 101/I.S. 2 - 97 for specified window type.

1.04 Submittals

- A. Contractor shall submit shop drawings, finish samples, test reports, and warranties.
 - 1. Samples of materials as may be requested without cost to owner, i.e., metal, glass, fasteners, anchors, frame sections, mullion section, corner section, etc.

1.05 Warranties

- A. Total Window System

1. The responsible Contractor shall assume full responsibility and warrant for one year the satisfactory performance of the total window installation which includes that of the windows, hardware, glass (including insulated units), glazing, anchorage and setting system, sealing, flashing, etc., as it relates to air, water, and structural adequacy as called for in the specifications and approved shop drawings.
2. Any deficiencies due to such elements not meeting the specifications shall be corrected by the responsible Contractor at his expense during the warranty period.
3. Manufacturers standard warranty.

PART 2 PRODUCTS

2.01 Manufacturer/model:

- A. Milgard Styline.
- B. Aluminum Windows supplied through Metal Building Supplier
- C. Or Approved Equal

PART 3 EXECUTION

3.01 Inspection

- A. Job Conditions
 1. Verify that openings are dimensionally within allowable tolerances, plumb, level, clean, provide a solid anchoring surface and are in accordance with approved shop drawings.

3.02 Installation

- A. Use only skilled tradesmen with work done in accordance with approved shop drawings and specifications.
- B. Plumb and align window faces in a single plane for each wall plane and erect windows and materials square and true. Adequately anchor to maintain positions permanently when subjected to normal thermal movement, specified building movement, and specified wind loads.
- C. Adjust windows for proper operation after installation.
- D. Furnish and apply sealants to provide a weather tight installation at all joints and intersections and at opening perimeters. Wipe off excess material and leave all exposed surfaces and joints clean and smooth.

3.03 Adjusting and Cleaning

- A. After completion of window installation, windows shall be inspected, adjusted, put into working order and left clean, free of labels, dirt, etc. Protection from this point shall be the responsibility of the general Contractor.

END OF SECTION

SECTION 09250
Gypsum Board

PART 1 -GENERAL

1.1 SCOPE

It is the intent of these Contract documents and the responsibility of the Contractor to furnish, provide, perform, and install all gypsum board (whether shown or not shown) needed for a complete project and building installation, at no additional cost to Owner.

- A. Gypsum board and accessories.
- B. Interior metal framing systems and accessories.

1.2 RELATED SECTIONS

- A. Section 06100 - Rough Carpentry
- B. Section 07210 – (Commercial) Building Insulation.
- C. Section 09910 – Paints and Stains

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. ASTM C473 - Standard Test Methods for Physical Testing of Gypsum Panel Products.
 - 2. ASTM C475 - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
 - 3. ASTM C514 - Standard Specification for Nails for the Application of Gypsum Board.
 - 4. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members.
 - 6. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
 - 7. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board.
 - 8. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications.
 - 9. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs.
 - 10. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
 - 11. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
 - 12. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- B. Gypsum Association (GA):
 - 1. GA-214 - Recommended Levels of Gypsum Board Finish.
 - 2. GA-216 - Application and Finishing of Gypsum Panel Products.
 - 3. GA-253 - Application of Gypsum Sheathing.

4. GA-290 - Area Separation Walls
 5. GA-600 - Fire Resistance Design Manual.
- C. ITS (Dir) - Directory of Listed Products; Intertek Testing Services.
- D. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc.
- E. UL 263 - Standard for Fire Tests of Building Construction and Materials.

1.4 DESIGN REQUIREMENTS

- A. Metal Framing: Provide non-load bearing steel stud partitions with deflections conforming to L/360 at 15 psf (718 Pa) for veneer plaster walls and L/240 at 5 psf (239 Pa) typical for gypsum board walls.
- B. Fire-Resistive Rating: Where indicated on Drawings, provide materials and construction that are identical to those assemblies whose fire resistance rating has been determined per ASTM E119 by a testing and inspecting organization acceptable to authorities having jurisdiction.
1. Meet or exceed fire resistance requirements outlined under provisions of the GA-600 Fire Resistance Design Manual for wall and ceiling assemblies.
 2. Meet or exceed Class A flame/fuel/smoke requirements of ASTM E84 surface burning characteristics for finish materials.
- C. Sound Transmission Characteristics: For gypsum board assemblies with STC ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E90 and classified according to ASTM E413 by a qualified independent testing agency.
- D. Impact-Resistant Characteristics: No structural failure at 400 foot pounds per ASTM E195.
- D. Mold-Resistant Characteristics: Rating of 10 according to ASTM D3273 mold testing.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Manufacturer's data sheets on each product to be used, including:
1. Gypsum board, joint tape and finish.
 2. Preparation instructions and recommendations.
 3. Storage and handling requirements and recommendations.
 4. Installation methods.
- C. Shop Drawings:
1. Indicate details associated with fireproofing and acoustical seals, opening locations and details, and opening termination details.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

- E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.6 QUALITY ASSURANCE

- A. Fire-Resistance Labeling: Provide products labeled with third party certification stamp of fire-resistance characteristics, including ITC, UL, and ULC as applicable.
- B. Installer Qualifications: Perform work by company specializing in Work of this Section with minimum 3 years documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other damaging causes.
 - 1. Neatly stack gypsum boards flat to prevent sagging.
 - 2. Handle gypsum boards to prevent damage to edges, ends, and surfaces.
 - 3. Protect adhesives and joint compounds from freezing or overheating per manufacturer's instructions.
 - 4. Protect metal framing studs.
- B. Store and dispose of solvent-based materials and supplies used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.8 PROJECT CONDITIONS

- A. Establish and maintain environmental conditions for application and finishing gypsum board to comply with ASTM C840 and GA-216.
- B. Minimum Room Temperatures:
 - 1. For non-adhesive attachment of gypsum board to framing, maintain not less than 40 degrees F (4.5 degrees C).
 - 2. For adhesive attachment of gypsum board maintain not less than 50 degrees F (10degrees C) for 48 hours prior to application and continuously thereafter until drying is complete.
- C. Ventilate building spaces to remove moisture not required for drying joint treatment materials. Avoid drafts during dry, hot weather to prevent materials from drying too rapidly.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers: Georgia Pacific or Temple-Inland Forest Products Corp. - Gypsum Products
- B. Substitutions: Or equal

2.2 MATERIALS

- A. Gypsum Board Materials:
 - 1. Fire-Rated Regular Gypsum Board: Type X fire-rated regular gypsum board.
 - a. Thickness: 5/8 inch (16 mm).
 - 2. Fire-Rated Water-Resistant Gypsum Backing Board: Type X fire-rated water-resistant gypsum backing board.
 - a. Thickness: 5/8 inch (16 mm).
 - 3. Glass-Mat Type X fire-rated Gypsum Coreboard: Gypsum Liner Panels
 - a. Thickness: 1 inch (25 mm).
 - 4. Georgia Pacific Densglass Fireguard (Type X)
 - a. Thickness: 5/8 inch (16 mm)

2.3 ACCESSORIES

- A. Metal Corner Beads: ASTM C1047; formed galvanized steel angle, minimum base steel 0.014 inch thick, sizes as required to suit substrate.
- B. Metal Casing Beads: ASTM C1047; formed galvanized steel trim, minimum base steel 0.014 inch thick, sizes as required to suit substrate.
- C. Metal Control Joints: ASTM C1047; roll-formed zinc control joints with perforations in flanges; center channel with removable tape strip over channel.
- D. Fastening Devices for Metal Framing: ASTM C1002.
- E. Fastening Devices for Wood Framing: ASTM C514.
- F. Steel Drill Screws: ASTM C 954.
- G. Joint Compound and Tape: ASTM C 475.
- H. Vapor Retarder: 6 mil polyethylene.

2.4 SPRAY TEXTURE FINISH

- A. Spray Texture Finish: Non-aggregated, non-asbestos powder producing light to medium-light textures on drywall or other interior surfaces.

PART 3 EXECUTION

- A. Gypsum board - General:
 - 1. Gypsum Board Application and Finishing Standards: Install and finish gypsum board to comply with ASTM C 840 and GA-216.
 - 2. Install sound attenuation insulation, specified in Section 07210, where indicated on Drawings, prior to gypsum board installation unless readily installed after board has been installed.
 - 3. Locate exposed end-butt joints as far from center of walls and ceilings as possible, and stagger not less than 24 inches (610 mm) in alternate courses of board.
 - 4. Install ceiling boards across framing in the manner which minimizes the number of

End-butt joints, and which will avoid end joints in the central area of each ceiling. Stagger end joints a minimum of 24 inches (610 mm).

5. Install wall and partition boards vertically unless otherwise noted.
6. Install exposed gypsum board with face side out. Do not install imperfect, damaged, or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16 inch (1.5 mm) open space between boards. Do not force into place.
7. Attach gypsum board to steel studs so that leading edge or end of each board is attached to open (unsupported) edge of stud flange first.
8. Attach gypsum board to supplementary framing and blocking provided for additional support at openings and cut-outs.
9. Space fasteners in gypsum boards per referenced gypsum board application and finishing standard and manufacturer's recommendations.

- B. Spray-Texture Finish: Apply spray texture finish on walls and ceiling surfaces per manufacturer's instructions.

3.4 JOINT TREATMENT

- A. General:
1. Inspect areas to be joint treated, verifying that the gypsum board fits snugly against supporting framework.
 2. In areas where joint treatment and compound finishing will be performed, maintain a temperature of not less than 55 degrees F (13 degrees C) for 24 hours prior to commencing the treatment, and until joint and finishing compounds have dried.
 3. Apply the joint treatment and finishing compound by machine or hand tool.
 4. Provide a minimum drying time of 24 hours between coats, with additional drying time in poorly ventilated areas.

3.5 TOLERANCES

- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch (1.5mm) in 10 feet (3048 mm) in any direction.

3.7 PROTECTION

- A. Provide final protection and maintain conditions that ensure gypsum board construction being without damage or deterioration at time of Substantial Completion.

3.8 CLEANING

- A. In addition to other requirements for cleaning, use necessary care to prevent scattering gypsum board scraps and dust, and to prevent tracking gypsum and joint finishing compound onto floor surfaces.
- B. At completion of each segment of installation in a room or space, promptly pick up and remove scraps, debris, and surplus materials of this Section from working area.

END OF SECTION

SECTION 09650
Bathroom Accessories

PART 1 -GENERAL

1.1 SCOPE

It is the intent of these Contract documents and the responsibility of the Contractor to furnish, provide, perform, and install all bathroom partitions and accessories (whether shown or not shown) needed for a complete project and building installation, at no additional cost to Owner.

Partitions are not required for single accommodation rest room.

- A. Plastic Laminate toilet partitions, hardware and structural accessories.
- B. Bathroom accessories

1.2 SUBMITTALS

- A. Shop drawings: Layout of toilet compartments.
- B. Product data: Manufacturer's catalog cuts of typical panel, pilaster, door, hardware, fastenings and accessories.
- C. Color chips: Sample of specified laminate on actual chip for color verification.

1.3 QUALITY ASSURANCE

- A. Components of toilet partitions shall be sourced from one single-source manufacturer who certifies that materials meet or exceed specifications.
- B. Installation: Installer shall have a history of completed jobs of similar size and scope, and shall be qualified.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Pre-finished materials shall be delivered to the job site in original, unopened cartons or other packaging materials necessary to protect finishes. Materials shall be stored in manufacturer's packaging until installation.

PART 2 - MATERIALS

2.1 MANUFACTURER

- A. Provide partition products and accessories as manufactured by The Mills Company, subsidiary of BradleyCorp., Menomonee Falls, WI. Or approved equal.

2.2 EQUIPMENT

- A. Floor-Braced Series 500 toilet partition system and accessories per the Construction Plans.

- B. Laminate: Wilsonart Laminate 4837-38 Terra Roca
- C. Metal trim: Brushed steel

2.3 COMPONENTS

- A. Panels: 1" thick panels shall be constructed of 0.048 high-pressure decorative plastic laminate meeting or exceeding NEMA standards bonded under pressure with a non-toxic adhesive to a solid 45 lb. density industrial grade particle board core.
- B. Doors: 1" thick doors shall be constructed of 0.048 high pressure decorative plastic laminate meeting or exceeding NEMA standards bonded under pressure with a non-toxic adhesive to a solid 45 lb. density industrial grade particle board core.
- C. Pilasters: 1¼" thick pilasters shall be the same construction as panels and doors. The floor edge of the pilaster shall be provided with a mechanically fastened 3⁄8" steel leveling bar. Pilasters shall be attached to the floor using a lead anchor and 3⁄8" threaded rod, hex nuts and washers to provide vertical and horizontal adjustment.
- D. 4" high, 4-piece shoes of 300 Series stainless steel shall be secured by Phillips-head fasteners.
- E. Hardware: Mills heavy-duty chromed Zamac hardware and fasteners necessary to complete an installation shall be provided.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Before installation, the installer shall inspect the site to ensure that no defects or conditions exist which would result in an unsatisfactory installation of the partitions. Measurements should also be taken at this time to further ensure correct installation.

3.2 INSTALLATION

- A. Install partitions, screens, dressing compartments and enclosures in accordance with shop drawings and manufacturer's current installation instructions. Leave partitions complete, clean and free from defects in workmanship.
- B. Doors and hardware shall be thoroughly adjusted and left in proper working condition. Set doors in open or closed position as required.
- C. Outswing doors of more than 105° must have a wall or panel to stop door travel.

3.3 CLEANING

- A. All rubbish and cartons generated by installer shall be removed and area left broom clean.

END OF SECTION

SECTION 09910 Paints and Stains

PART 1 -GENERAL

1.1 SCOPE

It is the intent of these Contract documents and the responsibility of the Contractor to furnish, provide, perform, and install all paints and stains (whether shown or not shown) needed for a complete project and building installation, at no additional cost to Owner. All surfaces, interior and exterior, not receiving a covering (like tile or carpeting) shall be coated.

- A. Surface preparation and field painting of exposed interior items and surfaces.
- B. Surface preparation and field painting of exposed exterior items and surfaces.

1.2 RELATED SECTIONS

- A. Section 06200 - Finish Carpentry and Millwork.

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM) D 16 - Standard Terminology For Paint, Related Coatings, Materials, and Applications.
- B. Steel Structures Painting Council (SSPC) SP6 - Commercial Blast Cleaning Procedures.
- C. Steel Structures Painting Council (SSPC) SP10 - Near White Blast Cleaning Procedure.

1.5 SUBMITTALS

- A. Manufacturer's data sheets on each product to be used.
 - 1. Material List: An inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
 - 2. Preparation instructions and recommendations.
- B. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.
- B. Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats.

- C. Paint exposed surfaces. If an item or a surface is not specifically mentioned, paint the item or surface the same as similar adjacent materials or surfaces. If a color of finish is not indicated, CCWD Construction Manager will select from standard colors and finishes available.
- D. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers: Kelly-Moore and Sherwin Williams Paints.

2.2 PAINT AND STAIN MATERIALS – GENERAL

- A. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- B. VOC Classification: Provide materials, including primers, undercoats, and finish-coat materials, that meet local air quality management district regulations.

2.4 PAINT AND STAIN SCHEDULE

A. ALL ROOMS:

Walls: Kelly Moore 171 Sand pebble, Eggshell finish.

Hard Ceilings: Kelly Moore 20 Western Acoustic, Flat finish.

Steel window and door casings: Kelly Moore AC252-5, Rocky Mountain, Satin finish.

3.2 PREPARATION

- A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted or stained. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting and staining operations in each space or area, reinstall items removed using workers skilled in the trades involved.
- B. Cleaning: Before applying paint or other stain, clean substrates of substances that could impair bond of the various coatings. Remove oil and grease before cleaning.
 - 1. Schedule cleaning and painting/staining so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
- C. Surface Preparation: Clean and prepare surfaces to be painted/stained according to manufacturer's written instructions for each particular substrate condition and as specified.

3.3 APPLICATION

- A. General: Apply paint/stain according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.
- B. Provide a minimum 5 mil prime coat or thicker in accordance with manufacturer's recommendations.**
- C. Provide a minimum of two finish coats of 7 mil per coat or thicker in accordance with manufacturer's recommendations.**
- D. General: Apply coatings according to manufacturer's written instructions.
 - 1. Use applicators and techniques best suited for the material being applied.
 - 2. Do not apply coatings over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to forming a durable coating film.

3.5 PROTECTION

- A. Protect work of other trades, whether being painted/stained or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by CCWD Construction Manager.
- B. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work.
- C. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces.

END OF SECTION

SECTION 13125
Metal Building System

PART 1 -GENERAL

1.1 DISCRIPTION

It is the intent of these Contract documents and the responsibility of the Contractor to Design, furnish, provide, perform, and install all pre-engineered metal building and appurtenances (whether shown or not shown) needed for a complete project and building installation, at no additional cost to Owner.

- A. The work of this section includes the design, fabrication, assembly, and erection of pre-engineered metal buildings consisting of Operations Building and Warehouse, including complete appurtenant items, all in accordance with the requirements of the Contract Documents.
- B. The building manufacturer shall coordinate with the contractor to provide the items included in the manufacturer's scope of work.
- C. The work hereunder shall include but not be limited to the completion of the following items of work:
 - 1. Building structural framing, roofing, siding, gutters and downspouts.
 - 2. Insulation, interior lining and weather-stripping.
 - 3. Equipment's, devices, casework and panels on walls, ceilings, and roofs indicated on the Construction Plans and Specifications.
 - 4. Contractor shall provide and install all doors, door hardware, louvers, glazing, skylights and other miscellaneous items indicated on the Construction Plans and Specifications.

1.2 RELATED WORK IN OTHER SECTIONS

- A. Section 03100: Concrete

1.3 BUILDING DESCRIPTION

- A. Building Size: The building size will be as shown on the Construction Plans.
- B. Primary Structural: Frames will consist of welded up plate section columns and roof beams, complete with necessary splice plates for bolted field assembly. Connections of all major structural members will be made with high-tensile bolts through pre-punched or predrilled holes for exact alignment.
- C. Foundation Design: The foundation indicated on the Construction Plans are approximate only. The metal building supplier shall prepare the final foundation design based on the actual foundation loads imparted by the building on the foundation based on the various loading scenarios.

1.4 DESIGN REQUIREMENTS

- A. The building shall be designed by the Manufacturer as a complete system. Members and connections not indicated on the drawings shall be the responsibility of the Manufacturer

and/or Contractor. All components of the system shall be supplied or specified by the same manufacturer.

- B. Governing Design Code: Structural design for the metal building system shall be performed by the manufacturer of the metal building system in accordance with the building code.
- C. Design Basis
 - a. Use standards, specifications, recommendations, findings, and interpretations of professionally recognized groups as basis for establishing design, drafting, fabrication, and quality criteria, practices, and tolerances, including the AISC Code of Standard Practice for Steel Buildings and Bridges.
 - b. Design structures in accordance with MBMA Metal Building Systems Manual including fabrication and erection tolerances.
 - c. Design structural mill sections and welded plate sections in accordance with AISC 360, ASD Method.
 - d. Design the lateral force resisting systems and related components for seismic loads in accordance with AISC 341.
 - e. Design cold-formed steel structural members and panels in accordance with AISI S-100.
 - f. Design all bolted joints in accordance with RCSC Specification
 - g. Design roof assembly tested in accordance with UL 580 Class 90.

1.5 Quality Assurance

- A. AISC Certification: Building System Manufacturer shall be American Institute of Steel Construction - Category MB certified.
- B. Letter of Certification: Certification: Submit structural calculations and a written certification prepared and signed by a Professional Engineer, registered to practice in California, verifying that the building system design and metal roof system design (including panels, clips, and support system components) meet indicated loading requirements and codes of authorities having jurisdiction. The certification must reference specific dead loads, live loads, snow loads, wind loads/speeds, tributary area load reductions (if applicable), concentrated loads, collateral loads, seismic loads, end use categories, governing code bodies including year, and load applications.
- C. Material Testing: In addition to mill certifications of structural steel, the manufacturer shall provide, upon request, evidence of compliance with specifications through testing independent of the manufacturer's suppliers. This quality assurance testing to include structural bolts, nuts, screw fasteners, mastics, and metal coatings (primers, metallic coated products, and painted coil products).
- D. Manufacturer and Fabricator Qualifications: Primary products furnished by single accredited manufacture/fabricator with minimum 5 years' experience.

E. Erector Qualifications:

- a. Single installer with minimum 5 years of experience in installing products of same or similar type and scope.
- b. Installer must be certified by the metal building manufacturer.
- c. Welder Qualifications: AWS D1.1/D1.1M and/or AWS D1.3/D1.3M

F. Design Loads

1. Governing Design Code: Structural design for the building structural system will be provided by the building manufacturer for the following design criteria:
 - a. Governing Building Code: California Building Code.
 - b. Year/Version: Current
2. Roof Live Load (LL): Roof live loads are loads produce during the life of the structure by moveable objects. Wind, snow, seismic or dead loads are not live loads. Roof live loads are applied based on the Tributary Area as follows:
 - a. Snow LL: 16-psf (non-reduceable)
 - b. Uniform LL: 20-psf
 - c. Concentrated LL: 300-lbs
3. Wind Load:
 - a. Wind load in miles per hour only.
 - b. Wind speed is 110 miles per hour (3 second gust).
 - c. Wind exposure factor is Exposure C.
 - d. Wind importance factor is 1.15.
 - e. Wind Pressure Coefficients and the design pressures shall be applied per governing code.
4. Seismic Load:
 - a. Seismic Design Category C.
 - b. Seismic importance factor is 1.25.
 - c. Site Class D.
 - d. Seismic load applied per governing code.
5. Snow Load: 16 PSF.
6. Crane Load: Not applicable.
7. Dead Load: Structural engineer shall calculate the total dead loads based on actual weight of materials of construction incorporated into building, including but not limited to walls, floors, roofs, ceilings, stairways, partitions, finishes, cladding and other similarly incorporated architectural and structural items, and weight of fixed service equipment, such as plumbing stacks and risers, electrical feeders, HVAC, and fire sprinkler systems.
8. Load Combinations: Load combinations used to design primary and secondary structural members and the structural foundation shall be in accordance with the governing code.

1.6 WARRANTY

- A. Provide manufacturer's written weather-tightness warranty for a maximum of five (5) years against leaks in roof panels arising out of or caused by ordinary wear and tear under normal weather and atmospheric conditions. Warranty shall be signed by both the metal roofing system metal roofing system Design/Builder.
- B. Provide manufacturer's standard written warranty for five (5) years against perforation of metal roof panels due to corrosion under normal weather and atmospheric conditions. Warranty shall be signed by metal roofing system manufacturer.
- C. Provide manufacturer's standard paint film written warranty for five (5) years against cracking, peeling, chalking, and fading of the coating on painted wall panels, painted roof panels and soffit panels. Warranty shall be signed by building system or roof system manufacturer. Manufacturer warrants that coating shall not blister, peel crack, chip, or experience material rust through for 5 years. For a period of 5 years chalking shall not exceed #8 - ASTM and fading shall be 5"E Color Difference Units or less.

PART 2 – PRODUCTS

2.1 MANUFACTURES

- A. Acceptable manufactures include:
 - a. Star Building Systems
 - b. Metallic Building Co.
 - c. CESCO Building Systems.
 - d. Varco Pruden
 - e. Nucor Buildings
 - f. Or approved Equal

2.2 MATERIALS

- A. Primary Framing Steel
 - a. Hot-rolled shapes: ASTM A 36 or ASTM A 992 or ASTM A572, minimum yield of 36 ksi (248 MPa) or 50 ksi (345 MPa).
 - b. Built-up sections:
 - i. Webs:
 - 1. ASTM A 1011 or ASTM A1018, SS or HSLAS Class 1, Grade 55 (380) for webs 3/16 inch (4.76 mm) thick and thinner.
 - 2. ASTM A 572 Grade 50 (340) or 55 (380) for webs thicker than 3/16 inch (4.76 mm).
 - ii. Flanges: ASTM A 529 Grade 55 (380) or ASTM A 572 Grade 50 (340).
 - c. Round tube: ASTM A 500, Grade B or C with minimum yield strength of 42 ksi (290 MPa).

- d. Square and rectangular tube: ASTM A 500, Grade B or C, minimum yield strength of 42 ksi (290 MPa).
 - e. Cold-formed C sections: ASTM A 1011, Grade 55 (380), or ASTM A 653, Grade 55 (380).
 - f. X-bracing: ASTM A 529 or A 572 for rod bracing 36 ksi (248 MPa) or 50 ksi (345 MPa), ASTM A 36 for angle bracing.
- B. Secondary Framing Steel
- a. Purlins, girts, and eave struts: ASTM A 1011 Grade 55 (380), or ASTM A 653, Grade 55 (380).
 - b. Finish: Red Oxide Shop Coat.
- C. Bolts
- a. Rigid Frame Connections: Provide High Strength Bolts, Nuts and Washers:
 - b. Bolts: ASTM A 325 or ASTM A 490 Heavy Hex Structural Type I as required by manufacturer's design.
 - c. Washers: ASTM F 436 Type 1 Hardened Steel
 - d. Nuts: ASTM A 563 Grade C Heavy Hex.
 - e. Coating: Hot-Dipped Galvanized.
- D. Single Skin Panels:
- a. Standing Seam Roof Panels:
 - i. Painted: ASTM A 792 AZ 50 SS Grade 50 Class 4
 - b. Through-Fastened Roof and Wall Panels:
 - i. Painted: ASTM A792 AZ 50 SS Grade 80 Class 1
- E. Thickness:
- a. 26 gauge: 0.0172 inch (0.437 mm) minimum uncoated thickness.
- F. Finish
- a. Exterior Paint
 - i. Fluoropolymer Two-Coat System (PVDF): 0.2 - 0.3 mil primer with 0.7 - 0.8 mil 70 percent PVDF fluoropolymer color coat.
 - b. Interior Paint
 - i. 0.5 mil total dry film thickness consisting of primer coat and wash coat of manufactures standard finish.
- G. Insulation

- a. Insulation in ceiling and walls is to have minimum R rating of R11 and meet all requirements of local building department.
- b. Insulated metal wall panels to be fire resistant as required.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Clean surfaces prior to installation.
- B. Prepare surfaces using methods recommended by manufacturer.

3.2 INSTALLATION

- A. Install system in accordance with manufacturer's instructions and approved shop drawings.
- B. Fit members square against abutting components
- C. Position members plumb, square, and level.
- D. Temporary brace members plumb, square, and level
- E. Do not splice load bearing members.
- F. Align and adjust various members forming parts of a complete frame or structure after assembly but before fastening
- G. Welding to conform to AWS D1.1
- H. Fasten panels to supports
- I. Install trim to maintain visual continuity of system
- J. Install joint sealant and gaskets to prevent water penetration
- K. Flash penetrations through roofing with metal trim to match panels

3.3 PROTECTION

- A. Protect installed products until completion of project

3.4 ADJUSTMENT

- A. Touch up, repair or replace damaged products before completion.

END OF SECTION

**SECTION 15400
PLUMBING**

PART 1 -GENERAL

1.1 SUMMARY:

It is the intent of these Contract documents and the responsibility of the Contractor to furnish, provide, perform, install, and test all plumbing (whether shown or not shown) needed for a complete project and building installation, at no additional cost to Owner.

Provide and install plumbing, piping and fixtures per plumbing drawings to include gas, water and sanitary sewer systems. The systems to be installed consist essentially of the following:

- A. Sanitary sewer and vent piping.
- B. Floor drain piping.
- C. Pipe and equipment insulation.
- D. Hot and cold water piping.
- E. Gas piping.
- F. Plumbing fixtures and trim and connection.
- G. Hose bibbs
- H. Vent flashing.
- I. Toilets and Sinks
- J. Instantaneous Hot Water Heater
- K. Drinking Fountain

1.2 GENERAL REQUIREMENTS:

This Section shall be performed in accordance with the General Conditions, Supplementary Conditions and all Sections in Division 1 of these Specifications. These documents must be read with the other Contract Documents and Sections as a whole to complete the intent of the contract.

1.3 SUBMITTALS:

Make submittals to the CCWD Construction Manager.

1.4 RULES, REGULATIONS AND CODES:

All work and materials shall be in full accordance with the latest codes, rules and regulations of the following:

- A. National Board of Fire Underwriters

- B. State Fire Marshal
- C. State Codes and Ordinances
- D. State Health Department
- E. State Industrial Accident Commission Safety Orders
- F. Rules of Local Utility
- G. Local City and/or County Ordinances
- H. California Building and Mechanical Code
- I. California Plumbing Code (Western Plumbing Officials)
- J. California Electric Code

Rulings and interpretations of the enforcing agency shall be considered part of the Regulations. Nothing in these Specifications is to be construed to permit work not conforming to the above, and expense in compliance with the above shall be borne by the Contractor.

Whenever the Specifications and Drawings require higher standards or larger sizes than those required by the Ordinances and Statutes, the Specifications and Drawings shall take priority over the specific Ordinances and Statutes.

1.5 DRAWINGS:

The Drawings form a part of this Specification and Contract, and any work or material shown on the Drawings and not mentioned in the Specifications, or vice versa, shall be executed the same as if specifically mentioned in both.

- A. The work shall be installed as indicated on the Drawings; however, in certain instances arrangements are schematic, indicating only general arrangement. Should it be necessary to deviate from the arrangement in order to meet structural conditions, such additions shall be made without expense to the Owner.

1.6 EXCAVATING AND BACKFILLING:

- A. This Contractor shall do all excavating required for the installation of all piping and service lines, and other work that applies to the work of his Contract indicated on the Drawings.
- B. Excavations shall be of open vertical construction of sufficient width to provide free working space at both sides of the trench and around the pipe as required for caulking, joining, backfill and compacting. Where invert elevations are not shown, trenches shall be dug to sufficient depth to give a minimum of two feet zero inches (2'-0") of fill above top of exterior piping, measured from the adjoining finished grade, except that asbestos cement pipe shall have two-feet six inches (2'-6") minimum cover

- C. Trenches shall be dug straight and true to line and grade with holes for bells for all bell and spigot pipe. Piping shall be evenly supported for its entire length upon outside periphery of lower 1/3 pipe. Bed all piping in sand. Where rock is encountered undercut trenches 3" and fill with well-tamped sand to correct pipe elevation.
- D. D. After pipe lines in excavation have been installed and tested, the excavation shall be backfilled to a point twelve inches (12") above the pipe using sand. Backfill shall proceed evenly on both sides of the pipe and shall be continuously tamped. Except as hereinafter noted, backfill above twelve inches (12") above the top of the pipe shall be made using earth from excavation placed in layers of 8" minimum depth. Compaction of each successive layer may be made by tamping only. No flooding or saturating will be permitted.
- E. Backfill shall be compacted to the original density of the soil before excavation.

1.7 TEST OF PIPING:

- A. All piping shall be tested at completion of roughing in, in accordance with the following schedule and show no loss in pressure or any visible leaks after a minimum duration of four hours at the test pressures indicated.
 1. All soil waste drain and vent piping withing building, fill to top of highest vent and allow to stand for 2 hours or longer as directed by inspector. Test with Water
 2. All cold water, test pressure is 100psi for 15 mins without leaks. Test with Water
 3. Air piping, test pressure is 150 psig for 30 mins w/ no perceptible drop in pressure. Test with Air.
 4. Testing equipment, materials and labor shall be furnished by Contractor.

1.8 PIPING INSTALLATION:

- A. General:
 1. No piping shall be permanently covered by construction before inspection and approval.
 2. Install water generally level, free of traps and unnecessary bends to conform to building requirements, and provide space for other work.
 3. Install piping promptly, capping and plugging open ends.
 4. All outside water piping shall be placed at 24" minimum depth.
 5. All outside natural gas piping shall be buried 24" minimum.

2.1 PIPING MATERIALS:

- A. All piping materials shall conform to types and sizes as specified herein.

- B. Sanitary sewer piping shall be service weight cast iron No-Hub with stainless steel band couplings. Fixture branches and vents 2-1/2" and smaller from 6" above grade may be Schedule 40 galvanized steel. Fittings shall be cast iron service weight.
- C. All hot and cold water lines shall be copper tube (Type M interior and Types L exterior and buried) with copper or lead free bronze fittings. All pipe, fittings, solder and other materials shall be NSF-61 certified and meet requirements of California Plumbing Code.
- D. Natural gas and fuel oil piping shall be seamless or lap welded black steel, 125 psig working pressure. Fittings shall be 125 psig to suit piping material. Thread paste shall be insoluble in water. All gas valves shall be rated for natural gas fuel. Steel pipe buried below grade shall have an applied high density polyethylene wrap, X-Tru-Coat, or equal, applied and installed all per the manufacturer's instructions. Paint all exposed black iron piping.
 - 1. Gas piping shall be graded toward the regulator wherever possible. Piping trapped by change of grade shall be supplied with a drip line at the low point brought out to an accessible location. Provide dirt pockets at bottoms of vertical pipe risers, consisting of tee fittings plugged with capped nipples. High pressure pipe shall be welded (see Steel Pipe Connections). All exposed black steel pipe shall be painted.
- E. Downspouts: All downspouts which are included in this work shall be Schedule 40 galvanized steel pipe with black cast iron drainage fittings, except piping below grade or slab to 5'-0" outside building shall be cast iron pipe and fittings as hereinbefore noted for waste piping.
 - 1. All pipe downspouts shall be furnished and installed in the PLUMBING work. All pipe downspouts shall be complete with all necessary offsets and fittings as required and approved. Connect to roof drains as required. No fittings shall be exposed to view.
- F. Cleanouts:
 - 1. Cleanouts of the same diameter of pipe shall be installed in all horizontal soil and waste lines where indicated and all points of change in direction. Cleanouts shall be located not less than 18" from building construction so as to provide sufficient space for rodding. No horizontal run below floor over 50' shall be without a cleanout, whether shown on the Drawings or not, but no cleanouts shall occur in the carpeted areas or public areas. Cleanouts shall be Zurn, Smith, Josam, or Wade, equal to Smith numbers specified.
 - 2. Cleanouts in cast iron soil or waste lines shall be Zurn 1440 cast iron ferrule bronze plug cleanouts. Cleanouts in galvanized iron waste or vent lines shall be brass screw square head cleanout plugs.
 - 3. Cleanouts located in interior walls shall be Zurn 1441 with chrome wall plates and at exterior shall be Zurn 1441 with bronze plug with vandal proof screws.
 - 4. All cleanouts on exterior of building shall be Zurn 1440 iron ferrule bronze plug cleanouts, installed as shown on the Drawings. Where exterior cleanouts occur in concrete walks use Zurn Z-1440 cleanout cover.
 - 6. Cleanouts in finished floor shall be fitted with Zurn Z-1400 nickel bronze frame and cover.

2.2. EQUIPMENT

- A. Back Syphonage Protection:
 1. Plumbing fixtures shall have their water supplies protected against possible back Syphonage in the event that the normal water pressure in the building piping system or parts thereof is succeeded by a vacuum.
 2. Outlets of all supply faucets shall clear overflow rims of lavatories and sinks by at least one-half inch (1/2"). Water closet and urinal flush valve shall have approved vacuum breakers.
- C. Drinking Fountain
Haws Model 1119
- D. Water Heaters:
Gas instantaneous water heater
- F. Plumbing fixtures:
 1. Fixtures shall be Kohler or equal, submit catalog cuts for approval.
 2. Water closets and urinals to operate at 15 psi pressure.

EXECUTION

3.1 GENERAL REQUIREMENTS FOR PLUMBING FIXTURES:

- A. All fixtures shall be first class in every respect. All finished plumbing shall be accurately lined up and where batteries of fixtures occur, special care shall be taken with the roughing in and finished plumbing.
- B. The numbers and approximate position of plumbing fixtures are shown on the drawings. Mounting heights should be based on local code and plumbing code requirements for fixtures being installed.
- C. Concealed stops shall be Brass Craft R 1520DLS/R1520AS or equal.
- D. Except where otherwise specified, all finished for exposed metal trim on any fixture shall be polished chromium plated. Porcelain caps secured with putty shall be provided and installed for all exposed bolt heads. Handles on all faucets and stops shall be all metal chromium plated.
- E. All fixtures shall be properly and securely installed and supported as required and approved. Fixtures secured to wooden partitions shall be securely bolted to wood backing, minimum size 2" x 3", or as directed by the Owner's Representative.
- F. Unions on waste pipes on fixtures side of traps may be slip or flange joints with soft rubber or lead gaskets.
- G. All condensate below roof line shall be provided with insulation.
- H. All water piping shall be copper and insulated with ¾" fiberglass jacket type insulation.
- I. Slope all sanitary sewer lines within building at ¼ inch per foot.

3.2 ADJUSTMENT OF SYSTEMS:

All flush valves shall be tested and adjusted so that each fixture receives the proper amount of water. All faucets, bibs, drinking fountains, etc., shall be properly regulated to the approval of the Owner's Representative so that the entire system is in first class condition.

3.3 WATER SYSTEM STERILIZATION:

- A. Close all open ends of water piping system for each day to prevent contamination by foreign matter entering pipe during construction. Piping shall be thoroughly flushed out to remove any dirt or foreign matter.
- B. After flushing, entire water system from new points of connection shall be sterilized before being turned over to Owner for use. Slowly fill system with water and add chlorine chemical agent to produce a minimum of 50 ppm of chlorine in entering water. Treated water shall be retained in pipe overnight. Chlorine residual at pipe extremities shall be as least 5 ppm at end of this time. Should chlorine residual be less than this amount, pipe shall be re-chlorinated.
- C. After chlorination, lines shall be flushed of chlorinated water and refilled from domestic supply. Flushing shall continue until residual chlorine is not greater than 0.2 ppm at all extremities.

END OF SECTION

**SECTION 15700
HVAC**

PART 1 -GENERAL

1.1 SUMMARY:

It is the intent of these Contract documents and the responsibility of the Contractor to design, furnish, provide, perform, install, and test all HVAC (whether shown or not shown) needed for a complete project and building installation, at no additional cost to Owner.

Only internal offices will receive Air Conditioning and Heating as shown on the drawings.

The Contractor shall provide all plant, labor, equipment, and shall perform all operations in connection with the Heating and Air Conditioning Systems as outlined below, in strict accordance with these Conditions of the Contract. Any incidental work not shown or specified which can reasonably be inferred or taken as belonging to the work and necessary to provide the system described or shown shall be the Contractors responsibility. The work shall be complete and ready for service as shown and/or specified and be satisfactory to the Owner Representative.

1.2 GENERAL REQUIREMENTS:

This Section shall be performed in accordance with the General Conditions, Supplementary Conditions and all Sections in Division 1 of these Specifications. These documents must be read with the other Contract Documents and Sections as a whole to complete the intent of the contract.

1.3 SUBMITTALS:

- A. Make submittals to the CCWD Construction Manager.
- B. If the Contractor desires to make a substitution, he shall submit complete information or catalog data to show the equality of the equipment or material offered to that specified.
- C. Submit to Owner Representative for approval, within a reasonable time after award of contract and in ample time to avoid delay of construction, shop drawings or submittals on all items of equipment and materials.

1.4 WORK INCLUDED:

The systems to be installed consist essentially of the following:

- A. Split System DX-Air Conditioning/Heating System.
- B. Exhaust fans and ductwork.
- C. Air Distribution Supply, Return and Exhaust Ductwork and Outlets.
- D. Temperature Control System, Fan Motor Starters, complete.
- E. Testing and adjusting of the complete system

- F. Contractor shall provide all line voltage power wiring, and all line and low voltage control conduit, disconnects, manual starters, and connect up all motors complete. Contractor to provide wiring diagram as requested.
- G. Contractor shall connect gas to all units and install condensate piping and drains.

1.6 ORDINANCES AND REGULATIONS:

- A. All work and materials shall be in full accordance with the latest codes, rules, and regulations of the following:
 - 1. National Fire Protection Association.
 - 2. Part 5, T-24 California Code of Regulations.
 - 3. State Health Department.
 - 4. State Industrial Accident Commission's Safety Orders.
 - 5. Rules of Local Utility.
 - 6. California Mechanical Code.
 - 7. California Building Code.
 - 8. California Plumbing Code.
 - 9. California Electric Code.
- B. Rulings and interpretations of the enforcing agency will be considered part of the regulations.
- C. Nothing in these Specifications is to be construed to permit work not conforming to the above, and expense in compliance with the above shall be borne by the Contractor.
- D. When contract documents differ from governing codes, Contractor shall furnish and install the larger size or higher standards than called for without extra charge.

2. PRODUCTS

2.1 GENERAL:

- A. Materials will be specified herein and as indicated on Drawings.

2.2 WEATHERPROOFING:

Provide all equipment, ductwork, controls, motor, bearings, V-belts or other materials requiring protection from weather, when located outside of building with adequate weatherproof protection. Obtain approval of Architect prior to installation of protection. Construct weatherproof protection to prohibit water from standing or puddling on equipment ductwork.

2.3 MATERIALS:

- A. Ductwork insulation: All insulation shall be applied only by those who are licensed contractors in the insulation industry, who employ only skilled personnel.
 - 1. Insulation applied to exterior surface of the ducts located in buildings shall have a flame spread of not more than 25 and a smoke-developed rating of not more than 50 when tested as a composite installation including insulation, facing materials, tapes and adhesives as normally applied.

2. All insulation shall be applied by those who are licensed contractors in the insulation industry, who employ only skilled personnel.
3. All diffuser boots, drops, and concealed supply and return ducts, unless indicated otherwise, shall be wrapped with *a minimum installed 'R' value of 8.0, adjust thickness as required.* The insulation shall be Manville, Fiberglas, or equal to Manville Microlite fiberglass foil faced duct insulation lapped 4" and held in place by copper clad wire tied on 12" centers of 1/2" long staples on 2" centers. Before wrapping insulation around ducts, contractor shall apply adhesive on all four sides of ducts to prevent sagging of insulation

B. Ductwork:

1. All sheet metal ductwork will be made of commercial grade steel.
2. Broken places in coating made in forming shall be completely soldered over. Weights of sheets shall not be less than the following:

Size of Duct	U.S. Gauge Galvanized Iron
0" to 12"	26
13" to 30"	24
31" to 54"	22
55" and larger	20

3. Ducts under 12" in greatest dimension shall have 'S' slip and drive slip seams at centers not to exceed 94". Duct shall be diagonally creased on all four sides. Longitudinal seams shall be double crimped, bent and hammered tight.

C. Dampers:

1. Dampers shall be furnished and installed **such that system can be balanced and at a minimum of each individual branch duct shall have a volume damper.** Dampers shall have locking and indicating quadrant Parker Kalon Company's, Elgin or equal. Dampers installed in inaccessible locations shall have damper rods extend and terminate flush with ceilings, with a Young Company's, Elgin, or equal, adjustable cover concealed damper regulator.

D. Insulated Flexible Duct:

1. Flexible duct may be used at concealed ceiling areas when diameter of duct is 18" dia. or smaller, and shall be Thermaflex Model MK-E consisting of an inner core, insulation and an outer moisture barrier. The inner core shall be constructed of a chlorinated polyethylene (CPE) bonded to the coated wire helix for maximum strength and durability. An insulating blanket woven of fiberglass shall encase the inner core and shall be sheathed with an outer vapor barrier of metallized polyester film. The vapor barrier shall be .05 perm per ASTM E96, procedure A. The flexible duct shall be rated for a maximum working velocity of 5500 FPM and shall be listed by the Underwriters Laboratories under their UL 181 standards as Class 1 duct and bear UL stamp. *The overall 'R' value shall be a minimum of 8.0, adjust thickness as required.*

2.4 EQUIPMENT:

A. Split System DX-Air Conditioning/Heating System:

1. Furnish and install Carrier or equal direct expansion split system outdoor unit in

combination with direct expansion coil and horizontal, vertical, or down flow furnaces, in location and of type scheduled on the Plans.

a. Nominal system electrical characteristics shall be 208/230V single or three phase, 60 cycle, or as shown on the Drawings.

2. Condensing Unit:

a. Furnish and install a high efficiency condensing unit, Carrier or equal

- 1) The condensing unit shall be air-cooled for use with remote coupled airconditioning. The system shall use Puron as scheduled.
- 2) The compressor shall be scroll, hermetically sealed type and shall be equipped with vibration isolators. The compressor motor assembly shall be protected by overloads and/or internal thermostat protection. The compressor shall be provided with a total of five (5) years warranty.
- 3) The coils shall be aluminum finned mechanically bonded to copper tubing and provided with coil guard.
- 4) The controls shall be factory wired and shall include high and low pressure hermostats, crankcase heaters, compressor and condenser fan overload devices, positive acting safety devices to prohibit short cycling, low ambient control down to 45 Degrees F outside air temperature, and time relay for five minute delay on startup.
- 5) It also shall include sight glass and filter drier in refrigerant liquid line at the condenser.
- 6) The condensing units shall be quiet operating and fit in allotted space.
- 7) The unit shall have sufficient removable panels for servicing of the unit.
- 8) The condensing units and coil combination shall have a SEER as scheduled as a minimum.

3. Cooling Coil:

a. Furnish and install a direct expansion coil on the furnace discharge. The unit shall be Carrier or equal all as scheduled on the Drawings.

- 1) The cooling coil shall be nonferrous construction with mechanically bonded smooth plate finish for use with Puron as scheduled.
- 2) The unit shall have the required capacity and CFM air delivery (Contractor to Size), with the return air at temperatures of 80 Degrees F Db and 67 Degrees F Wb, and 105 Degrees F Db outdoor air.
- 3) The unit shall have coil enclosure and shall be insulated and constructed of galvaneal steel.
- 4) Coil shall have thermostatic expansion valve, drain pan and condensate drain connection.

4. Furnaces:

b. High Efficiency Furnaces:

- 1) The furnace shall be condensing high efficiency type scheduled and be equipped for use with natural gas and have a minimum

A.G.A. output rating as shown on the Drawings. It shall also have inducer blower combustion system and automatic hot surface ignition system.

- 2) Blower and Blower Motor: Blower shall be centrifugal type, statically and dynamically balanced. Motor shall have factory lubricated bearings, shall be of the type shown on the Drawings, single or two speed, belt or direct drive.
 - 3) Casing shall be of 22 gauge steel with baked enamel finish.
 - 4) Unit Filter Section: Provide with 2" filter bank with sizes that are commercially available as detailed on construction documents. Filter bank shall have a minimum one square inch per 2 cfm. Filter velocity shall not exceed 300 fpm at nominal air flows. See paragraph 'J. Filters' and detail on the construction documents.
 - 5) Controls shall include gas valve which regulates gas flow; prewired indoor fan relay with transformer, hot surface ignition, and an electronic control board for furnace control at the LED status indicator lights for status indication.
- 6) The furnace unit shall be high efficiency.
- 7) Provide concentric flue assembly.

C. Exhaust Fans:

1. Inline Exhaust Fans:
 - a. Fans shall be Penn, Cook, or equal.
 - 1) Fan shall be of rectangular construction, and fabricated of steel for horizontal mounting.
 - 2) Motor and fan shall be mounted on rubber isolators and be vibration free and quiet operating.
 - 3) Drives shall be sized for a minimum of 150% of driven horsepower. Pulleys shall be of the machined cast iron type, keyed and securely attached to the wheel and motor shafts. The motor pulleys shall be adjustable for final system balancing.
 - 4) Motor shall be belt-driven and shall have thermal protection and disconnect switch and magnetic starters.
 - 5) Capacity and rpm shall be as scheduled on the drawings and shall bear the AMCA certified rating seal for air performance.

2.4 TEMPERATURE CONTROL:

- A. The wiring of low voltage temperature control equipment in accordance with the wiring diagrams and the functional operation of the temperature control system shall be the responsibility of the Contractor. Contractor shall provide all line voltage wiring, and all line and low voltage conduit, disconnects, manual and automatic starters, and connect up all motors complete.
 1. Drawings of temperature control system are diagrammatic only, and any apparatus not shown, such as relays, accessories, and so forth, but required to make the system operative to the complete satisfaction of the Owner Representative and Engineer, shall be furnished and installed without additional cost.
 2. All electric connections to temperature control equipment shown on the temperature control diagrams or specified, will be furnished and installed by the

Mechanical Contractor performing this work, and where exposed to weather, shall be run in conduit.

3. Equipment and controls, such as starters, switches, relays, etc., shall be clearly identified and labeled as to function and position with permanently engraved nameplates.
4. Equipment furnished by Contractor that is normally wired before installation shall be furnished completely wired. Temperature control wiring normally performed in the field will be furnished and installed by the Contractor.
5. Prior to installation, the Contractor shall submit diagrams, component data and description of sequence of operation to Owner Representative and Engineer for approval.
6. Entire system shall be guaranteed for one year from the date of acceptance of the completed building. After completion of the installation, the Contractor shall regulate and adjust all thermostats, dampers, motors, and other temperature control equipment provided under this contract.

3. EXECUTION

3.1 SYSTEM BALANCE AND ADJUSTMENT:

- A. General: Contractor shall obtain the service of an independent test and balancing agency that specializes in, and whose business is limited to, testing and balancing of air conditioning systems.
- B. Contractor shall coordinate work done by testing and balancing agency with work of other trades.
- C. Testing and Balancing agency as part of its contract shall act as authorized inspection agency and shall report any discrepancies or items not installed in accordance with Contract Drawings and/or specifications pertaining to air and water distribution, and exhaust systems.
- D. Contractor shall provide for adjustments and/or additions or modifications to fan and motor sheaves, belts, damper linkages and thee like to achieve proper air balance at no additional cost.

3.2 OPERATIONAL TEST AND ADJUSTMENT:

- A. Upon completion of the work, all equipment and systems shall be operated and tested for a period of at least three (3) consecutive days to demonstrate their satisfactory overall operation. On the last day of this period, the Contractor shall arrange for an acceptance test and final inspection to be conducted by the Owner Representative and Owner's Superintendent of Maintenance in the presence of the Contractor or his representatives. The Owner Representative and the Owner shall be notified at least one week in advance of the time proposed by the Contractor and a mutually agreeable time arranged. Contractor shall make all necessary adjustments and corrections to the systems prior to acceptance test so that the systems are operating smoothly and properly at this time.
- B. Immediately before starting tests, all air filters shall be replaced.
- C. Any equipment, system, or work found deficient during the test shall be replaced or revised as required, to the entire satisfaction of the Owner Representative and Engineer.

3.3 FIELD QUALITY CONTROL:

- A. Closing in uninspected work: Do not allow or cause any of this work to be covered up before it has been duly inspected, tested and approved by the Engineer or any other authorized inspectors having legal jurisdiction over this work. Should the Owner's Representative fail to observe the above, the work shall be uncovered, and after inspection, testing, and approval, re-covered at no additional expense.

3.4 Specific Requirements

- A. Bathroom Fan: Bathroom fans shall automatically and individually operate when the bathroom is occupied. Bathroom Fan should be manufactured by Panasonic or Equal.

END OF SECTION

SECTION 16100
Basic Electrical Materials and Methods

The General Conditions, Supplementary Conditions, and Division 1 - General Requirements are hereby made a part of this Section as fully as if repeated herein.

It is the intent of these Contract documents and the responsibility of the Contractor to furnish, provide, perform, install, and test all electrical materials and methods (whether shown or not shown) needed for a complete project and building installation, at no additional cost to Owner.

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. The requirements of this Section apply to all work of Division 16 - Electrical.

PART 2 PRODUCTS

2.1 MATERIALS

- A. All materials shall bear Underwriters' Laboratories label, except equipment for which the Underwriters' Laboratories do not provide a label service.
- B. All materials shall be listed by the State of California. Use only approved material which meets the requirements for energy conservation and other standards applicable to this project.
- C. All materials shall be new and unused, packed in their original container and free of all defects.
- D. All equipment or materials for any one system shall be furnished by the same manufacturer. Items such as lamps, wiring devices, circuit breakers, etc., shall be the same throughout the job.
- E. All materials for use on exterior of the building shall be weatherproof and corrosion resistant. All exterior ferrous material shall be galvanized.

2.2 RACEWAYS

- A. Rigid Steel Conduit: All rigid conduit shall be steel, hot dipped galvanized with inside enamel. All fittings shall be threaded. Bends of 1-1/4" or larger shall be factory bends. Running and exposed threads will not be permitted. All cuts shall be reamed. All underground steel joints shall be red leaded. Conduit shall be painted with asphaltic compound 12" above, and entirely below the point at which it enters the ground where subject to moisture. Acceptable manufacturers shall be Appleton, Triangle, Rome, General Electric, or approved equal. Conduit installed underground shall have factory applied vinyl coating, 3M "Scotchwrap," or Pabco wrap. Minimum conduit size shall be 2" above ground, 3/4" underground.
- B. Electric Metallic Tubing (EMT): All electric metallic tubing shall be steel, hot dipped

galvanized with inside enamel. All connectors shall be Efcor with insulated throats. Couplings shall be compression type and watertight type for outdoor use. Steel set screw connectors and couplings may be used where approved by code. All cuts shall be reamed. All fittings shall be as manufactured by Tomic, or approved equal. Acceptable manufacturers shall be same as for conduit.

- C. Flexible Conduit: All flexible conduit shall be galvanized steel as manufactured by National Electric, Triangle, Rome, or approved equal. All fittings shall be Tomic or D&H.
- D. Liquid-Tight Flexible Metal Conduit & Fittings: Manufacturers shall be Thomas & Betts or approved equal.
- E. Plastic Conduit: Plastic conduit and fittings shall be heavy-wall Schedule 40 polyvinyl chloride, as manufactured by Carlon, Rome, or approved equal. Elbows 1-1/4" and larger shall be factory made fittings. Joints shall be solvent welded. A ground conductor shall be provided for all plastic conduits in accordance with CEC Table 250-95. Underground stubups through concrete shall be made with rigid steel conduit. Exposed plastic conduit will not be permitted. Minimum size 3/4".
- F. Metallic Clad Cable: This cable type is not approved for use on this project.
- G. Non-metallic Sheathed Cable: This cable type is not approved for use on this project.

2.3 WIRE AND CABLE

- A. All line voltage electrical wire and cable shall be rated for 600 V.
- B. Wire and cable shall be as manufactured by Superior Essex, Southwire, Anaconda, or approved equal.
 - 1. Insulation:
 - a. Insulation for sizes #8 and larger shall be THHN/THWN.
 - b. Conductors in lighting fixtures shall be type AF or THHN.
 - c. In all locations other than those specified above, type THHN/THWN shall be used.
 - d. Pre-manufacturer for recessed LED lighting shall be #12.
 - e. Wiring for alarm, signal, and communications systems shall be specified in the respective Sections.
 - 2. Conductors:
 - a. All conductors size #10 and smaller shall be solid copper, stranded copper for sizes #8 and larger.
 - b. Feeder conductors shall be copper.
 - c. Minimum conductor size for lighting and power shall be #12.
 - d. Minimum conductor for site lighting shall be #10.

2.4 OUTLET AND JUNCTION BOXES

- A. All boxes for use with conduit system in dry locations shall be one-piece construction, pressed steel, 4" square for power or 3-1/2 octagon for lighting, with raised covers, Steel City Series 78, or equal where wiring in conduit is required.
- B. Boxes installed in concrete shall be concrete-tight, cast iron, Steel City, or equal.

- C. Boxes installed above grade or exterior shall be galvanized cast steel with threaded hubs case integrally with the box. Covers shall be stamped galvanized steel, gasketed. Fittings shall be cast metal. Casings shall be true to pattern, smooth, straight, with smooth, even edges and corners, of a uniform thickness of metal.
- D. Boxes shall be of sufficient size to accommodate all wires and connections without crowding. Extra-large boxes shall be used where required.

2.5 WIRE JOINTS AND CONNECTORS

- A. Lugs and connectors shall be Thomas & Betts "Lock-Tite" or approved equal for #6 AWG cable or larger, "Scotch-Lock" insulated electrical spring connectors for #8 AWG cable and smaller, or Wago push wire connectors for #12 AWG cable and smaller.
- B. Splice-in insulation shall be Scotch "13" electrical tape with vinyl backing.
- C. Wago push wire connectors may be used for #12 and smaller conductors.

2.6 SLEEVES

- A. All exposed conduits passing through interior frame partitions shall be furnished with chromium plated steel split-type escutcheon plates.
- B. All wall and floor penetrations shall be sealed with an approved foam type acoustical material.

2.7 SUPPORT SYSTEMS

- A. Supports and hangers for conduits and equipment shall be Kindorf, Unistrut, or approved equal. Each type of support shall be designed for the specific type of application involved, and shall be selected with adequate capacity to support the loads without undue deflection. Single supports shall be one-hole malleable iron. Multiple conduit runs shall be supported with Unistrut P-4000 channel with conduit clamps. The use of wires, plumber's tape, or similar materials will not be accepted.

2.8 WIRING DEVICES

- A. All wiring devices shall be specification grade as manufactured by Pass & Seymour, Leviton, Hubbell, or approved equal.
- B. Switches shall be totally enclosed, quiet type, rated 20 A, 120 V, back- or side-wired. Including Single Pole, Two Pole, Three Way and Dimmer Switches. Rating as required for the service conditions.
- C. Receptacles: All receptacles shall be specification grade three-wire grounding type rated at 15A, 120 V unless otherwise noted, including Single Receptacles, Duplex Receptacles and GFI Receptacles. All appliances requiring to be plugged into 20A receptacles shall be provided with 20A receptacles.
- D. Wiring devices shall be equal to the devices set forth herein, in ivory finish:

Wiring Devices	Leviton #	Hubbell #	P&S #
Single Pole Switch, 15A	1201-2	HBL1201	PS15AC1
Single Pole Switch, 20A	1221-2	HBL1221	PS20AC1
Double Pole Switch, 15A	1202-2	HBL1202	PS15AC2
Double Pole Switch, 20A	1222-2	HBL1222	PS20AC2
Three Way Switch, 15A	1203-2	HBL1203	PS15AC3
Three Way Switch, 20A	1223-2	HBL1223	PS20AC3
Duplex Conv. Outlet, 15A	5262	HBL5262	5262
Duplex Conv. Outlet, 20A	5362	HBL5362	5362
Isol. Ground Outlet, 15A	5262IG	IG5262	IG5262
Isol. Ground Outlet, 20A	5362IG	IG5362	IG5362
Duplex Conv. GFI Outlet, 15A	6599	GF15	1595L
Duplex Conv. GFI Outlet, 20A	6899	GF15	2095L

- E. Special receptacles for equipment furnished by Owner or under other Divisions shall be as manufactured by Leviton, Hubbell, or P&S and shall be of the type and rating as required for each piece of application.
- F. Receptacles in bathrooms, counter tops with sinks, exterior above grade and on roof and toilet rooms shall be ground fault type. All in accordance with CEC 210-8.
- G. Color of devices and device plates shall be ivory as directed by the Owner.
- H. Device plates: Leviton, P&S, Hubbell, or approved equal, smooth nylon, color to match device. Provide single-gang plates for single devices and multi-gang plates as required for multiple devices.

2.9 DISCONNECT SWITCHES

- A. Shall be heavy duty, Cutler Hammer, Square D, Siemens or General Electric. Shall be of same manufacturer as the switchboards and panelboards.
- B. Disconnect switches for motor loads shall be horsepower rated.
- C. Disconnect switches installed outdoors or in wet or damp locations shall be weatherproof type and shall comply with NEMA standards for the service conditions.
- D. Disconnect switches shall be fused, as required for the service conditions and as required by Code. Fuse rating shall match the nameplate rating of the equipment served.
- E. Disconnect switches shall be located relative to the load as required by code.

PART 3 EXECUTION

3.1 ELECTRICAL REQUIREMENTS

- A. Provide adequate working space around electrical equipment in accordance with the California Electrical Code.
- B. Provide access to electrical equipment areas as required by code.

- C. Coordinate the work with this Division with that of other Divisions.

3.2 RACEWAYS AND WIRING METHODS

- A. All wiring for power shall be installed in raceways.
- B. All wiring for vendor-provided signal systems shall be in accordance with the vendor's requirements. For the purposes of this specifications it is assumed such cables shall be installed exposed in accessible ceiling spaces and in conduit in walls.
- C. Conduits shall be concealed in building structure, in walls or ceilings, underground below floor slab or shall be exposed in mechanical and electrical rooms.
- D. Conduit shall be installed as follows:
 1. In poured concrete or masonry: Rigid steel conduit.
 2. In exposed damp or wet locations or in masonry construction: Rigid steel conduit.
 3. Service raceways: Schedule 40 PVC underground; rigid steel conduit above ground. Verify PVC type with utility company.
 4. Interior or exterior, exposed or where subject to physical damage: Rigid steel conduit.
 5. Interior concealed: EMT
 6. Motor connections: Liquid-tight flexible metal conduit.
 7. Exterior below grade: Schedule 40 PVC or wrapped rigid steel conduit.

3.3 SUPPORT SYSTEMS

- A. All conduits and fixtures shall be supported in a firm and secure manner as required by code. Materials shall be secured to the structure by means of suitable clamps and hangers specifically designed for the purpose and using machine screws or bolts on metal or wood screws on wood construction.
- B. Rigid steel conduit shall be supported at intervals not greater than 10 ft, electrical metallic tubing at intervals not greater than 5 ft. and MC cable at intervals not greater than 3 ft.
- C. A support shall be provided not more than 3 ft. from any change in direction. Additional supports to those specified above shall be installed where required to suit job conditions and to provide a secure installation. All hangers and supports shall be the products of one manufacturer.

3.4 OUTLET, JUNCTION, AND PULL BOXES:

- A. All boxes shall be of sufficient size to contain, without crowding, all wires, connections, and devices which may be required in any particular location. Extra deep boxes shall be provided wherever necessary to meet these requirements.
- B. Use outlet boxes as pull boxes wherever possible in branch circuit runs.

- C. Floor Boxes: Shall be single service or multi-service as noted on plans. Boxes shall be fully adjustable before and after concrete pour. Boxes shall be furnished with all required accessories for a complete and working installation, including device mounting brackets, both power and communications, trim ring/coverplate or floor port activation kit. Provide power devices and terminations.
 - 1. Grade Level Floor Boxes:
 - a. Single service box shall be wiremold type omnibox, cast iron, #880CS1-1 with one gang, brass trim #817B, brass duplex coverplate #828R for power and brass duplex coverplate #828GFITC for communications devices.
 - b. Multiple service box shall be wiremold type RFB4-CI-1 with coverplate #S38BBTCBK black finish. Provide (2) duplex grey power outlets and (1) ivory outlet. Provide all accessories to mount (4) data jacks.
- D. Weatherproof boxes shall be Appleton FD Series and fitted with gasketed cast covers.
- E. All device boxes which are installed in fire rated wall assembly and is provided with a firestopping putty pad shall have a brushed stainless steel coverplate in accordance with requirements of the putty pad.
- F. Telephone and computer signal plates shall be provided by owner's vendor unless otherwise noted on plans.
- G. Device covers for surface mounted boxes shall be ½" raised steel plates.
- H. Device covers for devices located in damp locations shall comply with CEC 406.8(A). Device covers for devices located in wet locations shall comply with 406.8(B). Such covers shall be cast metal or stainless steel with snap type doors. Plastic covers are not acceptable. Provide cover with two self closing lids for duplex receptacle.
- I. Boxes for special equipment shall be suitable for the particular equipment.
- J. Boxes shall be located and placed according to architectural and structural requirements.
- K. Provide raised covers as required to suit the type and thickness of wall finish in each location.
- L. When other than outlet boxes are employed, pull boxes and covers shall be galvanized steel, code gauge, sized to accommodate wiring and connections. Locate such junction boxes only in equipment rooms, wire closets, and above accessible ceilings.
- M. All junction boxes shall be fully accessible according to code.

3.5 DISCONNECT SWITCHES

- A. Units shall be heavy duty fused disconnect switches, two or three pole type, where indicated on the drawings, or as required by code. Switches and fuses shall be as required by the loads serving.

- B. Disconnects for fractional horse power motors shall be motor-rated toggle type disconnects with integral heater overloads.
- C. Disconnects for single phase motors shall be single phase and not three phase.
- D. Locate disconnects in accordance with CEC 430.102. Ensure all code-required clearances.

3.6 WEATHERPROOF CONSTRUCTION

- A. All wiring or equipment installed exterior to buildings or in wet or damp locations shall be weatherproof construction to suit the service conditions.
- B. Outlet boxes shall be gasketed; electrical metallic tubing shall have compression type fittings; lighting fixtures shall be designed for exterior installation.
- C. All exterior mounted equipment shall be corrosion resistant and constructed in accordance with NEMA standards for the service conditions encountered.

END OF SECTION

SECTION 16600
Lighting

The General Conditions, Supplementary Conditions, and Division 1 - General Requirements are hereby made a part of this Section as fully as if repeated herein.

It is the intent of these Contract documents and the responsibility of the Contractor to furnish, provide, perform, and install all lighting (whether shown or not shown) needed for a complete project and building installation, at no additional cost to Owner.

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. The scope of work covered by this Section consists in furnishing and installing a complete and operable system of lighting for the project as shown on the Drawings including:
 - 1. Installing and connecting up all light fixtures.
 - 2. Furnishing all lighting fixtures and lamps.
 - 3. Supports and hangers for lighting fixtures.
 - 4. Occupancy Motion Sensor and Low Voltage Automatic Shutoff Controls for interior lighting.
 - 5. Exterior lighting and related controls.

PART 2 PRODUCTS

2.1 MATERIALS

- A. All materials shall be designed and constructed in accordance with the codes and standards.
- B. All materials shall bear Underwriters' Laboratories label, except equipment for which the Underwriters' Laboratories do not provide a label service.
- C. Basic material shall be as specified in Section 16100, "Basic Electrical Material and Methods."
- D. All equipment or materials for any one system shall be furnished by the same manufacturer. Items such as lamps, conduit fittings, and wiring devices shall be the same throughout the job.
- E. All materials for use on exterior of the building shall be weatherproof and corrosion resistant. All exterior ferrous material shall be galvanized.

2.2 LIGHTING FIXTURES

- A. Furnish and install lighting fixtures to provide required lighting in all spaces, including lamps.
- B. All fixtures shall be UL labeled.

- C. Fixtures shall be complete with all fittings, accessories, and supports necessary for a complete and operable installation.
- D. Hangers and supports and the method of mounting the fixtures shall be in accordance with all applicable codes.
- E. Fixtures mounted against combustible material shall be approved for such installation.
- F. Fixtures shall be equal in design, quality, utility, material and workmanship to those specified and shall have been tested and approved by all necessary authorities and agencies before being submitted for approval.

2.3 BALLASTS

- A. LED fixture ballasts shall be UL-listed energy conserving type
- B. Ballasts shall be designed for lamps on the plans, 120 V, 277V or universal voltage as required.
- C. Acceptable manufacturers: Advance, Universal, General Electric, Sylvania, Philips, Williams.
- D. Emergency ballasts shall be as manufactured by Bodine, or equal with 1300-1400 lumen output for 4 foot lamp fixtures and 650 lumen output minimum for compact fluorescent or LED.

2.4 LAMPS

- A. LED lamps shall be as manufactured by Sylvania, General Electric, Philips, or approved equal.
- B. Incandescent lamps shall be inside-frosted except where otherwise noted, rated at 130 V.
- C. Lamps shall be new and operating at the same time of acceptance.

2.6 TIME SWITCHES

- A. Furnish and install time switches for exterior lighting.
- B. Time switches shall be as noted elsewhere in these specifications.

2.7 CONTACTORS

- A. Shall be electrically held contactors suitable for switching incandescent and discharge lighting.
- B. Rating, coil voltage and poles per plan.

2.8 EXIT LIGHTS AND EGRESS LIGHTING (EXIT ILLUMINATION)

Provide exit signs and emergency egress lighting as shown on the plans and described herein, all complete and ready for operation.

1. Exit signs shall comply with and be installed per CBC Section 1011.
2. Egress (exit illumination) lighting shall comply with, and be installed per CBC Section 1006.
3. Individual unit equipment for emergency illuminations shall comply with, and be wired per CEC Section 700.12(F). Aim units to provide maximum illumination possible at exit door and in the egress path.
4. For switched light fixtures which also serve as emergency lighting fixture, an unswitched hot wire shall be provided to each such fixture in addition to the switched wire. This hot wire shall be from the same circuit that is feeding power to the switched wire.

2.9 OCCUPANCY SENSOR CONTROL OF LIGHTING

- A. Provide a complete and fully operational occupancy motion sensor lighting control system for interior lighting as specified herein and shown on the drawings.
- B. The complete system, including all devices shall be in compliance with the California Energy Efficiency Standards.
- C. The complete system shall be comprised of single or dual technology low voltage sensors, power packs and slave packs. Provide line voltage sensors. Sensor technology shall be suitable for application as recommended by the Manufacturer of the sensor.
- D. All equipment and items of control shall be installed and wired in accordance with Manufacturer's requirements. Particular attention shall be given to placement of sensors to provide maximum coverage and minimize false "ONs" and "OFFs". To this respect, coordinate ceiling sensor placement with HVAC duct registers to keep sensors a minimum of six feet from the registers. Provide additional sensors to those shown in rooms on drawings where deemed necessary to obtain adequate coverage according to the Manufacturer.

2.10 LOW VOLTAGE AUTOMATIC LIGHTING SHUT OFF CONTROL SYSTEM

- A. An automatic low voltage shut off control system shall be provided for the interior lighting of the areas noted on the control panels in compliance with the Energy Efficiency Standards, Title 24 Part 6 Section 131(d).

An automatic time switch control device shall be installed to comply with Section 131(d)1. This device shall be part of a comprehensive intelligent lighting controller, complete with timers, keypad, relays, power supply, etc.

An override low voltage switching device shall be provided to comply with Section 131(d)2. The lighting switches for individual rooms and areas shall also serve as these override devices. The entire lighting control system shall be wired and programmed to meet the above-mentioned requirements.

- B. All lights shall be switched on and off using low voltage momentary contact, on/off switches unless otherwise shown. They shall additionally be switched off automatically through the automatic shut-off control panel.

- C. The system shall be as manufactured by Leviton or approved equal.
- D. All lights shall be switched on and off using momentary contact, on/off switches unless otherwise shown. Such switches shall be push-button type. Leviton type "greenmax digital" or equal. No more than (4) switches per single gang plate. They shall additionally be switched off automatically through the automatic shut off control panel. Provide factory labeling on switches. Provide dimmer switches with "on"/"off" switch. Provide stain steel switch plates.
- D. The control panel shall be surface or recessed mounted.
- F. Low voltage wiring is not required to be in conduit in accessible concealed ceiling spaces. Provide conduit for inaccessible spaces and wall drops.
- G. All exit signs shall be un-switched and not pass through the automatic shut-off control panel.
- H. All emergency light fixtures with integral battery ballasts shall be switched as shown and shall come on in emergency power-off mode upon power failure. To this effect provide an unswitched power wire to each such fixture from the same circuit as that feeding the light fixture.
- I. Provide a comprehensive submittal for approval by the Engineer. Submittal shall include, as a minimum:
 - 1. Equipment cutsheets with all inapplicable options crossed out.
 - 2. Light switches, cover plates including multi-gang coverplates.
 - 3. Relay schedule, completely filled out per plans, as to the areas of lights controlled and circuits powering the relay loads.
 - 4. One line diagram.
 - 5. Submittals which do not comply with the above will be returned un-reviewed and the Engineer will not be responsible for any resulting construction delays.
- J. Provide on-site check-out, start-up and training by factory trained technician. Training shall be for a minimum of four hours on how to operate, program the system and modify timing schedules.

PART 3 EXECUTION

3.1 GENERAL

- A. Refer to Section 16100, "Basic Electrical Materials and Methods," for the installation requirements for conduits, wiring, and wiring devices.
- B. Provides all hanger and supports for lighting fixtures in accordance with code requirements for installation in earthquake Zone 4.
- C. All branch circuit wiring shall be installed concealed in walls and ceilings.

3.2 LIGHT FIXTURES

- A. Install lighting fixtures in accordance with code requirements complete with lamps, hangers, frames, supports, etc. complete and ready for operation.
- B. Emergency light fixtures shall be wired up and controlled as shown on the Drawings. Test all emergency fixtures by switching off power to confirm proper operation.
- C. Fixtures, lamps, trim and diffusers shall be clean at final acceptance.
- D. Recessed fixtures installed in fire rated ceilings shall have housing approved by the Authority Having Jurisdiction. Recessed and pendant fixtures shall be supported and braced to satisfy seismic requirements.
- E. Fixtures shall be installed in true lines and all continuous row fixtures shall be installed as recommended by the fixture manufacturer.
- F. All fixtures shall be wired with Type AF or equal fixture wire. Joints shall be made up as specified under "Conductors".

3.3 EXTERIOR LIGHTING

- A. Shall be controlled and initiated by a combination of photocell, time switch and contactors. Some of the lights shall be designed as "night lights" and as such remain "on" dusk to dawn.
- B. See plans for exact configuration of controls.
- C. Set all controls as directed by Owner. Coordinate with Owner's representative to obtain all necessary information to set these controls.

3.4 CLEANING

- A. On completion of the work, all fixtures and lenses shall be left clean. Any minor damage or scratches shall be touched up to the satisfaction of CCWD Construction Manager.

3.5 OCCUPANCY SENSORS CONTROLS

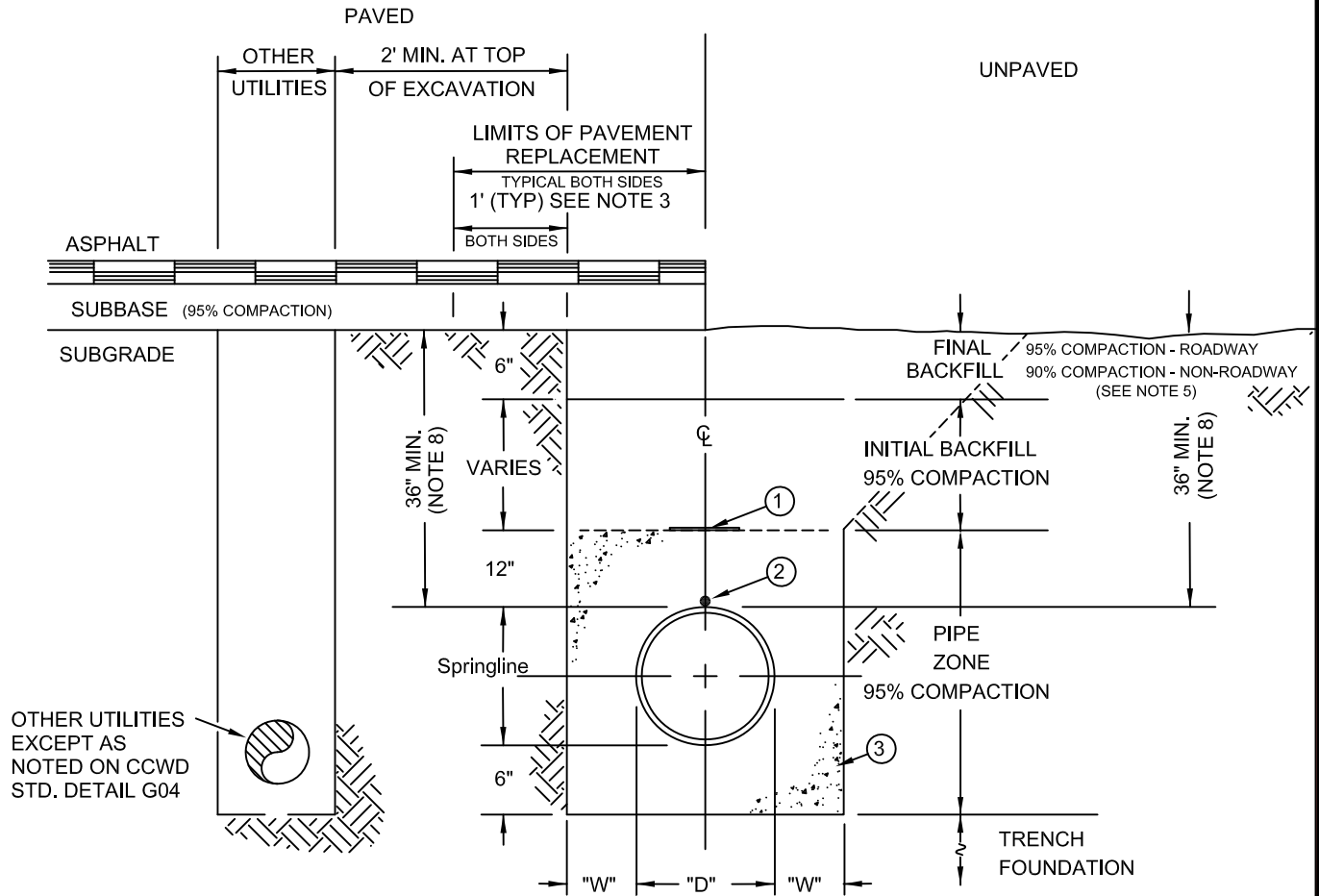
- A. All equipment and items of control shall be installed and wired in accordance with manufacturer's requirements. Particular attention shall be given to placement of sensors in the rooms to provide maximum coverage and minimize false "ONs" and "OFFs". To this respect, coordinate sensor placement w/ HVAC duct registers to keep sensors a minimum of six feet from the sensors. Provide additional sensors to those shown in rooms on prints where deemed necessary to obtain maximum coverage.

3.6 AUTOMATIC SHUT OFF CONTROLS

- A. All equipment and items of control shall be installed and wired in accordance with manufacturer's requirements.

- B. Controller shall be set to provide a sweep off for all interior lights controlled, except nightlights. Such a sweep shall be repeated at an interval not exceeding two hours for the entire period the building is not normally occupied. Verify with the Owners as to the times the space is normally occupied. Coordinate with Owner's representative in field to obtain all necessary information.

END OF SECTION



NOTES:

1. FOR EXCAVATIONS THAT WORKERS ENTER/DECEND, PERMITS SHALL BE REQUIRED FOR ALL EXCAVATIONS OVER 5 FEET IN DEPTH AND ANY EXCAVATIONS LESS THAN 5 FEET IN DEPTH IN SOILS THAT HAZARDOUS GROUND MOVEMENT MAY OCCUR.
2. PIPE TO BE LAID WITH LABEL UP ON EACH JOINT.
3. ROAD REPAIR SHALL CONFORM TO ROAD AGENCY PERMIT CONDITIONS AND SPECIFICATIONS. WIDTH OF REPAIR PER COUNTY OR CALTRANS REQUIREMENTS
4. WHEN COUNTY PUBLIC WORKS OR CALTRANS ENCROACHMENT PERMIT CONDITIONS ARE MORE RESTRICTIVE, THEY WILL TAKE PRECEDENCE.
5. EXCEPT FOR TRENCHES CUT IN ROAD SUBGRADE SLOPES AND FILLS, TRENCH WALLS ARE TO BE VERTICAL AND REMAIN WITHIN DESIGNATED LIMITS. ROADWAY INCLUDING AREAS UNDER PAVING, AREAS WITHIN 5-FT OF EDGE OF PAVEMENT, AND ALL SLOPES AND FILLS WITHIN ROADBED'S STRUCTURAL SECTION/SUBGRADE SHALL BE BACKFILLED TO 95% RELATIVE COMPACTION.
6. TRACER WIRE TO BE INCLUDED ON ALL PIPELINES INCLUDING SERVICE LATERALS.
7. SEE DETAIL G05A FOR UNSTABLE CONDITIONS.
8. PRECEDENCE SHALL BE GIVEN TO DEPTH OF COVER SHOWN ON PLAN AND PROFILE SHEETS, AND NOT LESS THAN 36-INCHES MINIMUM COVER.

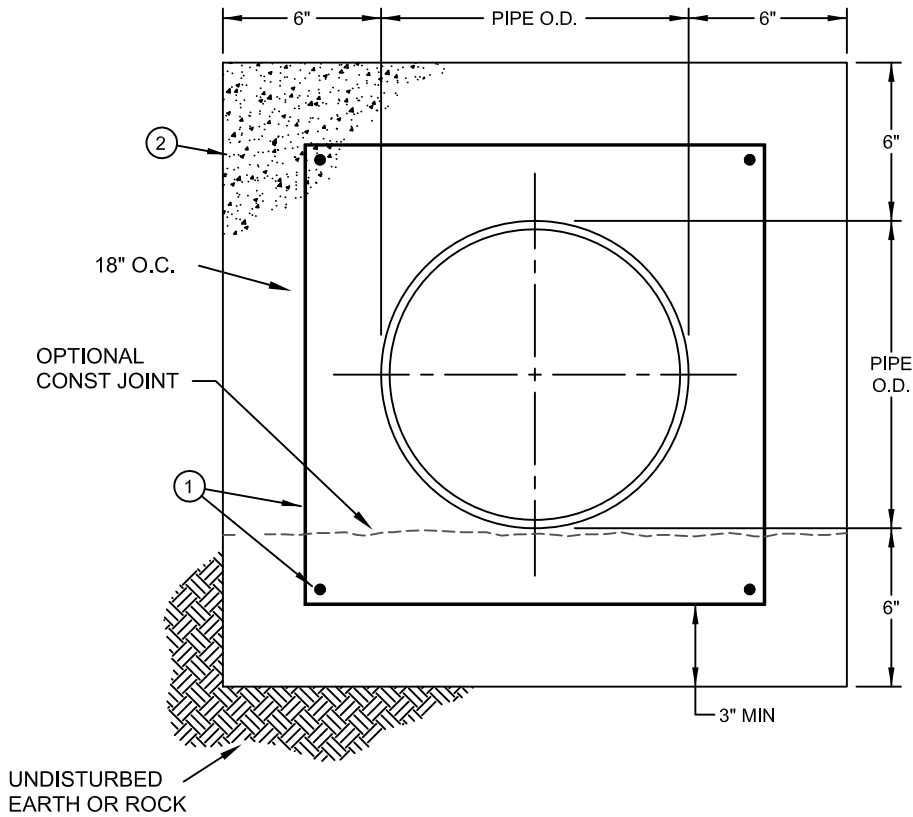
PIPE ZONE EXCAVATION LIMITS		
D	W (min.)	W (max.)
≤ 12"	6"	9"
> 12"	9"	12"

ITEM #	DESCRIPTION
①	2" WIDE WARNING TAPE (COLOR - MARKING) BLUE - "WATER" GREEN - "SEWER"
②	TRACER WIRE
③	PIPE ZONE MATERIAL

CALAVERAS COUNTY WATER DISTRICT

**GENERAL DETAILS
TRENCH SECTION**

DRAWN BY: CCWD STAFF	SCALE: NONE	CCWD STANDARD DRAWING NO. G05
APPROVED: CHARLES PALMER	DATE: AUG. 2018	



CONCRETE ENCASEMENT

NOTES:

1. INSTALL SAND BAGS UNDER THE PIPE AT MIDPOINT AND AT EACH JOINT TO SUPPORT PIPE.
2. PIPE JOINTS SHALL BE TIED DOWN TO PREVENT FLOATING.
3. ALL ENCASED PIPE SHALL BE DUCTILE IRON AND WRAPPED
4. PIPE SHALL BE DUCTILE IRON WITH RESTRAINED JOINTS EXTENDING TWO PIPE LENGTHS BEFORE AND AFTER ENCASEMENT

ITEM #	DESCRIPTION
①	#4 REBAR
②	CLASS "3" CONCRETE

CALAVERAS COUNTY WATER DISTRICT

GENERAL DETAILS
CONCRETE ENCASEMENT

DRAWN BY:
CCWD STAFF

SCALE:
NONE

CCWD STANDARD DRAWING NO.

APPROVED:
CHARLES PALMER

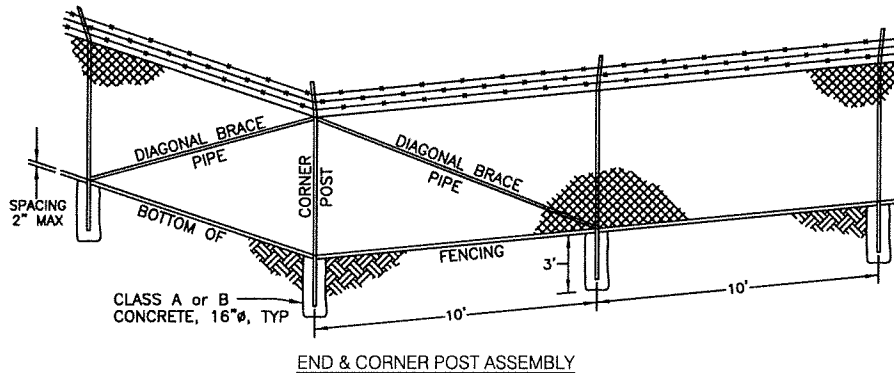
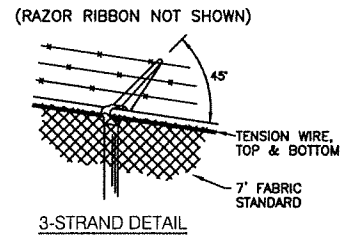
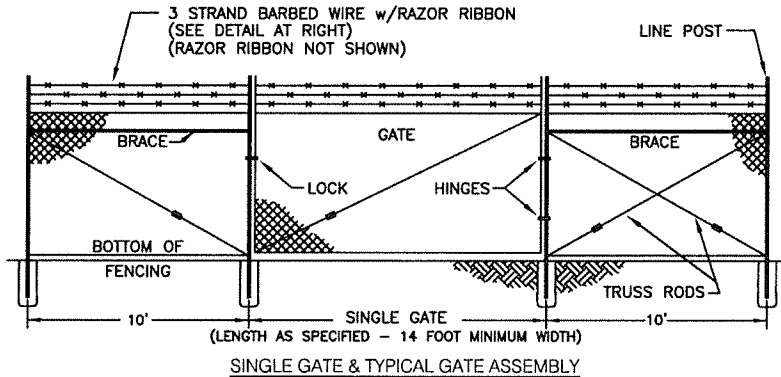
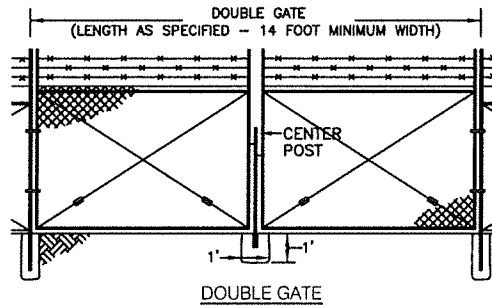
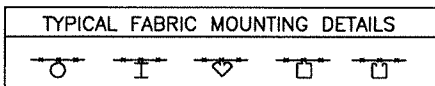
DATE:
SEPT. 2015

G09

TYPICAL MEMBER DIMENSIONS										
FENCE HEIGHT	LINE POSTS			END, LATCH & CORNER POSTS			BRACES			
	ROUND (I.D.)	H	ROLL FORMED	ROUND (I.D.)	ROLL FORMED		ROUND (I.D.)	H	ROLL FORMED	
					♡	□ □			□	□
OVER 6'	2"	2 1/4"x2"	2"x1 3/4"	2 1/2"	3 1/2"x3 1/2"	2 1/2"x2 1/2"	1 1/4"	1 1/2"x1 5/16"	1 5/8"x1 1/4"	1 3/4"x1 1/4"

GATE POST			
FENCE HEIGHT	GATE WIDTH	NOMINAL ID	WEIGHT PER FOOT
OVER 6'	UP THROUGH 6'	3"	7.58
	OVER 6' TO 12'	5"	14.62
	OVER 12' TO 18'	6"	18.97
	OVER 18' TO 24' MAX	8"	28.55

NOTE: ABOVE POST DIMENSIONS AND WEIGHTS ARE MINIMUMS. LARGER SIZES MAY BE USED.

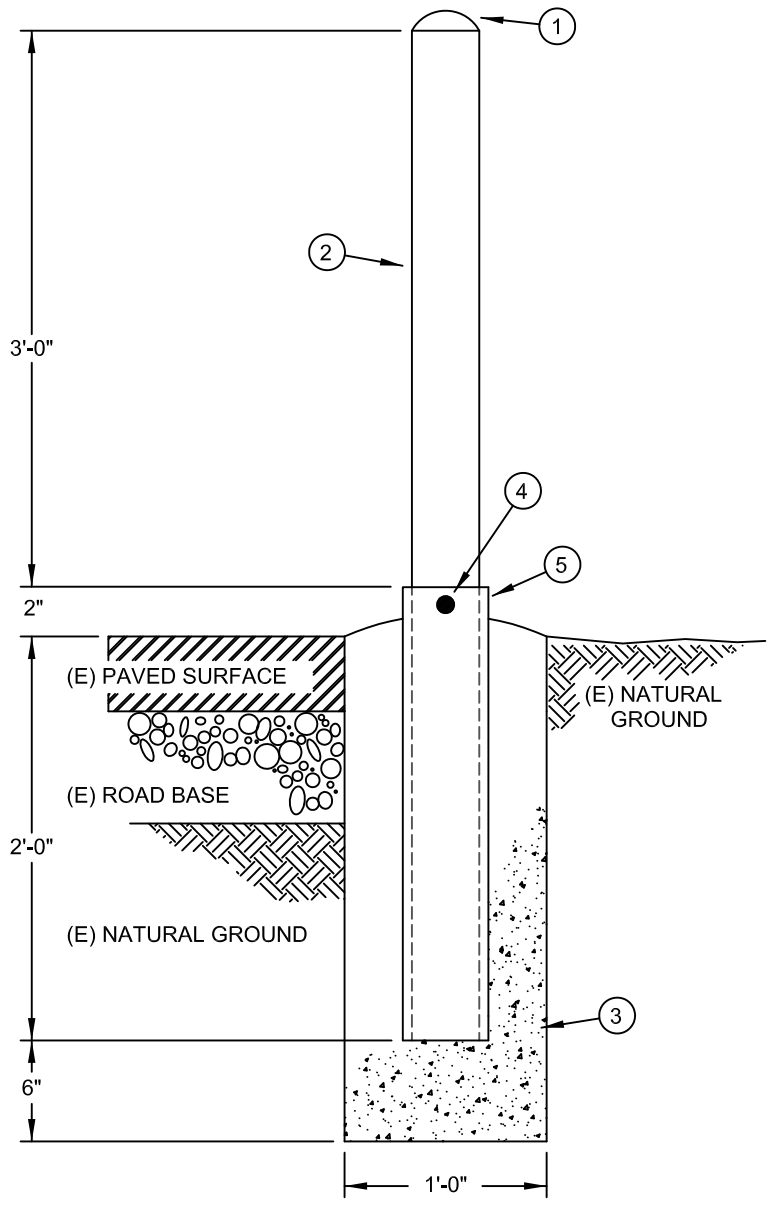


NOTES:

1. TABLE SHOWS EXAMPLES OF POST AND BRACE SECTIONS WHICH MAY COMPLY WITH THE SPECIFICATIONS.
2. SECTIONS SHOWN IN THE TABLES MUST ALSO COMPLY WITH THE STRENGTH REQUIREMENTS AND OTHER PROVISIONS OF THE SPECIFICATIONS.
3. OTHER SECTIONS WHICH COMPLY WITH THE STRENGTH REQUIREMENTS AND OTHER PROVISIONS OF THE SPECIFICATIONS MAY BE USED ON APPROVAL OF THE ENGINEER.
4. OPTIONS EXERCISED SHALL BE UNIFORM ON ANY ONE PROJECT.
5. DIMENSIONS SHOWN ARE NOMINAL.

CALAVERAS COUNTY WATER DISTRICT		
GENERAL DETAILS		
CHAIN-LINK FENCE AND GATES		
DRAWN BY: CCWD STAFF	SCALE: NONE	CCWD STANDARD DRAWING NO. G07
APPROVED: S.HUTCHINGS	DATE: DEC 2008	

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REMOVABLE GUARD POST

ITEM #	DESCRIPTION
①	3" PVC END CAP
②	3" SCH 40 STEEL POST, PAINTED SAFETY YELLOW, PLAIN END
③	CLASS 3 CONCRETE
④	1/2" BOLT THRU SLEEVE & POST w/NUT
⑤	4" STEEL SLEEVE EXTENDING 2" ABOVE CONCRETE

NOTES:

1. EXPOSED PIPE TO BE PAINTED YELLOW WITH TWO COATS OF PRIMER.

CALAVERAS COUNTY WATER DISTRICT		
GENERAL DETAILS REMOVABLE GUARD POST		
DRAWN BY: CCWD STAFF	SCALE: NONE	G12
APPROVED: CHARLES PALMER	DATE: SEPT. 2015	
CCWD STANDARD DRAWING NO.		

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