



# Ventura County Community College District

PURCHASING DEPARTMENT

July 18, 2017

Dear Prospective Bidders, Attached is the bid packet for

## **Bid 545, Ventura College Office Gymnasium HVAC Replacement**

- **A mandatory Job-Walk will begin at 10:00 a.m., Thursday, August 3, 2017.** Bidders are to meet at the Ventura College, Maintenance & Operations Department, 4900 Loma Vista Road, Ventura, CA 93003. For directions call 805-289-6000. Project worksite is at the Ventura College Athletic Event Center, (AEC). Following the job-walk, all further questions are to be emailed to the Purchasing Specialist as listed below. **The Question Deadline is 4:00 p.m., Wednesday, August 9, 2017.**
- **The deadline for submission of a bid proposal is 3:00 p.m., Thursday, August 17, 2017.** Bid proposals should be enclosed in a sealed envelope, addressed and delivered to the Ventura County Community College District Purchasing Department, 761 E. Daily Drive, Suite 200, Camarillo, CA, 93010, prior to this time. Each envelope shall bear the Title of the Project, the Project Number and the Name of the Bidder. No telephonic or telegraphic proposals shall be accepted. Proposals that arrive after the time set will be returned to the Bidder unopened. It is the responsibility of the Bidder to verify that their proposal has been received by the VCCCD Purchasing Department prior to the opening date. Verification of receipt can be made through the listed Purchasing Specialist.
- Prevailing Wage is required. In accordance with Section §1773 of the California Labor Code, the Contractor shall post a copy of the determination prevailing rates of wages at each job site. A copy of these determinations, entitled "PREVAILING WAGE SCALE" is available to any interested party through the internet at: [www.dir.ca.gov](http://www.dir.ca.gov). The Contractor and any Subcontractor(s) shall not pay less than the specified prevailing rates of wages to all workers employed by them in execution of the contract.
- Each Bidder submitting a proposal to complete the work, labor, materials and/or services ("Work") subject to this procurement must be a Department of Industrial Relations registered contractor pursuant to Labor Code 1725.5 ("DIR Registered Contractor"). A Bidder who is not a DIR Registered Contractor when submitting a proposal for the work is deemed "not qualified" and the proposal of such a Bidder will be rejected for non-responsiveness. Pursuant to Labor Code 1725.5; all Subcontractors identified in a Bidder's Subcontractor List shall be DIR Registered Contractors. If awarded the Contract for the Work, at all times during performance of the work, the Bidder and all Subcontractors, of any tier shall be DIR Registered Contractors.
- Pursuant to Public Contract Code §3300, Bidder must possess a current **Class C-20** California Contractors License at the time that the Contract for the Work is awarded.
- The award shall be subject to final agreement on terms, conditions, and scope of work between VCCCD and Bidder.

Thank you for your interest in this project. You may contact me with any questions about this bid at the email below, or contact me at 805-652-5561.

Sincerely,  
Janice Kisch, Purchasing Specialist / [Jkisch@vcccd.edu](mailto:Jkisch@vcccd.edu)

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**VENTURA COUNTY COMMUNITY COLLEGE DISTRICT  
NOTICE TO CONTRACTOR CALLING FOR BID**

NOTICE IS HEREBY GIVEN that the above-named California Community College District, acting by and through its Board of Trustees, hereinafter referred to as “the District”, is calling for bids for

**Bid 545, Ventura College Gymnasium Office HVAC Replacement.**

Bids will be received at Ventura County Community College District, 761 E. Daily Drive, Suite 200, Camarillo, CA 93010, Attn: Purchasing Department up to but no later than 3:00 p.m. on Thursday, August 17, 2017, at which time bids will be opened and publicly read. All bid proposals must be sealed and submitted on forms furnished by the District. Each bid proposal must be accompanied by: (a) the required Bid Security; not less than 10% of the maximum amount of Bid Proposal inclusive of add-on or alternates, (b) Subcontractors List, (c) Non-Collusion Affidavit, and (d) Statement of Bidder’s Qualifications, all of which must be fully executed. Failure to comply shall render such proposal to be “Non Responsive” and rejected. Bid proposals must conform with and be responsive to the bid and contract documents. Copies may be obtained as PDF from the website at [http://www.vcccd.edu/departments/purchasing/bids\\_and\\_agreements/current.shtml](http://www.vcccd.edu/departments/purchasing/bids_and_agreements/current.shtml)

**A mandatory Job-Walk will begin at 10:00 a.m., Thursday, August 3, 2017.** Bidders are to meet at the Ventura College Maintenance & Operations Department, 4900 Loma Vista Road, Ventura, CA 93003. Pursuant to Public Contract Code §3300, Bidder must possess a current Class C-20 Contractors License at the time that the contract for the work is awarded.

Each Bidder submitting a proposal to complete the work, labor, materials and/or services (“Work”) subject to this procurement must be a Department of Industrial Relations registered contractor pursuant to Labor Code §1725.5 (“DIR Registered Contractor”). A Bidder who is not a DIR Registered Contractor when submitting a proposal for the work is deemed “not qualified” and the proposal of such a Bidder will be rejected for non-responsiveness. Pursuant to Labor Code §1725.5; all Subcontractors identified in a Bidder’s Subcontractor List shall be DIR Registered Contractors. If awarded the Contract for the Work, at all times during performance of the work, the Bidder and all Subcontractors, of any tier shall be DIR Registered Contractors.

In accordance with Section §1770 of the CA Labor Code, the Contractor shall post a copy of the determination prevailing rates of wages at each job site. In accordance with the provisions of CA Public Contract Code §22300, substitution of eligible and equivalent securities for any monies to ensure performance under the contract will be permitted at the request and expense of the Contractor. The Owner reserves the right to reject any or all bid proposals or to waive any irregularities or informalities in any bid proposal or in the bidding.

Janice Kisch, Purchasing Specialist

Publication Dates: July 18 and 26, 2017

# INSTRUCTIONS FOR BIDDERS

## Section 00100

### 1.01 Preparation and Submittal of Bid Proposal

- A. Bid Proposal Preparation.** All information required by the bid forms must be completely and accurately provided. Numbers shall be stated in both words and figures where so indicated in the bid forms; conflicts between a number stated in words and in figures are governed by the words, except where the figures represent an express, correctly calculated sum. Partially completed Bid Proposals may be deemed non-responsive. Bid Proposals submitted on other than the bid forms included herein shall be deemed non-responsive. Bid Proposals not conforming to these Instructions for Bidders and the Notice to Contractors Calling for Bids (“Call for Bids”) may be deemed non-responsive and rejected. Each Bidder is solely responsible for all costs and expenses incurred by the Bidder in preparing and submitting a Bid Proposal to the District.
- B. Bid Proposal Submittal.** Bid Proposals shall be submitted at the place designated in the Call for Bids in sealed envelopes bearing on the outside the Bidder’s name and address along with an identification of the Work for which the Bid Proposal is submitted. Bidders are solely responsible for timely submission of Bid Proposals to the District at the place designated in the Call for Bids.
- C. Date and Time of Bid Proposal Submittal.** A Bid Proposal is considered submitted only if the outer envelope containing the Bid Proposal is stamped by the District’s date/time stamp machine at the place designated for submittal of the Bid Proposal. The date/time stamp is controlling and determinative as to the date and time of the Bidder’s submittal of its Bid Proposal. Bid Proposals received after the date and time specified in the Call for Bids are non-responsive and will be returned to the Bidder unopened.
- D. Alternate Bid Item(s).** If the Bid Proposal forms do not specifically call for the submittal of alternate bid item(s) and a Bidder submits alternate bid item(s), the District may deem the Bid Proposal to be non-responsive and reject the same. In the event that alternate item(s) are specifically called for in the Bid Proposal forms, any Bid Proposal which does not include bid(s) for the alternate item(s) may result in the Bid Proposal being deemed by the District to be non-responsive and rejected. In the event that bids for alternate item(s) are specifically called for in the Bid Proposal forms, the Bidder is referenced to the provisions of the Contract Documents permitting the District, during performance of the Work of the Contract Documents, to add or delete such alternate item(s) with the cost or credit (inclusive of all direct and indirect costs, supervision, overhead and profit) for such alternate item(s) to be in the amount(s) set forth in the Bidder’s Bid Proposal for such alternate item(s).

- 1.02 Bid Security.** Bid Security shall be in the form of: (a) cash, (b) a certified or cashier’s check made payable to the District or (c) a Bid Bond, in the form and content attached hereto, in favor of the District executed by the Bidder as a principal and an Admitted Surety Insurer under Code of Civil Procedure §§995.120 and 995.311 as surety (the “Bid Security”) in an amount not less than the percentage of the maximum amount of the Bid Proposal. Any Bid Proposal submitted without the required Bid Security is non-responsive and will be rejected.

- 1.03 Signatures.** All bid forms shall be executed by an individual duly authorized to execute the same on behalf of the Bidder.
- 1.04 Modifications.** Changes to the Bid Proposal which are not specifically called for or permitted may result in the District's rejection of the Bid Proposal as being non-responsive. No oral or telephonic modification of any submitted Bid Proposal will be considered. A written modification may be considered only if actually received by the District ten (10) days prior to the scheduled closing time for receipt of Bid Proposals.
- 1.05 Erasures; Inconsistent or Illegible Bid Proposals.** Bid Proposals must not contain any erasures, interlineations or other corrections unless the same are suitably authenticated by affixing in the margin immediately opposite such erasure, inter-lineation or correction the surname(s) of the person(s) signing the Bid Proposal. Any Bid Proposal not conforming to the foregoing may be deemed by the District to be non-responsive. If any Bid Proposal, or portions thereof, is determined by the District to be illegible, ambiguous or inconsistent, the District may reject such a Bid Proposal as being non-responsive.
- 1.06 Examination of Site and Contract Documents.** Each Bidder shall, at its sole cost and expense, inspect the Site to become fully acquainted with the Contract Documents and conditions affecting the Work. The failure of a Bidder to receive or examine any of the Contract Documents or to inspect the Site shall not relieve such Bidder from any obligation with respect to the Bid Proposal, the Contract or the Work required under the Contract Documents. The District assumes no responsibility or liability to any Bidder for, nor shall the District be bound by, any understandings, representations or agreements of the District's agents, employees or officers concerning the Contract Documents or the Work made prior to execution of the Contract. The submission of a Bid Proposal shall be deemed prima facie evidence of the Bidder's full compliance with the requirements of this section.
- 1.07 Withdrawal of Bid Proposal.** Any Bidder may withdraw its Bid Proposal without penalty by written request received by the District prior to the scheduled closing time for the receipt of Bid Proposals. Requests for withdrawal of bid proposals after scheduled closing time shall be in accordance with Public Contract Code §§5100 et seq.
- 1.08 Documents Required Upon Award of Contract.** The Agreement which the successful Bidder, as Contractor, will be required to execute along with the other documents which will be required to be furnished are included in the Contract Documents and shall be carefully examined by the Bidder.
- 1.09 Interpretation of Drawings, Specifications or Contract Documents.** Any Bidder in doubt as to the true meaning of any part of the Contract Documents or who finds discrepancies, errors or omissions therein; or who finds variances in any of the Contract Documents with applicable rules, regulations, ordinances and/or laws, may submit to the District a written request for an interpretation or correction thereof. It is the sole and exclusive responsibility of the Bidder to submit such request not less than seven (7) days prior to the scheduled closing for the receipt of Bid Proposals. Interpretations or corrections of the Contract Documents will be by written addendum issued by the District, a copy of which will be sent to each Bidder who attends the mandatory pre-bid job walk. No person is authorized to render an oral interpretation or correction of any portion of the Contract Documents to any Bidder, and no Bidder is authorized to rely on any such oral interpretation or correction. Failure to request interpretation or clarification of any portion of the Contract Documents pursuant to the foregoing is a waiver of any discrepancy, defect or conflict therein.

**1.10 Request for Substitutions Prior to Bid Opening.** Any Bidder may submit Request(s) for Substitution on the form provided herein (Section 01630), together with all substantiating data, no later than seven (7) days prior to the scheduled closing time for receipt of the Bid Proposals, in accordance with Public Contract Code §3400. The District shall use its best efforts to consider and act upon such Request for Substitution in a timely fashion. Actions taken, if any, concerning the Request for Substitution will be by written addendum issued by the District, a copy of which will be sent to each Bidder who attends the mandatory pre-bid job walk. In the absence of written addendum, the Request for Substitution shall be deemed denied for purposes of the District's evaluation of the Bid Proposals and award of the Contract.

**1.11 District's Right to Modify Contract Documents.** Before the scheduled closing time for receipt of Bid Proposals, the District may modify the Work, the Contract Documents, or any portion(s) thereof by the issuance of written addenda disseminated to all Bidders who have attended the mandatory pre-bid job walk. If the District issues any addenda, the failure of any Bidder to acknowledge such addenda in its Bid Proposal may render the Bid Proposal non-responsive.

**1.12 Bidders Interested in More Than One Bid Proposal.** No person, firm, corporation or other entity shall submit or be interested in more than one Bid Proposal for the same Work; provided, however, that a person, firm or corporation that has submitted a sub-proposal to a Bidder or who has quoted prices for materials to a Bidder is not thereby disqualified from submitting a sub-proposal, quoting prices to other Bidders or submitting a Bid Proposal for the proposed Work to the District.

### **1.13 Award of Contract**

**A. Waiver of Irregularities or Informalities.** The District reserves the right to reject any and all Bid Proposals or to waive any irregularities or informalities in any Bid Proposal or in the bidding.

**B. Award to Lowest Responsive Responsible Bidder.** The award of the Contract, if any, will be to the responsible Bidder submitting the lowest responsive Bid Proposal on the basis of the Base Bid Proposal and accepted bid alternate items, if any.

**C. Selection of Alternate Bid Items; Basis of Award of Contract.** The selection of Bid Alternates for determination of the lowest Bid Proposal will be based upon the Base Bid Proposal alone or a combination of the Base Bid Proposal and one or more Bid Alternates as selected by the District in accordance with the method for additive or deductive items specified in the bid solicitation.

**D. Alternate Bid Items Not Included in Award of Contract.** During performance of the Work, it is the District's option to add or delete from the scope of the Work Alternate Bid Items that were not included in the award of Contract. District may elect to have work done at price(s) set forth in the Alternate Bid Items Proposal.

**E. Responsive Bid Proposal.** A responsive Bid Proposal shall mean a Bid Proposal which conforms, in all material respects, to the Bid and Contract Documents.

**F. Responsible Bidder.** A responsible Bidder is a Bidder who has the capability in all respects to perform fully the requirements of the Contract Documents and the moral and business integrity and reliability that will assure good faith performance. In determining responsibility, the following criteria will be considered: (i) the ability, capacity and skill of the Bidder to perform the Work of the Contract Documents; (ii) whether the Bidder can perform the Work promptly and within the time specified, without delay or interference; (iii) the character, integrity, reputation, judgment, experience and efficiency of the Bidder; (iv) the quality of performance of the Bidder on previous contracts, by way of example only, the following information will be considered: (a) the administrative, consultant or other cost overruns incurred by the District on previous contracts with the Bidder; (b) the Bidder's compliance record with contract general conditions on other projects; (c) the submittal by the Bidder of excessive and/or unsubstantiated extra cost proposals and claims on other projects; (d) the Bidder's record for completion of work within the contract time and the Bidder's compliance with the scheduling and coordination requirements on other projects; (e) the Bidder's demonstrated cooperation with the District and other contractors on previous contracts; (f) whether the work performed and materials furnished on previous contracts was in accordance with the Contract Documents; (v) the previous and existing compliance by the Bidder with laws and ordinances relating to contracts; (vi) the sufficiency of the financial resources and ability of the Bidder to perform the work of the Contract Documents; (vii) the quality, availability and adaptability of the goods or services to the particular use required; (viii) the ability of the Bidder to provide future maintenance and service for the warranty period of the Contract; (ix) whether the Bidder is in arrears on debt or contract or is a defaulter on any surety bond; (x) such other information as may be secured by the District having a bearing on the decision to award the Contract, to include without limitation the ability, experience and commitment of the Bidder to properly and reasonably plan, schedule, coordinate and execute the Work of the Contract Documents and whether the Bidder has ever been debarred from bidding or found ineligible for bidding on any other projects. The ability of a Bidder to provide the required bonds will not of itself demonstrate responsibility of the Bidder. Upon request of the District, Bidder must promptly submit satisfactory evidence of any of the items listed above. The District may reject a Bidder or subcontractor that has failed to complete past Contract work for the District. The District reserves the right to reject any or all bid proposals or to waive any irregularities or informalities in any bid proposal or in the bidding.

**G. Participation by Other Public Entities:** Other public entities in the State of California may procure items and /or services off this bid under the same terms and conditions stated in this bid.

## 1.14 Subcontractors

**A. Designation of Subcontractors; Subcontractors List.** Each Bidder shall submit a list of its proposed Subcontractors for the proposed Work as required by the Subletting and Subcontracting Fair Practices Act (California Public Contract Code §§4100 et seq.) on the form furnished (Section 00215). The District may request that one or more apparent low Bidders provide to the District within twenty four (24) hours of bid opening the license numbers and value of work for each listed subcontractor submitted by Bidder. Any Bidder's failure to comply with the District's request may deem such Bidder's bid non-responsive and subject to rejection by the District.

**B. Work of Subcontractors.** The organization or arrangements of the Specifications and Drawings shall not limit the extent of the Work of the Contract Documents. Accordingly, all Bidders are

encouraged to disseminate all of the Specifications, Drawings and other Contract Documents to all persons or entities submitting sub-bids to the Bidder. The omission of any portion or item of Work from the Bid Proposal or from the sub-bidders' sub-bids which is reasonably inferable from the Contract Documents is not a basis for adjustment of the Contract Price or the Contract Time.

- 1.15 Workers' Compensation Insurance.** Pursuant to California Labor Code §3700, the successful Bidder shall secure Workers' Compensation Insurance for its employees engaged in the Work of the Contract. The successful bidder shall sign and deliver to the District the Workers Compensation Insurance certificate provided in Section 00415 prior to performing any of the Work under the Contract.
- 1.16 Bid Security Return.** The Bid Security of three or more low Bidders, the number being solely at the discretion of the District, will be held by the District for ten (10) days after the period for which Bid Proposals must be held open (which is set forth in the Call for Bids) or until posting by the successful Bidder(s) of the bonds, certificates of insurance required and return of executed copies of the Agreement, whichever first occurs, at which time the Bid Security will be returned to them.
- 1.17 Forfeiture of Bid Security.** If the Bidder awarded the Contract fails or refuses to execute the Agreement within seven (7) days from the date of receiving notification that it is the Bidder to whom the Contract has been awarded, the District may declare the Bidder's Bid Security forfeited as damages caused by the failure of the Bidder to enter into the Contract and may thereupon award the Contract for the Work to the responsible Bidder submitting the next lowest responsive Bid Proposal or may call for new bids, in District's sole and exclusive discretion.
- 1.18 Contractor's License.** No Bid Proposal will be considered from a Bidder who, at the time Bid Proposals are opened, is not licensed to perform the Work of the Contract Documents, in accordance with the Contractors License Law, California Business & Professions Code §§7000 et seq. This requirement is not a mere formality and cannot be waived by the District or its Board of Trustees. The required California Contractor's License classification(s) for the Work is set forth in the Call for Bids. The Contractor will be required to maintain the license(s) through the duration of the Contract. Any questions concerning a Contractor may be referred to the Registrar, Contractors' State License Board, P.O. Box 2600, Sacramento, CA 95826.
- 1.19 Anti-Discrimination.** It is the policy of the District that there be no discrimination against any prospective or active employee engaged in the Work because of race, color, ancestry, national origin, religious creed, sex, age or marital status. All Bidders agree to comply with the District's anti-discrimination policy and all applicable Federal and California anti-discrimination laws including but not limited to the California Fair Employment & Housing Act beginning with California Government Code §§12940 et seq. and California Labor Code §1735. In addition, all Bidders agree to require like compliance by any Subcontractor employed by them on the Work of the Contract.

## **1.20 Job-Walk**

- A. District Conduct of Job-Walk.** The District will conduct a Job Walk at the time and place designated in the Call for Bids. Regardless of whether the Job Walk is or is not designated as being mandatory, the District may, in its sole and exclusive discretion, elect to conduct one or more Job Walks in addition to that set forth in the Call for Bids, in which event the District shall notify all Bidders who have obtained the Contract Documents pursuant to the Call for Bids of any such additional Job Walk. If the District elects to conduct any Job Walk in addition to that set



forth in the Call for Bids, the District shall, in its notice of any such additional Job Walks, indicate whether Bidders' attendance at such additional Job-Walks is/are mandatory; in the event that any such additional Job-Walks is/are designated as being mandatory, the provisions of this section 1.21 shall be deemed to apply to such additional Job-Walks.

**B. Mandatory Job Walk.** If the Job Walk is designated in the Call for Bids as being mandatory, the failure of any Bidder to have its authorized representative present at the Job Walk will be grounds for the District to reject such bid and the Bid Proposal will be returned to the Bidder unopened. Where the Job Walk is mandatory, a Bidder may have more than one authorized representative and/or representatives of its Subcontractors present at the Job Walk; provided, however that attendance by representatives of the Bidder's Subcontractors without attendance by a representative of the Bidder shall not be sufficient to meet the Bidder's obligations hereunder and will be grounds for the District to declare the Bid Proposal of such Bidder to be non-responsive. Notwithstanding any other provisions of the Call for Bids or these Instructions for Bidders, in the event that the Job Walk is designated in the Call for Bids as being mandatory, the District will not consider the Bid Proposal of any Bidder who has obtained the Bid and Contract Documents, pursuant to Call for Bids, after the date and time set forth therein for such mandatory Job Walk; any Bid Proposal submitted by any such Bidder shall be deemed non-responsive, rejected and returned unopened to the Bidder submitting the same.

**C. Non-Mandatory Job Walk.** Unless designated in the Call for Bids as being mandatory, the Job Walk shall be deemed non-mandatory. The failure of any Bidder to have its authorized representative(s) present at such non-mandatory Job Walk shall not be a basis for deeming the Bid Proposal of such Bidder to be non-responsive. The foregoing notwithstanding, all Bidders are encouraged to attend the Job Walk. In the event that the Job Walk is not designated as being mandatory, Bid and Contract Documents may be obtained by a Bidder, on or after the time designated for the Job Walk; in such event, if such Bidder desires a Job Walk to be conducted, it shall be the sole and exclusive responsibility of such Bidder to request, in writing, that the District conduct an additional Job Walk. The District may, in its sole and exclusive discretion, elect to conduct or not conduct such requested Job Walk with consideration of factors such as the time remaining before the scheduled closing time for the receipt of Bid Proposals; the District may condition the conducting of such requested Job Walk upon reimbursement, by the Bidder requesting such Job Walk, of the actual or reasonable costs of the District's personnel and/or the District's agents or representatives in arranging for and conducting such Job Walk. The election of the District not to conduct a Job Walk requested by a Bidder obtaining the Contract Documents after the date and time designated in the Call for Bids for the Job Walk shall not operate to waive, limit or restrict any of the provisions of the Contract Documents, the Bidder's submittal of a Bid Proposal in conformity with the Contract Documents, or if awarded the Contract, performance of the Work and other obligations in strict conformity with the Contract Documents. If the District elects to conduct an additional Job Walk requested by a Bidder who has obtained the Contract Documents after the time designated in the Call for Bids for the Job Walk, the District shall notify all other Bidders who have theretofore obtained the Contract Documents of such requested Job Walk and the date, time and place where such requested Job Walk will be conducted and all such other Bidders may attend such requested additional Job Walk.

**1.21 Drug Free Workplace Certificate.** In accordance with California Government Code §§8350 et seq., the Drug Free Workplace Act of 1990, the successful Bidder will be required to execute a Drug Free Workplace Certificate concurrently with execution of the Agreement. The successful Bidder will be required to implement and take the affirmative measures outlined in such provisions. Failure of the

successful Bidder to comply with the measures outlined in such provisions may result in penalties, including without limitation, the termination of the Agreement, the suspension of any payment of the Contract Price otherwise due under the Contract Documents and/or debarment of the successful Bidder.

**1.22 Compliance with Immigration Reform and Control Act of 1986.** The Bidder is solely and exclusively responsible for employment of individuals for the Work of the Contract in conformity with the Immigration Reform and Control Act of 1986, 8 USC §§1101 et seq. (“IRCA”); the successful Bidder shall also require that any person or entity employing labor in connection with any of the Work of the Contract shall so similarly comply with the IRCA.

**1.23 Notice of Intent to Award Contract.** Following the public opening and reading of Bid Proposals, the District will issue a Notice of Intent to Award the Contract, identifying the Bidder to whom the District intends to award the Contract and the date/time/place of the District’s Board of Trustees meeting at which award of the Contract will be considered.

**1.24 Bid Protest.** Any Bidder submitting a Bid Proposal to the District may file a protest of the District’s intent to award the Contract provided that each and all of the following are complied with:

- A. The bid protest is in writing;
- B. The bid protest is filed and received by the District’s Purchasing Department not more than five (5) calendar days following the date of issuance of the District’s Notice of Intent to Award the Contract; and
- C. The written bid protest sets forth, in detail, all grounds for the bid protest, including without limitation all facts, supporting documentation, legal authorities and argument in support of the grounds for the bid protest; any matters not set forth in the written bid protest shall be deemed waived. All factual contentions must be supported by competent, admissible and creditable evidence.

Any bid protest not conforming to the foregoing shall be rejected by the District as invalid. Provided that a bid protest is filed in strict conformity with the foregoing, the District’s Purchasing Department or designee, shall review and evaluate the basis of the bid protest. The District’s Purchasing Department or designee shall provide the Bidder submitting the bid protest with a written statement concurring with or denying the bid protest. The District’s Board of Trustees will render a final determination and disposition of a bid protest by taking action to adopt, modify or reject the disposition of a bid protest as reflected in the written statement of the District’s Purchasing Department or designee. Action by the District’s Board of Trustees relative to a bid protest shall be final and not subject to appeal or reconsideration by the District, any employee or officer of the District or the District’s Board of Trustees. The issuance of a written statement by the Purchasing Department (or designee) and subsequent action by the District’s Board of Trustees shall be express conditions precedent to the institution of any legal or equitable proceedings relative to the bidding process, the District’s intent to award the Contract, the District’s disposition of any bid protest or the District’s decision to reject all Bid Proposals. In the event that any such legal or equitable proceedings are instituted and the District is named as a party thereto, the prevailing party(ies) shall recover from the other party(ies), as costs, all attorneys’ fees and costs incurred in connection with any such proceeding, including any appeal arising therefrom.

**1.25 Public Records.** All documents included in Bid Proposals become the exclusive property of the District upon submittal to the District. All Bid Proposals and other documents submitted in response to the Call for Bids become a matter of public record, except for information contained in such Bid Proposals deemed to be Trade Secrets (as defined in California Civil Code §3426.1). A Bidder that indiscriminately marks all or most of its Bid Proposal as exempt from disclosure as a public record, whether by the notations of "Trade Secret," "Confidential," "Proprietary," or otherwise, may render the Bid Proposal non-responsive and rejected. The District is not liable or responsible for the disclosure of such records, including those exempt from disclosure if disclosure is deemed required by law, by an order of Court, or which occurs through inadvertence, mistake or negligence on the part of the District or its officers, employees or agents. At such time as Bid Proposals are deemed a matter of public record, pursuant to the above, any Bidder or other party shall be afforded access for inspection and/or copying of such Bid Proposals, by request made to the District in conformity with the California Access to Public Records Act, California Government Code §§6250, et. seq.

**1.26 Bidder and Subcontractors DIR Registered Contractor Status.**

**Bidder Status.** In addition to other requirements established herein relating to Bidder qualifications, in order to be deemed “qualified” to submit a proposal for the Work, the Bidder must be a DIR Registered Contractor when submitting a proposal. The proposal of a Bidder who is not a DIR Registered Contractor when the proposal is submitted will be rejected for non-responsiveness.

**Listed Subcontractor’s Status.** All Subcontractors identified in a Bidder’s Subcontractor List shall be DIR Registered Contractors at the time of submittal of the proposal for the Work. The foregoing notwithstanding, a proposal is not subject to rejection for non-responsiveness when the Subcontractors List accompanying the proposal lists any Subcontractor(s) who is/are not DIR Registered Contractors if the listed subcontractors who are not DIR Registered become DIR Registered prior to the opening of proposals or become DIR Registered within twenty-four (24) hours of the opening of the proposals pursuant to Labor Code 1771.1 (c)(1) or (2). If the Subcontractors List accompanying the proposal lists any Subcontractor(s) who is/are not DIR Registered do not become registered prior to the opening of proposals or become DIR Registered within twenty four (24) hours of the opening of proposals pursuant to Labor Code 1771.1©(1) or (2), such proposal is not subject to rejection for non-responsiveness, provided that if the Bidder submitting the Subcontractors List with non-DIR registered Subcontractors is awarded the Contract for the Work, the Bidder shall request consent of the District to substitute another Subcontractor for the non-DIR Registered Subcontractor pursuant to Labor Code 1771.1(c)(3), without adjustment of the Contract Price or the Contract Time.

Additionally, all contractors and subcontractors must furnish electronic certified payroll records directly to the Labor Commissioner (aka Division of Labor Standards Enforcement). The phase-in timetable for this requirement can be found on the following link at <http://www.cir.ca.gov/Public-Works/SB854.html> (also find all related SB854 related information).

**1.27 Prevailing Wage Rates, Employment of Apprentices and Labor Compliance Program.**

**A. Payment of Prevailing Wage Rates.** The Bidder and all potential Subcontractors shall utilize the relevant prevailing wage rate determinations in the PREVAILING WAGE SCALE established by the Director of the Department of Industrial Relations in effect on the first advertisement date of the Notice to Contractors Calling For Bids in preparing the Bid Proposal and all component price quotations. Pursuant to Labor Code §1773.2, copies of these determinations are maintained at the District’s Measure Y offices located at 740 West Woodbury

Road, Pasadena, CA 91103, and are available to any interested party upon request. Copies of rate schedules are also available on the Internet at [http://www.dir.ca.gov/DIR/S&R/statistics\\_research.html](http://www.dir.ca.gov/DIR/S&R/statistics_research.html).

- B. Apprenticeship Committee Contract Award Information.** Pursuant to Labor Code §1777.5 and Title 8 California Code of Regulations §230, the Contractor and Subcontractors of any tier who are not already approved to train by an apprenticeship program sponsor shall, within ten (10) calendar days of signing the Contract or Subcontract, as applicable, but in any event prior to the first day in which the Contractor or Subcontractor has workers employed on the Project, submit the Public Works Contract Award Information form (DAS form 140 included in Section 00900 of the Contract Specifications) to the appropriate local apprenticeship committees whose geographic area of operation include the area of the Project and who can supply apprentices to the Project. Contractors and Subcontractors must also submit a copy of the forms to the District.
- C. Statement of Employer Fringe Benefit Payments.** Within five (5) calendar days of signing the Contract or Subcontract, as applicable, the Statement of Employer Payments (DSLE Form PW 26 included in Section 00900 of the Specifications) must be completed and submitted to the District by each Contractor and Subcontractor of any tier who pays benefits to a third party trust, plan or fund for health and welfare benefits, vacation funds or makes pension contributions. The form must contain, for each worker classification, the fund or trust name, address, administrator, and amount per hour contributed and frequency of contributions. Training fund contributions must also be reported on this form. See Article 4.21.9 of the Contract General Conditions.
- D. Notice to Subcontractors.** Bidders shall notify all potential Subcontractors submitting price quotations for portions of the Work of the requirements concerning payment of prevailing wage rates, payroll records, hours of work, employment of apprentices and the District's LCP requirements and enforcement procedures set forth in Article 4.21 of Section 00700 (General Conditions) and Section 00900 of the Contract Specifications.

*[End Of Section]*

**BID PROPOSAL**  
Section 00210

**TO:** **VENTURA COUNTY COMMUNITY COLLEGE DISTRICT**, a California Community College District, acting by and through its Board of Trustees ("District") 761 E. Daily Drive, Suite 200, Camarillo, CA 93010.

**FROM:**

\_\_\_\_\_  
*(Name of Bidder - as listed on license)*

\_\_\_\_\_  
*(Address)*

\_\_\_\_\_  
*(City, State, Zip Code)*

\_\_\_\_\_  
*(Telephone)*

\_\_\_\_\_  
*(Fax)*

\_\_\_\_\_  
*(E-Mail Address)*

\_\_\_\_\_  
*(Name(s) of Bidder's Authorized Representative(s) and Title)*

**1.01 Bid Proposal**

**A. Bid Proposal Amount**

Pursuant to and in compliance with the Notice to Contractors Calling for Bids, the Instructions for Bidders and the other documents relating thereto, the undersigned Bidder, having reviewed the Instructions for Bidders and all other Contract Documents and upon compliance with all requirements therein with reference to the submittal of this Bid Proposal, hereby proposes and agrees to perform the Contract including, without limitation, all of its component parts; to perform everything required to be performed; to provide and furnish any and all of the labor, materials, tools, equipment, applicable taxes, and services necessary to perform the work of the Contract in strict compliance with the Contract Documents and complete in a workmanlike manner all of the Work required for the Project described as:

**B. Bid 545, Ventura College Athletic Office HVAC Replacement**

**Base Bid Amount:**            \$

\_\_\_\_\_  
*(Total bid amount in figures)*

Dollars

\_\_\_\_\_  
*(Total bid amount in words)*

**D. Acknowledgment of Bid Addenda**

In submitting this Bid Proposal, the undersigned Bidder acknowledges receipt of all Bid Addenda issued by or on behalf of the District, as set forth below. The Bidder confirms that this Bid Proposal incorporates and is inclusive of, all items or other matters contained in Bid Addenda.

\_\_\_\_\_ **No Addenda Issued**  
(initial)

\_\_\_\_\_ **Addenda Nos. \_\_\_\_\_ received, acknowledged and**  
(initial) **incorporated into this Bid Proposal.**

**1.02 Rejection of Bid; Holding Open of Bid**

It is understood that the District reserves the right to reject this Bid Proposal and that this Bid Proposal shall remain open and not be withdrawn for the period of time specified in the Call for Bids, except as provided by law.

**1.03 Documents Comprising Bid Proposal**

The undersigned Bidder has submitted as its Bid Proposal the following: Bid Proposal (00210), List of Subcontractors (00215), Non-Collusion Affidavit (00220), Statement of Bidder’s Qualifications (00240), Bid Security (Cash, Cashier’s Check, Certified Check or Bid Bond (00260) and Verification of DIR Registration.

The Bidder acknowledges that if this Bid Proposal and the foregoing documents are not fully in compliance with applicable requirements set forth in the Call for Bids, the Instructions for Bidders and in each of the foregoing documents, the Bid Proposal may be rejected as non-responsive.

**1.04 Award of Contract**

It is understood and agreed that if written notice of the acceptance of this Bid Proposal and award of the Contract thereon is mailed or delivered by the District to the undersigned after the opening of Bid Proposals and within the time this Bid Proposal is required to remain open or at any time thereafter before this Bid Proposal is withdrawn, the undersigned will execute and deliver to the District the Agreement in the form attached hereto in accordance with the Bid Proposal as accepted within seven (7) calendar days after notification of acceptance and award. Concurrently with delivery of the executed Agreement to the District, the Bidder awarded the Contract shall deliver to the District: (1) the Labor and Material Payment Bond; (2) the Performance Bond; (3) the Drug-Free Workplace Certificate; (4) Certificates of Insurance evidencing all insurance coverages required to be provided under the Contract Documents; and (5) the Certificate of Workers’ Compensation Insurance. The Work under the Contract Documents shall be commenced by the undersigned Bidder, if awarded the Contract, on the date stated in the District's Notice to Proceed issued pursuant to the Contract Documents.

Completion of the Work and all Interim Milestones shall be achieved within the Contract Time and Interim Milestones specified in the Contract Documents.

**1.05 Notices**

All notices or other correspondence shall be addressed to the District and the Bidder at their respective addresses set forth herein. Notices shall be effective only if in writing and in conformity with the requirements for service of notices set forth in the Contract Documents.

**1.06 Contractor's License**

The undersigned Bidder is currently and duly licensed in accordance with the California Contractors License Law, California Business & Professions Code §§7000 et seq., under the following:

License Number: \_\_\_\_\_  
Class \_\_\_\_\_ Expiration Date \_\_\_\_\_ Class \_\_\_\_\_ Expiration Date \_\_\_\_\_  
Class \_\_\_\_\_ Expiration Date \_\_\_\_\_ Class \_\_\_\_\_ Expiration Date \_\_\_\_\_

DIR Registration Number: \_\_\_\_\_ Expiration Date: \_\_\_\_\_

By executing this Bid Proposal, the Bidder hereby certifies that: (a) it is duly licensed, in the necessary class(es), for performing the Work of the Contract Documents; (b) that such license shall be in full force and effect throughout the duration of the performance of the Work under the Contract Documents; and (c) that all Subcontractors providing or performing any portion of the Work of the Contract Documents shall be so similarly and appropriately licensed to perform or provide such portion of the Work.

**1.07 Designation of Subcontractors**

In compliance with the Subletting and Subcontracting Fair Practices Act (California Public Contract Code §§4100, et seq.) and amendments thereof, each Bidder shall set forth in the Subcontractors List: (a) the name and location of the place of business of each Subcontractor who will perform work or labor or render services to the Bidder in or about the construction of the Work to be performed under the Contract Documents in an amount in excess of one-half of one percent (0.5%) of the Bidder's Bid Proposal; and (b) the trade and/or portion of the Work which will be performed by each listed Subcontractor. The Bidder shall list only one Subcontractor for each trade and/or portion of the Work as is defined by the Bidder in its Bid Proposal. If a Bidder fails to list a Subcontractor for a portion of the work in excess of one-half of one percent (0.5%) of the Bidder's Bid Proposal or if the Bidder specifies more than one Subcontractor for the same portion of Work to be performed under the Contract Documents valued in excess of one-half of one percent (0.5%) of the Bidder's Bid Proposal amount, the Bidder shall be deemed to have agreed that it is fully qualified to perform that portion of the Work itself and that it shall perform that portion of the Work.

**1.08 Confirmation of Figures**

By submitting this Bid Proposal, the Bidder confirms that it has checked all of the above figures and understands that neither the District nor any of its agents, employees or representatives shall be responsible for any errors or omissions on the part of the undersigned Bidder in preparing and submitting this Bid Proposal.

**1.09 Acknowledgment and Confirmation**

The undersigned Bidder acknowledges its receipt, review and understanding of the Drawings, the Specifications and other Contract Documents pertaining to the proposed Work. The undersigned Bidder certifies that the Contract Documents are, in its opinion, adequate, feasible and complete for providing, performing and constructing the Work in a sound and suitable manner for the use specified and intended by the Contract Documents. The undersigned Bidder certifies that it has, or has available, all necessary equipment, personnel, materials, facilities and technical and financial ability to complete the Work for

the amount bid herein within the Contract Time and in accordance with the Contract Documents. The undersigned Bidder certifies that its bid amount includes funds sufficient to allow the Bidder to comply with all applicable local, state and federal laws and regulations governing the labor and services to be provided for the performance of the Work of the Contract and shall indemnify, defend and hold District harmless from and against any and all claims, demands, losses, liabilities and damages arising out of or relating to Bidder's failure to comply with applicable law in this regard.

By: \_\_\_\_\_  
(Signature & Date)

*(Corporate Seal)*

\_\_\_\_\_  
(Typed or Printed Name of Bidder's Authorized Representative)

Title: \_\_\_\_\_

Date: \_\_\_\_\_

*[End Of Section]*



**LIST OF SUBCONTRACTORS**  
Section 00215

1. Licensed Name of Subcontractor	2. Address of Office, Mill or Shop	3. Trade or Portion of Work	4. Subcontractor's License Number	4. DIR Registration Number	5. \$ Value of Work
			Requested by District	Requested by District	Fill out ONLY if requested by District
			Requested by District	Requested by District	Fill out ONLY if requested by District
			Requested by District	Requested by District	Fill out ONLY if requested by District
			Requested by District	Requested by District	Fill out ONLY if requested by District
			Requested by District	Requested by District	Fill out ONLY if requested by District
			Requested by District	Requested by District	Fill out ONLY if requested by District
			Requested by District	Requested by District	Fill out ONLY if requested by District
			Requested by District	Requested by District	Fill out ONLY if requested by District
			Requested by District	Requested by District	Fill out ONLY if requested by District

**Name of Bidder:** \_\_\_\_\_ **Authorized Signature:** \_\_\_\_\_

[Duplicate and attach additional page(s) as required.]

**NON-COLLUSION AFFIDAVIT**

**Section 00220**

STATE OF CALIFORNIA  
COUNTY OF \_\_\_\_\_

I, \_\_\_\_\_ being first duly sworn, depose and say that I am  
*(Typed or Printed Name)*  
the \_\_\_\_\_ of \_\_\_\_\_,  
*(Title)* *(Bidder Name)*  
the party submitting the foregoing Bid Proposal (the "Bidder"). In connection with the foregoing Bid Proposal, the undersigned declares, states and certifies that:

- 1.01 The Bid Proposal is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization or corporation.
- 1.02 The Bid Proposal is genuine and not collusive or sham.
- 1.03 The Bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any other bidder or anyone else to put in sham bid, or to refrain from bidding.
- 1.04 The Bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price, or that of any other bidder, or to fix any overhead, profit or cost element of the bid price or that of any other bidder, or to secure any advantage against the public body awarding the contract or of anyone interested in the proposed contract.
- 1.05 All statements contained in the Bid Proposal and related documents are true.
- 1.06 The Bidder has not, directly or indirectly, submitted the bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any person, corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Executed this \_\_\_\_\_ day of \_\_\_\_\_, 2017, at \_\_\_\_\_  
*(City, County and State)*

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

\_\_\_\_\_  
*Signature*

\_\_\_\_\_  
*Address*

\_\_\_\_\_  
*Name Printed or Typed*

\_\_\_\_\_  
*City, County and State*

( ) \_\_\_\_\_  
*Area Code and Telephone Number*

**STATEMENT OF BIDDER'S QUALIFICATIONS**  
Section 00240

**1.01 Bidder's Organization**

A. Form of entity of Bidder, i.e, corporation, partnership, etc. \_\_\_\_\_

1. If a corporation, state the following: \_\_\_\_\_  
State of Incorporation: \_\_\_\_\_  
Date of Incorporation: \_\_\_\_\_  
President/Chief Executive Officer: \_\_\_\_\_  
Secretary: \_\_\_\_\_  
Treasure/Chief Financial Officer: \_\_\_\_\_

2. If a partnership, state the following:  
Date of Organization: \_\_\_\_\_  
Type of Partnership (general, limited): \_\_\_\_\_  
Names of all general partners; if any of the general partners are not natural persons, provide the information for each such general partner requested by Paragraphs 1.01.A.1, 1.01.A.2 and 1.01.A.4 as appropriate: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. If a proprietorship, state the following:  
Names of all proprietors: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. If a joint venture, state the following: \_\_\_\_\_  
Date of organization: \_\_\_\_\_  
Names of all Joint Venture members. For each Joint Venture member, identify the form of entity and provide the information requested by Paragraphs 1.01.A.1, 1.01.A.2 and 1.01.1.C for each Joint Venture member as appropriate: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. Bidder's form of entity is other than listed above, describe the type of entity or organization and identify all principals or owners of equity in the entity or organization \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

B. Number of years your organization has been in business as a contractor: \_\_\_\_\_  
Organization longevity must also be in compliance with item 1.03 C. Licensing, and have been in business with the advertised classification for a minimum of 5 years. Do you meet this qualification? \_\_\_\_ Yes \_\_\_\_ No

C. Number of years your organization has conducted business under its present name: \_\_\_\_\_

1. If your organization has conducted business under a name or name style different than your organization's present name, identify all prior name(s) or name style(s): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. For each name or name style identified in Paragraph 1.01.C.1, state the dates during which you conducted business under each name or style: \_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## 1.02 Financial

A. Attach a current audited, reviewed or compiled Financial Statement for your organization prepared by a Certified Public Accountant licensed under the laws of the State of California utilizing generally accepted accounting practices applied in a consistent manner. The Financial Statement must include a current balance sheet and income statement showing: (i) current assets (i.e., cash, accounts receivable, accrued income, deposits, material inventory, etc.); (ii) net fixed assets; (iii) other assets; (iv) current liabilities (i.e., accounts payable, accrued salaries, accrued payroll taxes, etc.); and (v) other liabilities (i.e., capital, capital stock, earned surplus, retained earnings, etc.).

B. Is the attached Financial Statement for the identical organization as the Bidder?  
\_\_\_\_\_ Yes \_\_\_\_\_ No.

If not, explain the relationship and financial responsibility of the organization whose Financial Statement is provided (i.e., parent/subsidiary, etc.).

### 1.03 Licensing

A. California Contractors License:

License Number: \_\_\_\_\_

Expiration Date: \_\_\_\_\_

Responsible Managing Employee/Officer: \_\_\_\_\_

License Classification(s): \_\_\_\_\_

B. Has a claim or other demand ever been made against your organization's California Contractors License Bond? \_\_\_\_\_ Yes \_\_\_\_\_ No

If yes, on a separate attachment, state the following: (i) the name, address and telephone number of each person or entity making claim or demand; (ii) the date of each claim or demand; (iii) the circumstances giving rise to each such claim or demand; and (iv) the disposition of each such claim or demand.

C. The District requires a minimum of 5 years of licensed work experience within the Contractor Classification advertised, with no gaps in license coverage or change of company name. State the number of years this company has performed work under the above and advertised classification: \_\_\_\_\_ years.

D. Has a complaint ever been filed against your organization's California Contractors License with the California Contractors State License Board?  
\_\_\_\_\_ Yes \_\_\_\_\_ No

If yes, on a separate attachment, state the following for each complaint: (i) the name, address and telephone number of each person or entity making the complaint; (ii) the date of each complaint; (iii) the circumstances giving rise to each such complaint; and (iv) the disposition of each such complaint, including without limitation, any disciplinary or other action imposed or taken by the California Contractors State License Board as a result of any such complaint.

E. Attach to this Statement true and correct copies of the following:

1. Your organization's California Contractors License (the copy must clearly and legibly show: (i) the licensee name; (ii) the expiration date; (iii) the classification(s) of licensure).
2. The Contractors License Bond posted by your organization in connection with your California Contractors License pursuant to California Business & Professions Code §§7071.5 and 7071.6.
3. If your organization's California Contractors License is issued by virtue of the qualification of a responsible managing employee or responsible managing officer, the Qualifiers Bond if required pursuant to California Business & Professions Code §7071.9).

- F. Attach to this statement a copy of the Contractors DIR Registration.
1. Each Bidder submitting a proposal to complete the work, labor, materials and/or services (“Work”) subject to this procurement must be a Department of Industrial Relations registered contractor pursuant to Labor Code 1725.5 (“DIR Registered Contractor”).
  2. Pursuant to Labor Code 1725.5; all Subcontractors identified in a Bidder’s Subcontractor List shall be DIR Registered Contractors.
  3. If awarded the Contract for the Work, at all times during performance of the work, the Bidder and all Subcontractors, of any tier shall be DIR Registered Contractors.

**1.04 Experience**

A. List the categories of work your organization typically performs with your own forces: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

B. Claims and lawsuits (if you answer yes to any of the following, you must attach details).

1. Have any lawsuits or other administrative, legal, arbitration or other proceedings, ever been brought or commenced against your organization or any of its principals, officers or equity owners in connection with any construction contract or construction project? \_\_\_\_\_ Yes \_\_\_\_\_ No

If so, describe the circumstances, the amount demanded or other relief demand and the disposition of each such lawsuit or other proceeding.

2. Has your organization ever filed a lawsuit or commenced other administrative, legal or other proceedings in connection with any construction contract or construction project? \_\_\_\_\_ Yes \_\_\_\_\_ No

If so, describe the circumstances, the amount demanded or other relief demand and the disposition of each such lawsuit or other proceeding.

3. Are there any judgments, orders, decrees or arbitration awards pending, outstanding against your organization or any of the officers, directors, employees or principals of your organization? \_\_\_\_\_ Yes \_\_\_\_\_ No

If so, describe each such judgment, order, decree or arbitration award and the present status of the satisfaction or discharge thereof.

**C.** On a separate attachment, list all construction projects your organization has in progress and for each project listed, state: (i) a general description of the work performed by your organization on the project; (ii) the dollar value of the work performed or to be performed by your organization; (iii) the owner's name, name of the owner's representative and the address and telephone number of the owner and the owner's representative; (iv) the project architect's name, address, telephone number and contact person; (v) percent presently complete; and (vi) the current scheduled completion date.

**D.** On a separate attachment, list all construction projects completed by your organization in the past five (5) years and for each project identified, state: (i) a general description of the work performed by your organization on the project; (ii) the dollar value of the work performed or to be performed by your organization; (iii) the owner's name, name of the owner's representative and the address and telephone number of the owner and the owner's representative; (iv) the project architect's name, address, telephone number and contact person; (v) percent presently complete; and (vi) the current scheduled completion date.

**E.** Has your organization ever refused to sign a contract awarded to it?  
\_\_\_\_\_ Yes \_\_\_\_\_ No

If so, on a separate attachment, state the following: (i) describe each such contract; (ii) the owner's name, address, telephone number and contact person; and (iii) the circumstances of your refusal to sign such contract.

**F.** Has your organization ever failed to complete a construction contract?  
\_\_\_\_\_ Yes \_\_\_\_\_ No

If so, on a separate attachment, state the following: (i) describe each such contract; (ii) the owner's name, address, telephone number and contact person; and (iii) the circumstances of your failure to complete such contract.

**G.** Has your organization ever been declared in default of a construction contract?  
\_\_\_\_\_ Yes \_\_\_\_\_ No

If so, on a separate attachment, state the following: (i) describe each such contract; (ii) the owner's name, address, telephone number and contact person; and (iii) the circumstances of each such declaration of default.

**H.** Has any construction contract to which your organization is a party been terminated for the convenience of the project owner? \_\_\_\_\_ Yes \_\_\_\_\_ No

If so, identify the project and project owner along with a description of the circumstances under which the convenience termination occurred.

**I.** Has a claim or other demand ever been asserted against any Bid Bond, Performance Bond, or Payment Bond posted by your organization in connection with any construction contract or your submittal of a bid proposal for a

construction contract? \_\_\_\_\_ Yes \_\_\_\_\_ No

If so, on a separate attachment, state the following: (i) the name, address, telephone number and contact person for each claimant; (ii) the date upon which each such demand or claim was made; and (iii) the disposition of each such demand or claim.

**1.05 References** (include name, contact person, telephone, email address, fax and address for each reference provided)

**A.** Trade References (three (3) minimum) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**B.** Bank References \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**C.** Public Works Inspectors of Record \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**D.** Owner references (must have completed at least two (2) Federal, State, K-12 or higher education building projects in the past five (5) years. Please list these two (2) projects and at least one (1) other Owner referenced, preferably another Federal, State, K-12 or higher education project). \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**E.** Insurance Carriers (General Liability, Auto, and Workers' Compensation) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**F.** Surety Firms (issuing your Bid, Performance and Payment Bonds) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**1.06 Accuracy and Authority**

The undersigned is duly authorized to execute this Statement of Bidders Qualifications under penalty of perjury on behalf of the Bidder. The undersigned warrants and represents that he/she has personal knowledge of each of the responses to this Statement of Bidder's Qualifications and/or that he/she has conducted all necessary and appropriate inquiries to determine the truth, completeness and accuracy of responses to this Statement of Bidder's Qualifications.

The undersigned declares and certifies that the responses to this Statement of Bidder's Qualifications are complete and accurate; there are no omissions of material fact or information that render any response to be false or misleading and there are no misstatements of fact in any of the responses.

Executed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ at \_\_\_\_\_.  
(City and State)

I declare under penalty of perjury under California law that the foregoing is true and correct.

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Typed or written name)

*[End Of Section]*

**BID SECURITY BOND**  
Section 00260

***KNOW ALL MEN BY THESE PRESENTS:***

That we, \_\_\_\_\_, as Principal, and \_\_\_\_\_, as Surety, are held and firmly bound, along with our respective heirs, executors, administrators, successors and assigns, jointly and severally, unto **VENTURA COUNTY COMMUNITY COLLEGE DISTRICT**, hereinafter "Obligee," for payment of the penal sum hereof in lawful money of the United States, as more particularly set forth herein.

**THE CONDITION OF THIS OBLIGATION IS SUCH THAT:**

WHEREAS, the Principal has submitted the accompanying Bid Proposal for the Work commonly described as **Bid 545, VC Athletic Office HVAC Replacement** and the Bid Proposal must be accompanied by Bid Security.

WHEREAS, subject to the terms of this Bond, the Surety is firmly bound unto the Obligee in the penal sum of **TEN PERCENT (10%)** of the maximum amount of the Bid Proposal submitted by the Principal to the Obligee, as set forth above, inclusive of additive alternate bid items, if any.

NOW, THEREFORE, if the Principal shall not withdraw said Bid Proposal within the period specified therein after the opening of the same, or, if no period be specified, for sixty (60) days after opening of said Bid Proposal; and if the Principal is awarded the Contract, and shall within the period specified therefore, or if no period be specified, within five (5) days after the prescribed forms are presented to him for signature, enter into a written contract with the Obligee, in accordance with the Bid Proposal as accepted, and give such bond(s) with good and sufficient surety or sureties, as may be required, for the faithful performance and proper fulfillment of such Contract and for the payment for labor and materials used for the performance of the Contract, or in the event of the withdrawal of said Bid Proposal within the period specified for the holding open of the Bid Proposal or the failure of the Principal to enter into such Contract and give such bonds within the time specified, if the Principal shall pay the Obligee the difference between the amount specified in said Bid Proposal and the amount for which the Obligee may procure the required Work and/or supplies, if the latter amount be in excess of the former, together with all costs incurred by the Obligee in again calling for Bids or otherwise procuring said Work or supplies, then the above obligation shall be void and of no effect, otherwise to remain in full force and effect.

Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or the Call for Bids, the Work to be performed thereunder, the Drawings or the Specifications accompanying the same, or any other portion of the Contract Documents shall in any way affect its obligations under this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of

said Contract, the Call for Bids, the Work, the Drawings or the Specifications, or any other portion of the Contract Documents.

In the event that suit or other proceeding is brought upon this Bond by the Obligee, the Surety shall pay to the Obligee all costs, expenses and fees incurred by the Obligee in connection therewith, including without limitation, attorneys' fees.

IN WITNESS WHEREOF, the Principal and Surety have executed this instrument this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ by their duly authorized agents or representatives.

**Bidder:**

*(corporate Seal)*

\_\_\_\_\_  
*(Principal's Name)*

By: \_\_\_\_\_  
*(Signature)*

\_\_\_\_\_  
*(Typed or Printed Name & Title)*

\_\_\_\_\_  
*(Address)*

**Surety:**

*(Corporate Seal)*

\_\_\_\_\_  
*(Surety's Name)*

By: \_\_\_\_\_  
*(Signature of Attorney-in-Fact for Surety)*

\_\_\_\_\_  
*(Typed or Printed Name)*

*(Attach Attorney-in-Fact Certificate)*

\_\_\_\_\_  
*(Address of Surety's Office where Bond is issued)*

\_\_\_\_\_  
*(Area Code and Telephone Number of Surety)*

**SECTION 00310  
AGREEMENT**

THIS AGREEMENT is made this \_\_\_\_ day of \_\_\_\_\_, 20\_\_, in the City of Ventura, County of Ventura, State of California, by and between VENTURA COUNTY COMMUNITY COLLEGE DISTRICT, a California Community College District, hereinafter called the "District" and \_\_\_\_\_, hereinafter called the "Contractor", with a principal place of business located at \_\_\_\_\_.

WITNESSETH, that the District and the Contractor in consideration of the mutual covenants contained herein agree as follows:

**1.01 The Work.** Within the Contract Time and for the Contract Price, subject to adjustments thereto pursuant to the Contract Documents, the Contractor shall perform and provide all necessary labor, materials, tools, equipment, utilities, services and transportation to complete in a workmanlike manner all of the Work required in connection with the work of improvement commonly referred to as **Bid 545, VC Athletic Office HVAC Replacement**. Contractor shall complete all Work covered by the Contract Documents, including without limitation, the Drawings and Specifications prepared by the Architect, and other Contract Documents enumerated in Article 5 below, along with all modifications and addenda thereto issued in accordance with the Contract Documents.

**1.02 Contract Time.** The Work shall be commenced on the date stated in the District's Notice to Proceed. The Contractor shall achieve Substantial Completion of the Work **within 180 consecutive calendar days** after the date stated in the District's Notice to Proceed (see Section 1.01 of the Contract Special Conditions and as otherwise provided in the Contract Documents).  
*The Awarded Bidder must meet with the Facilities, Maintenance and Operations Director within one week of award to schedule work and accommodate any special conditions called out by Campus Director.*

**1.03 Contract Price.** The District shall pay the Contractor as full consideration for the Contractor's full, complete and faithful performance of the Contractor's obligations under the Contract Documents, subject to any additions or deduction as provided for in the Contract Documents, the Contract Price of \_\_\_\_\_ Dollars \$\_\_\_\_\_).

The Contract Price is based upon the Contractor's Base Bid Proposal and the following Alternate Bid Items, if any:

The District's payment of the Contract Price shall be in accordance with the Contract Documents.

**1.04 Liquidated Damages.** In the event of the failure or refusal of the Contractor to achieve Completion of the Work of the Contract Documents within the Contract Time, as adjusted, the Contractor shall be subject to assessment of Liquidated Damages in accordance with the Contract Documents.

**1.05 The Contract Documents.** The Contract Documents consist of the following:

Notice to Contractors Calling for Bids	Labor and Material Payment Bond
Instructions for Bidders	Performance Bond
Bid Proposal	Certificate of Workers Compensation
Subcontractors List	Drug Free Workplace Certification
Non-Collusion Affidavit	General Conditions
Statement of Bidder's Qualifications	Special Conditions
Bid Bond	Specifications
Agreement	Drawings
Labor Compliance Program	Guarantee
Proof of DIR Registration Per SB 854	

**1.06 Award of Contract.** The award shall be subject to final agreement on terms, conditions, and scope of work between VCCCD and Bidder.

**1.07 Authority to Execute.** The individual(s) executing this Agreement on behalf of the Contractor is/are duly and fully authorized to execute this Agreement on behalf of Contractor and to bind the Contractor to each and every term, condition and covenant of the Contract Documents.

IN WITNESS WHEREOF, this Agreement has been duly executed by the District and the Contractor as of the date set forth above.

DISTRICT:

VENTURA COUNTY COMMUNITY  
COLLEGE DISTRICT,  
a California Community College District

By: \_\_\_\_\_

Name: Terry Cobos

Title: Director of General Services

CONTRACTOR:

\_\_\_\_\_  
(Contractor's License Number)

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

\_\_\_\_\_  
[Corporate Seal]

[End Of Section]

**LABOR AND MATERIAL PAYMENT BOND**

Section 00400

***KNOW ALL MEN BY THESE PRESENTS:***

That we, \_\_\_\_\_, as Principal, and \_\_\_\_\_, as Surety, are held and firmly bound, along with our respective heirs, executors, administrators, successors and assigns, jointly and severally, unto **VENTURA COUNTY COMMUNITY COLLEGE DISTRICT**, hereinafter "Obligee", for payment of the penal sum of \_\_\_\_\_ Dollars (\$\_\_\_\_\_) in lawful money of the United States, as more particularly set forth herein.

**THE CONDITION OF THIS OBLIGATION IS SUCH THAT:**

WHEREAS, the Obligee, by resolution of its Board of Trustees, has awarded to the Principal a Contract for the Work commonly described as: **Bid 545, VC Athletic Office HVAC Replacement**. WHEREAS, the Principal, on or about \_\_\_\_, 20\_\_\_\_, entered into a Contract with the Obligee for performance of the Work; the Agreement and all other Contract Documents set forth therein are incorporated herein and made a part hereof by this reference.

WHEREAS, by the terms of the Contract Documents, the Principal is required to furnish a bond for the prompt, full and faithful payment to any Claimant, as hereinafter defined, for all labor, materials or services used, or reasonably required for use, in the performance of the Work.

NOW THEREFORE, if the Principal shall promptly, fully and faithfully make payment to any Claimant for all labor, materials or services used or reasonably required for use in the performance of the Work, then this obligation shall be void; otherwise, it shall be, and remain, in full force and effect.

The term "Claimant" shall refer to any person, corporation, partnership, proprietorship or other entity including without limitation, all persons and entities described in California Civil Code §3181, providing or furnishing labor, materials or services used or reasonably required for use in the performance of the Work under the Contract Documents, without regard for whether such labor, materials or services were sold, leased or rented. This Bond shall inure to the benefit of all Claimants so as to give them, or their assigns and successors, a right of action upon this Bond.

In the event that suit is brought on this Bond by any Claimant for amounts due such Claimant for labor, materials or services provided or furnished by such Claimant, the Surety shall pay for the same and reasonable attorneys' fees pursuant to California Civil Code §3250.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, deletion, addition, or any other modification to the terms of the Contract Documents, the Work to be performed thereunder, the Specifications or the Drawings, or any other portion of the Contract Documents, shall in any way limit, restrict or otherwise affect its obligations under this Bond; the Surety hereby waives notice from the Obligee of any such change, extension of time, alteration, deletion, addition or other modification to the Contract Documents, the Work to be performed under the Contract Documents, the Drawings or the Specifications of any other portion of the Contract Documents.

IN WITNESS WHEREOF, the Principal and Surety have executed this instrument this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ by their duly authorized agents or representatives.

*(Corporate Seal)*

\_\_\_\_\_  
*(Principal Name)*

By: \_\_\_\_\_  
*(Signature)*

\_\_\_\_\_  
*(Typed or Printed Name)*

Title: \_\_\_\_\_

*(Corporate Seal)*

\_\_\_\_\_  
*(Surety Name)*

By: \_\_\_\_\_  
*(Signature of Attorney-in-Fact for Surety)*

\_\_\_\_\_  
*(Typed or Printed Name of Attorney-in-Fact)*

*(Attach Attorney-in-Fact Certificate)*

\_\_\_\_\_  
*(Address)*

\_\_\_\_\_  
*(Area Code and Telephone Number of Surety)*

*[End of Section]*

**PERFORMANCE BOND**

Section 00410

**KNOW ALL MEN BY THESE PRESENTS:**

That we \_\_\_\_\_, as Principal, and \_\_\_\_\_, as Surety, are held and firmly bound, along with our respective heirs, executors, administrators, successors and assigns, jointly and severally, unto **VENTURA COUNTY COMMUNITY COLLEGE DISTRICT**, hereinafter "Obligee", for payment of the penal sum of \_\_\_\_\_ Dollars (\$) in lawful money of the United States, as more particularly set forth herein.

**THE CONDITION OF THIS OBLIGATION IS SUCH THAT:**

WHEREAS, the Obligee, by action of its Board of Trustees, has awarded to the Principal a Contract for the Work commonly described as **Bid 545, Ventura College Gymnasium Office HVAC Replacement**.

WHEREAS, the Principal, on or about \_\_\_\_\_ 2017, entered into a contract with the Obligee for performance of the Work; the Agreement and all other Contract Documents set forth therein are incorporated herein and made a part hereof by this reference.

WHEREAS, by the terms of the Contract Documents ("Contract"), the Principal is required to furnish a bond ensuring the Principal's prompt, full and faithful performance of the Work of the Contract.

WHEREAS, the Principal and the Surety, jointly and severally, bind themselves, their heirs, executors, administrative, successors and assigns, to the Obligee for the prompt, full and faithful performance of the Contract, which is incorporated herein by this reference.

NOW, THEREFORE, if the Principal shall promptly, fully and faithfully perform each and all of the obligations and things to be done and performed by the Principal in strict accordance with the terms of the Contract as said Contract may be modified or amended from time to time; and if the Principal shall indemnify and save harmless the Obligee and all of its officers, agents and employees from any and all losses, liability and damages, claims, judgments, stop notices, costs, and fees of every description, whether imposed by law or equity, which may be incurred by the Obligee by reason of the failure or default on the part of the Principal in the performance of any or all of the terms or the obligations of the Contract, including all modifications and amendments thereto, and any warranties or guarantees required thereunder; then this obligation shall be void; otherwise, it shall be, and remain, in full force and effect.

In the event the Principal is declared by the Obligee to be in breach or default in the performance of the Contract, then, after written notice from the Obligee to the Surety, as provided for herein, the Surety shall either remedy the default or breach of the Principal or shall take charge of the Work of the Contract and complete the Contract with a Contractor other than the Principal at its own expense; provided, however, that the procedure by which the Surety undertakes to discharge its obligations under this Bond shall be subject to the advance written approval of the Obligee.



If the Surety does not proceed to cure or remedy the Principal's default(s) of its performance of the Contract with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen (15) calendar days after receipt of a written notice from Obligees to the Surety demanding that the Surety perform its obligations under this Bond, and the Obligees shall be entitled to enforce any remedy available to Obligees.

Within fifteen (15) calendar days of Obligees' written notice to the Surety of the failure of performance of the Contract by the Principal, it shall be the duty of the Surety to give to the Obligees an unequivocal notice in writing of the Surety's election to remedy the default(s) of the Principal promptly, or to arrange for performance of the Contract promptly by a Contractor other than the Principal, time being of essence to this Bond. In said Notice of Election, the Surety shall state the date of commencement of its cure or remedy of the Principal's default(s) or its performance of the Contract. The Surety's obligations for cure or remedy, include but are not limited to: correction of defective or incomplete work and completion of the Contract, additional legal, design professional and delay costs arising from Surety's actions or failure to act; and liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance by the Principal. The Surety shall give prompt written notice to the Obligees upon completion of the cure or remedy of the Principal's default(s) of its performance of the Contract.

In the event the Surety shall fail to issue its Notice of Election to Obligees within the time provided for herein above, the Obligees may thereafter cause the cure or remedy of the Principal's failure of performance or default or to complete the Work. The Principal and the Surety shall be each jointly and severally liable to the Obligees for all damages and costs sustained by the Obligees as a result of the Principal's failure of performance under the Contract Documents or default in its performance of obligations thereunder, including without limitation the costs of cure or completion exceeding the then remaining balance of the Contract Price.

The Surety, for value received, hereby stipulates and agrees that no change or adjustment of the Contract Time or Contract Price, alterations, deletions, additions or any other modifications to the Contract Documents, or the Work to be performed thereunder, shall in any way limit, restrict, or otherwise affect the obligations of the Surety under this Bond. Surety waives notice of any change or adjustment of the Contract Time or Contract Price, alterations, deletions, additions or any other modifications to the Contract Documents, or the Work to be performed thereunder and agrees to automatically adjust the penal sum of this Bond to reflect any adjustments of the Contract Time or Contract Price which increase the Contract Price.

Principal and Surety agree that if Obligees is required to engage the services of an attorney in connection with enforcement of this Bond, each shall pay Obligees' costs and reasonable attorney's fees incurred, with or without suit, in addition to the above penal sum.

The guarantees contained in this Bond survive Final Completion of the Work called for in the Contract Documents with respect to the obligations and liabilities of the Principal, which survive Final Completion of the Work.

IN WITNESS WHEREOF, the Principal and Surety have executed this instrument this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ by their duly authorized agents or representatives.

*(Corporate Seal)*

\_\_\_\_\_  
*(Principal Name)*  
By: \_\_\_\_\_  
*(Signature)*  
\_\_\_\_\_  
*(Typed or Printed Name)*  
Title: \_\_\_\_\_

*(Corporate Seal)*

\_\_\_\_\_  
*(Surety Name)*  
By: \_\_\_\_\_  
*(Signature of Attorney-in-Fact for Surety)*

*(Attach Attorney-in-Fact Certificate)*

\_\_\_\_\_  
*(Typed or Printed Name of Attorney-in-Fact)*  
\_\_\_\_\_  
*(Address)*  
\_\_\_\_\_  
*(Area Code and Telephone Number of Surety)*

**CERTIFICATE OF WORKERS' COMPENSATION INSURANCE**  
Section 00415

I, \_\_\_\_\_ the \_\_\_\_\_,  
*(Name)* *(Title)*  
of \_\_\_\_\_, declare, state and certify that:  
*(Contractor Name)*

1.01 I am aware that California Labor Code §3700(a) and (b) provides:

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

- A. By being insured against liability to pay compensation in one or more insurers duly authorized to write compensation insurance in this state.
- B. By securing from the Director of Industrial Relations a certificate of consent to self-insure either as an individual employer, or one employer in a group of employers, which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to his or her employees."

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

By: \_\_\_\_\_  
*(Signature)*

\_\_\_\_\_  
*(Date)*

# DRUG-FREE WORKPLACE CERTIFICATION

## Section 00417

I, \_\_\_\_\_ the \_\_\_\_\_,  
(Name) (Title)  
of \_\_\_\_\_, declare, state and certify that:  
(Contractor Name)

- 1.01 I am aware of the provisions and requirements of California Government Code §§8350 et seq., the Drug Free Workplace Act of 1990.
- 1.02 I am authorized to certify, and do certify, on behalf of Contractor that a drug free workplace will be provided by Contractor by doing all of the following:
- A. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance is prohibited in Contractor's workplace and specifying actions which will be taken against employees for violation of the prohibition;
  - B. Establishing a drug-free awareness program to inform employees about all of the following:
    - 1. The dangers of drug abuse in the workplace;
    - 2. Contractor's policy of maintaining a drug-free workplace;
    - 3. The availability of drug counseling, rehabilitation and employee-assistance programs; and
    - 4. The penalties that may be imposed upon employees for drug abuse violations;
  - C. Requiring that each employee engaged in the performance of the Contract be given a copy of the statement required by subdivision (A), above, and that as a condition of employment by Contractor in connection with the Work of the Contract, the employee agrees to abide by the terms of the statement.
- 1.03 Contractor agrees to fulfill and discharge all of Contractor's obligations under the terms and requirements of California Government Code §8355 by, inter alia, publishing a statement notifying employees concerning: (a) the prohibition of any controlled substance in the workplace, (b) establishing a drug-free awareness program, and (c) requiring that each employee engaged in the performance of the Work of the Contract be given a copy of the statement required by California Government Code §8355(a) and requiring that the employee agree to abide by the terms of that statement.

1.04 Contractor and I understand that if the District determines that Contractor has either: (a) made a false certification herein, or (b) violated this certification by failing to carry out and to implement the requirements of California Government Code §8355, the Contract awarded herein is subject to termination, suspension of payments, or both. Contractor and I further understand that, should Contractor violate the terms of the Drug-Free Workplace Act of 1990, Contractor may be subject to debarment in accordance with the provisions of California Government Code §§8350, et seq.

1.05 Contractor and I acknowledge that Contractor and I are aware of the provisions of California Government Code §§8350, et seq. and hereby certify that Contractor and I will adhere to, fulfill, satisfy and discharge all provisions of and obligations under the Drug-Free Workplace Act of 1990.

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

Executed at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_, 2017  
(City and State)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Typed or Printed Name)

**GUARANTEE**  
Section 00420

\_\_\_\_\_ (*Contractor's Name*) hereby unconditionally guarantees that the work performed under and pursuant to the Ventura County Community College District (District) project known as the **Bid 545, Ventura College Athletic Office HVAC Replacement** ("Project") has been done in strict accordance with the requirements of the Contract and therefore further guarantees the work of the contract to be and remain free of defects in workmanship and materials for a period of one (1) year from the date of completion of the contract, unless a longer guarantee period is called for by the Contract Documents, in which case the terms of the longer guarantee shall govern. The Contractor hereby agrees to repair or replace any and all work, together with any other work which may have been damaged or displaced in so doing, that may prove to be not in accordance with the requirements of the Contract or that may be defective in its workmanship or materials within the guarantee period specified, without any expense whatsoever to the District, ordinary wear and tear and unusual abuse and neglect only excepted. The Contractor has provided contract bonds which will remain in full force and effect during the guarantee period.

The Contractor further agrees that within ten (10) calendar days after being notified in writing by the District of any work not in accordance with the requirements of the contract or any defects in the work, he will commence and prosecute with due diligence all work necessary to fulfill the terms of this guarantee, and to complete the work within a reasonable period of time. In the event he fails to so comply, he does hereby authorize the District to proceed to have such work done at the Contractor's expense and he will pay the cost thereof upon demand. The District shall be entitled to all costs, including reasonable attorneys' fees, necessarily incurred upon the Contractor's refusal to pay the above costs.

Notwithstanding the foregoing paragraph, in the event of an emergency constituting an immediate hazard to the health or safety of the employees of the District, or its property or licensees, the District may undertake at the Contractor's expense without prior notice, all work necessary to correct such hazardous condition when it was caused by the work of the Contractor not being in accordance with the requirements of this contract, or being defective, and to charge the same to the Contractor as specified in the preceding paragraph.

The guarantee set forth herein is not intended by the parties, nor shall it be construed, as in any way limiting or reducing the District's rights to enforce all terms of the contract referenced herein above or the time for enforcement thereof. This guarantee is provided in addition to, and not in lieu of, the District's rights on such contract.

Contractor's Signature: \_\_\_\_\_

Subcontractor's Signature \_\_\_\_\_

Representative to be contacted for services:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone No.: \_\_\_\_\_ Fax No.: \_\_\_\_\_

Email.: \_\_\_\_\_

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# GENERAL CONDITIONS

## ARTICLE 1: DEFINITIONS; GENERAL

### 1.1 Architect.

The Architect is the person or entity identified as such in the Agreement; references to the "Architect" includes the Architect's authorized representative and his, her or its successor(s).

### 1.2 Construction Equipment

"Construction Equipment" is equipment utilized for the performance of any portion of the Work, but which is not incorporated into the Work.

### 1.3 Contract Documents

The Contract Documents consist of the Agreement between the District and the Contractor, Conditions of the Contract (whether General, Special or otherwise), Drawings, Specifications, including addenda thereto issued prior to execution of the Agreement and any other documents listed in the Agreement. The Contract Documents shall include modifications issued after execution of the Agreement. The Contract Documents form the Contract for Construction.

### 1.4 Contract Document Terms

The term "provide" means "provide complete in place" or to "furnish and install" such item. Unless otherwise provided in the Contract Documents, the terms "approved;" "directed;" "satisfactory;" "accepted;" "acceptable;" "proper;" "required;" "necessary" and "equal" shall mean as approved, directed, satisfactory, accepted, acceptable, proper, required, necessary and equal, in the opinion of the District, its agents or representatives. The term "typical" as used in the Drawings shall require the installation or furnishing of such item(s) of the Work designated as "typical" in all other similar areas; Work in such other areas shall conform to that shown as "typical" or as reasonably inferable therefrom.

### 1.5 Contractor

The Contractor is the person or entity identified as such in the Agreement; references to "Contractor" include the Contractor's authorized representative.

### 1.6 Contractor's Superintendent

The Contractor's Superintendent is the individual employed by the Contractor whose principal responsibility shall be the supervision and coordination of the Work; the Contractor's Superintendent shall not perform routine construction labor.

### 1.7 Days

Unless otherwise expressly stated, references to "days" in the Contract Documents shall be deemed to be calendar days.

### 1.8 Deferred Approval Items

Deferred approval items are those items that shall not be started until detailed plans, specifications, and engineering calculations have been accepted and signed by the Architect or Engineer.

## **1.9 District**

The "District" refers to **Ventura County Community College District** and its authorized representatives, including the Project Manager, the District's Board of Trustees and the District's officers, employees, agents and representatives.

### **1.10 District's Inspector**

The District's Inspector is the individual designated and employed by the District in accordance with the requirements of Title 24 of the California Code of Regulations. The District's Inspector shall be authorized to act on behalf of the District as provided for in the Contract Documents and in Title 24 of the California Code of Regulations, as the same may be amended from time to time.

### **1.11 Division of State Architect ("DSA")**

The DSA is the California Division of the State Architect including without limitation the DSA's Office of Construction Services, Office of Design Services and the Office of Regulation Services; references to the DSA in the Contract Documents shall mean the DSA, its offices and its authorized employees and agents. The authority of the DSA over the Work and the performance thereof shall be as set forth in the Contract Documents and Title 24 of the California Code of Regulations.

### **1.12 Drawings and Specifications**

The Drawings are the graphic and pictorial portions of the Contract Documents, wherever located and whenever issued, showing generally, the design, location and dimensions of the Work and may include without limitation, plans, elevations, sections, details, schedules, notes or diagrams. The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards, criteria and workmanship for the Work and related services. The Drawings and Specifications are intended to delineate and describe the Work and its component parts so as to permit skilled and competent contractors to bid upon the Work and prosecute the same to completion.

## **1.13 Intent and Correlation of Contract Documents**

### **1.13.1 Work of the Contract Documents**

The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary and what is required by one shall be as binding as if required by all. Performance by the Contractor shall be required to the extent consistent with the Contract Documents and reasonably inferable therefrom as being necessary to produce the intended results. Organization of the Specifications into divisions, sections or articles, and the arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade. Where any portion of the Contract Documents is silent and information appears elsewhere in the Contract Documents, such other portions of the Contract Documents shall control. Work not particularly detailed, marked or specified shall be the same as similar parts that are detailed, marked or specified.

### **1.13.2 Technical Terms**

Unless otherwise stated in the Contract Documents, words or terms, which have, well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

### **1.13.3 Conflict in Contract Documents**

The Contract Documents are intended to be fully cooperative and to agree. If Contractor observes any conflict, inconsistency or ambiguity, Contractor shall promptly notify the District and the Architect in writing of such conflict, inconsistency or ambiguity prior to commencement of affected Work. If a conflict, inconsistency or ambiguity arises, the following order or precedence shall generally apply, provided, however, that the order of precedence shall not be so rigidly interpreted as to create an absurd or costly result: Special Conditions shall take precedence over General Conditions, Specifications shall take precedence over Drawings and shall govern as to materials, workmanship and installation procedures. Plans identify the scope and location of the Work. With regard to Drawings, figures govern over scaled dimensions, larger details govern over general drawings, addenda and change order drawings govern over contract drawings, contract drawings govern over standard drawings.

### **1.14 Material Supplier**

A Material Supplier is any person or entity who only furnishes materials, equipment or supplies for the Work without fabricating, installing or consuming them in the Work.

### **1.15 Project**

The Project is the total construction of which the Work performed by the Contractor under the Contract Documents may be the whole or a part of the Project and which may include construction by the District or by separate contractors.

### **1.16 Project Manager**

The Project Manager, if any, is the individual or entity designated as such in the Special Conditions. The Project Manager is an independent contractor retained by the District and shall be authorized and empowered to act on behalf of the District. The removal or replacement of the designated Project Manager shall not result in adjustment of the Contract Price or the Contract Time or otherwise affect, limit or restrict Contractor's obligations hereunder.

### **1.17 Record Documents**

The Record Documents are a set of the Drawings and Specifications marked by the Contractor during the performance of the Work to indicate completely and accurately the actual as-built condition of the Work. The Record Documents shall be sufficient for a capable and qualified draftsman to modify the Drawings to reflect and indicate the Work actually in place at Final Completion of the Work.

### **1.18 Shop Drawings; Samples; Product Data (“Submittals”)**

Shop Drawings are diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor of any tier, manufacturer, Material Supplier, or distributor to illustrate some portion of the Work. Samples are physical examples of materials, equipment or workmanship forming a part of, or to be incorporated into the Work. Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and

other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work. Shop Drawings, Samples and Product Data prepared or furnished by the Contractor or any of its Subcontractors or Material Suppliers are collectively referred to as "Submittals".

### **1.19 Site**

The Site is the physical area designated in the Contract Documents for Contractor's performance, construction and installation of the Work.

### **1.20 Subcontractors; Sub-Subcontractors**

A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work. "Subcontractor" does not include a separate contractor to the District or subcontractors of any separate contractor. A Sub-Subcontractor is a person or entity of any tier, who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site.

### **1.21 Special Conditions**

If made a part of the Contract Documents, Special Conditions are special or supplemental provisions, not otherwise provided for in the Agreement or the General Conditions.

### **1.22 Surety.** The Surety is the person or entity that executes, as surety, the Contractor's Labor and Material Payment Bond and/or Performance Bond or other bonds provided by the Contractor.

### **1.23 Work**

The "Work" is the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment or services provided or to be provided by the Contractor to fulfill the Contractor's obligations under the Contract Documents. The Work may constitute the whole or a part of the Project.

## **ARTICLE 2: DISTRICT**

### **2.1 Information Required of District**

#### **2.1.1 Surveys; Site Information**

District may provide information concerning physical characteristics of the Site. Information not provided by the District concerning physical characteristics of the Site, which is required, shall be obtained by Contractor without adjustment to the Contract Price or the Contract Time.

#### **2.1.2 Drawings and Specifications**

All of the Drawings and the Specifications shall remain the property of the District; the Contractor shall not use the Drawings or the Specifications in connection with any other work of improvement other than the Work of the Project.

#### **2.1.3 Furnishing of Information**

Information or services to be provided by the District under the Contract Documents shall be furnished by the District with reasonable promptness to avoid delay in the orderly progress of the Work. Information about existing conditions furnished by the District under the Contract Documents is obtained from sources believed to be reliable,

but the District neither guarantees nor warrants that such information is complete and accurate. The Contractor shall verify all information provided by the District. To the extent that the Contract Documents depict existing conditions on or about the Site, or the Work involves the renovation, removal or remodeling of existing improvements, or the Work involves any tie-in or other connection with any existing improvements, the conditions and/or existing improvements depicted in the Contract Documents are as they are believed to exist.

## **2.2 District's Right to Stop the Work**

In addition to the District's right to suspend the Work or terminate the Contract pursuant to the Contract Documents, the District may, by written order, direct the Contractor to stop the Work, or any portion thereof, until the cause for such stop work order has been eliminated, if the Contractor: (i) fails to correct Work which is not in conformity and in accordance with the requirements of the Contract Documents, or (ii) otherwise fails to carry out the Work in conformity and accordance with the Contract Documents. The right of the District to stop the Work hereunder shall not be deemed a duty on the part of the District to exercise such right for the benefit of the Contractor or any other person or entity, nor shall the District's exercise of such right waive or limit the exercise of any other right or remedy of the District under the Contract Documents or at law.

## **2.3 Partial Occupancy or Use**

### **2.3.1 District's Right to Partial Occupancy**

The District may occupy or use any completed or partially completed portion of the Work, provided that the District and the Contractor have accepted, in writing, the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, utilities, damage to the Work, insurance and the period for correction of the Work and commencement of warranties required by the Contract Documents for such portion of the Work partially used or occupied by the District. If the Contractor and the District are unable to agree upon the matters set forth above, the District may nevertheless use or occupy any portion of the Work, with the responsibility for such matters subject to resolution in accordance with the Contract Documents. Immediately prior to such partial occupancy or use of the Work, or portions thereof, the District, the District's Inspector, the Contractor and the Architect shall jointly inspect the portions of the Work to be occupied or to be used to determine and record the condition of the Work. The District's use or occupancy of the Work or portions thereof pursuant to the preceding shall not be deemed "completion" of the Work as that term is used in Public Contract Code §7107.

### **2.3.2 No Acceptance of Defective or Nonconforming Work**

Unless otherwise expressly agreed upon by the District and the Contractor, the District's partial occupancy or use of the Work or any portion thereof, shall not constitute the District's acceptance of the Work not complying with the requirements of the Contract Documents or which is otherwise defective.

## **2.4 The District's Inspector**

In addition to the authority and rights of the District's Inspector as provided for elsewhere in the Contract Documents, all of the Work shall be performed under the observation of the District's

Inspector in accordance with the provisions of Title 24 of the California Code of Regulations. The District's Inspector shall have access to all parts of the Work at any time, wherever located, including shop inspections, and whether partially or completely fabricated, manufactured, furnished or installed. The performance of the duties of the District's Inspector under the Contract Documents shall not relieve or limit the Contractor's performance of its obligations under the Contract Documents.

## **ARTICLE 3: ARCHITECT**

### **3.1 Architect's Administration of the Contract**

#### **3.1.1 Administration of Contract**

The Architect will provide administration of the Contract as described in the Contract Documents, and will be one of the District's representatives during construction until the time that Final Payment is due the Contractor. The Architect will advise and consult with the District, the Project Manager and the District's Inspector with respect to the administration of the Contract and the Work. The Architect shall have the responsibilities and powers established by law, including Title 24 of the California Code of Regulations.

#### **3.1.2 Periodic Site Inspections**

The Architect will visit the Site at intervals appropriate to the stage of construction to become generally familiar with the progress and quality of the completed Work and to determine, in general, if the Work is being performed in a manner indicating that the Work, when completed, will be in accordance with the Contract Documents. The Architect will not be required to make exhaustive or continuous Site inspections to check quality or quantity of the Work. On the basis of Site observations as an architect, the Architect will keep the District informed of the progress of the Work, and will endeavor to guard the District against defects and deficiencies in the Work.

#### **3.1.3 Contractor Responsibility for Construction Means, Methods and Sequences**

The Architect will not have control over or charge of and will not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, these being solely the Contractor's responsibility. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or of any other persons performing portions of the Work.

#### **3.1.4 Verification of Applications for Payment**

In accordance with Article 8 hereof, the Architect will review the Contractor's Applications for Progress Payments and for Final Payment, verify the extent of Work performed and the amount properly due the Contractor on such Application for Payment.

#### **3.1.5 Rejection of Work**

The Architect is authorized to reject Work which is defective or does not conform to the requirements of the Contract Documents. Whenever the Architect considers it necessary or advisable, additional inspections or testing of the Work may be conducted, whether or

not such Work is fabricated, installed or completed. Neither this authority of the Architect nor a decision made in good faith by the Architect to exercise or not to exercise such authority shall give rise to a duty or responsibility to the Contractor, Subcontractors, Material Suppliers, their agents or employees, or other persons performing portions of the Work.

### **3.1.6 Architect's Review of Submittals**

The Architect will review and approve or take other appropriate action upon the Contractor's Submittals, but only for the limited purpose of checking for conformance with the design concept expressed in the Contract Documents. Review of Submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's Submittals shall not relieve the Contractor of its obligations under the Contract Documents. The Architect's review of Submittals shall not constitute approval of safety measures, programs or precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item in a Submittal shall not indicate approval of an assembly of which the item is a component. The Architect's review and return of Submittals will normally require a minimum of twenty one (21) days from date of receipt of complete submittal. Deferred approval submittals indicated in the Contract Documents require additional time for processing and review of all submittals.

### **3.1.7 Changes to the Work; Change Orders**

The Architect will prepare Change Orders and may authorize minor changes in the Work in accordance with Article 9.9 hereof.

### **3.1.8 Completion**

The Architect will conduct observations to determine the date(s) of interim milestones, if any, and the dates of Substantial and Final Completion. The Architect will verify that the Contractor has complied with all requirements of the Contract Documents and is entitled to receipt of Final Payment.

### **3.1.9 Interpretation of Contract Documents**

The Architect will interpret and decide matters concerning the requirements of the Contract Documents on written request of either the District or the Contractor, or as deemed necessary. The Architect's response to such requests will be made in writing with reasonable promptness and within the time limits specified in the Contract Documents. Interpretations and decisions of the Architect will be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings with transmittal letter. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both the District and the Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions so rendered in good faith. The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.



## **ARTICLE 4: THE CONTRACTOR**

### **4.1 Communications**

All communications regarding the Work, the performance thereof or the Contract Documents shall be in writing; oral communications, unless reduced to writing, are not binding on the parties. Communications between the Contractor and the District shall be through the Project Manager. Communications between separate contractors, if any, shall be through the Project Manager. Contractor shall make all written communications concerning the Project available to the District upon request.

### **4.2 Contractor Review of Contract Documents**

#### **4.2.1 Examination of Contract Documents**

The Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by the District pursuant to the Contract Documents and shall at once report to the District any errors, inconsistencies or omissions discovered. If the Contractor performs any Work knowing, or with reasonable diligence should have known that, it involves an error, inconsistency or omission in the Contract Documents without prior written notice to the District of the same, the Contractor shall assume full responsibility for such performance and shall bear all attributable costs for correction of the same.

#### **4.2.2 Field Measurements**

Prior to commencement of the Work, or portions thereof, the Contractor shall take field measurements and verify field conditions at the Site and shall carefully compare such field measurements and conditions and other information known to the Contractor with information provided in the Contract Documents. Errors, inconsistencies or omissions discovered shall be reported to the District at once.

#### **4.2.3 Dimensions; Layouts and Field Engineering**

Dimensions indicated in the Drawings are intended for reference only. The Contractor shall be solely responsible for dimensioning and coordinating the Work of the Contract Documents. All field engineering required for laying out the Work and/or establishing grades for earthwork operations shall be by the Contractor at its expense. Any field engineering or other engineering to be provided or performed by the Contractor under the Contract Documents and required or necessary for the proper execution or installation of the Work shall be provided and performed by an engineer duly registered under the laws of the State of California in the engineering discipline for such portion of the Work.

#### **4.2.4 Request for Information**

If the Contractor encounters any condition which the Contractor believes, in good faith and with reasonable basis, is the result of an ambiguity, conflict, error or omission in the Contract Documents (collectively “the Conditions”), it shall be the affirmative obligation of the Contractor to timely notify the District, in writing, of the Conditions encountered and to request information from the District necessary to address and resolve any such Conditions before proceeding with any portion of the Work affected or which may be affected by such Conditions. If the Contractor fails to timely notify the

District in writing of any Conditions encountered and the Contractor proceeds to perform any portion of the Work containing or affected by such Conditions, the Contractor shall bear all costs associated with or required to correct, remove, or otherwise remedy any portion of the Work affected thereby without adjustment of the Contract Time or the Contract Price. The Contract Time shall not be subject to adjustment in the event that the Contractor fails to timely request information from the Architect. The Architect's responses to any such Contractor request for information shall be provided within five (5) days. The foregoing provisions notwithstanding, in the event that the Architect reasonably determines that any of Contractor's request(s) for information: (i) does not reflect adequate or competent supervision or coordination by the Contractor or any Subcontractor; or (ii) does not reflect the Contractor's adequate or competent knowledge of the requirements of the Work or the Contract Documents; or (iii) is not justified for any other reason, Contractor shall be liable to the District for all costs incurred by the District associated with the processing, reviewing, evaluating and responding to any such request for information, including without limitation, fees of the Architect and any other design consultant to the Architect or the District.

#### **4.2.5 Work in Accordance With Contract Documents**

The Contractor shall perform all of the Work in strict conformity with the Contract Documents and approved Submittals.

### **4.3 Site Investigation; Subsurface Conditions**

#### **4.3.1 Contractor Investigation**

The Contractor shall be responsible for, and by executing the Agreement acknowledges, that it has carefully examined the Site and has taken all steps it deems reasonably necessary to ascertain all conditions which may affect the Work, or the cost thereof, including, without limitation, conditions bearing upon transportation, disposal, handling or storage of materials; availability of labor or utilities; access to the Site; and the physical conditions and the character of equipment, materials, labor and services necessary to perform the Work. Any failure of the Contractor to do so will not relieve it from the responsibility for fully and completely performing all Work without adjustment to the Contract Price or the Contract Time. The District assumes no responsibility to the Contractor for any understandings or representations concerning conditions or characteristics of the Site, or the Work, made by any of its officers, employees or agents prior to the execution of the Agreement, unless such understandings or representations are expressly set forth in the Agreement.

#### **4.3.2 Subsurface Data**

By executing the Agreement, the Contractor acknowledges that it has examined the subsurface data available and satisfied itself as to the character, quality and quantity of surface and subsurface materials, including without limitation, obstacles which may be encountered in performance of the Work, insofar as this information is reasonably ascertainable from an inspection of the Site, review of available subsurface data and analysis of information furnished by the District under the Contract Documents. Subsurface data or other soils investigation report provided by the District hereunder are not a part of the Contract Documents. Information contained in such data or report regarding subsurface conditions, elevations of existing grades, or below grade elevations

are approximate only and is neither guaranteed nor warranted by the District to be complete and accurate. The Contractor shall examine all subsurface data to make its own independent interpretation of the subsurface conditions and acknowledges that its bid is based upon its own opinion of the conditions which may be encountered. The District assumes no responsibility for any conclusions or interpretations made by Contractor on the basis of available subsurface data or other information furnished by District under the Contract Documents.

### **4.3.3 Subsurface Conditions**

#### **4.3.3.1 Procedures**

If the Work under the Contract Documents involves digging trenches or other excavations that extend deeper than four feet below the surface, the Contractor shall promptly and before the following conditions are disturbed, notify the District's Inspector, in writing, of any: (i) material that the Contractor believes may be material that is hazardous waste, as defined in California Health and Safety Code §25117, that is required to be removed to a Class I or Class II or Class III disposal site in accordance with provisions of existing law; (ii) subsurface or latent physical conditions at the site differing from those indicated; or (iii) unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in the Work or the character provided for in the Contract Documents. If upon notice to the District of the conditions described above and upon the District's investigation thereof, the District determines that the conditions so materially differ or involve such hazardous materials which require an adjustment to the Contract Price or the Contract Time, the District shall issue a Change Order in accordance with Article 9 hereof. In accordance with California Public Contract Code §7104, any dispute arising between the Contractor and the District as to any of the conditions listed in (i), (ii) or (iii) above, shall not excuse the Contractor from the completion of the Work within the Contract Time and the Contractor shall proceed with all Work to be performed under the Contract Documents. The District reserves the right to terminate the Contract pursuant to Article 15.2 hereof should the District determine not to proceed because of any condition described in (i), (ii) or (iii) above.

#### **4.3.3.2 Trenching**

For all excavations in excess of five (5) feet involving an estimated expenditure in excess of \$25,000, Contractor shall submit to the District for acceptance a detailed Drawing showing the design of shoring, bracing, sloping or other provisions to be made for the protection of workmen from the hazard of caving ground. If such design varies from the standards established by the Construction Safety Orders of the California Division of Industrial Safety, the Drawing shall be prepared by a registered civil or structural engineer. None of the aforementioned trenching shall be started before Contractor receives notification of acceptance from the District. Contractor shall comply with all other applicable requirements of California Labor Code §6705, and as therein provided, no provisions of that Section or this Section shall be construed to

impose tort liability upon the District. In any event, Contractor shall not commence any excavation work until it has secured all necessary permits including the required CAL OSHA excavation/shoring permit. Any permits shall be prominently displayed on the Project premises prior to commencement of any excavation.

#### **4.4 Supervision and Construction Procedures**

##### **4.4.1 Supervision of the Work**

The Contractor shall supervise and direct performance of the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract Documents, unless Contract Documents give other specific instructions concerning these matters. The Contractor shall be responsible for inspection of completed or partially completed portions of Work to determine that such portions are in proper condition to receive subsequent Work.

##### **4.4.2 Responsibility for the Work; Coordination of the Work**

The Contractor shall be responsible to the District for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and all other persons performing any portion of the Work under a contract with the Contractor. The Contractor shall not be relieved of the obligation to perform the Work in accordance with the Contract Documents either by activities or duties of the Project Manager, District's Inspector or the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the Contractor. The Contractor shall be responsible for all necessary or appropriate coordination of the Work and component parts thereof so that Substantial Completion of the Work will be achieved within the Contract Time and the Work will be completed for the Contract Price. The coordination of the Work is a material obligation of the Contractor hereunder and shall include without limitation, conducting regular coordination meetings with its Subcontractors and Material Suppliers, sequencing the operations of Subcontractors and Material Suppliers, and adapting its planned means, methods and sequences of construction operations as necessary to accommodate field or changed conditions at the Site.

##### **4.4.3 Surveys**

The Contractor shall prepare or cause to be prepared all detailed surveys necessary for performance of the Work. The Contractor shall be responsible for the establishment, location, maintenance and preservation of benchmarks, reference points and stakes for the Work, the cost of which shall be included within the Contract Price. The Contractor shall be solely responsible for all loss or costs resulting from the loss, destruction, disturbance or damage of benchmarks, reference points or stakes.

##### **4.4.4 Construction Utilities**

The Contractor shall arrange for the furnishing of and shall pay the costs of all utility services, including, without limitation, electricity, water, gas and telephone necessary for performance of the Work and the Contractor's obligations under the Contract

Documents. The Contractor shall furnish and install necessary or appropriate temporary distributions of utilities, including meters, to the Site. Any such temporary distributions shall be removed by the Contractor upon completion of the Work. The costs of all such utility services, including the installation and removal of temporary distributions thereof, shall be borne by the Contractor and included in the Contract Price.

#### **4.4.5 Existing Utilities; Removal, Relocation and Protection**

In accordance with California Government Code §4215, the District shall assume the responsibility for the timely removal, relocation, or protection of existing main or trunkline utility facilities located on the Site which are not identified in the Drawings, Specifications or other Contract Documents. Contractor shall be compensated for the costs of locating, repairing damage not due to the Contractor's failure to exercise reasonable care, and removing or relocating such utility facilities not indicated in the Drawings, Specifications and other Contract Documents with reasonable accuracy, and for equipment on the Site necessarily idled during such work. Contractor shall not be assessed Liquidated Damages for delay in completion of the Work when such delay is caused by the failure of the District or the utility district to provide for removal or relocation of such utility facilities. Nothing in this Article 4.4.5 shall be deemed to require the District to indicate the presence of existing service laterals or appurtenances whenever the presence of such utilities on the Site can be inferred from the presence of other visible facilities, such as buildings, meters and junction boxes, on or adjacent to the Site. If the Contractor encounters utility facilities not identified by the District in the Drawings, Specifications, or other Contract Documents, the Contractor shall immediately notify, in writing, the District and the utility owner. In the event that such utility facilities are owned by a public utility, the public utility shall have the sole discretion to perform repairs or relocation work or permit the Contractor to do such repairs or relocation work at a price determined in accordance with Article 9 of these General Conditions.

### **4.5 Labor and Materials**

#### **4.5.1 Payment for Labor, Materials and Services**

Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, applicable taxes, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated in the Work.

#### **4.5.2 Employee Discipline and Skills**

The Contractor shall enforce strict discipline and good order among the Contractor's employees, the employees of any Subcontractor of any tier, and all other persons performing any part of the Work at the Site. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them. The Contractor shall dismiss from its project employees and direct any Subcontractor of any tier to dismiss from their employment on the project any person deemed by the District to be unfit or incompetent to perform Work and thereafter, the Contractor shall not employ nor permit the employment of such person for performance of any part of the Work without the prior written consent of the District, which consent may be withheld in the reasonable discretion of the District.

#### **4.5.3 Contractor's Superintendent and Project Manager**

The Contractor shall employ a competent superintendent, project manager and all necessary assistants who shall be in attendance at the Site at all times during performance of the Work. The Contractor's communications relating to the Work or the Contract Documents shall be through the Contractor's superintendent and/or project manager. The superintendent shall represent the Contractor at the Site and communications given to the superintendent shall be binding as if given to the Contractor. The Contractor shall dismiss from the project the superintendent, project manager or any of his/her assistants if they are deemed, in the sole reasonable judgment of the District, to be unfit, incompetent or incapable of performing the functions assigned to them. In such event, the District shall have the right to approve of the replacement superintendent, project manager or assistant.

#### **4.5.4 Prohibition on Harassment**

##### **4.5.4.1 District's Policy Prohibiting Harassment**

The District is committed to providing a campus and workplace free of sexual harassment and harassment based on factors such as race, color religion, national origin, ancestry, age, medical condition, marital status, disability or veteran status. Harassment includes without limitation, verbal, physical or visual conduct which creates an intimidating, offensive or hostile environment such as racial slurs; ethnic jokes; posting of offensive statements, posters or cartoons or similar conduct. Sexual harassment includes without limitation the solicitation of sexual favors, unwelcome sexual advances, or other verbal, visual or physical conduct of a sexual nature.

##### **4.5.4.2 Contractor's Adoption of Anti-Harassment Policy**

Contractor shall adopt and implement all appropriate and necessary policies prohibiting any form of discrimination in the workplace, including without limitation harassment on the basis of any classification protected under local, state or federal law, regulation or policy. Contractor shall take all reasonable steps to prevent harassment from occurring, including without limitation affirmatively raising the subject of harassment among its employees, expressing strong disapproval of any form of harassment, developing appropriate sanctions, informing employees of their right to raise and how to raise the issue of harassment and informing complainants of the outcome of an investigation into a harassment claim. Contractor shall require that any Subcontractor or Sub-subcontractor performing any portion of the Work to adopt and implement policies in conformity with this Article 4.5.4.

##### **4.5.4.3 Prohibition on Harassment at the Site**

Contractor shall not permit any person, whether employed by Contractor, a Subcontractor, Sub-subcontractor, or any other person or entity, performing any Work at or about the Site to engage in any prohibited form of harassment. Any such person engaging in a prohibited form of harassment directed to any individual performing or providing any portion of the Work at or about the Site shall be subject to appropriate sanctions in accordance with the anti-harassment

policy adopted and implemented pursuant to Article 4.5.4.2 above. Any person performing or providing Work on or about the Site who engages in a prohibited form of harassment directed to any student, faculty member or staff of the District or directed to any other person on or about the Site shall be subject to immediate removal and shall be prohibited thereafter from providing or performing any portion of the Work. Upon the District's receipt of any notice or complaint that any person employed directly or indirectly by Contractor in performing or providing the Work has engaged in a prohibited form of harassment, the District will promptly undertake an investigation of such notice or complaint. In the event that the District, after such investigation, reasonably determines that a prohibited form of harassment has occurred, the District shall promptly notify the Contractor of the same and direct that the person engaging in such conduct be immediately removed from the Site. Unless the District's determination that a prohibited form of harassment has occurred is grossly negligent or without reasonable cause, the District shall have no liability for directing the removal of any person determined to have engaged in a prohibited form of harassment nor shall the Contract Price or the Contract Time be adjusted on account thereof. Contractor and the Surety shall defend, indemnify and hold harmless the District and its employees, officers, Board of Trustees, agents, and representatives from any and all claims, liabilities, judgments, awards, actions or causes of actions, including without limitation, attorneys' fees, which arise out of, or pertain in any manner to: (i) the assertion by any person dismissed from performing or providing work at the direction of the District pursuant to this Article 4.5.4.3; or (ii) the assertion by any person that any person directly or indirectly under the employment or direction of the Contractor has engaged in a prohibited form of harassment directed to or affecting such person. The obligations of the Contractor and the Surety under the preceding sentence are in addition to, and not in lieu of, any other obligation of defense, indemnity and hold harmless whether arising under the Contract Documents, at law or otherwise; these obligations survive completion of the Work or the termination of the Contract.

#### **4.6 Taxes**

The Contractor shall pay, without adjustment of the Contract Price, all sales, consumer, use and other taxes for the Work or portions thereof provided by the Contractor under the Contract Documents.

#### **4.7 Permits, Fees and Notices; Compliance with Laws**

##### **4.7.1 Payment of Permits, Fees**

Unless otherwise provided in the Contract Documents, the Contractor shall secure, pay for, and include in the Contract Price the building permits, other permits, governmental fees, licenses and inspections necessary or required for the proper execution and completion of the Work.

##### **4.7.2 Compliance with Laws**

The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations and other orders of public authorities bearing on performance of the Work.

### **4.7.3 Notice of Variation from Laws**

If the Contractor knows, or has reason to believe, that any portion of the Contract Documents are at variance with applicable laws, statutes, ordinances, building codes, regulations or rules, the Contractor shall promptly notify the District, in writing, of the same. If the Contractor performs Work knowing, or with reasonable diligence should have known, it to be contrary to laws, statutes, ordinances, building codes, rules or regulations applicable to the Work without such notice to the District, the Contractor shall assume full responsibility for such Work and shall bear the attributable costs arising or associated therefrom, including without limitation, the removal, replacement or correction of the same.

## **4.8 Submittals**

### **4.8.1 Purpose of Submittals**

Shop Drawings, Product Data, Samples and similar submittals (collectively "Submittals") are not Contract Documents. The purpose for submission of Submittals is to demonstrate, for those portions of the Work for which Submittals are required, the manner in which the Contractor proposes to provide or incorporate such item of the Work in conformity with the information given and the design concept expressed in the Contract Documents.

### **4.8.2 Contractor's Submittals**

#### **4.8.2.1 Prompt Submittals**

The Contractor shall review, confirm and submit to the Architect with the number of copies of Submittals within the timeframes required by the Contract Documents. Contractor's submission of Submittals in conformity with the Submittal Schedule is a material consideration of the Contract. In the event that the District reasonably determines that all or any portion of any Submittal fails to comply with the requirements of the Contract Documents and/or such Submittals are not otherwise complete and accurate so as to require re-submission more than one (1) time, Contractor shall bear all costs associated with the review and approval of such resubmitted Submittals; provided that such costs are in addition to, and not in lieu of, any liquidated damages imposed under the Contract Documents for Contractor's delayed submission of Submittals. Submittals not required by the Contract Documents may be returned without action. No adjustment to the Contract Time or the Contract Price shall be granted to the Contractor on account of its failure to make timely submission of any Submittals.

#### **4.8.2.2 Approval of Contractor's Confirmation of Submittals**

All Submittals prepared by Subcontractors, of any tier, Material Suppliers, manufacturers or distributors shall bear the written approval of the Contractor thereto prior to submission to the Architect for review. Any Submittal not bearing the Contractor's written approval shall be subject to return to the Contractor for re-submittal in conformity herewith, with the same being deemed to not have been submitted. Any delay, impact or cost associated therewith shall be the sole and exclusive responsibility of the Contractor without adjustment of the Contract Time or the Contract Price.



#### **4.8.2.3 Verification of Submittal Information**

By approving and submitting Submittals, the Contractor represents to the District and Architect that the Contractor has determined and verified materials, field measurements, field construction criteria, catalog numbers and similar data related thereto and has checked and coordinated the information contained within such Submittals with the requirements of the Work and of the Contract Documents.

#### **4.8.2.4 Information Included in Submittals**

All Submittals shall be accompanied by a written transmittal or other writing by the Contractor providing an identification of the portion of the Drawings or the Specifications pertaining to the Submittal, with each Submittal numbered consecutively for ease of reference along with the following information: (i) date of submission; (ii) project name; (iii) name of submitting Subcontractor; and (iv) if applicable, the revision number. The foregoing information is in addition to, and not in lieu of, any other information required for the Architect's review, evaluation and approval of the Contractor's Submittals.

#### **4.8.2.5 Contractor Responsibility for Deviations**

The Contractor shall not be relieved of responsibility for correcting deviations from the requirements of the Contract Documents by the Architect's approval of Submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submission of the Submittal and the District has given written approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Submittals by the Architect's approval thereof.

#### **4.8.2.6 No Performance of Work without Approval**

The Contractor shall perform no portion of the Work requiring the Architect's review and approval of Submittals until the Architect has completed its review and granted its approval of such Submittal. The Contractor shall not perform any portion of the Work forming a part of a Submittal or which is affected by a related Submittal until the entirety of the Submittal or other related Submittal has been fully approved.

#### **4.8.3 Architect Review of Submittals**

The purpose of the Architect's review of Submittals and the time for the Architect's return of Submittals to the Contractor shall be as set forth elsewhere in the Contract Documents, including without limitation, Article 3.1.6 of the General Conditions. If the Architect returns a Submittal as rejected or requiring correction(s) and re-submission, the Contractor, so as not to delay the progress of the Work, shall promptly thereafter resubmit a Submittal conforming to the requirements of the Contract Documents; the resubmitted Submittal shall indicate the portions thereof modified in order to obtain the Architect's approval. When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, the Architect shall be entitled to rely upon the accuracy and completeness of such calculations and certifi-

cations accompanying Submittals. The Architect's review of the Submittals is for the limited purposes described in the Contract Documents.

#### **4.8.4 Deferred Approval Items**

In the event that any portion of the Work is designated in the Contract Documents as a "Deferred Approval" item, Contractor shall be solely and exclusively responsible for the preparation of Submittals for such item(s) in a timely manner so as not to delay or hinder the completion of the Work within the Contract Time.

### **4.9 Materials and Equipment**

#### **4.9.1 Specified Materials, Equipment**

Except as otherwise provided, references in the Contract Documents to any specific article, device, equipment, product, material, fixture, patented process, form, method or type of construction, by name, make, trade name, or catalog number, with or without the words "or equal" shall be deemed to establish a minimum standard of quality or performance, and shall not be construed as limiting competition.

#### **4.9.2 Approval of or Equal, Substitutions or Alternatives**

The Contractor may propose to furnish alternatives or substitutes for a particular item specified in the Contract Documents, provided that the Contractor provides advance written notice to the District of such proposed or equal, substitution or alternative and certifies to the District that the quality, performance capability, functionality and appearance of the proposed alternative or substitute will meet or exceed the quality, performance capability, functionality, and appearance of the item or process specified, and must demonstrate to the District that the use of the substitution or alternative is appropriate and will not delay completion of the Work or result in an increase to the Contract Price. The Contractor shall submit all data to the District to permit the Architect's proper evaluation of the proposed substitution or alternative. The Contractor shall not provide, furnish or install any substitution or alternative without the District's prior approval of the same; any alternative or substitution installed or incorporated into the Work without first obtaining the District's approval of the same shall be subject to removal pursuant to Article 12 hereof. The District's decision shall be final regarding the approval or disapproval of the Contractor's proposed substitutions or alternatives. The District's approval of any Contractor-proposed substitution shall be in accordance with Change Order procedures set forth in Article 9 and as otherwise specified in the Contract Documents.

#### **4.9.3 Placement of Material and Equipment Orders**

Contractor shall, after award of the Contract, promptly and timely place all orders for materials and/or equipment necessary for completion of the Work so that delivery of the same shall be made without delay or interruption to the timely completion of the Work. Contractor shall require that any Subcontractor of any tier performing any portion of the Work similarly place orders for all materials and/or equipment to be furnished by any such Subcontractor. Upon request of the District, the Contractor shall furnish reasonably satisfactory written evidence of the placement of orders for materials and/or equipment necessary for completion of the Work, including without limitation, orders

for materials and/or equipment to be provided, furnished or installed by any Subcontractor of any tier.

#### **4.9.4 District's Right to Place Orders for Materials and/or Equipment**

If the Contractor fails or refuses to provide reasonably satisfactory written evidence of the placement of orders for materials and/or equipment necessary for completion of the Work, or should the District determine, in its sole and reasonable discretion, that such orders have not been placed in a manner that assures timely delivery of such materials and/or equipment to the Site so the Work can be completed without delay or interruption, the District shall have the right, but not the obligation, to place such orders on behalf of the Contractor. If the District exercises such right, the District's conduct in that regard does not assume control of the work. Rather, Contractor remains responsible for the means, methods, techniques, sequences or procedures for completion of the Work and is not relieved from any of Contractor's obligations under the Contract Documents, including without limitation, completion of the Work within the Contract Time and for the Contract Price. If the District exercises the right hereunder to place orders for materials and/or equipment on behalf of Contractor pursuant to the foregoing, Contractor shall reimburse the District for all costs and fees incurred by the District in placing such orders; such costs and fees may be deducted by the District from the Contract Price then or thereafter due the Contractor.

### **4.10 Safety**

#### **4.10.1 Safety Programs**

The Contractor shall be solely responsible for initiating, maintaining and supervising all safety programs required by applicable law, ordinance, regulation or governmental orders in connection with the performance of the Contract, or otherwise required by the type or nature of the Work. The Contractor shall require that its Subcontractors similarly initiate and maintain all appropriate or required safety programs.

#### **4.10.2 Safety Precautions**

The Contractor shall be solely responsible for initiating and maintaining reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to: (i) employees on the Work and other persons who may be affected thereby; (ii) the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors of any tier; and (iii) other property or items at the site of the Work, or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities whether or not designated for removal, relocation or replacement in the course of construction. The Contractor shall erect and maintain, as required by existing conditions and conditions resulting from performance of the Contract, reasonable safeguards for safety and protection of property and persons, including, without limitation, posting danger signs and other warnings against hazards, promulgating safety regulations and notifying Districts and users of adjacent sites and utilities. The Contractor shall give or post all notices required by applicable law and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

#### **4.10.3 Safety Coordinator**

The Contractor shall designate a responsible member of the Contractor's organization at the Site whose duty shall be the prevention of accidents and the implementation and maintenance safety precautions and programs. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the District.

#### **4.10.4 Emergencies**

In an emergency affecting safety of persons or property, the Contractor shall act, to prevent threatened damage, injury or loss.

### **4.11 Hazardous Materials**

#### **4.11.1 Use of Hazardous Materials**

In the event that the Contractor, any Subcontractor or anyone employed directly or indirectly by them shall use, at the Site, or incorporate into the Work, any material or substance deemed to be hazardous or toxic under any law, rule, ordinance, regulation or interpretation thereof (collectively "Hazardous Materials"), the Contractor shall comply with all laws, rules, ordinances or regulations applicable thereto and shall exercise all necessary safety precautions relating to the use, storage or disposal thereof. Unless otherwise provided, Contractor shall be solely responsible for the transportation and disposal of any Hazardous Materials on or about the Site.

#### **4.11.2 Prohibition on Use of Asbestos Containing Building Materials ("ACBMs")**

Notwithstanding any provision of the Drawings or the Specifications to the contrary, it is the intent of the District that ACBMs not be used or incorporated into any portion of the Work. If any portion of the Work depicted in the Drawings or the Specifications shall require materials or products which the Contractor knows, or should have known with reasonably diligent investigation, to contain ACBMs, Contractor shall promptly notify the District of the same so that an appropriate alternative can be made in a timely manner so as not to delay the progress of the Work. Contractor warrants to the District that there are no materials or products used or incorporated into the Work which contain ACBMs. Whether before or after completion of the Work, if it is discovered that any product or material forming a part of the Work or incorporated into the Work contains ACBMs, the Contractor shall at its sole cost and expense remove such product or material in accordance with any laws, rules, procedures and regulations applicable to the handling, removal and disposal of ACBMs and to replace such product or material with non-ACBM products or materials and to return the affected portion(s) of the Work to the finish condition depicted in the Drawings and Specifications relating to such portion(s) of the Work. Contractor's obligations under the preceding sentence shall survive the termination of the Contract, the warranty period provided under the Contract Documents, the Contractor's completion of the Work or the District's acceptance of the Work. In the event that the Contractor shall fail or refuse, for any reason, to commence the removal and replacement of any material or product containing ACBMs forming a part of, or incorporated into the Work, within ten (10) days of the date of the District's written notice to the Contractor of the existence of ACBM materials or products in the Work, the District may thereafter proceed to cause the removal and replacement of such

materials or products in any manner which the District determines to be reasonably necessary and appropriate; all costs, expenses and fees, incurred by the District in connection with such removal and replacement shall be the responsibility of the Contractor and the Contractor's Performance Bond Surety.

#### **4.11.3 Encountering of Hazardous Materials**

If the Contractor encounters Hazardous Materials at the Site which have not been rendered harmless or for which there is no provision in the Contract Documents for their containment, removal, abatement or handling, the Contractor shall immediately stop the Work in the affected area and shall immediately notify the District, in writing, of such condition. The Contractor shall diligently proceed with the Work in all other unaffected areas. The Contractor shall proceed with the Work in the affected area only after the Hazardous Materials have been rendered harmless, contained, removed or abated. Adjustments, if any, to the Contract Time or Price shall be made in accordance with Articles 7 and 9.

#### **4.11.4 Material Safety Data Sheets**

Contractor is required to insure that Material Safety Data Sheets (MSDS) for any material requiring a MSDS pursuant to the federal "hazard communication" standard or employee's right-to-know law are available in a readily accessible place on the Work premises. The Contractor is also required to insure (i) the proper labeling of any substance brought onto the Work premises, and (ii) that the persons working with the material, or within the general area of the material, are informed about the hazards of the substance and follow proper handling and protection procedures.

#### **4.11.5 Compliance with Proposition 65**

Contractor is required to comply with the provisions of California Health and Safety Code § 25249.5, et seq., which requires the posting and giving of notice to persons who may be exposed to any chemical known to the State of California to cause cancer. The Contractor agrees to familiarize itself with such statutory provisions and to fully comply with the requirements set forth therein.

### **4.12 Maintenance of Documents**

#### **4.12.1 Documents at Site**

The Contractor shall maintain at the Site: (i) one record copy of the Drawings, Specifications and all addenda thereto; (ii) Change Orders approved by the District and all other modifications to the Contract Documents; (iii) Submittals reviewed by the Architect; (iv) Requests for Information and responses thereto; (v) Record Drawings; (vi) Material Safety Data Sheets ("MSDS") accompanying any materials, equipment or products delivered or stored at the Site or incorporated into the Work; and (vii) all building and other codes or regulations applicable to the Work, including without limitation, Title 24, Part 2 of the California Code of Regulations. During performance of the Work, all documents maintained by Contractor at the Site shall be available to the District, the Project Manager, the Architect, the District's Inspector and DSA for review, inspection or reproduction. Upon completion of the Work, all documents maintained at the Site by the Contractor pursuant to the foregoing, except for (vii), shall be assembled and transmitted to the District.

#### **4.12.2 Maintenance of Record Documents**

During its performance of the Work, the Contractor shall continuously maintain Record Documents which are marked to indicate all field changes made to adapt the Work depicted in the Documents to field conditions, changes resulting from Change Orders and all concealed or buried installations, including without limitation, piping, conduit and utility services. The Record Documents shall be clean and all changes, corrections and dimensions shall be marked in a neat and legible manner in a contrasting color. The District's inspection or review shall not be deemed to be the District's approval or verification of the completeness or accuracy of the Record Documents. The failure or refusal of the Contractor to continuously maintain complete and accurate Record Documents or to make available the Record Documents for inspection and review by the District may be deemed by the District to be Contractor's default of a material obligation hereunder. Payments to the Contractor are conditioned upon continuous maintenance and completion of the Record Documents pursuant to Articles 8.3.2 and 8.3.3. If the Contractor fails or refuses to continuously maintain the Record Documents in a complete and accurate manner, the District may take appropriate action to cause such maintenance, and all costs incurred in connection therewith shall be charged to the Contractor; the District may deduct such costs from any portion of the Contract Price then or thereafter due the Contractor.

#### **4.13 Use of Site**

The Contractor shall confine operations at the Site to areas permitted by law, ordinances or permits, subject to any restrictions or limitations set forth in the Contract Documents. The Contractor shall not unreasonably encumber the Site or adjoining areas with materials or equipment. The Contractor shall be solely responsible for providing security at the Site with all such costs included in the Contract Price. The District shall at all times have access to the Site.

#### **4.14 Noise and Dust Control**

The Contractor shall be responsible for complying with the requirements of the city and county having jurisdiction with regard to noise ordinances governing construction sites and activities. Construction equipment noise is subject to the control of the Environmental Protection Agency's Noise Control Program (Code of Federal Regulations, Title 40, Part 204). The Contractor shall be solely responsible for maintaining all areas of the Work free from all materials and products that by becoming airborne may cause respiratory inconveniences to District students and personnel. Damages and/or any liability derived from the Contractor's failure to comply with these requirements shall be the sole cost of the Contractor, including all penalties incurred for violations of local, state and/or federal regulations.

#### **4.15 Cutting and Patching**

The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make the component parts thereof fit together properly in accordance with the Contract Documents. Only tradespersons skilled and experienced in cutting and patching shall perform such work. The Contractor shall not damage or endanger any portion of the Work, or the fully or partially completed construction of the District or separate contractors by cutting, patching, excavation or other alteration. The Contractor shall not cut, patch or otherwise alter the construction by the District or separate contractor without the prior written consent of the District or separate contractor thereto, which consent shall not be unreasonably withheld. The

Contractor shall not unreasonably withhold consent to the request of the District or separate contractor to cut, patch or otherwise alter the Work.

**4.16 Clean-Up**

The Contractor shall at all times keep the Site and all adjoining areas free from the accumulation of any waste material, rubbish or excess materials and equipment, placed, caused by performance of the Work. The Contractor shall maintain the Site in a "rake-clean" standard on a daily basis. Prior to completion of the Work, Contractor shall remove from the Site all rubbish, waste and excess material, tools, Construction Equipment, machinery, temporary facilities and barricades, and any other items which are not the property of the District under the Contract Documents. Upon completion of the Work, the Site and all adjoining areas shall be left in a neat and broom clean condition satisfactory to District. The Project Manager is authorized to direct the Contractor's clean-up obligations hereunder. If the Contractor fails to clean up as provided for in the Contract Documents, the District may do so, and all costs incurred in connection therewith shall be charged to the Contractor; the District may deduct such costs from any portion of the Contract Price then or thereafter due the Contractor.

**4.17 Access to the Work**

The Contractor shall provide the DSA, the District, the Project Manager, the District's Inspector, Labor Compliance Officer and Labor Compliance administrator and consultant(s), the Architect and the Architect's consultant(s) with access to the Work, whether in place, preparation and progress and wherever located.

**4.18 Information for the District's Inspector**

The Contractor shall furnish the District's Inspector access to the Work for obtaining such information as may be necessary to keep the District's Inspector fully informed respecting the progress, quality and character of the Work and materials, equipment or other items incorporated therein.

**4.19 Inspector's Field Office**

The Contractor shall provide and include in the Contract Price a temporary furnished office at the Site, if specified in the Contract Documents, for use by the District, the Project Manager and the District's Inspector, until removal of the same is authorized by the District.

**4.20 Patents and Royalties**

The Contractor and the Surety shall defend, indemnify and hold harmless the District and its agents, employees and officers from any claim, demand or legal proceeding arising out of or pertaining, in any manner, to any actual or claimed infringement of patent rights in connection with performance of the Work under the Contract Documents.

**4.21 Prevailing Wage Rates; Employment of Apprentices and Labor Compliance Program**

**4.21.1. Determination of Prevailing Wage Rates**

Pursuant to Labor Code §§1770 et seq., the District has obtained from the Director of the Department of Industrial Relations determinations of the generally prevailing rates of per diem wages and the prevailing rate for holiday and overtime work in the locality in which the Work is to be performed. Copies of these determinations, entitled "PREVAILING WAGE SCALE", are maintained at the District office identified in the

Notice to Contractors Calling For Bids and on the Internet. Holidays shall be as defined in the collective bargaining agreement applicable to each particular craft, classification or type of worker employed under the Contract. Per diem wages include employer payments for health and welfare, pensions, vacation, travel time and subsistence pay, apprenticeship or other training programs authorized by California Labor Code §3093, and similar purposes when the term "per diem wages" is used herein. Holiday and overtime work, when permitted by law, shall be paid for at the rate of at least one and one-half (1½) times the above specified rate of per diem wages, unless otherwise specified. The Contractor shall post, at appropriate and conspicuous locations on the Site, a schedule showing all determined general prevailing wage rates.

#### **4.21.2. Labor Compliance Program**

The Project is in part funded by the Kindergarten-University Public Education Facilities Bond Act of 2002 or the Kindergarten-University Public Education Facilities Bond Act of 2004. The District has initiated a Labor Compliance Program ("LCP") pursuant to the provisions of Labor Code §1771.5 and other applicable law. The District's LCP Manual is included in Section 00900 of the Contract Specifications. The Contractor and all Subcontractors of any tier shall comply with the LCP initiated and enforced by the District.

#### **4.21.3. Payment of Prevailing Wage Rates**

##### **4.21.3.1 Statutory Requirements**

The Project is subject to the provisions of Labor Code §§1720 et seq. and the requirements of Title 8 of the California Code of Regulations §§16000 et seq., which govern the payment of prevailing wage rates on public works projects. The Contractor and Subcontractors of any tier shall be governed by and required to comply with these statutes and regulations in connection with the Project. Pursuant to Labor Code §1771, the Contractor and all Subcontractors of any tier shall pay not less than the prevailing wage rates to all workers employed in execution of the Contract. Contractor and Subcontractors shall comply with applicable statutes and regulations, including but not limited to Labor Code §§ 1771, 1775, 1777.5, 1813 and 1815, and the District's LCP. Copies of these statutes and the District's LCP are contained in Section 00900 of the Contract Specifications.

##### **4.21.3.2. Weekly Payments to Employees**

Contractor and all Subcontractors of any tier shall pay each worker on the Project, unconditionally and not less often than once each week, the full amounts that are due and payable for the period covered by the particular payday. Thus, an employer must establish a fixed workweek and an established payday. On each payday, each worker must receive all sums due at the end of the preceding workweek and must be provided with an itemized wage statement.



#### **4.21.4. Penalty for Prevailing Wage Rate Underpayment**

Pursuant to Labor Code §1775, the Contractor shall, as a penalty, forfeit up to Fifty Dollars (\$50.00) to the District for each calendar day or portion thereof, for each worker paid less than the prevailing wage rates as determined by the Director of the Department of Industrial Relations for such work or craft in which such worker is employed for the Work by the Contractor or by any Subcontractor, of any tier, in connection with the Work. The difference between prevailing wage rates and the amount paid to each worker each calendar day, or portion thereof, for which each worker paid less than the prevailing wage rate, shall be paid to each worker by the Contractor.

#### **4.21.5. Payroll Records**

##### **4.21.5.1. Certified Payroll Reports and Basic Payroll Records**

The Contractor and Subcontractors of any tier shall maintain Certified Payroll Reports and “Basic Payroll Records”, as that term is defined in Appendix A to the District’s LCP, during the course of the Work and shall preserve them for a period of three (3) years after completion of the Project for all tradesworkers executing the Work of the Contract. Certified Payroll Reports must be submitted weekly at the time designated in Article 4.21.5.2 or upon request as described in Article 4.21.5.4. Basic Payroll Records may be requested by the District at any time and shall be provided within ten (10) calendar days following the receipt of the request.

##### **4.21.5.2. Weekly Submittal of Certified Payroll Reports**

**4.21.5.2.1.** Pursuant to Labor Code §1776, the Contractor and each Subcontractor of any tier shall maintain an accurate, weekly payroll record showing the employee full name, address, social security number, work classification, amount paid per hour, straight time, overtime and holiday hours worked each day and weekly totals, the actual per diem wages paid to each person employed for the Work, and the gross/net wages paid for this Project/all projects, as well as the Contractor name and address, Project name and location, and dates of payroll. If payments are made to any third party trust, funds or plans for health and welfare, pension or vacation trusts, those payments must be stated on the payroll report. The basic wage rate paid per hour plus the employer contributions for benefits, including training fund contributions, must at least equal the prevailing wage rate for that classification.

**4.21.5.2.2.** The Contractor shall maintain and submit its Certified Payroll Reports and those of the Subcontractors of any tier to the District each week, no later than seven (7) calendar days after the payday for the week covered by the payroll

reports. If there is no work on a given week or on a given day, the Certified Payroll Report must indicate “no work” for that week or day(s). The Certified Payroll Reports must account for each day of the week including Saturdays, Sundays and holidays. Contractor and Subcontractors of every tier must write “final” on the last submitted payroll report for the Project.

**4.21.5.2.3** The Certified Payroll Reports shall be verified by a written declaration made by a person with authority to represent the reporting entity, under penalty of perjury, that the information contained in the payroll record is true and correct and that the reporting entity has complied with the requirements of California Labor Code §§1771, 1811, and 1815 for any Work performed by his, her or its employees on the Project. Copies of the District’s certified payroll form and the required declaration are provided in Section 00900 of the Contract Specifications. The Contractor and Subcontractors must use the District-provided forms.

**4.21.5.3. Penalty for Delinquent or Inadequate Payroll Records**

In the event Contractor submits “Inadequate Payroll Records” or Contractor has “Delinquent Payroll Records”, as those terms are defined in Appendix A to the District’s LCP, the Contractor shall have ten (10) days in which to comply, subsequent to receipt of written notice specifying in what respects the Contractor must comply herewith. Should Contractor fail to strictly comply after such 10-day period, the Contractor shall, as a penalty to the District, forfeit Twenty-Five Dollars (\$25.00) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated.

**4.21.5.4. Making Certified Payroll Reports Available Upon Request**

Pursuant to Labor Code §1776, in addition to its obligation to deliver certified payroll records to the District on a weekly basis as set forth above, the Contractor shall also make payroll records available for inspection at all reasonable hours at the principal office of the Contractor on the following basis: (i) a certified copy of an employee's payroll record shall be made available for inspection or furnished to such employee or his/her authorized representative on request; (ii) a certified copy of all payroll records shall be made available for inspection or furnished upon request to the District, the Division of Labor Standards Enforcement and the Division of Apprenticeship Standards of the Department of Industrial Relations; (iii) a certified copy of payroll records shall be made available upon request to the public for inspection or copies thereof made; provided, however, that a request by the public shall be made through either the District, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested payroll records have not been previously provided to the District, the Division of Apprenticeship Standards or the Division of

Labor Standards Enforcement, the requesting party shall, prior to being provided the records, reimburse the cost of preparation by the Contractor, Subcontractors and the entity through which the request was made; the public shall not be given access to such records at the principal office of the Contractor; (iv) the Contractor shall file a certified copy of the payroll records with the entity that requested such records within ten (10) days after receipt of a written request; (v) any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by the District, the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address and social security number. The name and address of the Contractor or any Subcontractor, of any tier, performing a part of the Work shall not be marked or obliterated. The Contractor shall inform the District of the location of payroll records, including the street address, city and county and shall, within five (5) working days, provide a notice of a change or location and address. In the event of noncompliance with the requirements of this subparagraph, the Contractor shall have ten (10) days in which to comply, subsequent to receipt of written notice specifying in what respects the Contractor must comply herewith. Should Contractor fail to strictly comply after such 10-day period, the Contractor shall, as a penalty to the District, forfeit Twenty-Five Dollars (\$25.00) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, such penalties shall be withheld from any portion of the Contract Price then or thereafter due the Contractor. The responsibility for compliance with the foregoing provisions shall rest upon the Contractor.

#### **4.21.6. Hours of Work**

##### **4.21.6.1. Limits on Hours of Work**

Pursuant to Labor Code §1810, eight (8) hours of labor shall constitute a legal day's work. Pursuant to Labor Code §1811, the time of service of any worker employed at any time by the Contractor or by a Subcontractor, of any tier, upon the Work or upon any part of the Work, is limited and restricted to eight (8) hours during any one calendar day and forty (40) hours during any one calendar week, except as hereafter provided. Notwithstanding the foregoing provisions, Work performed by employees of Contractor or any Subcontractor, of any tier, in excess of eight (8) hours per day and forty (40) hours during any one week, shall be permitted upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half (1½) times the basic rate of pay.

##### **4.21.6.2. Penalty for Excess Hours**

Pursuant to Labor Code §§1813 and 1815, the Contractor shall pay to the District a penalty of Twenty-five Dollars (\$25.00) for each worker

employed in the execution of the Contract by the Contractor or any Subcontractor, of any tier, for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any calendar day and forty (40) hours in any one calendar week, or as otherwise provided by law, in violation of the provisions of the California Labor Code, unless compensation to the worker so employed by the Contractor is not less than one and one-half (1½) times the basic rate of pay for all hours worked in excess of eight (8) hours per day.

**4.21.6.3. Contractor Responsibility For Cost of Excess Hours.**

Any Work performed by workers necessary to be performed after regular working hours or on Sundays or other holidays shall be performed without adjustment to the Contract Price or any other additional expense to the District.

**4.21.7. Audit/Investigation of Compliance with Prevailing Wage Laws**

The District shall conduct audits and investigations of the Contractor's and Subcontractors' Certified Payroll Records in fulfillment of the District's obligation as an authorized LCP to enforce compliance with prevailing wage laws. The District shall conduct audits/investigations on a random and as-needed basis. An audit shall include the comparison of submitted Certified Payroll Records to Basic Payroll Records or documents maintained independent of the Certified Payroll Records, or to records used to gather the information in the Certified Payroll Records. The comparison may also involve other documents which authenticate or corroborate representations made in the Certified Payroll Records. The purpose of any audit or investigation shall be to verify the payment of prevailing wage rates. To ensure that the audit/investigation is fair, the Contractor or Subcontractor shall be provided an opportunity to submit evidence supporting its position. Should the District find that a Contractor or a Subcontractor has violated prevailing wage laws, the District shall refer the matter to the Labor Commissioner for approval of the District recommended forfeiture. The District shall forward its audit/investigation report to the affected Contractor or Subcontractor concurrently with the District's submission of the report to the Labor Commissioner, excepting documents which the District originally received from the Contractor or Subcontractor and which are also expressly referenced in the report. The District recommended forfeiture amount shall be in conformity with the provisions of Labor Code §§1720 et seq. Depending on the ruling of the Labor Commissioner, the audit/investigation may result in a withholding from the Contractor's Contract Payments.

**4.21.8. Responsibility for Subcontractors' Payment of Prevailing Wages**

Pursuant to Labor Code §1775, the Contractor is responsible for ensuring that all Subcontractors of any tier comply with requirements for payment of prevailing wages. Contractor is responsible for Labor Code violations by Subcontractors of any tier. The agreement executed between the Contractor and each Subcontractor must contain a copy of the provisions of Labor Code §§ 1771, 1775, 1777.5, 1813 and 1815, at a minimum. Contractor shall monitor each Subcontractors' payment of prevailing wage rates. Upon becoming aware of the failure of any Subcontractor of any tier to pay its workers the

specified prevailing wage, the Contractor shall diligently take action to halt and rectify the failure, including, without limitation, retaining sufficient funds due to the Subcontractor to cover the underpayment. Before making final payment to any Subcontractor, the Contractor must obtain an affidavit from the Subcontractor, signed under penalty of perjury, which states that the Subcontractor has paid the specified, determined prevailing wage rate to its employees for the Project, as well as any amounts due pursuant to Labor Code §1813. Contractor shall provide copies of such affidavits to the District and provide Contractor's affidavit that it has paid the specified, determined prevailing wage rate to its employees for the Project, as well as any amounts due under Labor Code §1813.

#### **4.21.9. Statement of Employer Payments**

Within five (5) calendar days of signing the Contract or Subcontract, as applicable, the Statement of Employer Payments (DSLE Form PW 26 included in Section 00900 of the Specifications) must be completed and submitted to the District by each Contractor and Subcontractor who pays benefits to a third party trust, plan or fund for health and welfare benefits, vacation funds or makes pension contributions. The form must contain, for each worker classification, the fund or trust name, address, administrator, and amount per hour contributed and frequency of contributions. Training fund contributions must also be reported on this form. In February and August of each year during the Project, the Contractor and Subcontractors of any tier must verify changes in wage rates for any trade classifications used on the Project. Thereafter, Contractor and its Subcontractors must submit a new Statement of Employer Payments to the District which reflects any changes in wages and benefits.

#### **4.21.10. Apprentices**

##### **4.21.10.1. Apprenticeship Committee Contract Award Information**

Pursuant to Labor Code §1777.5 and Title 8 California Code of Regulations §230, Contractor and Subcontractors of any tier who are not already approved to train by an apprenticeship program sponsor shall, within ten (10) calendar days of signing the Contract or Subcontract, as applicable, but in any event prior to the first day in which the Contractor or Subcontractor has workers employed on the Project, submit the Public Works Contract Award Information form (DAS form 140 included in Section 00900 of the Contract Specifications) to the appropriate local apprenticeship committees whose geographic area of operation include the area of the Project and can supply apprentices to the Project. Contractor and Subcontractors must also submit a copy of the form to the District which shall include, in addition to other information, an estimate of journeymen hours to be performed under the Contract or Subcontract, the number of apprentices to be employed, and the approximate dates the apprentices will be employed.

##### **4.21.10.2. Employment of Apprentices**

**4.21.10.2.1.** Labor Code §1777.5 and Title 8 California Code of Regulations §§2000 et seq. provide detailed requirements for employing apprentices on public works. The responsibility of complying with Section 1777.5 and the

regulations lies exclusively with the Contractor.

**4.21.10.2.2.** Any apprentices employed to perform any of the Work shall be paid the standard wage paid to apprentices under the regulations of the craft or trade for which such apprentice is employed, and such individual shall be employed only for the work of the craft or trade to which such individual is registered.

**4.21.10.2.3.** Only apprentices, as defined in California Labor Code §3077, who are in training under apprenticeship standards and written apprenticeship agreements under California Labor Code §§3070 et seq. are eligible to be employed for the Work. The employment and training of each apprentice shall be in accordance with the provisions of the apprenticeship standards and apprentice agreements under which such apprentice is training.

**4.21.10.3. Apprenticeship Certificate and Dispatch of Apprentices**

When the Contractor or any Subcontractor of any tier in performing any of the Work employs workers in any Apprenticeable Craft or Trade, the Contractor and such Subcontractor shall apply to the Joint Apprenticeship Committee administering the apprenticeship standards of the craft or trade in the area of the site of the Work for a certificate approving the Contractor or such Subcontractor under the apprenticeship standards for the employment and training of apprentices in the area or industry affected, provided, however, that the approval as established by the Joint Apprenticeship Committee or Committees shall be subject to the approval of the Administrator of Apprenticeship. The Joint Apprenticeship Committee or Committees, subsequent to approving the Contractor or Subcontractor, shall arrange for the dispatch of apprentices to the Contractor or such Subcontractor in order to comply with California Labor Code §1777.5. There shall be an affirmative duty upon the Joint Apprenticeship Committee or Committees, administering the apprenticeship standards of the crafts or trades in the area of the site of the Work, to ensure equal employment and affirmative action and apprenticeship for women and minorities. Contractors or Subcontractors shall not be required to submit individual applications for approval to local Joint Apprenticeship Committees provided they are already covered by the local apprenticeship standards. Contractors who are not already approved to train apprentices must request dispatch of required apprentices from one of the applicable Apprentices Committees by giving the program actual notice of at least 48 hours (excluding Saturdays, Sundays and holidays) before the date on which apprentices are required. Contractors who do not receive a sufficient number of apprentices from their initial request must request dispatch of apprentices from at least one other apprenticeship committee if more than one exists in the area of the Project.

#### **4.21.10.4. Ratio of Apprentices to Journeymen**

The ratio of Work performed by apprentices to journeymen, who shall be employed in the Work, may be the ratio stipulated in the apprenticeship standards under which the Joint Apprenticeship Committee operates, but in no case shall the ratio be less than one hour of apprentice work for each five hours of labor performed by a journeyman, except as otherwise provided in California Labor Code §1777.5. The minimum ratio for the land surveyor classification shall not be less than one apprentice for each five journeymen. Any ratio shall apply during any day or portion of a day when any journeyman, or the higher standard stipulated by the Joint Apprenticeship Committee, is employed at the site of the Work and shall be computed on the basis of the hours worked during the day by journeymen so employed, except for the land surveyor classification. The Contractor shall employ apprentices for the number of hours computed as above before the completion of the Work. The Contractor shall, however, endeavor, to the greatest extent possible, to employ apprentices during the same time period that the journeymen in the same craft or trade are employed at the site of the Work. Where an hourly apprenticeship ratio is not feasible for a particular craft or trade, the Division of Apprenticeship Standards, upon application of a Joint Apprenticeship Committee, may order a minimum ratio of not less than one apprentice for each five journeymen in a craft or trade classification. The Contractor or any Subcontractor covered by this Article and California Labor Code §1777.5, upon the issuance of the approval certificate, or if it has been previously approved in such craft or trade, shall employ the number of apprentices or the ratio of apprentices to journeymen stipulated in the apprenticeship standards. Upon proper showing by the Contractor that it employs apprentices in such craft or trade in the State of California on all of its contracts on an annual average of not less than one apprentice to each five journeymen, the Division of Apprenticeship Standards may grant a certificate exempting the Contractor from the 1-to-5 ratio as set forth in this Article and California Labor Code §1777.5. This Article shall not apply to contracts of general contractors, or to contracts of specialty contractors not bidding for work through a general or prime contractor, involving less than Thirty Thousand Dollars (\$30,000.00) or twenty (20) working days. The term "Apprenticeable Craft or Trade," as used herein shall mean a craft or trade determined as an Apprenticeable occupation in accordance with rules and regulations prescribed by the Apprenticeship Council.

#### **4.21.10.5. Exemption from Ratios**

The Joint Apprenticeship Committee shall have the discretion to grant a certificate, which shall be subject to the approval of the Administrator of Apprenticeship, exempting the Contractor from the 1-to-5 ratio set forth in this Article when it finds that any one of the following conditions are met: (i) unemployment for the previous three-month period in such area exceeds an average of fifteen percent (15%) or; (ii) the number of

apprentices in training in such area exceeds a ratio of 1-to-5 in relation to journeymen, or; (iii) the Apprenticeable Craft or Trade is replacing at least one-thirtieth (1/30) of its journeymen annually through apprenticeship training, either on a statewide basis or on a local basis, or; (iv) if assignment of an apprentice to any Work performed under the Contract Documents would create a condition which would jeopardize such apprentice's life or the life, safety or property of fellow employees or the public at large, or if the specific task to which the apprentice is to be assigned is of such a nature that training cannot be provided by a journeyman. When such exemptions from the 1-to-5 ratio between apprentices and journeymen are granted to an organization which represents contractors in a specific trade on a local or statewide basis, the member contractors will not be required to submit individual applications for approval to local Joint Apprenticeship Committees, provided they are already covered by the local apprenticeship standards.

#### **4.21.10.6. Contributions to Trust Funds**

The Contractor or any Subcontractor of any tier who performs any of the Work by employment of journeymen or apprentices in any apprenticeable craft or trade shall contribute to the California Apprenticeship Council in the same amount that the Director determines is the prevailing amount of apprenticeship training contributions in the area of the Project. Contractor or any Subcontractor, of any tier, may take as a credit for payments to the Council any amounts paid by the Contractor or Subcontractor to an approved apprenticeship program that can supply apprentices to the Project. Contractors who do not contribute to an apprenticeship program must submit their contributions to the California Apprenticeship Council. Training Fund contributions are due and payable on the 15th day of the month for work performed during the preceding month. Training contributions to the California Apprenticeship Council shall be paid by check and shall be accompanied by a Completed Training Fund Contribution form (CAC-2), a copy of which is included in Section 00900 of the Contract Specifications. Contractors who contribute to an apprenticeship program are entitled to a full credit in the amount of those contributions. The Division of Labor Standards Enforcement is authorized to enforce the payment of such contributions to such fund(s) as set forth in California Labor Code §227. Such contributions shall not result in an increase in the Contract Price.

#### **4.21.10.7. Contractor's Compliance**

The responsibility of compliance with this Article for all Apprenticeable Trades or Crafts is solely and exclusively that of the Contractor. All decisions of the Joint Apprenticeship Committee(s) under this Article are subject to the provisions of California Labor Code §3081. In the event the Contractor willfully fails to comply with the provisions of this Article and California Labor Code §1777.5, pursuant to California Labor Code §1777.7, the Contractor shall: (i) be denied the right to bid on any public works contract for a period of one (1) year from the date the



determination of non-compliance is made by the Administrator of Apprenticeship; and (ii) forfeit, as a civil penalty, Fifty Dollars (\$50.00) for each calendar day of noncompliance. Notwithstanding the provisions of California Labor Code §1727, upon receipt of such determination, the District shall withhold such amount from the Contract Price then due or to become due. Any such determination shall be issued after a full investigation, a fair and impartial hearing, and reasonable notice thereof in accordance with reasonable rules and procedures prescribed by the California Apprenticeship Council. Any funds withheld by the District pursuant to this Article shall be deposited in the General Fund or other similar fund of the District. The interpretation and enforcement of California Labor Code §§1777.5 and 1777.7 shall be in accordance with the rules and procedures of the California Apprenticeship Council.

#### **4.21.11. Employment of Independent Contractors**

Pursuant to California Labor Code §1021.5, Contractor shall not willingly and knowingly enter into any agreement with any person, as an independent contractor, to provide any services in connection with the Work where the services provided or to be provided requires that such person hold a valid contractors license issued pursuant to California Business and Professions Code §§7000 et seq. and such person does not meet the burden of proof of his/her independent contractor status pursuant to California Labor Code §2750.5. In the event that the Contractor shall employ any person in violation of the foregoing, Contractor shall be subject to the civil penalties under California Labor Code §1021.5 and any other penalty provided by law. In addition to the penalties provided under California Labor Code §1021.5, Contractor's violation of this Article 4.18.7 or the provisions of California Labor Code §1021.5 shall be deemed an event of Contractor's default under Article 15.1 of these General Conditions. The Contractor shall require any Subcontractor of any tier performing or providing any portion of the Work to adhere to and comply with the foregoing provisions.

#### **4.21.12. District's Enforcement of Violations**

The District shall withhold Contract payments when: 1) Contractor submits Inadequate Payroll Records or Contractor has Delinquent Payroll Records; 2) after an investigation, it is established Prevailing Wages have not been paid to all workers on the Project; or 3) Contractor's or Subcontractors' failure to comply with Labor Code requirements concerning employment of apprentices. As set forth in the District's LCP, the District will first obtain approval from the Labor Commissioner of the amounts of forfeitures for violations of Labor Code requirements.

#### **4.22 Assignment of Antitrust Claims**

Pursuant to California Public Contract Code §7103.5, the Contractor and its Subcontractor(s), of any tier, hereby offers and agrees to assign to the District all rights, title and interest in and to all causes of action they may have under Section 4 of the Clayton Act, (15 U.S.C. §15) or under the Cartwright Act (California Business and Professions Code §§16700 et seq.), arising from

purchases of goods, services or materials hereunder or any Subcontract. This assignment shall be made and become effective at the time the District tenders Final Payment to the Contractor, without further acknowledgment by the parties. If the District receives, either through judgment or settlement, a monetary recovery in connection with a cause of action assigned under California Public Contract Code §7103.5, the assignor thereof shall be entitled to receive reimbursement for actual legal costs incurred and may, upon demand, recover from the District any portion of the recovery, including treble damages, attributable to overcharges that were paid by the assignor but were not paid by the District as part of the Contract Price, less the expenses incurred by the District in obtaining that portion of the recovery. Upon demand in writing by the assignor, the District shall, within one year from such demand, reassign the cause of action assigned pursuant to this Article if the assignor has been or may have been injured by the violation of law for which the cause of action arose: and (i) the District has not been injured thereby; or (ii) the District declines to file a court action for the cause of action.

## **ARTICLE 5: SUBCONTRACTORS**

### **5.1 Subcontracts**

Any Work performed for the Contractor by a Subcontractor shall be pursuant to a written agreement between the Contractor and such Subcontractor which specifically incorporates by reference the Contract Documents and which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents. The foregoing notwithstanding, no contractual relationship shall exist, or be deemed to exist, between any Subcontractor and the District, unless the Contract is terminated and District, in writing, elects to assume the Subcontract. Each Subcontract for a portion of the Work shall provide that such Subcontract may be assigned to the District if the Contract is terminated by the District pursuant to Article 15.1 hereof, subject to the prior rights of the Surety obligated under a bond relating to the Contract. Upon request, the Contractor shall provide to the District copies of executed Subcontracts and Purchase Orders, including amendment thereto, to which Contractor is a party within seven (7) days of District's request for same. The Contractor's failure or refusal, for any reason, to provide copies of such Subcontracts or Purchase Orders shall be deemed the Contractor's default of a material term of the Contract Documents.

### **5.2 Substitution of Listed Subcontractor**

#### **5.2.1 Substitution Process**

Any request of the Contractor to substitute a listed Subcontractor will be considered only if such request is in strict conformity with this Article 5.2 and California Public Contract Code §4107. All costs and fees incurred by the District in the review and evaluation of a request to substitute a listed Subcontractor shall be borne by the Contractor; such costs and fees may be deducted by the District from the Contract Price then or thereafter due the Contractor.

#### **5.2.2 Responsibilities of Contractor Upon Substitution of Subcontractor**

Neither the substitution nor the District's consent to Contractor's substitution of a listed Subcontractor shall relieve Contractor from its obligation to complete the Work within the Contract Time and for the Contract Price. In the event that the District determines that revised or additional Submittals are required of the newly substituted Subcontractor, the District shall promptly notify the Contractor, in writing, of such requirement and the time for submittal. In the event that the revised or additional Submittals are not

submitted by Contractor within the time specified, Contractor shall be subject to the per diem assessments for late Submittals as set forth in Article 4.8 of these General Conditions. Any revised or additional Submittals required pursuant to this Article 5.2.2 shall conform with the requirements of Article 4.8 of these General Conditions. Contractor shall reimburse the District for all fees and costs incurred or associated with the processing, review and evaluation of any revised or additional Submittals required pursuant to this Article 5.2.2; the District may deduct such fees and costs from any portion of the Contract Price then or thereafter due the Contractor. In the event that additional or revised Submittals are required pursuant to this Article 5.2.2, such requirement shall not result in an increase to the Contract Time or the Contract Price.

## **ARTICLE 6: INSURANCE; INDEMNITY; BONDS**

### **6.1 Workers' Compensation Insurance; Employer's Liability Insurance**

The Contractor shall purchase and maintain Workers' Compensation Insurance as will protect the Contractor from claims under workers' or workmen's compensation, disability benefit and other similar employee benefit acts which are applicable to the Work to be performed, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. Contractor shall purchase and maintain Employer's Liability Insurance covering bodily injury (including death) by accident or disease to any employee which arises out of the employee's employment by Contractor. The Employer's Liability Insurance required of Contractor hereunder may be obtained by Contractor as a separate policy of insurance or as an additional coverage under the Workers' Compensation Insurance required to be obtained and maintained by Contractor hereunder. The limits of liability for the Employer's Liability Insurance required hereunder shall be as set forth in the Special Conditions.

### **6.2 Commercial General Liability and Property Insurance**

The Contractor shall purchase and maintain Commercial General Liability and Property Insurance covering the types of claims set forth below which may arise out of or result from Contractor's operations under the Contract Documents and for which the Contractor may be legally responsible: (i) claims for damages because of bodily injury, occupational sickness or disease or death of the Contractor's employees; (ii) claims for damages because of bodily injury, sickness or disease or death of any person other than the Contractor's employees; (iii) claims for damages insured by usual personal injury liability coverage which are sustained (a) by a person as a result of an offense directly or indirectly related to employment of such person by the Contractor, or (b) by another person; (iv) claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom; (v) claims for damages because of bodily injury, death of a person or property damages arising out of ownership, maintenance or use of a motor vehicle; and (vi) contractual liability insurance applicable to the Contractor's obligations under the Contract Documents. Contractor shall also provide excess or umbrella liability limits for Products and Completed Operations Aggregate for this Project as a Designated Project as set forth in the Special Conditions.

### **6.3 Builder's Risk "All-Risk" Insurance**

The Contractor, during the progress of the Work and until Final Acceptance of the Work by the District upon completion of the entire Contract, shall maintain Builder's Risk "All-Risk"

Completed Value Insurance Coverage on all insurable Work included under the Contract Documents which coverage is to provide extended coverage and insurance against vandalism and malicious mischief, perils of fire, sprinkler leakage, civil authority, sonic boom, collapse and flood upon the entire Work which is the subject of the Contract Documents, and including completed Work and Work in progress to the full insurable value thereof. Contractor's Builders Risk Insurance shall include coverage and insurance against the perils of earthquake if so indicated in the Special Conditions. Such insurance shall include the District as an additional named insured, and any other person with an insurable interest designated by the District as an additional named insured. The risk of damage to the Work due to the perils covered by the Builder's Risk "All Risk" Insurance, as well as any other hazard which might result in damage to the Work, is that of the Contractor and the Surety, and no claims for such loss or damage shall be recognized by the District, nor will such loss or damage excuse the complete and satisfactory performance of the Contract by the Contractor.

#### **6.4 Coverage Amounts**

The insurance required of the Contractor hereunder shall be written for not less than any limits of liability specified in the Contract Documents, or required by law, whichever is greater. In the event of any loss or damage covered by a policy of insurance required to be obtained and maintained by the Contractor hereunder, the Contractor shall be solely and exclusively responsible for the payment of the deductible, if any, under such policy of insurance, without adjustment to the Contract Price on account thereof.

#### **6.5 Evidence of Insurance; Subcontractor's Insurance**

##### **6.5.1 Certificates of Insurance**

With the execution of the Contract, Contractor shall deliver to the District Certificates of Insurance evidencing the insurance coverages required by the Contract Documents. Failure or refusal of the Contractor to so deliver Certificates of Insurance may be deemed by the District to be a default of a material obligation of the Contractor under the Contract Documents. The Certificates of Insurance and the insurance policies required by the Contract Documents shall contain a provision that coverages afforded under such policies will not be canceled or allowed to expire until at least thirty (30) days prior written notice has been given to the District. The insurance policies required of Contractor hereunder shall also name the District as an additional insured as its interests may appear. Should any policy of insurance be canceled before Final Acceptance of the Work by the District and the Contractor fails to immediately procure replacement insurance as required, the District reserves the right to procure such insurance and to deduct the premium cost thereof and other costs incurred by the District in connection therewith from any sum then or thereafter due the Contractor under the Contract Documents. The Contractor shall, from time to time, furnish the District, when requested, with satisfactory proof of coverage of each type of insurance required by the Contract Documents; failure of the Contractor to comply with the District's request may be deemed by the District to be a default of a material obligation of the Contractor under the Contract Documents.

##### **6.5.2 Subcontractors' Insurance**

Contractor shall require that every Subcontractor, of any tier, performing or providing any portion of the Work obtain and maintain the policies of insurance set forth in

Articles 6.1 and 6.2 of these General Conditions; the coverages and limits of liability of such policies of insurance to be obtained and maintained by Subcontractors shall be as set forth in the Special Conditions. The policies of insurance to be obtained and maintained by Subcontractors hereunder are in addition to, and not in lieu of, Contractor obtaining and maintaining such policies of insurance. Each of the policies of insurance obtained and maintained by a Subcontractor hereunder shall conform with the requirements of this Article 6. Upon request of the District, Contractor shall promptly deliver to the District Certificates of Insurance evidencing that the Subcontractors have obtained and maintained policies of insurance in conformity with the requirements of this Article 6. Failure or refusal of the Contractor to provide the District with Subcontractors' Certificates of Insurance evidencing the insurance coverages required hereunder is a material default of Contractor hereunder.

#### **6.6 Maintenance of Insurance**

Any insurance bearing on the adequacy of performance of Work shall be maintained after the District's Final Acceptance of all of the Work for the full one year correction of Work period and any longer specific guarantee or warranty periods set forth in the Contract Documents. Should such insurance be canceled before the end of any such periods and the Contractor fails to immediately procure replacement insurance as specified, the District reserves the right to procure such insurance and to charge the cost thereof to the Contractor. Nothing contained in these insurance requirements is to be construed as limiting the extent of the Contractor's responsibility for payment of damages resulting from its operations or performance of the Work under the Contract Documents, including without limitation the Contractor's obligation to pay Liquidated Damages. In no instance will the District's exercise of its option to occupy and use completed portions of the Work relieve the Contractor of its obligation to maintain insurance required under this Article until the date of Final Acceptance of the Work by the District, or such time thereafter as required by the Contract Documents. The insurer providing any insurance coverage required hereunder shall be to the reasonable satisfaction of the District.

#### **6.7 Contractor's Insurance Primary**

All insurance and the coverages thereunder required to be obtained and maintained by Contractor hereunder, if overlapping with any policy of insurance maintained by the District, shall be deemed to be primary and non-contributing with any policy maintained by the District and any policy or coverage thereunder maintained by District shall be deemed excess insurance. To the extent that the District maintains a policy of insurance covering property damage arising out of the perils of fire or other casualty covered by the Contractor's Builder's Risk Insurance or the Commercial General Liability Insurance of the Contractor or any Subcontractor, the District, Contractor and all Subcontractors waive rights of subrogation against the others. The costs for obtaining and maintaining the insurance coverages required herein shall be included in the Contract Price. The District shall be endorsed on all policies provided by Contractor, as appropriate, as additional insureds as respects liability arising out of Contractor's or Subcontractors' performance of the terms and conditions of these Contract Documents.

#### **6.8 Indemnity**

Unless arising solely out of the active negligence, gross negligence or willful misconduct of the District, the Architect or the Project Manager, the Contractor shall indemnify, defend and hold harmless: (i) the District and its Board of Trustees, officers, employees, agents and representatives (including the District's Inspector); (ii) the Architect and its consultants for the

Work and their respective agents and employees; and (iii) the Project Manager and its agents and employees from and against any and all damages, losses, claims, demands or liabilities whether for damages, losses or other relief, including, without limitation attorneys fees and costs which arise, in whole or in part, from the Work, the Contract Documents or the acts, omissions or other conduct of the Contractor or any Subcontractor or any person or entity engaged by them for the Work. The Contractor's obligations under the foregoing include without limitation: (i) injuries to or death of persons; (ii) damage to property; or (iii) theft or loss of property; and (iv) other losses, liabilities, damages or costs resulting from, in whole or part, any acts, omissions or other conduct of Contractor, any of Contractor's Subcontractors, of any tier, or any other person or entity employed directly or indirectly by Contractor in connection with the Work and their respective agents, officers or employees. If any action or proceeding, whether judicial, administrative, arbitration or otherwise, shall be commenced on account of any claim, demand or liability subject to Contractor's obligations hereunder, and such action or proceeding names the District as a party thereto, the Contractor shall, at its sole cost and expense, defend the District in such action or proceeding with counsel reasonably satisfactory to District. In the event that there shall be any judgment, award, ruling, settlement, or other relief arising out of any such action or proceeding to which the District is bound by, Contractor shall pay, satisfy or otherwise discharge any such judgment, award, ruling, settlement or relief; Contractor shall indemnify and hold harmless the District from any and all liability or responsibility arising out of any such judgment, award, ruling, settlement or relief. The Contractor's obligations hereunder are binding upon Contractor's Performance Bond Surety and these obligations shall survive notwithstanding Contractor's completion of the Work or the termination of the Contract.

#### **6.9 Payment Bond; Performance Bond**

Prior to commencement of the Work, the Contractor shall furnish a Performance Bond as security for Contractor's faithful performance of the Contract and a Labor and Material Payment Bond as security for payment of persons or entities performing work, labor or furnishing materials in connection with Contractor's performance of the Work under the Contract Documents. The amounts of the Performance Bond and the Payment Bond required hereunder shall be one hundred percent (100%) of the Contract Price. Said Labor and Material Payment Bond and Performance Bond shall be in the form and content set forth in the Contract Documents. The failure or refusal of the Contractor to furnish either the Performance Bond or the Labor and Material Payment Bond in strict conformity with this Article 6.9 may be deemed by the District as a default by the Contractor of a material obligation hereunder. Upon request of the Contractor, the District may consider and accept, but is not obligated to do so, multiple sureties on such bonds. The Surety on any bond required under the Contract Documents shall be an Admitted Surety Insurer as that term is defined in California Code of Civil Procedure §995.120.

### **ARTICLE 7: CONTRACT TIME**

#### **7.1 Substantial Completion of the Work Within Contract Time**

Unless otherwise expressly provided in the Contract Documents, the Contract Time is the period of time, including authorized adjustments thereto, allotted in the Contract Documents for achieving Substantial Completion of the Work. The date for commencement of the Work is the date established by the Notice to Proceed issued by the District, which shall not be postponed by the failure to act of the Contractor or of persons or entities for whom the Contractor is

responsible. The date of Substantial Completion is the date certified by the Architect, the Project Manager and the District's Inspector as such in accordance with the Contract Documents. The Contract Time is as indicated in the Special Conditions.

## **7.2 Progress and Completion of the Work**

### **7.2.1 Time of Essence**

Time limits stated in the Contract Documents are of the essence. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing and achieving Substantial Completion of the Work. The Contractor shall employ and supply a sufficient force of workers, material and equipment, and prosecute the Work with diligence so as to maintain progress, to prevent Work stoppage and to achieve Substantial Completion of the Work within the Contract Time.

### **7.2.2 Substantial Completion**

Substantial Completion is that stage in the progress of the Work when the Work is complete in accordance with the Contract Documents, including but not limited to start-up and testing, so the District can occupy or use the Work for its intended purpose. Substantial Completion shall be determined by the Architect and the District's Inspector upon request by the Contractor in accordance with the Contract Documents. The good faith and reasonable determination of Substantial Completion by the District's Inspector and the Architect shall be controlling and final.

### **7.2.3 Correction or Completion of the Work After Substantial Completion**

Upon achieving Substantial Completion of the Work, the District, the District's Inspector, the Project Manager, the Architect and the Contractor shall jointly inspect the Work and prepare a comprehensive list of items of the Work (punch list) to be corrected or completed by the Contractor. The exclusion of, or failure to include, any item on such list shall not alter or limit the obligation of the Contractor to complete or correct any portion of the Work in accordance with the Contract Documents. In the event that the Contractor shall fail or refuse, for any reason, to complete all punch list items within the Contract Time, Contractor shall be subject to assessment of Liquidated Damages in accordance with Article 7.4 hereof. If the Contractor fails or refuses to complete all items of the Work within the Contract Time, the District may, in its sole and exclusive discretion and without further notice to Contractor, elect to cause the completion of such items of the Work, provided, however, that such election by the District is in addition to, and not in lieu of, any other right or remedy of the District under the Contract Documents or at law. If the District elects to complete items of the Work, Contractor shall be responsible for all costs incurred by the District in connection therewith and the District may deduct such costs from the Contract Price then or thereafter due the Contractor; if these costs exceed the remaining Contract Price due to the Contractor, the Contractor and the Performance Bond Surety are liable to District for any such excess costs.

### **7.2.4 Final Completion**

Final Completion is that stage of the Work when all Work has been completed in accordance with the Contract Documents, including without limitation, the performance

of all punch list items noted upon Substantial Completion, and the Contract has been otherwise fully performed by the Contractor. Final Completion shall be determined by the Architect and the District's Inspector upon request of the Contractor. The good faith and reasonable determination of Final Completion by the District's Inspector and the Architect shall be controlling and final.

### **7.2.5 Contractor Responsibility for Multiple Inspections**

In the event the Contractor shall request determination of Substantial or Final Completion and it is determined by the District that the Work does not then justify certification of Substantial or Final Completion, as applicable, and re-inspection is required at a subsequent time to make such determination, the Contractor shall be responsible for all costs of such re-inspection, including without limitation, the fees of the Architect and the salary of the District's Inspector. The District may deduct such costs from the Contract Price then due or thereafter due to the Contractor.

### **7.2.6 Final Acceptance**

Final Acceptance of the Work shall occur upon approval of the Work by the District's Board of Trustees. Such approval shall be submitted for adoption at the next regularly scheduled meeting of the District's Board of Trustees after the determination of Final Completion. The commencement of any warranty or guarantee period under the Contract Documents shall be deemed to be the date upon the District's Board of Trustees approves of the Final Acceptance of the Work.

## **7.3 Progress Schedule**

### **7.3.1 Submittal of Preliminary Construction Schedule**

Within ten (10) days following execution of the Agreement, the Contractor shall prepare and submit to the District, the Project Manager and the Architect a Preliminary Construction Schedule indicating, in graphic and tabular form, the estimated rate of progress and sequence of all Work required under the Contract Documents. The purpose of the Preliminary Construction Schedule is to assure adequate planning and execution of the Work so that it is completed within the Contract Time and to permit evaluation of the progress of the Work. The Preliminary Construction Schedule shall indicate the dates for commencement and completion of various portions of the Work, including, without limitation, the procurement and fabrication of major items, material and equipment forming a part of, or to be incorporated into, the Work as well as Site construction activities. The Preliminary Construction Schedule shall identify all major (critical) Submittals required, the portion(s) of the Work for which the identified Submittals relate to and the date upon which each Submittal required will be transmitted to the Architect for review (the "Submittal Schedule"). The Contractor shall prepare the Preliminary Construction Schedule using Primavera, Sure Track, or comparable software in Critical Path Method format. If Contractor elects to use software other than Primavera or Sure Track, Contractor shall provide such software to the District at Contractor's expense. These requirements shall not be deemed control over or assumption of construction means, methods or sequences, all of which remain the Contractor's responsibility. Further, these requirements shall not give rise to an increase in the Contract Time or the Contract Price. The Contractor may submit a Preliminary



Construction Schedule depicting completion of the Work in a duration shorter than the Contract Time; provided that such Preliminary Construction Schedule shall not be a basis for adjustment to the Contract Price in the event that completion of the Work shall occur after the time depicted therein, nor shall such Preliminary Construction Schedule be the basis for any extension of the Contract Time, the Contractor's entitlement to any extension of the Contract Time shall be based upon the Contract Time and not on any shorter duration which may be depicted in the Contractor's Preliminary Construction Schedule. In the event any of the Construction Schedules required under this Article 7.3 incorporate therein "float" time, such float shall be deemed to belong to and owned by the District. As used herein, "float time" shall be deemed to refer to the time between the earliest start date and the latest start date, or between the earliest finish date and the latest finish date of each activity shown on the Construction Schedule.

### **7.3.2 Review of Preliminary Construction Schedule**

The District, the Project Manager and the Architect shall review the Preliminary Construction Schedule submitted by the Contractor pursuant to Article 7.3.1 above for conformity with the requirements of the Contract Documents. Within fifteen (15) days of the date of receipt of the Preliminary Construction Schedule, such Schedule will be returned to the Contractor with comments to the form or content thereof. Review of the Preliminary Progress Schedule and any comments thereto by the District, the Project Manager and/or the Architect shall not be deemed to be the assumption of construction means, methods or sequences by the District, the Project Manager or the Architect, all of which remain the Contractor's obligations under the Contract Documents.

### **7.3.3 Preparation and Submittal of Contract Construction Schedule**

Within ten (10) days of the District's return of the Preliminary Construction Schedule to the Contractor pursuant to Article 7.3.2 above, the Contractor shall prepare and submit the Cost Loaded Construction Schedule which incorporates therein the comments to the Preliminary Construction Schedule. Upon the Contractor's submittal of such Construction Schedule, the District shall review the same for purposes of determining conformity with the requirements of the Contract Documents. Within fifteen (15) days of the receipt of the Construction Schedule, the District will approve such Construction Schedule or will return the same to the Contractor with comments to the form or content. In the event there are comments to the form or content thereof, the Contractor, shall within seven (7) days of receipt of such comments, revise and resubmit the Construction Schedule incorporating therein such comments. Upon the District's approval of the form and content of a Construction Schedule, the same shall be deemed the "Approved Construction Schedule." The District's approval of a Construction Schedule shall be for the sole and limited purpose of determining conformity with the requirements of the Contract Documents. By the Approved Construction Schedule, the District shall not be deemed to have exercised control over, or approval of, construction means, methods or sequences, all of which remain the responsibility and obligation of the Contractor in accordance with the terms of the Contract Documents. Further, the Approved Construction Schedule shall not operate to limit or restrict any of Contractor's obligations under the Contract Documents nor relieve the Contractor from the full, faithful and timely performance of such obligations in accordance with the terms of the Contract Documents. The activities, commencement and completion dates of activities,

and the sequencing of activities depicted on the Approved Construction Schedule shall not be modified or revised by the Contractor without the prior consent, or direction, of the District. Updates to the Approved Construction Schedule pursuant to Article 7.3.5 below shall not be deemed revisions to the Approved Construction Schedule. In the event that the Approved Construction Schedule shall depict completion of the Work in a duration shorter than the Contract Time, the same shall not be a basis for an adjustment of the Contract Time or the Contract Price in the event that actual completion of the Work shall occur after such the time depicted in such Approved Construction Schedule. In such event, the Contract Price shall not be subject to adjustment on account of any additional costs incurred by the Contractor to complete the Work prior to the Contract Time, as adjusted in accordance with the terms of the Contract Documents. Any adjustment of the Contract Time or the Contract Price shall be based upon the Contract Time set forth in the Contract Documents and not any shorter duration which may be depicted in the Approved Construction Schedule.

#### **7.3.4 Revisions to Approved Construction Schedule**

In the event that the progress of the Work or the sequencing of the activities of the Work shall materially differ from that indicated in the Approved Construction Schedule, as determined by the District in its reasonable discretion and judgment, the District may direct the Contractor to revise the Approved Construction Schedule; within fifteen (15) days of the District's direction, the Contractor shall prepare and submit a revised Approved Construction Schedule, for review and approval by the District. The Contractor may request consent of the District to revise the Approved Construction Schedule. Any such request shall be considered by the District only if in writing setting forth the Contractor's proposed revision(s) to the Approved Construction Schedule and the reason(s) therefor. The District may consent to, or deny, any such request of the Contractor to revise the Approved Construction Schedule in its reasonable discretion.

#### **7.3.5 Updates to Approved Construction Schedule**

The Contractor shall monitor and update the Approved Construction Schedule on a monthly basis, or more frequently as required by the conditions or progress of the Work, or as may be requested by the District. Proper and complete updating of the Approved Construction Schedule shall be a condition precedent to the issuance of progress payments described in Article 8 of these General Conditions. The Contractor shall provide the District with updated Approved Construction Schedules indicating progress achieved and activities commenced or completed within the prior updated Approved Construction Schedule. Updates to the Approved Construction Schedule shall not include any revisions to the activities, commencement and completion dates of activities or the sequencing of activities depicted on the Approved Construction Schedule. Any such revisions to the Approved Construction Schedule shall result in the District's rejection of such update and Contractor shall, within seven (7) days of the District's rejection of such update, submit to the Architect and the Project Manager an Updated Approved Construction Schedule which does not incorporate any such revisions. If requested by the District, the Contractor shall also submit, with its updates to the Approved Construction Schedule, a narrative statement including a description of current and anticipated problem areas of the Work, delaying factors and their impact, and an explanation of corrective action taken or proposed by the Contractor. If the progress of the Work is behind the Approved Construction Schedule, the Contractor

shall indicate what measures will be taken to place the Work back on schedule. The District may, from time to time, and in the District's sole and exclusive discretion, transmit to the Contractor's Performance Bond Surety the Approved Construction Schedule, any updates thereof and the narrative statement described hereinabove. The District's election to transmit, or not to transmit such information, to the Contractor's Performance Bond Surety shall not limit the Contractor's obligations under the Contract Documents.

#### **7.3.6 Contractor Responsibility for Construction Schedule**

The Contractor shall be responsible for the preparation, submittal and maintenance of the Construction Schedules required by the Contract Documents, and any failure of the Contractor to do so may be deemed by the District as the Contractor's default in the performance of a material obligation under Contract Documents. Any and all costs or expenses required or incurred to prepare, submit, maintain, and update the Construction Schedules shall be solely that of the Contractor and no such cost or expense shall be charged to the District. The Contract Price shall not be subject to adjustment on account of costs, fees or expenses incurred or associated with the Contractor's preparation, submittal, maintenance or updating of the Construction Schedules. All schedule submittals shall include electronic diskettes for use by the District in its analysis and approval of the schedule submittal.

### **7.4 Adjustment of Contract Time**

If Substantial Completion or completion of an Interim Milestone is delayed, adjustment, if any, to the Contract Time on account of such delay shall be in accordance with this Article 7.4.

#### **7.4.1 Excusable Delays**

If Substantial Completion of the Work or completion of an Interim Milestone is delayed by Excusable Delays, the Contract Time shall be subject to adjustment for such reasonable period of time as determined by the District. Excusable Delays shall not result in any increase in the Contract Price. Excusable Delays refer to unforeseeable and unavoidable casualties or other unforeseen causes beyond the control, and without fault or neglect, of the Contractor, any Subcontractor, Material Supplier or other person directly or indirectly engaged by the Contractor in performance of any portion of the Work. Excusable Delays include unanticipated and unavoidable labor disputes, unusual and unanticipated delays in transportation of equipment, materials or Construction Equipment reasonably necessary for completion and proper execution of the Work, and unanticipated unusually severe weather conditions. Neither the financial resources of the Contractor or any person or entity directly or indirectly engaged by the Contractor in performance of any portion of the Work shall be deemed conditions beyond the control of the Contractor. If an event of Excusable Delay occurs, the Contract Time shall be subject to adjustment hereunder only if the Contractor establishes: (i) full compliance with all applicable provisions of the Contract Documents relative to the method, manner and time for Contractor's notice and request for adjustment of the Contract Time; (ii) that the event(s) forming the basis for Contractor's request to adjust the Contract Time are outside the reasonable control and without any fault or neglect of the Contractor or any person or entity directly or indirectly engaged by Contractor in performance of any portion of the Work; and (iii) that the event(s) forming the basis for Contractor's request to adjust the Contract Time directly and adversely impacted the progress of the Work as

indicated in the Approved Construction Schedule or the most recent updated Approved Construction Schedule relative to the date(s) of the claimed event(s) of Excusable Delay. The foregoing provisions notwithstanding, if the Special Conditions set forth a number of “Rain Days” to be anticipated during performance of the Work, the Contract Time shall not be adjusted for rain related unusually severe weather conditions until and unless the actual number of Rain Days during performance of the Work shall exceed those noted in the Special Conditions and such additional Rain Days shall have directly and adversely impacted the progress of the Work as depicted in the Approved Construction Schedule or the most recent updated Approved Construction Schedule relative to the date(s) of such additional Rain Days.

#### **7.4.2 Compensable Delays**

If Substantial Completion of the Work or completion of an Interim Milestone is delayed and such delay is caused by the acts or omissions of the District, the Architect, the Project Manager or separate contractor employed by the District (collectively “Compensable Delays”), upon Contractor’s request and notice, in strict conformity with Articles 7 and 9 of these General Conditions, the Contract Time will be adjusted by Change Order for such reasonable period of time as determined by the Architect, Project Manager and the District. In accordance with California Public Contract Code § 7102, if the Contractor’s progress is delayed by any of the events described in the preceding sentence, Contractor shall not be precluded from the recovery of damages directly and proximately resulting therefrom, provided that the District is liable for the delay, the delay is unreasonable under the circumstances involved and the delay was not within the reasonable contemplation of the District and the Contractor at the time of execution of the Agreement. In such event, Contractor’s damages, if any, shall be limited to direct, actual and unavoidable additional costs of labor, materials or Construction Equipment directly resulting from such delay, and shall exclude indirect or other consequential damages. Except as expressly provided for herein, Contractor shall not have any other claim, demand or right to adjustment of the Contract Price arising out of delay, interruption, hindrance or disruption to the progress of the Work. Adjustments to the Contract Price and the Contract Time, if any, on account of Changes to the Work or Suspension of the Work shall be governed by the applicable provisions of the Contract Documents, including without limitation, Articles 9 and 14 of these General Conditions.

#### **7.4.3 Unexcusable Delays**

Unexcusable Delays refer to any delay to the progress of the Work caused by events or factors other than those specifically identified in Articles 7.4.1 and 7.4.2 above. Neither the Contract Price nor the Contract Time shall be adjusted on account of Unexcusable Delays.

#### **7.4.4 Adjustment of Contract Time**

##### **7.4.4.1 Procedure for Adjustment of Contract Time**

The Contract Time shall be subject to adjustment only in strict conformity with applicable provisions of the Contract Documents. Failure of Contractor to request adjustment(s) of the Contract Time in strict conformity with applicable provisions of the Contract Documents shall be deemed Contractor’s waiver of the same.

#### **7.4.4.2 Limitations Upon Adjustment of Contract Time on Account of Delays**

Any adjustment of the Contract Time on account of an Excusable Delay or a Compensable Delay shall be limited as set forth herein. If an Excusable Delay and a Compensable Delay occur concurrently, the maximum extension of the Contract Time shall be the number of days from the commencement of the first delay to the cessation of the delay which ends last. If an Unexcusable Delay occurs concurrently with either an Excusable Delay or a Compensable Delay, the maximum extension of the Contract Time shall be the number of days, if any, which the Excusable Delay or the Compensable Delay exceeds the period of time of the Unexcusable Delay. No adjustment of the Contract Time shall be made on account of any Excusable Delays or Compensable Delays unless such delay(s) actually and directly impact Work or Work activities on the critical path of the then current and updated Approved Construction Schedule as of the date on which such delay first occurs. The District shall not be deemed in breach of, or otherwise in default of any obligation hereunder, if the District shall deny any request by the Contractor for an adjustment of the Contract Time for any delay which does not actually and directly impact Work on the then current and updated Approved Construction Schedule.

### **7.5 Liquidated Damages**

#### **7.5.1 Contractor Delays**

Should the Contractor neglect, fail or refuse to achieve Substantial Completion of the Work within the Contract Time, as adjusted, or to complete an Interim Milestone or Final Completion in accordance with the times specified or provided for in the Contract Documents, the Contractor agrees to pay to the District the amount of per diem Liquidated Damages set forth in the Special Conditions, not as a penalty but as Liquidated Damages, for every day beyond the Contract Time, as adjusted, Interim Milestone or Final Completion, the Work is achieved. The Liquidated Damages amounts set forth in the Special Conditions are agreed upon by and between the Contractor and the District because of the difficulty of fixing the District's actual damages in the event of delayed completion of the Work. The Contractor and the District specifically agree that said amounts are reasonable estimates of the District's damages in such event, and that such amounts do not constitute a penalty. Liquidated Damages may be deducted from the Contract Price then or thereafter due the Contractor. The Contractor and the Surety shall be liable to the District for any Liquidated Damages exceeding any amount of the Contract Price then held or retained by the District. In the event that the Contractor shall fail or refuse to correct or complete items of the Work noted upon Substantial Completion and the District elects to exercise its right to cause completion or correction of such items pursuant to Article 7.2.3.2 hereof, the District's assessment of Liquidated Damages pursuant to the foregoing shall be in addition, and not in lieu of, the District's right to charge Contractor with the cost of completing or correcting such items of the Work, as provided for under Article 7.2.3.2.

#### **7.5.2 District Delays**

If the Contractor is delayed by the District or anyone employed by it and granted an extension of time, or if the Contractor is delayed and the District is held responsible for such delay, the Contractor and the District agree that it is impractical and infeasible to

determine the amount of actual damage suffered by the Contractor as a result of such delay. Such damages include, but are not limited to, extended home and field office overhead, impairment of bonding capacity, lost opportunity, and all other damages or claims, regardless of tier, attributable, or claimed to be attributable to any such delay. Accordingly, in such an instance, it is agreed that the District will pay to the Contractor as fixed and liquidated damages, and not as a penalty, the sum of set forth in the Special Conditions for each calendar day of delay beyond the Contract Time.

### **7.5.3 Liquidated Damages Reasonable**

The Contractor and the District acknowledge and agree that the provisions of this Article 7.5 are reasonable under the circumstances existing at the time of the Contractor's execution of the Agreement.

## **ARTICLE 8: CONTRACT PRICE**

### **8.1 Contract Price**

The Contract Price is the amount stated in the Agreement as such, and subject to any authorized adjustments thereto in accordance with the Contract Documents, is the total amount payable by the District to the Contractor for performance of the Work under the Contract Documents. The District's payment of the Contract Price to the Contractor shall be in accordance with the Contract Documents.

### **8.2 Cost Breakdown (Schedule of Values)**

Within fifteen (15) days of the Cost Loaded Contract Construction Schedule (Article 7.3.3), the Contractor shall furnish a detailed tabular Cost Breakdown of the Contract price consistent with the cost-loaded work activities included in the Approved Construction Schedule. The Cost Breakdown shall be subject to the District's review and approval of the form and content thereof. In the event that the District shall reasonably object to any portion of the Cost Breakdown, within ten (10) days of the District's receipt of the Cost Breakdown, the District shall notify the Contractor, in writing of the District's objection(s) to the Cost Breakdown. Within five (5) days of the date of the District's written objection(s), Contractor shall submit a revised Cost Breakdown to the District for review and approval. The foregoing procedure for the preparation, review and approval of the Cost Breakdown shall continue until the District has approved of the entirety of the Cost Breakdown. Once the Cost Breakdown is approved by the District, the Cost Breakdown shall not be thereafter modified or amended by the Contractor without the prior consent and approval of the District, which may be granted or withheld in the sole reasonable discretion of the District. Notwithstanding any provision of the Contract Documents to the contrary, payment of the Contractor's overhead, supervision and general conditions costs and profit, as such items are reflected in the Cost Breakdown, shall be made incrementally as included in the activities included in the Approved Construction Schedule.

### **8.3 Progress Payments**

#### **8.3.1 Applications for Progress Payments**

During the Contractor's performance of the Work, the Contractor shall submit monthly, on the first working day of each month, to the Project Manager, Applications for Progress Payments, on forms approved by the District, setting forth an itemized estimate of Work completed in the preceding month. Values utilized in the Applications for Progress Payments shall be based upon the proper updating of the Approved

Construction Schedule. The Cost Breakdown and/or Approved Cost Loaded Construction Schedule, pursuant to Article 8.2 above, and such values shall be only for determining the basis of Progress payments to the Contractor, and shall not be considered as fixing a basis for adjustments, whether additive or deductive, to the Contract Price.

### **8.3.2 District's Review of Applications for Progress Payments**

In accordance with Public Contract Code §20104.50, upon receipt of an Application for Progress Payment, the Project Manager, the District's Inspector, and the Architect shall review the Application. Such review shall be for the purpose of determining that the Application for Progress Payment is a proper Progress Payment request. For purposes of this Article 8.3.2, an Application for Progress Payment shall be deemed "proper" only if it is submitted on the properly completed form approved by the District, and accompanied by:

- (i) the Application submitted by the Contractor shall be consistent with and accompanied by the updated Approved Construction Schedule;
- (ii) weekly Certified Payrolls of the Contractor and all Subcontractors, of any tier, for laborers performing any portion of the Work for which a Progress Payment is included (if requested);
- (iii) duly completed and executed forms of Conditional Waiver and Release of Rights Upon Progress Payment in accordance with California Civil Code § 3262 of the Contractor, all Subcontractors of any tier, and Material Suppliers covering the Progress Payment requested;
- (iv) duly completed and executed forms of Unconditional Waiver and Release of Rights upon Progress Payment in accordance with California Civil Code § 3262 of the Contractor, all Subcontractors of any tier, and Material Suppliers covering the Progress Payment received by the Contractor under the prior Application for Progress Payment;
- (v) a current union statement reflecting that the Contractor and any Subcontractor of any tier, are current in the payment of any supplemental fringe benefits required pursuant to any collective bargaining agreement to which the Contractor or any such Subcontractor is a party to or is otherwise bound by (if requested); and
- (vi) a certification by the Contractor that it has maintained the Record Documents reflecting the actual as-built conditions of the Work performed (such certification is subject to verification by the District's Inspector prior to approval of the Progress Payment).

In accordance with Public Contract Code § 20104.50, an Application for Progress Payment determined by the District not to be a proper Application for Progress Payment shall be returned by the District to the Contractor as soon as is practicable after receipt of the same from the Contractor, but in no event not more than seven (7) days after the District's receipt thereof. The District's return of any Application for Progress Payment pursuant to the preceding sentence shall be accompanied by a written document setting forth the reason(s) why the Application for Progress Payment is not proper. Pursuant to the District's Labor Compliance Program, Labor Code §1771.5 and other applicable law, the District shall withhold payments when payroll records are delinquent or

inadequate.

### **8.3.3 Architect and District's Inspector Review of Applications for Progress Payments**

Upon receipt of an Application for Progress Payment, the Architect and the District's Inspector shall meet with the Contractor to inspect the completed work and verify the portion of the work completed during the month using the approved Construction Schedule update and the Cost Breakdown. The Application for Progress Payment shall reflect the agreed percentages of work complete that is properly due to the Contractor under the terms of the Contract Documents. The Application submitted by the Contractor shall be consistent with and accompanied by the updated Approved Construction Schedule.

### **8.3.4 District's Disbursement of Progress Payments**

#### **8.3.4.1 Timely Disbursement of Progress Payments**

In accordance with Public Contract Code § 20104.50, within thirty (30) days after the District's receipt of a proper Application for Progress Payment, there shall be paid, by District, to Contractor a sum equal to ninety percent (95%) of the value of the Work indicated in the Application for Progress Payment as verified and approved by the District's Inspector and the Architect. If an Application for Progress payment is determined not to be proper due to the failure or refusal of the contractor to submit the required documents with the Application for progress payment, or if it is reasonably determined that the Record Documents have not been continuously maintained to reflect the actual as-built conditions of the Work completed in the period for which the Progress Payment is requested, the thirty (30) day period hereunder for the District's timely disbursement of a Progress payment shall be deemed to commence on the date that the District is actually in receipt of a complete and proper Application for Progress payment or verifies the proper updating of the as-built conditions.

#### **8.3.4.2 Untimely Disbursement of Progress Payments**

In accordance with Public Contract Code §20104.50, in the event that the District shall fail to make any Progress Payment within thirty (30) days after receipt of an undisputed and properly submitted Application for Progress Payment, the District shall pay the Contractor interest on the undisputed amount of such Application for Progress Payment equal to the legal rate of interest set forth in California Code of Civil Procedure § 685.010(a). The foregoing notwithstanding, pursuant to the District's Labor Compliance Program, Labor Code §1771.5 and other applicable law, the District shall withhold payments when payroll records are delinquent or inadequate without penalty or payment of interest under Public Contract Code §20104.50.

#### **8.3.4.3 District's Right to Disburse Progress or Final Payments by Joint Checks**

The District may, in its sole discretion, issue joint checks to the Contractor and any Subcontractor or Material Supplier providing work, labor, materials, equipment or services for the Project in satisfaction of its obligation to make Progress Payments or the Final Payment due hereunder. District may require



Contractor to provide copies of applicable Subcontracts, purchase orders, rental invoices or materials invoices.

#### **8.3.4.4 No Waiver of Defective or Non-Conforming Work**

The approval of any Application for Progress Payment or the disbursement of any Progress Payment to the Contractor shall not be deemed nor constitute acceptance of defective Work or Work not in conformity with the Contract Documents.

#### **8.3.5 Progress Payments for Changed Work**

The Contractor's Applications for Progress Payment may include requests for payment on account of Changes in the Work which have been properly authorized and approved by the District's Inspector, the Architect and the Board. Except as provided for herein, no other payment shall be made by the District for Changes in the Work.

#### **8.3.6 Materials or Equipment Not Incorporated Into the Work**

##### **8.3.6.1 Limitations Upon Payment**

Except as expressly provided for herein, no payments shall be made by the District on account of any item of the Work, including without limitation, materials or equipment which has/have not been incorporated into and made a part of the Work.

##### **8.3.6.2 Materials or Equipment Delivered and Stored at the Site**

The District may, in its sole and exclusive discretion, make payment for materials or equipment not yet incorporated into the Work if, a request for payment of such materials or equipment is made and if all of the following are complied with: (a) the materials or equipment have been delivered to the Site; (b) adequate arrangements, reasonably satisfactory to the District, have been made by the Contractor to store and protect such materials or equipment at the Site including without limitation, insurance reasonably satisfactory to the District, covering and protecting against the risk of loss, destruction, theft or other damage to such materials or equipment while in storage; and (c) the establishment of procedures reasonably satisfactory to the District by which title to such materials or equipment will be vested in the District upon the District's payment therefor. The Contractor acknowledges that the discretion to make, or not to make, payment for materials or equipment delivered or stored at the site of the Work pursuant to the preceding sentence shall be exercised exclusively by the District; the District's exercise of discretion not to make payment for materials or equipment delivered or stored at the Site, but not yet incorporated into the Work shall not be deemed the District's default hereunder. In the event that the District shall elect to make payment for materials or equipment delivered and stored at the Site, the costs and expenses incurred to comply with the requirements of (b) and (c) of this Article 8.3.6.2 shall be borne solely and exclusively by the Contractor and no payment shall be made by the District on account of such costs and expenses.

#### **8.3.7 Exclusions From Progress Payments**

No payments shall be made by the District for materials or equipment to be incorporated

into the Work where such materials or equipment have not been delivered or stored at the Site. The District shall not make any payment on account of any materials or equipment which are in the process of being fabricated or which are in transit to the Site or other storage location. In addition to the District's right to withhold disbursement of any Progress Payment provided for in the Contract Documents, neither the Contractor's Application for Progress Payment shall include, nor shall the District be obligated to disburse any portion of the Contract Price for amounts which the Contractor does not intend to pay any Subcontractor, of any tier, or Material Supplier because of a dispute or any other reason.

### **8.3.8 Title to Work**

The Contractor warrants that title to all Work covered by an Application for Progress Payment will pass to the District no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Progress Payment, all Work for which a Progress Payment has been previously issued and the Contractor has received payment from the District therefor shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, stop notices, security interests or encumbrances in favor of the Contractor, Subcontractors, Material Suppliers or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

## **8.4 Final Payment**

### **8.4.1 Application for Final Payment**

When the Contractor has achieved Final Completion of the Work and has otherwise fully performed its obligations under the Contract Documents, the Contractor shall submit an Application for Final Payment on such form as approved by the District. Thereupon, the Architect and the District's Inspector will promptly make a final inspection of the Work and when the Architect and the District's Inspector find the Work acceptable under the Contract Documents and that the Contract has been fully performed by the Contractor, the Architect and the District's Inspector will thereupon promptly approve the Application for Final Payment, stating that to the best their knowledge, information and belief, the Work has been completed in accordance with the terms of the Contract Documents. The Final Payment shall include the remaining balance of the Contract Price and any retention from Progress Payments previously withheld by the District.

### **8.4.2 Conditions Precedent to Disbursement of Final Payment**

Neither Final Payment nor any remaining Contract Price shall become due until the Contractor submits to the District each and all of the following, the submittal of which are conditions precedent to the District's obligation to disburse the Final Payment: (i) an affidavit or certification by the Contractor that payrolls, bills for materials and other indebtedness incurred in connection with the Work for which the District or the District's property may or might be responsible or encumbered have been paid or otherwise satisfied; (ii) a certificate evidencing that insurance required by the Contract Documents to remain in force after the Contractor's receipt of Final Payment is currently in effect; (iii) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover any period following Final Payment as required by the Contract Documents; if required (iv) consent of the Surety on the Labor

and Material Payment Bond and Performance Bond, to Final Payments if required; (v) duly completed and executed forms of Conditional or Unconditional Waivers and Releases of rights upon Final Payment of the Contractor, Subcontractors of any tier and Material Suppliers in accordance with California Civil Code §3262, with each of the same stating that there are, or will be, no claims for additional compensation after disbursement of the Final Payment; (vi) Operations and Maintenance manuals and separate warranties provided by any manufacturer or distributor of any materials or equipment incorporated into the Work; (vii) the Record Drawings; (viii) the form of Guarantee included in the Contract Documents duly executed by an authorized representative of the Contractor; (ix) any and all other items or documents required by the Contract Documents to be delivered to the District upon completion of the Work; and (x) if required by the District, such other data establishing payment or satisfaction of obligations such as receipts, releases and waivers of liens, stop notices, claims, security interest or encumbrances arising out of the Contract to the extent and in such form as may be required by the District.

#### **8.4.3 Disbursement of Final Payment**

Provided that the District is then in receipt of all documents and other items in Article 8.4.2 above as conditions precedent to the District's obligation to disburse Final Payment, not later than sixty (60) days following Final Acceptance the District shall disburse the Final Payment to the Contractor. Pursuant to California Public Contract Code §7107, if there is any dispute between the District and the Contractor at the time that disbursement of the Final Payment is due, the District may withhold from disbursement of the Final Payment an amount not to exceed one hundred fifty percent (150%) of the amount in dispute.

#### **8.4.4 Waiver of Claims**

The Contractor's acceptance of the Final Payment is a waiver and release by the Contractor of any and all claims against the District for compensation or otherwise in connection with the Contractor's performance of the Contract.

#### **8.4.5 Claims Asserted After Final Payment**

Any lien, stop notice or other claim filed or asserted after the Contractor's acceptance of the Final Payment by any Subcontractor, of any tier, laborer, Material Supplier or others in connection with or for Work performed under the Contract Documents shall be the sole and exclusive responsibility of the Contractor who further agrees to indemnify, defend and hold harmless the District and its officers, agents, representatives and employees from and against any claims, demands or judgments arising or associated therewith, including without limitation attorneys fees incurred by the District in connection therewith. In the event any lien, stop notice or other claim of any Subcontractor, Laborer, Material Supplier or others performing Work under the Contract Documents remain unsatisfied after Final Payment is made, Contractor shall refund to District all monies that the District may pay or be compelled to pay in discharging any lien, stop notice or other claim, including, without limitation all costs and reasonable attorneys fees incurred by District in connection therewith.

## **8.5 Withholding of Payments**

The District may withhold any Progress Payment or the Final Payment, in whole or in part, or backcharge the Contractor to the extent it may deem advisable to protect the District on account of: (i) defective Work or Work not in conformity with the requirements of the Contract Documents which is not remedied; (ii) failure of the Contractor to make payments when due Subcontractors or Material Suppliers for materials or labor; (iii) claims filed or reasonable evidence of the probable filing of claims by Subcontractors, laborers, Material Suppliers, or others performing any portion of the Work under the Contract Documents for which the District may be liable or responsible including, without limitation, Stop Notice Claims filed with the District pursuant to California Civil Code §3179 et seq.; (iv) a reasonable doubt that the Contract can be completed for the then unpaid balance of the Contract Price; (v) tax demands filed in accordance with California Government Code §12419.4; (vi) inadequate or delinquent payroll records, or violations of requirements to pay prevailing wages, or employment of apprentices; (vii) other claims, penalties and/or forfeitures for which the District is required or authorized to retain funds otherwise due the Contractor; (viii) any amounts due from the Contractor to the District under the terms of the Contract Documents; (ix) the Contractor's failure to perform any of its obligations under the Contract Documents or its default under the Contract Documents or its failure to maintain adequate progress of the Work; or (x) the Contractor's failure to timely provide Certified Payrolls of the Contractor and all Subcontractors, of any tier, in accordance with Articles 8.3.2., 8.4.2. or applicable law. In addition to the foregoing, the District shall not be obligated to process any Application for Progress Payment or Final Payment, nor shall Contractor be entitled to any Progress Payment or Final Payment so long as any lawful or proper direction concerning the Work or the performance thereof or any portion thereof, given by the District, the District's Inspector, the Architect or any public authority having jurisdiction over the Work, or any portion thereof, shall not be fully and completely complied with by the Contractor. When the District is reasonably satisfied that the Contractor has remedied any such deficiency, payment shall be made of the amount withheld.

## **8.6 Payments to Subcontractors**

The Contractor shall pay all Subcontractors for and on account of Work of the Contract performed by such Subcontractors in accordance with the terms of their respective subcontracts and as provided for pursuant to California Public Contract Code §10262, the provisions of which are deemed incorporated herein by this reference. In the event of the Contractor's failure to make payment to Subcontractors in conformity with California Public Contract Code §10262, the provisions of California Public Contract Code §10253 shall apply; by this reference, the provisions of California Public Contract Code §10253 are incorporated herein in its entirety, except that the references in said Section 10253 to "the director" shall be deemed to refer to the District.

## **ARTICLE 9: CHANGES**

### **9.1 Changes in the Work**

The District, at any time, by written order, may make Changes within the general scope of the Work under the Contract Documents or issue additional instructions, require additional Work or direct deletion of Work. The Contractor shall not proceed with any Change involving an increase or decrease in the Contract Price or the Contract Time without prior written authorization from the District. The foregoing notwithstanding, the Contractor shall promptly

commence and diligently complete any Change to the Work subject to the District's written authorized issued pursuant to the preceding sentence; the Contractor shall not be relieved or excused from its prompt commencement and diligent completion of any Change subject to the District's written authorization by virtue of the absence or inability of the Contractor and the District to agree upon the extent of any adjustment to the Contract Time or the Contract Price on account of such Change. The issuance of a Change Order pursuant to this Article 9 in connection with any Change authorized by the District under this Article 9.1 shall not be deemed a condition precedent to Contractor's obligation to promptly commence and diligently complete any such Change authorized by the District hereunder. The District's right to make Changes shall not invalidate the Contract nor relieve the Contractor of any liability or other obligations under the Contract Documents. Any requirement of notice of Changes in the scope of Work to the Surety shall be the responsibility of the Contractor. Changes to the Work depicted or described in the Drawings or the Specifications shall be subject to approval by the DSA. The District may make Changes to bring the Work or the Project into compliance with environmental requirements or standards established by state or federal statutes and regulations enacted after award of the Contract.

## **9.2 Oral Order of Change in the Work**

Any oral order, direction, instruction, interpretation, or determination from the District, the District's Inspector or the Architect which in the opinion of the Contractor causes any change to the scope of the Work, or otherwise requires an adjustment to the Contract Price or the Contract Time, shall be treated as a Change only if the Contractor gives the Architect and the District's Inspector written notice within ten (10) days of the order, directions, instructions, interpretation or determination and prior to acting in accordance therewith. Time is of the essence in Contractor's written notice pursuant to the preceding sentence so that the District can promptly investigate and consider alternative measures to address the order, direction, instruction, interpretation or determination giving rise to Contractor's notice. Accordingly, Contractor acknowledges that its failure, for any reason, to give written notice within ten (10) days of such order, direction, instruction, interpretation or determination shall be deemed Contractor's waiver of any right to assert or claim any entitlement to an adjustment of the Contract Time or the Contract Price on account of such order, direction, instruction, interpretation or determination. The written notice shall state the date, circumstances, extent of adjustment to the Contract Price or the Contract Time, if any, requested, and the source of the order, directions, instructions, interpretation or determination that the Contractor regards as a Change. Unless the Contractor acts in strict accordance with this procedure, any such order, direction, instruction, interpretation or determination shall not be treated as a Change and the Contractor hereby waives any claim for any adjustment to the Contract Price or the Contract Time on account thereof.

## **9.3 Contractor Submittal of Data**

Within fifteen (15) days after receipt of a written order directing a Change in the Work or furnishing the written notice regarding any oral order directing a Change in the Work, the Contractor shall submit to the District a detailed written statement setting forth the amount of any adjustment to the Contract Price on account thereof, properly itemized and supported by sufficient substantiating data to permit evaluation of the same, and the extent of adjustment of the Contract Time, if any, required by such Change. No claim or adjustment to the Contract Price or the Contract Time shall be allowed if not asserted by the Contractor in strict conformity herewith or if asserted after Final Payment is made under the Contract Documents.

## **9.4 Adjustment to Contract Price and Contract Time on Account of Changes to the Work**

### **9.4.1 Adjustment to Contract Price**

Adjustments to the Contract Price due to Changes in the Work shall be determined by application of one of the following methods, in the following order of priority:

#### **9.4.1.1 Mutual Agreement**

By negotiation and mutual agreement, on a lump sum basis, between the District and the Contractor on the basis of the estimate of the actual and direct increase or decrease in costs on account of the Change. Upon request of the District, the Contractor shall provide a detailed estimate of increase or decrease in costs directly associated with performance of the Change along with cost breakdowns of the components of the Change and supporting data and documentation. The Contractor shall be solely responsible for any additional costs or additional time arising out of, or related in any manner to, its failure to provide the estimate of costs within fifteen (15) days after the receipt of the written request of the District for such estimate.

#### **9.4.1.2 Determination by the District**

By the District, whether or not negotiations are initiated pursuant to Article 9.4.1.1 above, based upon actual and necessary costs incurred by the Contractor as determined by the District on the basis of the Contractor's records. In the event that the procedure set forth in this Article 9.4.1.2 is utilized to determine the extent of adjustment to the Contract Price on account of Changes to the Work, promptly upon determining the extent of adjustment to the Contract Price, the District shall notify the Contractor in writing of the same; the Contractor shall be deemed to have accepted the District's determination of the amount of adjustment to the Contract Price on account of a Change to the Work unless Contractor shall notify the District, the Architect and the District's Inspector, in writing, not more than fifteen (15) days from the date of the District's written notice, of any objection to the District's determination. Failure of the Contractor to timely notify the District, the Architect and the District's Inspector of Contractor's objections to the District's determination of the extent of adjustment to the Contract Price shall be deemed Contractor's acceptance of the District's determination and a waiver of any right or basis of the Contractor to thereafter protest or otherwise object to the District's determination. Notwithstanding any objection of the Contractor to the District's determination of the extent of any adjustment to the Contract Price pursuant to this Article 9.4.1.2,

Contractor shall, pursuant to Article 9.7 below, diligently proceed to perform and complete any such Change.

#### **9.4.1.3 Basis for Adjustment of Contract Price**

If Changes in the Work require an adjustment of the Contract Price pursuant to Articles 9.4.1.1 or 9.4.1.2 above, the basis for adjustment of the Contract Price shall be as follows:

#### **9.4.1.3.1 Labor**

Contractor shall be compensated for the costs of labor actually and directly utilized in the performance of the Change. Such labor costs shall be limited to field labor for which there is a prevailing wage rate classification. Wage rates for labor shall not exceed the prevailing wage rates in the locality of the Site and shall be the labor classification(s) necessary for the performance of the Change. Use of a labor classification which would increase labor costs associated with any Changes shall not be permitted. Labor costs shall exclude costs incurred by the Contractor in preparing estimate(s) of the costs of the Change, in the maintenance of records relating to the costs of the change coordination and assembly of materials and information relating to the Change or performance thereof, or the supervision and other overhead and general conditions costs associated with the Change or performance thereof.

#### **9.4.1.3.2 Materials and Equipment**

Contractor shall be compensated for the costs of materials and equipment necessarily and actually used or consumed in connection with the performance of Changes. Costs of materials and equipment may include reasonable costs of transportation from a source closest to the site of the Work and delivery to the Site. If discounts by Material Suppliers are available for materials necessary used in the performance of Changes, they shall be credited to the District. If materials and/or equipment necessarily used in the performance of Changes are obtained from a supplier or source owned in whole or in part by the Contractor, compensation therefore shall not exceed the current wholesale price for such materials or equipment. If, in the reasonable opinion of the District, the costs asserted by the Contractor for materials and/or equipment in connection with any Change is excessive, or if the Contractor fails to provide satisfactory evidence of the actual costs of such materials and/or equipment from its supplier or vendor of the same, the costs of such materials and/or equipment and the District's obligation for payment of the same shall be limited to the then lowest wholesale price at which similar materials and/or equipment are available in the quantities required to perform the Change. The District may elect to furnish materials and/or equipment for changes to the Work, in which event the Contractor shall not be compensated for the costs of furnishing such materials and/or equipment or any mark-up thereon.

#### **9.4.1.3.3 Construction Equipment**

Contractor shall be compensated for the actual cost of the necessary and direct use of Construction Equipment in the performance of Changes to the Work. Use of such Construction

Equipment in the performance of Changes to Work shall be compensated in increments of hourly, weekly or monthly rates, whichever shall be the most economical to the District when applied to the scope of the specific change. Rental time for Construction Equipment moved by its own power shall include time required to move such Construction Equipment to the site of the Work from the nearest available rental source of the same. If Construction Equipment is not moved to the Site by its own power, Contractor will be compensated for the loading and transportation costs in lieu of rental time the foregoing notwithstanding, neither moving time or loading and transportation time shall be allowed if the Construction Equipment is used for performance of any portion of the Work other than Changes to the Work. Unless prior approval in writing is obtained by the Contractor from the Architect, the District's Inspector and the District, no costs or compensation shall be allowed for time while Construction Equipment is inoperative, idle or on standby, for any reason. The Contractor shall not be entitled to an allowance or any other compensation for Construction Equipment or tools used in the performance of Changes to the Work where such Construction Equipment or tools have a replacement value of \$1,000.00 or less. Construction Equipment costs claimed by the Contractor in connection with the performance of any Change to the Work shall not exceed rental rates (Blue Book) established by distributors or construction equipment rental agencies in the locality of the Site; any costs asserted which exceed such rental rates shall not be allowed or paid. Unless otherwise specifically approved in writing by the Architect, the District's inspector and the District, the allowable rate for the use of Construction Equipment in connection with the Changes to the Work shall constitute full compensation to the Contractor for the cost of rental, fuel, power, oil, lubrication, supplies, necessary attachments, repairs or maintenance of any kind, depreciation, storage, insurance, labor (exclusive of labor costs of the Construction Equipment operator), and any / all other costs incurred by the Contractor incidental to the use of such Construction Equipment.

#### **9.4.1.3.4 Mark-up on Costs of Changes to the Work**

In determining the cost to the District and the extent of increase to the Contract Price resulting from a Change adding to the Work, the allowance for mark-ups on the costs of the Change for all overhead (including home office and field overhead), general conditions costs and profit associated with the Change shall not exceed the percentage set forth in the Special Conditions, regardless of the number of Subcontractors, of any tier, performing any portion of any Change to the Work. If a Change to the Work reduces the Contract Price, the maximum adjustment



to the Contract Price shall be the actual cost reduction realized by the reduced or deleted Work multiplied by the percentage set forth in the Special Conditions.

#### **9.4.1.4 Contractor Maintenance of Records**

In the event that Contractor shall be directed to perform any Changes to the Work pursuant to Article 9.1 or 9.2, or should the Contractor encounter conditions which the Contractor, pursuant to Article 9.6, believes would obligate the District to adjust the Contract Price and/or the Contract Time, Contractor shall maintain detailed records on a daily basis. Such records shall include without limitation hourly records for labor and Construction Equipment and itemized records of materials and equipment used that day in connection with the performance of any Change to the Work. In the event that more than one Change to the Work is performed by the Contractor in a calendar day, Contractor shall maintain separate records of labor, Construction Equipment, materials and equipment for each such Change. In the event that any Subcontractor, of any tier, shall provide or perform any portion of any Change to the Work, Contractor shall require that each such Subcontractor maintain records in accordance with this Article. Each daily record maintained hereunder shall be signed by Contractor's Superintendent or Contractor's authorized representative; such signature shall be deemed Contractor's representation and warranty that all information contained therein is true, accurate, complete and relate only to the Change referenced therein. All records maintained by a Subcontractor, of any tier, relating to the costs of a Change to the Work shall be signed by such Subcontractor's authorized representative or Superintendent. All records maintained hereunder shall be subject to inspection, review and/or reproduction by the District, the Architect or the District's Inspector upon request. In the event that Contractor shall fail or refuse, for any reason, to maintain or make available for inspection, review and/or reproduction such records and the adjustment to the Contract Price on account of any Change to the Work is determined pursuant to this Article, the District's reasonable good faith determination of the extent of adjustment to the Contract Price on account of such Change shall be final, conclusive, dispositive and binding upon Contractor. Contractor's obligation to maintain records hereunder is in addition to, and not in lieu of, any other Contractor obligation under the Contract Documents with respect to Changes to the Work.

#### **9.4.2 Adjustment to Contract Time.**

In the event of any Change(s) to the Work pursuant to this Article 9, the Contract Time shall be extended or reduced by Change Order for a period of time commensurate with the time reasonably necessary to perform such Change. Such time shall be requested in writing by the Contractor with the Contract price Adjustment Proposal. The time extension request shall be justified by the Contractor by submittal of a CPM analysis accurately portraying the impact of the change on the critical path of the project schedule. Changes performed within available float as indicated in the updated Approved Construction Schedule shall not justify a time extension to the Contract. When agreement is reached between the District and Contractor that a Change shall require an extension of the contract time, the Contractor shall not be subject to

Liquidated Damages for such period of time. If completion of the Work is delayed by causes for which the District is responsible and the delay is unreasonable under the circumstances involved, and not within the contemplation of the Contractor and the District at the time of execution of the Agreement, the Contractor shall not be precluded from the recovery of damages arising therefrom.

#### **9.4.3 Addition or Deletion of Alternate Bid Item(s)**

If the Bid for the Work includes proposal(s) for Alternate Bid Item(s), during Contractor's performance of the Work, the District may elect, pursuant to this Article to add any such Alternate Bid Item(s) if the same did not form a basis for award of the Contract or delete any such Alternate Bid Item(s) if the same formed a basis for award of the Contract. If the District elects to add or delete any such Alternate Bid Item(s) pursuant to the foregoing, the cost or credit for such Alternate Bid Item(s) shall be as set forth in the Contractor's Bid.

### **9.5 Change Orders**

If the District approves of a Change, a written Change Order prepared on behalf of the District shall be forwarded to the Contractor describing the Change and setting forth the adjustment to the Contract Time and the Contract Price, if any, on account of such Change. All Change Orders shall be in full payment and final settlement of all claims for direct, indirect and consequential costs, including without limitation, costs of delays or impacts related to, or arising out of, items covered and affected by the Change Order, as well as any adjustments to the Contract Time. Any claim or item relating to any Change incorporated into a Change Order not presented by the Contractor for inclusion in the Change Order shall be deemed waived. The Contractor shall execute the Change Order prepared pursuant to the foregoing; once the Change Order has been prepared and forwarded to the Contractor for execution, without the prior approval of the District which may be granted or withheld in the sole and exclusive discretion of the District, the Contractor shall not modify or amend the form or content of such Change Order, or any portion thereof. The Contractor's attempted or purported modification or amendment of any such Change Order, without the prior approval of the District, shall not be binding upon the District; any such unapproved modification or amendment to such Change Order shall be null, void and unenforceable. Unless otherwise expressly provided for in the Contract Documents or in the Change Order, any Change Order issued hereunder shall be binding upon the District only upon action of the District's Board of Trustees approving and ratifying such Change Order. In the event of any amendment or modification made by the Contractor to a Change Order for which there is no prior approval by the District, in accordance with the provisions of this Article 9.5, unless otherwise expressly stated in its approval and ratification of such Change Order, any action of the Board of Trustees to approve and ratify such Change Order shall be deemed to be limited to the Change Order as prepared by the Architect; such approval and ratification of such Change Order shall not be deemed the District's approval and ratification of any unapproved amendment or modification by the Contractor to such Change Order.

### **9.6 Contractor Notice of Changes**

If the Contractor should claim that any instruction, request, the Drawings, the Specifications, action, condition, omission, default, or other situation obligates the District to increase the Contract Price or to extend the Contract Time, the Contractor shall notify the District's Project Manager and the Architect, in writing, of such claim within ten (10) days from the date of its

actual or constructive notice of the factual basis supporting the same. The District shall consider any such claim of the Contractor only if sufficient supporting documentation is submitted with the Contractor's notice to the District's Project Manager and the Architect. Time is of the essence in Contractor's written notice pursuant to the preceding sentence so that the District can promptly investigate and consider alternative measures to the address such instruction, request, Drawings, Specifications, action, condition, omission, default or other situation. Accordingly, Contractor acknowledges that its failure, for any reason, to give written notice (with sufficient supporting documentation to permit the District's review and evaluation) within ten (10) days of its actual or constructive knowledge of any instruction, request, Drawings, Specifications, action, condition, omission, default or other situation for which the Contractor believes there should an adjustment of the Contract Time or the Contract Price shall be deemed Contractor's waiver, release, discharge and relinquishment of any right to assert or claim any entitlement to an adjustment of the Contract Time or the Contract Price on account of any such instruction, request, Drawings, Specifications, action, condition, omission, default or other situation. In the event that the District determines that the Contract Price or the Contract Time are subject to adjustment based upon the events, circumstances and supporting documentation submitted with the Contractor's written notice under this Article 9.6, any such adjustment shall be determined in accordance with the provisions of Articles 9.4.1 and 9.4.2.

### **9.7 Disputed Changes**

In the event of any dispute or disagreement between the Contractor and the District or the Architect regarding the characterization of any item as a Change to the Work or as to the appropriate adjustment of the Contract Price or the Contract Time on account thereof, the Contractor shall promptly proceed with the performance of such item of the Work, subject to a subsequent resolution of such dispute or disagreement in accordance with the terms of the Contract Documents. The Contractor's failure or refusal to so proceed with such Work may be deemed to be Contractor's default of a material obligation of the Contractor under the Contract Documents.

### **9.8 Emergencies**

In an emergency affecting the safety of life, or of the Work, or of property, the Contractor, without special instruction or prior authorization from the District or the Architect, is permitted to act at its discretion to prevent such threatened loss or injury. Any compensation claimed by the Contractor on account of such emergency work shall be submitted and determined in accordance with this Article 9.

### **9.9 Minor Changes in the Work**

The Architect may order minor Changes in the Work not involving an adjustment in the Contract Price or the Contract Time and not inconsistent with the intent of the Contract Documents. Such Changes shall be effected by written order and shall be binding on the District and the Contractor. The Project Manager or the District's Inspector may direct the Contractor to perform Changes provided that each such Change does not result in an increase of more than \$500.00 to the Contract Price and no adjustment of the Contract Time. The Contractor shall carry out such orders promptly.

### **9.10 Unauthorized Changes**

Any Work beyond the lines and grades shown on the Contract Documents, or any extra Work performed or provided by the Contractor without notice to the Architect and the District's

Inspector in the manner and within the time set forth in Articles 9.2 or 9.6 shall be considered unauthorized and at the sole expense of the Contractor. Work so done will not be measured or paid for, no extension to the Contract Time will be granted on account thereof and any such Work may be ordered removed at the Contractor's sole cost and expense. The failure of the District to direct or order removal of such Work shall not constitute acceptance or approval of such Work nor relieve the Contractor from any liability on account thereof.

## **ARTICLE 10: SEPARATE CONTRACTORS**

### **10.1 District's Right to Award Separate Contracts**

The District reserves the right to perform construction or operations related to the Project with the District's own forces or to award separate contracts in connection with other portions of the Project or other construction or operations at or about the Site. If the Contractor claims that delay or additional cost is involved because of such action by the District, the Contractor shall seek an adjustment to the Contract Price or the Contract Time as provided for in the Contract Documents. Failure of the Contractor to request such an adjustment of the Contract Time or the Contract Price in strict conformity with the provisions of the Contract Documents applicable thereto shall be deemed a waiver of the same.

### **10.2 District's Coordination of Separate Contractors**

The District shall provide for coordination of the activities of the District's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the District in reviewing their respective Construction Schedules when directed to do so. The Contractor shall make any revisions to the Approved Construction Schedule for the Work hereunder deemed necessary after a joint review and mutual agreement. The Construction Schedules shall then constitute the Construction Schedules to be used by the Contractor, separate contractors and the District until subsequently revised.

### **10.3 Mutual Responsibility**

The Contractor shall afford the District and separate contractors reasonable opportunity for storage of their materials and equipment and performance of their activities at the Site and shall connect and coordinate the Contractor's Work, construction and operations with theirs as required by the Contract Documents.

### **10.4 Discrepancies or Defects**

If part of the Contractor's Work depends for proper execution or results upon construction or operations by the District or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Project Manager any apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor to so report shall constitute an acknowledgment that the District's or separate contractors' completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then discoverable by the Contractor's reasonable diligence.

## **ARTICLE 11: TESTS AND INSPECTIONS**

### **11.1 Tests; Inspections; Observations**

#### **11.1.1 Contractor's Notice**

If the Contract Documents, laws, ordinances or any public authority with jurisdiction over the Work requires the Work, or any portion thereof, to be specially tested, inspected or approved, the Contractor shall give the Project Manger written notice of the readiness of such Work for observation, testing or inspection at least two (2) working days prior to the time for the conducting of such test, inspection or observation. If inspection, testing or observation is by authority other than the District, the Contractor shall inform the District's Inspector and the Project Manager not less than two (2) working days prior to the date fixed for such inspection, test or observation. The Contractor shall not cover up any portion of the Work subject to tests, inspections or observations prior to the completion and satisfaction of the requirements of such test, inspection or observation. In the event that any portion of the Work subject to tests, inspection or approval shall be covered up by Contractor prior to completion and satisfaction of the requirements of such tests, inspection or approval, Contractor shall be responsible for the uncovering of such portion of the Work as is necessary for performing such tests, inspection or approval without adjustment of the Contract Price or the Contract Time on account thereof.

#### **11.1.2 Cost of Tests and Inspections**

Costs for tests and inspection of materials shall be paid by the District as provided for herein. Within twenty (20) days after the establishment of the Approved Construction Schedule pursuant to Article 7.3 hereof, the District shall submit to the Contractor a written list of the portions of the Work subject to special tests or inspections to be paid for by the District along with the number of hours or costs of testing or inspection allocated for each such portion of the Work. Should any act, omission or other conduct of the Contractor, any of its Subcontractors, of any tier, or Material Suppliers cause the number of hours or the costs of such tests or inspections to exceed that set forth in the District's list submitted pursuant to the foregoing, the Contractor shall be solely responsible for all such excess costs and the District may deduct such amount from any portion of the Contract Price then or thereafter due the Contractor. The District will pay for all tests and inspections provided that, in addition to the cost to be paid by the Contractor previously set forth in this Article, the Contractor shall pay for all tests and inspections under any of the following conditions: (i) when such costs are stipulated in the provisions of the Contract Documents to be borne by the Contractor; (ii) when a material is tested or inspected and fails to meet the requirements of the Specifications and/or Drawings; or (iii) when the source of the material is changed after the original test or inspection has been made or approved.

#### **11.1.3 Testing/Inspection Laboratory**

The District shall select duly qualified person(s) or testing laboratory(ies) to conduct the tests and inspections to be paid for by the District and required by the Contract Documents. All such tests and inspections shall be in conformity with the latest adopted Title 24 of the California Code of Regulations. Where inspection or testing is to be

conducted by an independent laboratory or testing agency, materials or samples thereof shall be selected by the laboratory, testing agency, the District's Inspector, the Project Manager or the Architect and not by the Contractor.

#### **11.1.4 Additional Tests, Inspections and Approvals**

If the Architect, the Project Manager, the District's Inspector or public authorities having jurisdiction over the Work determine that portions of the Work require additional testing, inspection or approval, the Project Manager shall instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the District, and the Contractor shall give timely notice to the Project Manager of when and where tests and inspections are to be made so the District's Inspector and the Architect may observe such procedures. The District shall bear the costs of such additional tests, inspections or approvals, except to the extent that such additional tests, inspections or approvals reveal any failure of the Work to comply with the requirements of the Contract Documents, in which case the Contractor shall bear all costs made necessary by such failures, including without limitation, the costs of corrections, repeat tests, inspections or approvals and the costs of the Architect's services or its consultants in connection therewith. Where required DSA testing of the work identifies a failure rate of ten percent (10%) or greater for any system, scope of work, installation or subtrade that has been specifically targeted, District may, at its sole discretion, order that all such similar systems, installations, scopes of work or subtrade work used in connection with the Project be tested, and the cost to test all such work shall be paid by the Contractor.

#### **11.2 Delivery of Certificates**

Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect. If a material is not required to be tested, the Architect, Inspector or the District may require Contractor to furnish a certificate bearing the official and legal signature of the supplier with each delivery of such material, which certificate shall state that the material complies with the Specifications.

#### **11.3 Timeliness of Tests, Inspections and Approvals**

Tests or inspections required and conducted pursuant to the Contract Documents shall be made or arranged by Contractor to avoid delay in the progress of the Work.

### **ARTICLE 12: UNCOVERING AND CORRECTION OF WORK**

#### **12.1 Inspection of the Work**

##### **12.1.1 Access to the Work**

All Work and all materials and equipment forming a part of the Work or incorporated into the Work are subject to inspection by the District, the Project Manager, the Architect and the District's Inspector for conformity with the Contract Documents. The Contractor shall, at its cost and without adjustment to the Contract Price or the Contract Time, furnish any facilities necessary for sufficient and safe access to the Work for purposes of inspection by the District, the Project Manager, the Architect, the District's Inspector, DSA or any other public or quasi-public authority with jurisdiction over the Work or any portion thereof.

### **12.1.2 Limitations Upon Inspections**

Inspections, tests, measurements, or other acts of the Architect and the District's Inspector hereunder are for the sole purpose of assisting them in determining that the Work, materials, equipment, progress of the Work, and quantities generally comply and conform with the requirements of the Contract Documents. These acts or functions shall not relieve the Contractor from performing the Work in full compliance with the Contract Documents. No inspection by the Architect or the District's Inspector shall constitute or imply acceptance of Work inspected. Inspection of the Work hereunder is in addition to, and not in lieu of, any other testing, inspections or approvals of the Work required under the Contract Documents.

### **12.2 Uncovering of Work**

If any portion of the Work is covered contrary to the request of the Architect, the District's Inspector, the Project Manager or the requirements of the Contract Documents, it must be uncovered by the Contractor for observation by such District representative and be replaced by the Contractor without adjustment of the Contract Time or the Contract Price.

### **12.3 Rejection of Work**

Prior to the District's Final Acceptance of the Work, any Work or materials or equipment forming a part of the Work or incorporated into the Work which is defective or not in conformity with the Contract Documents may be rejected by the District, the Project Manager, the Architect or the District's Inspector and the Contractor shall correct such rejected Work without any adjustment to the Contract Price or the Contract Time, even if the Work, materials or equipment have been previously inspected by the Architect or the District's Inspector or even if they failed to observe the defective or non-conforming Work, materials or equipment.

### **12.4 Correction of Work**

The Contractor shall promptly correct any portion of the Work rejected by the District, the Project Manager, the Architect or the District's Inspector for failing to conform to the requirements of the Contract Documents, or which is determined by them to be defective, whether observed before or after Substantial Completion and whether or not fabricated, installed or completed. The Contractor shall bear all costs of correcting such rejected Work, including additional testing and inspections and compensation for the Architect's or Inspector's services and expenses made necessary thereby. The Contractor shall bear all costs of correcting destroyed or damaged construction, whether completed or partially completed, of the District or separate contractors, caused by the Contractor's correction or removal of Work which is not in accordance with the requirements of the Contract Documents, or which is defective.

### **12.5 Removal of Non-Conforming or Defective Work**

The Contractor shall, at its sole cost and expense, remove from the Site all portions of the Work which are defective or are not in accordance with the requirements of the Contract Documents which are neither corrected by the Contractor nor accepted by the District.

### **12.6 Failure of Contractor to Correct Work**

If the Contractor fails to commence to correct defective or non-conforming Work within three (3) days of notice of such condition and promptly thereafter complete the same within a reasonable time, the District may correct it in accordance with the Contract Documents. If the

Contractor does not so proceed, the District may remove it and store the salvable materials or equipment at the Contractor's expense. If the Contractor does not pay costs of such removal and storage after written notice, the District may sell such materials or equipment at auction or at private sale and shall account for the proceeds thereof, after deducting costs and damages that should have been borne by the Contractor, including without limitation compensation for the Architect's and Inspector's services, attorneys fees and other expenses made necessary thereby. If such proceeds of sale do not cover costs which the Contractor should have borne, the Contract Price shall be reduced by the deficiency. If payments of the Contract Price then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor and the Surety shall promptly pay the difference to the District.

### **12.7 Acceptance of Defective or Non-Conforming Work**

The District may, in its sole and exclusive discretion, elect to accept Work which is defective or which is not in accordance with the requirements of the Contract Documents, instead of requiring its removal and correction, in which case the Contract Price shall be reduced as appropriate and equitable.

## **ARTICLE 13: WARRANTIES**

### **13.1 Workmanship and Materials**

The Contractor warrants to the District that all materials and equipment furnished under the Contract Documents shall be new, of good quality and of the most suitable grade and quality for the purpose intended, unless otherwise specified in the Contract Documents. All Work shall be of good quality, free from faults and defects and in conformity with the requirements of the Contract Documents. If required by the District, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment incorporated into the Work. Any Work, or portion thereof not conforming to these requirements, including substitutions or alternatives not properly approved in accordance with the Contract Documents may be deemed defective. Where there is an approved substitution of, or alternative to, material or equipment specified in the Contract Documents, the Contractor warrants to the District that such installation, construction, material, or equipment will equally perform the function and have the quality of the originally specified material or equipment. The Contractor expressly warrants the merchantability, the fitness for use, and quality of all substitute or alternative items in addition to any warranty given by the manufacturer or supplier of such item.

### **13.2 Warranty Work**

If, within one year after the date of Final Acceptance, or such other time frame set forth elsewhere in the Contract Documents, any of the Work is found to be defective or not in accordance with the requirements of the Contract Documents, or otherwise contrary to the warranties contained in the Contract Documents, the Contractor shall commence all necessary corrective action not more than seven (7) days after receipt of a written notice from the District to do so, and to thereafter diligently complete the same. In the event that Contractor shall fail or refuse to commence correction of any such item within said seven (7) day period or to diligently prosecute such corrective actions to completion, the District may, without further notice to Contractor, cause such corrective Work to be performed and completed. In such event, Contractor and Contractor's Performance Bond Surety shall be responsible for all costs in connection with such corrective Work, including without limitation, general administrative overhead costs of the District in securing and overseeing such corrective Work. Nothing contained herein shall be construed to establish a period of limitation with respect to any



obligation of the Contractor under the Contract Documents. The obligations of the Contractor hereunder shall be in addition to, and not in lieu of, any other obligations imposed by any special guarantee or warranty required by the Contract Documents, guarantees or warranties provided by any manufacturer of any item or equipment forming a part of, or incorporated into the Work, or otherwise recognized, prescribed or imposed by law. Neither the District's Final Acceptance, the making of Final Payment, any provision in Contract Documents, nor the use or occupancy of the Work, in whole or in part, by District shall constitute acceptance of Work not in accordance with the Contract Documents nor relieve the Contractor or the Contractor's Performance Bond Surety from liability with respect to any warranties or responsibility for faulty or defective Work or materials, equipment and workmanship incorporated therein.

### **13.3 Guarantee**

Upon completion of the Work, Contractor shall execute and deliver to the District the form of Guarantee included within the Contract Documents. The Contractor's execution and delivery of the form of Guarantee is an express condition precedent to any obligation of the District to disburse the Final Payment to the Contractor.

### **13.4 Survival of Warranties**

The provisions of this Article 13 shall survive the Contractor's completion of Work under the Contract Documents, the District's Final Acceptance or the termination of the Contract.

## **ARTICLE 14 : SUSPENSION OF WORK**

### **14.1 District's Right to Suspend Work**

The District may, without cause and without invalidating or terminating the Contract, order the Contractor, in writing, to suspend, delay or interrupt the Work in whole or in part for such period of time as the District may determine. The Contractor shall resume and complete the Work suspended by the District in accordance with the District's directive, whether issued at the time of the directive suspending the Work or subsequent thereto.

### **14.2 Adjustments to Contract Price and Contract Time**

If the District orders a suspension of the Work, an adjustment shall be made to the Contract Price for increases in the direct cost of performance of the Work of the Contract Documents actually caused by suspension, delay or interruption ordered by the District; provided however that no adjustment of the Contract Price shall be made to the extent: (i) that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible under the Contract Documents; or (ii) that an equitable adjustment is made or denied under another provision of the Contract Documents. Any such adjustment of the Contract Price shall not include any adjustment to increase the Contractor's overhead, general administrative costs or profit, all of which will remain as reflected in the Cost Breakdown submitted by the Contractor pursuant to the Contract Documents. In the event of the District's suspension of the Work, the Contract Time shall be equitably adjusted.

## **ARTICLE 15: TERMINATION**

### **15.1 Termination for Cause**

#### **15.1.1 District's Right to Terminate**

The District may terminate the Contract upon the occurrence of any one or more of the following events of the Contractor's default: (i) if the Contractor refuses or fails to prosecute the Work with diligence as will ensure Substantial Completion of the Work within the Contract Time, or if the Contractor fails to substantially Complete the Work within the Contract Time; (ii) if the Contractor becomes bankrupt or insolvent, or makes a general assignment for the benefit of creditors, or if the Contractor or a third party files a petition to reorganize or for protection under any bankruptcy or similar laws, or if a trustee or receiver is appointed for the Contractor or for any of the Contractor's property on account of the Contractor's insolvency, and the Contractor or its successor in interest does not provide adequate assurance of future performance in accordance with the Contract Documents within 10 days of receipt of a request for such assurance from the District; (iii) if the Contractor repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment; (iv) if the Contractor repeatedly fails to make prompt payments to any Subcontractor, of any tier, or Material Suppliers or others for labor, materials or equipment; (v) if the Contractor disregards laws, ordinances, rules, codes, regulations, orders applicable to the Work or similar requirements of any public entity having jurisdiction over the Work; (vi) if the Contractor disregards proper directives of the Architect, the District's Inspector or District under the Contract Documents; (vii) if the Contractor performs Work which deviates from the Contract Documents and neglects or refuses to correct such Work; or (viii) if the Contractor otherwise violates in any material way any provisions or requirements of the Contract Documents. Once the District determines that sufficient cause exists to justify the action, the District may terminate the Contract without prejudice to any other right or remedy the District may have, after giving the Contractor and the Surety at least seven (7) days advance written notice of the effective date of termination. The District shall have the sole discretion to permit the Contractor to remedy the cause for the termination without waiving the District's right to terminate the Contract, or otherwise waiving, restricting or limiting any other right or remedy of the District under the Contract Documents or at law.

#### **15.1.2 District's Rights Upon Termination**

In the event that the Contract is terminated pursuant to this Article 15.1, the District may take over the Work and prosecute it to completion, by contract or otherwise, and may exclude the Contractor from the site. The District may take possession of the Work and of all of the Contractor's tools, appliances, construction equipment, machinery, materials, and plant which may be on the site of the Work, and use the same to the full extent they could be used by the Contractor without liability to the Contractor. In exercising the District's right to prosecute the completion of the Work, the District may also take possession of all materials and equipment stored at the site of the Work or for which the District has paid the Contractor but which are stored elsewhere, and finish the Work as the District deems expedient. In exercising the District's right to prosecute the completion of the Work, the District shall have the right to exercise its sole discretion as to the manner, methods, and reasonableness of the costs of completing the Work and the District shall not be required to obtain the lowest figure for completion of the Work. In the event that the District takes bids for remedial Work or completion of the Work, the

Contractor shall not be eligible for the award of such contract(s).

### **15.1.3 Completion by the Surety**

In the event that the Contract is terminated pursuant to this Article 15.1, the District may demand that the Surety take over and complete the Work. The District may require that in so doing, the Surety not utilize the Contractor in performing and completing the Work. Upon the failure or refusal of the Surety to take over and begin completion of the Work within fifteen (15) days after demand therefor, the District may take over the Work and prosecute it to completion as provided for above. Such remedy is in addition to, and not lieu of, other remedies available to District as provided by law or in equity.

### **15.1.4 Assignment and Assumption of Subcontracts**

The District shall, in its sole and exclusive discretion, have the option of requiring any Subcontractor or Material Supplier to perform in accordance with its Subcontract or Purchase Order with the Contractor and assign the Subcontract or Purchase Order to the District or such other person or entity selected by the District to complete the Work.

### **15.1.5 Costs of Completion**

In the event of termination under this Article 15.1, the Contractor shall not be entitled to receive any further payment of the Contract Price until the Work is completed. If the unpaid balance of the Contract Price as of the date of termination exceeds the District's direct and indirect costs and expenses for completing the Work, including without limitation, attorneys' fees and compensation for additional professional and consultant services, such excess shall be used to pay the Contractor for the cost of the Work performed prior to the effective date of termination with a reasonable allowance for overhead and profit. If the District's costs and expenses to complete the Work exceed the unpaid Contract Price, the Contractor and/or the Surety shall pay the difference to the District.

### **15.1.6 Contractor Responsibility for Damages**

The Contractor and the Surety shall be liable for all damage sustained by the District resulting from, in any manner, the termination of Contract under this Article 15.1, including without limitation, attorneys' fees, and for all costs necessary for repair and completion of the Work over and beyond the Contract Price.

### **15.1.7 Conversion to Termination for Convenience**

In the event the Contract is terminated under this Article 15.1, and it is determined, for any reason, that the Contractor was not in default under the provisions hereof, the termination shall be deemed a Termination for Convenience of the District and thereupon, the rights and obligations of the District and the Contractor shall be determined in accordance with Article 15.2 hereof.

### **15.1.8 District's Rights Cumulative**

In the event the Contract is terminated pursuant to this Article 15.1, the termination shall not affect or limit any rights or remedies of the District against the Contractor or the Surety. The rights and remedies of the District under this Article 15.1 are in addition to, and not in lieu of, any other rights and remedies provided by law or otherwise under the Contract Documents. Any retention or payment of monies to the Contractor by the District shall not be deemed to release the Contractor or the Surety from any liability

hereunder.

### **15.2 Termination for Convenience of the District**

The District may at any time, in its sole and exclusive discretion, by written notice to the Contractor, terminate the Contract in whole or in part when it is in the interest of, or for the convenience of, the District. In such case, the Contractor shall be entitled to payment for: (i) Work actually performed and in place as of the effective date of such termination for convenience of the District, with a reasonable allowance for profit and overhead on such Work, and (ii) reasonable termination expenses for reasonable protection of Work in place and suitable storage and protection of materials and equipment delivered to the site of the Work but not yet incorporated into the Work, provided that such payments exclusive of termination expenses shall not exceed the total Contract Price as reduced by payments previously made to the Contractor and as further reduced by the value of the Work as not yet completed. The Contractor shall not be entitled to profit and overhead on Work which was not performed as of the effective date of the termination for convenience of the District. The District may, in its sole discretion, elect to have subcontracts assigned pursuant to Article 15.1.4 above after exercising the right hereunder to terminate for the District's convenience.

## **ARTICLE 16: MISCELLANEOUS**

### **16.1 Governing Law**

This Contract shall be governed by and interpreted in accordance with the laws of the State of California.

### **16.2 Successors and Assigns**

Except as otherwise expressly provided in the Contract Documents, all terms, conditions and covenants of the Contract Documents shall be binding upon, and shall inure to the benefit of the District and the Contractor and their respective heirs, representatives, successors-in-interest and assigns.

### **16.3 Cumulative Rights and Remedies; No Waiver**

Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not in lieu of or otherwise a limitation or restriction of duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the District shall constitute a waiver of a right or remedy afforded it under the Contract Documents or at law nor shall such an action or failure to act constitute approval of or acquiescence in a breach hereunder, except as may be specifically agreed in writing.

### **16.4 Severability**

In the event any provision of the Contract Documents shall be deemed illegal, invalid, unenforceable and/or void, by a court or any other governmental agency of competent jurisdiction, such provision shall be deemed to be severed and deleted from the Contract Documents, but all remaining provisions hereof, shall in all other respects, continue in full force and effect.

### **16.5 No Assignment by Contractor**

The Contractor shall not sublet or assign the Contract, or any portion thereof, or any monies due thereunder, without the express prior written consent and approval of the District, which approval may be withheld in the sole and exclusive discretion of the District. The District's

approval to such assignment shall be upon such terms and conditions as determined by the District in its sole and exclusive discretion.

#### **16.6 Independent Contractor Status**

In performing its obligations under the Contract Documents, the Contractor is an independent contractor to the District and not an agent or employee of the District.

#### **16.7 Notices**

Except as otherwise expressly provided for in the Contract Documents, all notices which the District or the Contractor may be required, or may desire, to serve on the other, shall be effective only if delivered by personal delivery or by postage prepaid, First Class Certified Return Receipt Requested United States Mail, addressed to the District or the Contractor at their respective address set forth in the Contract Documents, or such other address(es) as either the District or the Contractor may designate from time to time by written notice to the other in conformity with the provisions hereof. In the event of personal delivery, such notices shall be deemed effective upon delivery, provided that such personal delivery requires a signed receipt by the recipient acknowledging delivery of the same. In the event of mailed notices, such notice shall be deemed effective on the third working day after deposit in the mail.

#### **16.8 Disputes; Continuation of Work**

Notwithstanding any claim, dispute or other disagreement between the District and the Contractor regarding performance under the Contract Documents, the scope of Work thereunder, or any other matter arising out of or related to, in any manner, the Contract Documents, the Contractor shall proceed diligently with performance of the Work in accordance with the District's written direction, pending any final determination or decision regarding any such claim, dispute or disagreement.

#### **16.9 Dispute Resolution; Claims Under \$375,000.00**

Claims between the District and the Contractor of \$375,000.00 or less shall be resolved in accordance with the procedures established in Part 3, Chapter 1, Article 1.5 of the California Public Contract Code, §§20104 et seq.; provided however that California Public Contract Code §20104.2(a) shall not supersede the requirements of the Contract Documents with respect to the Contractor's notification to the District of such claim or extend the time for the giving of such notice as provided in the Contract Documents. The term "claims" as used herein shall be as defined in California Public Contract Code §20104(b)(2).

#### **16.10 Attorneys Fees**

Except as expressly provided for in the Contract Documents, or authorized by law, neither the District nor the Contractor shall recover from the other any attorneys fees or other costs associated with or arising out of any legal, administrative or other proceedings filed or instituted in connection with or arising out of the Contract Documents or the performance of either the District or the Contractor thereunder.

#### **16.11 Marginal Headings; Interpretation**

The titles of the various Articles of these General Conditions and elsewhere in the Contract Documents are used for convenience of reference only and are not intended to, and shall in no way, enlarge or diminish the rights or obligations of the District or the Contractor and shall have no effect upon the construction or interpretation of the Contract Documents. The Contract Documents shall be construed as a whole in accordance with their fair meaning and not strictly

for or against the District or the Contractor.

#### **16.12 Provisions Required by Law Deemed Inserted**

Each and every provision of law and clause required by law to be inserted in the Contract Documents is deemed to be inserted herein and the Contract Documents shall be read and enforced as though such provision or clause are included herein, and if through mistake, or otherwise, any such provision or clause is not inserted or if not correctly inserted, then upon application of either party, the Contract Documents shall forthwith be physically amended to make such insertion or correction.

#### **16.13 Entire Agreement**

The Contract Documents contain the entire agreement and understanding between the District and the Contractor concerning the subject matter hereof, and supersedes and replaces all prior negotiations, proposed agreements or amendments, whether written or oral. No amendment or modification to any provision of the Contract Documents shall be effective or enforceable except by an agreement in writing executed by the District and the Contractor.

[End of Section]

# SPECIAL CONDITIONS

## Section 00800

### 1.01 Contract Time

- A. Substantial Completion of the Work.** The Work shall be commenced on the date stated in the Notice to Proceed issued by the District to the Contractor and shall be completed (Substantial Completion) within **One Hundred Eighty (180)** consecutive calendar days from and after the date stated in the Notice to Proceed (Reference Article 7 of the General Conditions).
- B. Interim Milestone Completion Dates.** Notwithstanding any provision of the Contract Documents to the contrary, Contractor shall sequence and coordinate the work so that portions of the work are completed as required by the Work Segment Plan in accordance with the following interim start and completion dates:  
*No interim milestones on this project.*

### 1.02 Liquidated Damages

- A. Delayed Substantial Completion of the Work.** Pursuant to Article 7 of the General Conditions, the Contractor shall be subject to the assessment and withholding of Liquidated Damages for failure to achieve Substantial Completion of the Work within the Contract Time as indicated in item 1.01.A, above. Liquidated Damages shall be at the rate of Five Hundred Dollars (\$500) per calendar day until Substantial Completion of the Work is achieved.
- B. Delayed Completion of Interim Milestones.** - N/A
- C. Delayed Final Completion of the Work.** Pursuant to Article 7 of the General Conditions, the Contractor shall be subject to the assessment and withholding of Liquidated Damages for failure to achieve Final Completion of the Work in accordance with the Contract Documents. Liquidated Damages shall be at the rate of Five Hundred Dollars (\$500) per Calendar day until Final Completion of the Work is achieved
- D. Delayed Submittals.** The per day assessment of Liquidated Damages for Contractor's delayed submission of Submittals pursuant to Article 4.8.2.1 of the General Conditions is One Hundred Dollars (\$100) per calendar day per Submittal until the required Submittal is submitted.
- E. Cumulative Assessment of Liquidated Damages.** If the Contractor fails to timely delivery the Submittals, fails to achieve Final Completion of the Work Segments as set forth herein, or fails to achieve Substantial or Final Completion of the Work, the Contractor shall be subject to assessment and withholding of Liquidated Damages in the amounts set forth above for each such portion of the Work which is not timely delivered or completed within the time allocated for each portion of the Work.
- F. Contractor Liquidated Damages.** – N/A

### 1.03 Insurance

**A. Insurance Provided By Contractor.** Pursuant to Article 6 of the General Conditions, the Contractor shall provide and maintain the following insurance coverage amounts as set forth below:

1. **Workers Compensation Insurance**  
In accordance with limits established by law.
2. **Employers Liability Insurance** \$1,000,000
3. **Commercial General Liability Insurance**  
Per Occurrence \$2,000,000  
Aggregate \$5,000,000
4. **Automobile Liability Insurance** \$1,000,000
5. **Builders Risk Insurance**  
In an amount equal to 110% of the original Contract Price.
6. **Excess Products and Completed Operations** \$2,000,000

**B. Insurance Provided by Subcontractors.**

Pursuant to Article 6 of the General Conditions, all Subcontractors and Sub-Subcontractors shall provide and maintain the following insurance coverages, with minimum coverage amounts as set forth below:

1. **Workers Compensation Insurance**  
In accordance with limits established by law.
2. **Employers Liability Insurance** \$1,000,000
3. **Commercial General Liability Insurance**  
Per Occurrence \$1,000,000  
Aggregate \$2,000,000
4. **Automobile Liability**  
Bodily Injury/Property Damage Per Occurrence \$1,000,000

### 1.04 Drawings and Specifications.

The number of sets of the Drawings and Specifications, which the District will provide to the awarded Contractor, pursuant to Article 2.1.2 of the General Conditions, is one (1) set of reproducible specifications with plans.

### 1.05 Number of Contract Documents.

The number of executed copies of the Agreement is two (2); the number of Performance Bonds and Payment Bonds required is one (1).

### 1.06 Security.

In addition to the security requirements set forth elsewhere in the Contract Documents,



the Contractor must adhere to the following:

- A. Locked Door Policy.** No building, room or site gate shall be left unsecured for any period of time when not occupied by the Contractor and/or after the Contractor's daily work hours.

**1.07 Working Hours.**

The working hours for this Contract shall be 7:00 a.m. to 7:00 p.m. Monday through Friday. Saturday/Sunday work requires written notification to the District.

Work hours are subject to standard construction hours per the Ordinance set by the **City of Ventura, CA**. Contractor is expected to work weekends and holidays, as necessary, to complete the work within the specified time of completion without any additional cost to the District. At the District's request, Contractor shall modify the working hours for the Contract without adjustment of the Contract Time or Contract Price. (Reference General Conditions Article 7.2.1)

**1.08 Temporary Electric Power.**

Provide temporary electric power connections as necessary for execution of work. The Contractor will arrange distribution service point for electric power with the College Director of Maintenance. Contractor shall provide meters, necessary wiring, switches, receptacles, etc., and make connections to distribution points. Contractor is to pay all connection costs for temporary electric power.

**1.09 Temporary Lighting.**

Provide lighting and outlets in temporary structures and wherever necessary for proper performance and inspection of work. If operations are performed during hours of darkness and whenever District deems natural lighting insufficient, provide adequate floodlights, clusters, and spot illumination, as required to facilitate reading of drawings and specifications. Make arrangements with subcontractors for electric services and lighting as necessary in performance of their work. Contractor is to pay for all temporary lighting.

**1.10 Temporary Heat and Ventilation.**

**1.10.1** Provide heat, fuel and services to protect the work against injury from dampness and cold until final acceptance of all work of the contract.

**1.10.2** When the new HVAC system is used for temporary heat and ventilation, comply with air quality requirements of ASHRAE 62, and the following:

- 1) **Temporary Filters for Air Systems:** Provide temporary filters in air conditioning and ventilating systems to prevent dust and fumes from contaminating the new ductwork and equipment. Use commercial viscous-coated throw away filters, or equal, having efficiency of not less than 60 percent.
- 2) At completion, inspect the entire system for dirt and debris. Clean equipment, ducts and plenums that are soiled, at no cost to the District.

**1.10.3** Before casework is delivered to the building, for not less than 5 days prior to installing wood finishes, and throughout placing of this finish and other finish operations such as painting and laying of resilient floor covering, sufficient heat to maintain building temperature at 65 degrees F.

**1.10.4** Operate HVAC system over a weekend as directed, for not less than 48 hours to purge VOC and other contaminates from the building.

**1.11 Temporary Telephone and Fax Service.** –N/A

**1.12 Temporary Water Services.**

**1.12.1** The District will provide and pay for water. Special conditions or services will be the Contractor's responsibility and expense.

**1.12.2** An approved double check valve shall be furnished and installed by the Contractor at the connection to the main.

**1.12.3** The District reserves the right to make connections to the temporary lines by themselves or by other contractors. In the event the contractor uses the water in a wasteful manner, the Contractor will be billed District's cost for the wasted water.

**1.13 Temporary Gas.**

Provide temporary gas service as necessary for execution of work. Contractor shall connect gas service to new meter in an approved manner. Gas used and all other costs including installation, maintenance and removal of temporary meter shall be paid by the Contractor.

**1.14 Temporary Sanitary Facilities.**

Not applicable

**1.15 Utility Costs for Subcontractors.**

Distribution of temporary utility services to subcontractors shall be Contractor's responsibility.

**1.16 Temporary Fire Protection and Safety Requirements.**

The Contractor shall take necessary precautions to guard against and eliminate fire hazards and to prevent damage to construction work, building materials, equipment, temporary field offices, storage sheds, and public and private property. The Contractor shall be responsible for providing, maintaining, and enforcing the following conditions and requirements during the entire construction period.

- 1) Fire Inspection: The Contractor's Superintendent shall inspect the entire project at least once each week to make certain that the conditions and requirements are being adhered to.
- 2) Hose: The number of outlets, supply of hose, and proper hose size to protect the construction area shall be determined by the local Fire Marshal and provided by the Contractor.

- 3) Fires: Employees shall not be allowed to start fires with gasoline or kerosene or other highly flammable materials. No open fires shall be allowed.
- 4) Flammable Building Materials: Only a reasonable working supply of flammable building material shall be located inside of, or on the roof of, any storage facility.
- 5) Combustible Waste Materials: Oil-soaked rags, papers, and other highly combustible materials must be stored in closed metal containers at all times, and shall be removed from the site at the close of each day's work and more often where necessary, and placed in metal containers with tight hinged lids.
- 6) Gasoline and other flammable or polluting liquids/materials shall not be poured into sewers, manholes, or traps, but shall be disposed of, together with flammable or waste material subject to spontaneous combustion, in a safe manner meeting all applicable laws and ordinances. Make appropriate arrangements for storing these materials outside of the building.
- 7) Provide and maintain fire extinguishers during construction, conveniently located for proper protection, one fire extinguisher for each 5,000 square feet of floor area or less, but not less than four extinguishers. Fire extinguishers shall be ten-pound ABC type. Extinguishers shall meet approval of Underwriter's Laboratory, and shall be inspected at regular intervals and recharged as necessary.

**1.17 Self -Propelled Construction Equipment**

All self-propelled construction equipment, except light service trucks, panels, pickups, station wagons, crawler type cranes, power shovels and draglines, whether moving alone or in combination, shall be equipped with a reverse signal alarm (hub-cap type).

**1.18. Temporary Offices (Construction Trailers). - Not Applicable**

**1.19 Temporary Office (Contractor's Trailer). - Not Applicable**

**1.20 Temporary Scaffolding, Stairs, and Hoists.**

Provide and maintain for duration of work, in accordance with CAL-OSHA and applicable laws and ordinances, all required temporary standing scaffolding, and temporary stairs, ladders, ramps, runways and hoists for use of all trades, unless otherwise specified in Contract Documents.

**1.21 Temporary Guards, Barricades, and Lights.**

**1.21.1** Provide construction canopies, barricades, fences, guards, railings, lights, and warning signs necessary and required by law, and take necessary precautions required to avoid injury or damage to any and all persons and property.

**1.21.2** Provide and maintain protective fences and barricades as shown on drawings and

as Contractor may deem necessary to protect construction yard, storage areas and work in place, subject to approval as to type and appearance. Hog wire fencing is not acceptable. Remove all temporary fences and barricades upon project completion.

## **1.22 Protection of Work and Facilities.**

**1.22.1** Protect all adjacent property, roads, streets, curbs, shrubbery, lawns, erosion control materials and planting during construction operations. All damaged material shall be replaced and/or repaired at the expense of the Contractor.

**1.22.2** Upon completion deliver the entire work to the District in proper, whole and unblemished condition. Work outside of the immediate construction site shall be restored to a whole and unblemished condition immediately upon completion of that portion of the work.

- 1) Parts of work in place that are subject to injury, because of operations being carried on adjacent thereto, shall be covered, boarded up, or substantially enclosed with adequate protection.
- 2) The Contractor shall be responsible for preventing the overloading of any part of the facilities beyond their safe calculated carrying capacity by the placing of materials and/or equipment, tools, machinery, or any other items thereon.
- 3) The District may provide such watchman services deemed necessary to protect the District's interest, but any protection so provided by the District shall not relieve the Contractor of the responsibility for the safety and condition of the work and material until the completion and acceptance thereof. The Contractor shall employ such watchman services as he may deem necessary to properly protect and safeguard the work and material.

## **1.23 Special Controls.**

**1.23.1** Use of Powder-Driven Fasteners: The use of powder set (cartridge type) anchors or lugs for attaching of any work is strictly prohibited on this project unless approved in writing by the District.

**1.23.2** Use of Explosives: Blasting will not be permitted unless approved in writing by the District.

**1.23.3** Dust Control: Throughout the entire Contract period, effectively dust-palliate the working area, roads, and storage areas constructed under this Contract and involved portions of the site, except during such periods that other contractors may be performing work of separate contracts in these areas. Such application shall consist of intermittent watering and sprinkling of such frequency as will satisfactorily allay the dust during all hours that work is being performed. At no time shall water be allowed to pond or puddle. Ponds and puddles shall be removed immediately and steps taken to remove or dry the mud resulting from the ponds or puddles.

**1.24 Water Control.**

Surface or subsurface water or other fluid shall not be permitted to accumulate in excavations or under the structures. Should such conditions develop or be encountered, the water or other fluid shall be controlled and suitably disposed of by means of temporary pumps, piping, drainage lines and ditches, dams or other methods approved by the District.

**1.25. Project Identification.**

Provide and maintain one sign only on the property at location as directed by the Construction Manager (CM). Signboard shall contain information and be of size as detailed on the drawings. Small direction signs may be installed if specifically approved by the CM. Signs by subcontractors and material suppliers will not be permitted.

**1.26 Contractor Vehicles on Campus.**

Contractor's vehicles shall be restricted to access routes established by the District. Parking of Contractor's employees' vehicles will be limited to areas as established by the District, not necessarily adjacent to the site.

**1.27 Removal of Temporary Construction.**

Remove temporary office facilities, toilets, storage sheds, fences, and other construction of temporary nature from site as soon as progress of work permits. Recondition and restore portions of site occupied by same to a condition acceptable to District.

**1.28 Use of Facilities.**

The Contractor and subcontractor shall not, during hours of construction or at times when they are on site to perform work under the contract, use any of the campus facilities, including but not limited to, the restrooms, phones and roadways and the like without prior permission of the campus M & O Director.

**1.29 Damages.**

The Contractor shall be responsible to report and repair, at no additional cost to the District, any damage to College property caused by Contractor, Contractor's employees, Subcontractors, material suppliers, or any other persons or entities, which are onsite as a result of the Contract and work there under. Contractor shall notify the District Project Manager in writing within four (4) hours of the occurrence, and provide a description of the damage and the exact location. The Contractor shall immediately contact the M&O Director, the Project Manager and IOR, and immediately repair the damage using materials of equal or superior grade to that which was damaged. No backfilling or covering up of damage or repairs shall be performed by the Contractor until such time as the District representative has inspected the work and provided the Contractor with written approval to cover the work.

**1.30 Waste Management.**

Contractor shall not use the campus dumpsters, or dispose of waste or any other items, on Campus.

**1.31 State and College Regulations**

The Contractor and his Subcontractors shall comply with all District, City, County and

State regulations regarding noise, dust, smoke, fire and safety rules, and shall keep the site and surrounding areas clean and free of debris.

**1.32 Drawings and Plans.**

The terms “drawings” and “plans” are used interchangeable in the Contract Documents and have the same meaning.

**1.33 Approval for Commencement of Work.**

The Contractor shall obtain approval from the Director of Maintenance & Operations, before commencing work in any existing occupied area, or before working on existing piping, wiring, or equipment. The Contractor shall indicate the particular area where work will be in progress and the length of time any existing system will be out of service. This work is to be scheduled in such a manner so as not to disrupt present operations, where possible. If new construction requires interruption of present operations, the Contractor shall obtain approval from the parties named above, after providing them with specific information regarding areas, dates, hours of the day, and number of hours any interruption is expected to take place. All interruption of services shall be approved by the District, in writing, prior to such interruptions and at the sole discretion of the District. The Contractor shall perform such work on weekends, after regular working hours, or in incremental blocks of time as directed by the District, at no additional cost to the contract price. Work performed as herein described shall not be a basis for an extension to the contract time for completion of all work.

**1.34 Verify Existing Conditions.**

The Contractor shall verify, identify and locate all utilities (above and below grade, visible and concealed), and all conditions and dimensions of the Work as described in the Contract Documents, prior to starting construction. All Subcontractors shall verify at the Site all conditions and measurements related to their work.

**1.35 Scaling Dimensions from Drawings.**

In no case shall working dimensions be scaled from plans, sections, or details from the Working Drawings. If no dimension is shown, the Contractor shall request in writing that the District provide clarification and dimensions.

**1.36 Similar Conditions.**

The intent is to provide a fully functional finished product, complete in every respect. Where a specific detail is not shown, the construction shall be similar to that indicated or noted for similar conditions and as necessary for a complete installation. References of notes and details to specific conditions and locations shall not limit their applicability. Materials for similar use shall be of the same type and manufacturer, unless otherwise indicated or specified as different. Any deviation must be approved in writing, by the District, prior to incorporation into the work.

**1.37 Handicap Access Regulations.**

The Contractor and all Subcontractors shall comply with Title 24, Disabled Access Regulations and ADA, Americans with Disabilities Act Regulations, whether or not specifically indicated on the Contract Documents. Where existing paths of travel are interrupted due to construction, barrier-free paths of travel shall be maintained by the Contractor, without adjustment to Contract Price or Contract Time.

**1.38 Items marked “N.I.C.” (Not in Contract).**

Items marked N.I.C. in the Drawings are not part of the Work. In most instances, they are included for coordination under this Contract of the Work with concurrent or future work outside this contract. However, the Contractor shall review all items marked N.I.C. and provide the District notice and deadline dates of when the items are needed onsite for coordination and incorporation into the project. Failure by the Contractor to give notice to the District and to provide such notice in sufficient time so as to allow District to select, order and receive the items shall not be the basis for delay claims, time extensions, or increased cost to the contract price.

**1.39 Coordination for all Trades.**

The Contractor shall be responsible for the proper location and size of openings for all trades, and shall coordinate all construction as indicated by the Contract Documents, including Shop Drawings reviewed by the District.

**1.40 Items Not Identified in Construction Documents.**

Any conditions or installations not identified in the Contract Documents and affecting the Work to be performed shall be brought to the attention of the District in order that cost and responsibility for any added work may be determined before work is undertaken. The Contractor’s notice to the District of such installations or conditions shall be in writing. Pending receipt of written direction from the District, the Contractor shall not disturb or perform construction operations in any area affected by such installations or conditions.

**1.41 Vehicular Access and Parking.**

Construction, which might affect existing College vehicular access and parking, shall be scheduled during non-school hours. The Contractor shall immediately vacate any area if Contractor’s operations or activities curtail vehicular access to the campus or to parking. Fire Department vehicular access to and around the construction area shall be maintained at all times by the Contractor clear of obstruction. Contractor shall provide keys to all gates to local Fire Department and District representatives for gate access.

**1.42 Right of Access.**

The District, or its representative(s), shall be able at all times to enter the construction site and observe the work. They shall have the right to reject defective materials and workmanship and to require appropriate corrections at the Contractor’s expense. The Contractor shall not be relieved of any responsibility under this contract to provide materials and equipment in accordance with the Contract Documents for failure by the District representatives to discover, or otherwise bring to the attention of the Contractor, any deficiencies with the work.

**1.43 Restoration of Existing Conditions.**

The Contractor shall restore all landscaping, paving, and grading to the original condition at all areas adjoining the construction sites. Prior to performing any work on the project, the Contractor shall, at his sole expense, locate and mark the locations of all components of the irrigation systems which will, or may be, affected by or interfere with work under the contract. The Contractor shall meet with the Facilities Planning & Construction Office/Director of Maintenance & Operations Office to develop a plan and schedule to expose and rework the irrigation system as necessary to maintain continuous

uninterrupted functioning of the irrigation system. In the event that irrigation lines, sprinklers, control wiring or the like are damaged, the Contractor shall notify the District Project Manager/Director of Maintenance & Operations Office representative within one (1) hour, and within four (4) hours of the occurrence provide a written description of the damage and its exact location. The Contractor shall immediately repair the damage using materials of equal or superior grade to that which was damaged. No backfilling or covering up of damage or repair shall be performed by the Contractor until such time as the Facilities Planning & Construction Office/Director of Maintenance & Operations Office representative has inspected the work and provided the Contractor with written approval to cover the work.

**1.44 Municipal Laws and Regulations.**

The Contractor shall have full knowledge of, and at no additional cost to the contract comply with, all laws and regulations including, but not limited to, limitations on noise, hours of operation, hauling routes or limits on weight of equipment traveling on adjacent streets, and any other limitations which might affect the Contractor's work and operations.

**1.45. Weekend Hours.**

The contract time is expressed in calendar days. The Contractor may perform work, with prior notification as per Article 1.07 of the Special Conditions, on weekends or holidays, at his discretion. Should it be necessary for inspectors, District personnel, consultants, or Project Manager to visit the work site on weekends or holidays, additional cost, if any, shall be reimbursed to the District by the Contractor. The District, at its sole discretion, may direct certain portions of the work to be performed after hours, or on weekends or holidays, in order to minimize interruption to the academic operations of the College. The Contractor shall reflect in his Progress Schedule all work, which may impact academic operations, and at Contractor's sole expense, and as directed by the District, perform all work at times convenient to the District.

**1.46 Testing and Inspection Costs.**

**1.47.1** All costs for testing and inspection shall be paid by the District. However, the Contractor shall be responsible for all costs incurred for re-testing that may be required due to failed tests. Upon receipt from the Contractor of a Progress Schedule in accordance with the Contract Documents, the District shall provide a copy of the Progress Schedule to the Testing Laboratory and obtain from them a cost to perform all necessary inspections for the project based on the timeframes set forth in the Progress Schedule. The Contractor shall reimburse the District for quantities, which exceed the scheduled amounts of time.

**1.47.2** If the Contractor uses a fabricator or supplier subject to DSA inspection or documentation from beyond a 100 mile radius of the Project Site, costs above and beyond those for the same inspections and documentation were it to occur within a 100 mile radius of the Project Site, including, but not limited to, out of state tests and inspections, per diem, travel, or the like, will be paid by the District and the District shall be reimbursed by the Contractor upon submittal by the District to the Contractor of the costs incurred.

**1.47 Needless Requests for Information.**



Any needless Request for Information (RFI) will be billed to the Contractor by the A/E team at the additional service rate contained in their respective contracts. A needless RFI is any request for which an answer is in the plans or specifications, or Contract related correspondence, prior to the date of the RFI. Needless punch list visits will be billed in the same way.

**1.48 E-mail Address.**

All parties shall have an Email address and be responsible for all correspondence distributed via E-Mail. No Exceptions!

**1.49 Service Charges.**

Electrical, water, telephone, and other utility charges will be billed to the contract at the same rate paid by the Ventura County Community College District (VCCCD).

**1.50 Material Substitutions.**

Any and all material specification substitutions must be submitted to the District for approval no later than seven (7) days prior to the bid due date. Any substitutions submittal after that date will not be accepted or reviewed.

**1.51 Electronic Schedule Files.**

Pursuant to the requirements of the General Conditions under Article 7, the Contractor shall provide copies of project schedules submitted to the District on paper, including but not limited to, weekly, semi-monthly & monthly schedule updates, on compact discs, in the proper file format to function in the scheduling program provided by the Contractor to the District as required under Article 7 of the General Conditions.

**1.52 Changes to the Work for Contractor Convenience.**

Any changes to the Work resulting from a request by the Contractor to deviate from the approved Contract Documents or as a result of the Contractor not following the Contract Documents that requires additional architectural or engineering services, including but not limited to document submittal to the Division of State Architects (DSA), will be billed to the Contractor by the A/E team at the additional service rate contained in their respective contracts.

**1.53 Mark-ups on Changes to the Work.**

In the event of Changes to the Work, the mark-up for all general conditions, costs, overhead (including home and field office overhead), profit and bond, shall not exceed **Twenty Percent (20%)** of the direct actual costs of the performance of an additive Change, as determined in accordance with the provisions of Article 9.4 of the General Conditions. However, in the event that Contractor self-performs the entirety of the Change, the mark-up for all general conditions, costs, overhead (including home and field office overhead), profit and bond, shall not exceed **Fifteen Percent (15%)** of the direct actual costs of the performance of an additive Change, as determined in accordance with the provisions of Article 9.4 of the General Conditions. In addition, the mark-up shall include the actual, direct cost of the bond for such Change, not to exceed **Two Percent (2%)** of the direct, actual costs of the performance of the Change.

The foregoing limitation or mark-up shall apply regardless of the number of subcontractors, of any tier, performing any portion of such additive Change to the Work. In the event that the Work of such additive Change is performed in part by a

subcontractor, Contractor agrees to allocate at least Ten Percent (10%) to such subcontractor, with no more than Five Percent (5%) to be allocated to the Contractor. In the event the Change is deductive, the District shall receive a credit equal to the value of the direct actual costs of the Work of the deductive Change plus Zero (0%) of such direct actual costs for all general conditions, overhead (including home and field office overhead), profit and bond.

**1.54 Allowances.**

The following allowances are in addition to the scope of the Work as defined in the Contract Documents and the Contractor shall add all Allowances to complete the work and shall include the total Allowances amount in the Bid Proposal Lump Sum Amount (Refer to Bid Proposal, Section 00210).

**List of Allowances**

Item	Description	Amount (\$)
1	No Allowance included in this project	<i>[ENTER</i>
		<i>AMOUNTS]</i>
<b>Total Allowances</b>		

The District may utilize the above allowances up to the total amount during the course of construction by issuing a Work Order(s) to the Contractor. A deductive Change Order will be issued at the completion of the Work to return the entire balance of the unused allowances to the District, without application of any mark-up.

Upon incorporation of the Work described in each Work Order, the Contractor will be paid out of the Allowance fund as a line Item included in the Contractors payment application.

**1.55 Inclement Weather Days.**

Pursuant to Article 7.4.1 of the General Conditions, the number of Working Rain Days (including inclement weather) for this Contract is Thirty Five (35) days.

**1.56 District’s Project Manager.**

The District’s Project Manager a Ventura College is:

**Jay Moore**, Ventura College Director of Facilities, Maintenance & Operations,  
4900 Loma Vista Rd., Ventura, CA 93003, Phone: 805-289-6340.

*[End Of Section]*

# TECHNICAL SPECIFICATIONS

## Section 01000

### 1.01 GENERAL INFORMATION

**A. Job Walk Attendance**

Bidders are required to attend the job walk on this project since it encompasses a variety of renovation work at the Athletic Event Center.

**B. Discrepancies**

Where there are discrepancies between the General Conditions of the Ventura County Community College District and the Technical Specifications and Drawings, the General Conditions of the District shall take precedence.

**C. Alternative Materials**

The use of a manufacturer, product brand name or make in the specifications is not intended to restrict bidders. The specifications establish the character or quality of the article desired. Alternative materials or goods on which other proposals are submitted must, in all cases, be equal or exceed in every detail to the item specified. Bid must clearly state the brand, make or model number. Alternative goods and materials are subject to review and must be approved prior to the date listed on the bid specifications. The District, for inspection and specification testing, may require samples of bid items. Samples furnished must be free of expense to the District. Samples furnished must also be identical in all respects to the products specified in the bid. Samples, if not destroyed by tests and if requested, will be returned at the bidder's expense. All goods furnished under this contract shall be newly manufactured goods. Used or reconditioned goods are prohibited, unless otherwise specified.

**D. Questions Concerning Technical Specifications**

Technical specifications continue on the following pages. All questions regarding this bid and or specifications should be directed to the Purchasing Department of the District. Questions should be addressed by e-mail to the Purchasing Specialist handling this bid. Questions must be submitted by e-mail to [jkisch@vcccd.edu](mailto:jkisch@vcccd.edu) **no later than Wednesday, August 9 at 4:00 p.m.**

**E. Plan Drawings & Technical Specifications**

The technical specifications continue in the following sections and drawing plates and are considered a part of this bid package. The specifications include the following sections with drawings:  
HVAC Replacement – A.E. Group

**PROJECT MANUAL**  
**VENTURA COLLEGE**  
**VENTURA COLLEGE GYMNASIUM BUILDING**  
**OFFICE HVAC REPLACEMENT PROJECT**

*4/5/17*

**PREPARED BY**  
**AE GROUP MECHANICAL ENGINEERS**  
**838 E. FRONT STREET**  
**VENTURA CALIF. 93001**  
**805 653-1722**  
**[hugh@aegroupme.com](mailto:hugh@aegroupme.com)**

**Hugh McTernan**  
**Mechanical Engineer**  
**Engineer of Record**

Bid 545 VC Gymnasium Office HVAC Replacement

**Ken Lucci**  
**Electrical Engineer**

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Section 16190	Support Devices
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Section 16901	General Control Devices
Section 16920	Motor Control

**SECTION 00115 – BASIC CONTRACT REQUIREMENTS****PART 1 GENERAL****1.01 SUMMARY OF WORK**

- A. This work includes the demolition and disposal of existing units and ductwork in mezzanine area, new fan coils with ducting, refrigerant and condensate piping, and outdoor heat pump units, energy management system, concrete, masonry, and electrical system upgrades.

**1.02 SELECTIVE DEMOLITION**

- A. Coordinate demolition with all trades and protect areas not involved with the installation of the new equipment. Demolish and remove existing equipment only to the extent required for the new construction. Legally dispose of all demolished materials. Recycle to the greatest extent possible.

**1.03 CUTTING AND PATCHING**

- A. Promptly patch and repair holes and damaged surfaces caused to adjacent construction. Closely match texture and finish of existing adjacent surfaces. Extend final coat of paint to a logical stopping point such as door frame or wall corner. Employ qualified workers to perform cutting and patching. Replace any damaged ceiling tiles.
- B. Do not cut any structural member without prior notification to the Engineer.
- C. Substitution shall be approved by the Engineer prior to the construction of the change.

**1.04 INSPECTION**

- A. Contractor is responsible for scheduling inspection and maintaining permitted construction plans at the site.

**PART 2 PRODUCTS/INSTALLATION****2.01 CONCRETE**

- A. Concrete shall have the following compressive strength after 28 days – 2500 PSI
- B. Mixing and placing of concrete shall be in accordance with the California Building Code. Cement shall be type II conforming to ASTM C150.

**2.02 MASONRY**

- A. Masonry unit shall conform to ASTM C90 lightweight split faced concrete blocks and shall be grouted solid.
- B. Masonry shall be Type S shall have an average compressive strength of 1800 PSI.
- C. Wall shall be installed straight true and level with consistent width joints.
- D. Grout color shall match wall color.

**2.04 GATE**

- A. Install a metal faced custom built gate with commercial gate hardware. See plans.

END OF SECTION 00115

**SECTION 01040 – PROJECT COORDINATION**

## PART 1 GENERAL

## 1.01 REQUIREMENTS INCLUDED

- A. Coordination of Work of all trades.

## 1.02 RELATED REQUIREMENTS

- A. Section 01700 - Contract Closeout: Closeout Submittals.

## 1.03 DESCRIPTION

- A. Coordinate scheduling, submittals, and work of the various sections of Specifications to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items to be installed later.
- B. Coordinate sequence of work to accommodate Owner occupancy.

## 1.04 MEETINGS

- A. Contractor shall hold coordination meetings and pre-installation conferences with personnel and sub-contractors to assure coordination of work.

## 1.05 COORDINATION OF SUBMITTALS

- A. Schedule and coordinate submittals.
- B. Provide a complete list of submittals, indicating specified sections, sub-contractors, numbering system, etc.
- C. Coordinate work of various sections having independent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate requests for substitutions to assure compatibility of space, of operating elements, and effect on work of other sections.
- E. The first submittal shall be comprehensive and complete. Product specifics such as color, voltage, options, etc. shall be clearly marked. A copy of the submittal with review shall be kept on the jobsite.

## 1.06 COORDINATION OF SPACE

- A. Coordinate use of project space and sequence of installation of mechanical and electrical work which is indicated diagrammatically on Drawings. Follow routings shown for pipes, ducts, and conduits as closely as practicable, with due allowance for available physical space; make runs parallel with lines of building. Utilize space efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- B. In finished areas except as otherwise shown conceal pipes, ducts, and wiring in the construction. Coordinate locations of fixtures and outlets with finish elements.
- C. Existing building will have to accommodate new material installation. Provide all required furring, anchors, finishes, etc. necessary for new material installation.



1.07 COORDINATION OF CONTRACT CLOSEOUT

- A. Coordinate completion and cleanup of work of separate sections in preparation for Substantial Completion.
- B. Coordinate correction of defective work and work not in accordance with Contract Documents, to minimize disruption of College District's activities.
- C. Assemble and coordinate closeout submittals.

PART 2 PRODUCTS – NOT APPLICABLE

PART 3 EXECUTION – NOT APPLICABLE

END OF SECTION 01040

**SECTION 01300 – SUBMITTALS AND MANUALS**

## PART 1 GENERAL

## 1.01 WORK INCLUDED

- A. To ensure that the specified products are furnished and installed in accordance with design intent, procedures have been established for advance submittal of design data, and for review and acceptance or rejection by the Engineer.

## 1.02. REQUIREMENTS INCLUDED

- A. Procedures.
- B. Construction Progress Schedules.
- C. Schedule of Values.
- D. Manufacturer's Instructions.
- E. Manufacturer's Certificates.

## 1.03 RELATED REQUIREMENTS

- A. Section 01700 – Contract Closeout: Warranties and Manufacturers Certificates.

## 1.04 PROCEDURES

- A. Deliver submittals to College District's Construction Manager.
- B. Transmit each item under Engineer-accepted form, Identify Project, Contractor, subcontractor, major supplier. Identify pertinent Drawing sheet and detail number, and Specification Section number, as appropriate. Identify deviations from Contract Documents. Provide space for Contractor and Engineer review stamps.
- C. Submit initial progress schedules and schedule of values in accordance with Section 6-1 and 9-2 of the Standard Specifications. After review by Engineer revise and resubmit as required. Submit revised schedules with each second Application for Payment, reflecting changes since previous submittal.
- D. Comply with progress schedule for submittals related to Work progress. Coordinate submittal of related items.
- E. After Engineer review of submittal, revise and resubmit as required, identifying changes made since previous submittal.
- F. Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report any inability to comply with provisions.

## PART 2 PRODUCTS

## 2.01 SHOP DRAWINGS

- A. Submit shop drawings to engineer for review. Allow seven business days for review.

## 2.02 SUBMITTALS

- A. Submit submittals to engineer for review prior to beginning of work. Allow seven business days for review.

## 2.03 AIR BALANCE REPORTS AND CONTROLS COMMISSIONING REPORT

- A. Provide air balance report and controls commissioning report to engineer within one week of completion of task.

## 2.04 OPERATION AND MAINTENANCE DATA

- A. Submit 2 copies of Operation and Maintenance Manuals promptly after completion of work for review by the engineer and College District in accordance with Section 01700.
  - 1. Preparation of data shall be done by personnel trained and experienced in maintenance and operation of the described products, skilled in technical writing to the extent required to communicate essential data, and draftsmen shall be competent to prepare the required drawings.

## PART 3 EXECUTION

## 3.01 SUBMITTALS

- A. Submittals shall be provided in a commercial binder clearly labeled with the project title in 8-1/2"x11" format clearly legible. Products to be used shall be clearly identified on each sheet. If variations are shown on the product sheet then the contractor shall clearly identify which product is being submitted for review. All options and electrical information where shown shall be clearly identified as to which is being submitted for review.

END OF SECTION 01300

**SECTION 01630 – SUBSTITUTIONS AND PRODUCT OPTIONS**

## PART 1 GENERAL

## 1.01 REQUIREMENTS INCLUDED

- A. Contractor's options in selection of products.
- B. Products list.
- C. Requests for substitution of products.
- D. Substitution Request Form.

## 1.02 OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards.
- B. Products Specified by Naming Two or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not specifically named.
- C. Products Specified by Naming Only One Manufacturer: No option: no substitution allowed.

## 1.03 PRODUCTS LIST

- A. Within 15 days after date of Owner-Contractor Agreement, transmit three copies of a list of major products which are proposed for installation, including name of manufacturer.
- B. Tabulate products by Specifications section: number, title, and article number.
- C. Products specified only by reference standards, give manufacturer, trade name, model or catalog designation and reference standards.
- D. Engineer will reply in writing stating whether there is reasonable objection to listed items. Failure to object to a listed item shall not constitute a waiver of requirements of Contract Documents.

## 1.04 LIMITATIONS ON SUBSTITUTIONS

- A. During Bidding period, no substitutions shall be considered.
- B. Requests for substitutions of products will be considered only within 35 days after date of Owner-Contractor Agreement. Subsequent requests will be considered only in case of product unavailability or other conditions beyond control of Contractor.
- C. Substitutions will not be considered when indicated on shop drawings or product data submittals without separate formal request, when requested directly by subcontractor or supplier, or when acceptance will require substantial revision of Contract Documents.
- D. Substitute products shall not be ordered or installed without written acceptance.
- E. Only one request of substitution for each product will be considered. When substitution is not accepted, provide specified product.

- F. College District will determine acceptability of substitutions.

1.05 REQUEST FOR SUBSTITUTIONS

- A. Requirements as stated on Substitution Request Form at the end of this section.

1.06 CONTRACTOR REPRESENTATION

- A. Requirements as stated on Substitution request Form at the end of this section.

1.07 SUBMITTAL PROCEDURES

- A. Submit three copies of request for substitution of the Substitution Request Form at the end of this section.
- B. Engineer will review Contractor's requests for substitutions with reasonable promptness.
- C. For accepted products, submit shop drawings, product data, and samples.

PART 2 PRODUCTS – NOT APPLICABLE

PART 3 EXECUTION – NOT APPLICABLE

SECTION CONTINUED ON NEXT PAGE

SUBSTITUTION REQUEST FORM

PAGE 1 OF 2

Include this form with each request for substitution.

	_____	
	DATE OF REQUEST	
General Contractor's	_____	_____
<u>Initials</u>	SPECIFICATION SECTION	PRODUCT
_____	Contractor acknowledges and certifies that this substitution request is with all limitations of paragraph <u>1.05 LIMITATIONS ON SUBSTITUTIONS</u>	

REQUESTS FOR SUBSTITUTIONS

- \_\_\_\_\_A. Submit separate request for each substitution. Document each request with complete data substantiating compliance of proposed substitution with requirements of Contract Documents.
- \_\_\_\_\_B. Identify product by Specifications section and Article numbers. Provide manufacturer's name and address, trade name of product, and model or catalog number. List fabricators and suppliers as appropriate.
- \_\_\_\_\_C. Attach product data as specified in Section 01340.
- \_\_\_\_\_D. List similar projects using product, dates of installation, and names of Engineer and Owner.
- \_\_\_\_\_E. Give itemized comparison of proposed substitution with specified product, listing variations, and reference to Specifications section and Article numbers.
- \_\_\_\_\_F. Give quality and performance comparison between proposed substitution and the specified product.
- \_\_\_\_\_G. Give cost data comparing proposed substitution with specified product, and amount of net change to Contract Sum.
- \_\_\_\_\_H. List availability of maintenance services and replacement materials.
- \_\_\_\_\_I. State effect of substitution on construction schedule, and changes required in other work or products.

continued on next page

SUBSTITUTION REQUEST

PAGE 2 OF 2

General  
Contractor's

Initials

\_\_\_\_\_

CONTRACTOR REPRESENTATION

- \_\_\_\_\_A. Request for substitution constitutes a representation that Contractor has investigated proposed product and has determined that it is equal to or superior in all respects to specified product or that the cost reduction offered is ample justification for accepting the offered substitution.
- \_\_\_\_\_B. Contractor will provide same warranty for substitution as for specified product.
- \_\_\_\_\_C. Contractor will coordinate installation of accepted substitute, making such changes as may be required for Work to be complete in all respects.
- \_\_\_\_\_D. Contractor certifies that cost data presented is complete and includes all related costs under this Contract.
- \_\_\_\_\_E. Contractor waives claims for additional costs related to substitution which may later become apparent.

END OF SECTION 01630

SECTION 01700 – CONTRACT CLOSEOUT

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Closeout Procedures.
- B. Final Cleaning.
- C. Project Record Documents.
- D. Operation and Maintenance Data.
- E. Warranties and Bonds.
- F. Spare Parts and Maintenance Materials.

1.02 CLOSEOUT PROCEDURES

- A. When Contractor considers Work has reached final completion, submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Engineer's inspection.
- B. In addition to submittals required by the conditions of the Contract, provide submittals required by governing authorities, and submit a final statement of accounting giving total adjusted Contract Sum, previous payments, and sum remain due.

1.03 FINAL CLEANING

- A. Execute prior to final inspection.
- B. Clean interior and exterior surfaces exposed to view: remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces. Clean equipment and fixtures to a sanitary condition, clean or replace filters of mechanical equipment.
- C. Clean site; sweep paved areas, rake clean other surfaces.
- D. Remove waste and surplus materials, rubbish, and construction facilities from the Project and from the site.

1.04 PROJECT RECORD DOCUMENTS

- A. Store documents separate from those used for construction.
- B. Keep documents current; do not permanently conceal any work until required information has been recorded.
- C. At Contract closeout, submit documents with transmittal letter containing date, Project title, Contractor's name and address, list of documents, and signature of Contractor.

1.05 OPERATION AND MAINTENANCE DATA



- A. Provide data for:
  - 1. Mechanical equipment and controls – Division 15.
  - 2. Electrical equipment and controls – Division 16.
- B. Submit two sets prior to final inspection, bound in 8-1/2 x 11 three-ring binders with durable plastic covers.
- C. Provide a separate volume for each system, with a table of contents and index tabs for each volume.
- D. Part 1: Directory, listing names, addresses, and telephone numbers of: Engineer, Contractor, and Subcontractors.
- E. Part 2: Operation and maintenance instructions, arranged by system. For each system, give names addresses, and telephone numbers of subcontractors and suppliers. List:
  - 1. Appropriate design criteria.
  - 2. List of equipment.
  - 3. Parts list.
  - 4. Operating instructions.
  - 5. Maintenance instructions, equipment.
  - 6. Maintenance instructions, finishes.
  - 7. Shop drawings and product data.
  - 8. Warranties.

1.06 WARRANTIES AND BONDS

- A. Provide duplicate, notarized copies. Execute Contractor's submittals and assemble documents executed by subcontractors, suppliers, and manufacturers. Provide Table of Contents and assemble in binder with durable plastic cover.
- B. Submit material prior to final application for payment. For equipment put into use with Owner's permission during construction, submit within 10 days after first operation. For items of Work delayed materially beyond Date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.07 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide products, spare parts, and maintenance materials in quantities specified in each Section, in addition to that used for construction of Work. Coordinate with Owner, deliver to Project site and obtain receipt prior to final payment.

PART 2 PRODUCTS – NOT APPLICABLE

PART 3 EXECUTION – NOT APPLICABLE

END OF SECTION 01700

**SECTION 02220 – SELECTIVE DEMOLITION**

## PART 1 – GENERAL

## 1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

## 1.02 SUMMARY

- A. Selective demolition which meets the certification goals as established by the City of San Buenaventura program for the individual Project requirements. Refer to Section 705 – Waste Diversion.
- B. Section includes:
  - 1. Demolition and removal of selected portions of building or structure.
  - 2. Demolition and removal of selected site elements.
  - 3. Salvage of existing items to be reused or recycled.
  - 4. Protecting existing work to remain.
  - 5. Cleaning soiled materials that are to remain.
  - 6. Disconnecting and capping utilities.
  - 7. Removing debris and equipment.
  - 8. Removal of items indicated on Drawings.
  - 9. Salvageable items to be retained by the Owner as indicated on the Drawings and during the pre-construction job walk.

## 1.03 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner.
- C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

## 1.04 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- B. Ownership of Materials: Except for items or materials indicated to be reused, salvaged, or otherwise indicated to remain the Owner's property, demolished materials shall become the Contractor's property and shall be removed from the site with further disposing at the Contractor's option.

## 1.05 INFORMATIONAL SUBMITTALS

- A. Proposed Protection Measures: Submit report, including drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control

and for noise control. Indicate proposed locations and construction of barriers.

- B. Schedule of Selective Demolition Activities: Indicate the following:
1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure on-site operations of Owner, staff, and students are uninterrupted.
  2. Interruption of utility services. Indicate how long utility services will be interrupted.
  3. Coordination for shutoff, capping, and continuation of utility services.
  4. Use of elevator and stairs.
  5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- C. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner prior to start of demolition.
- D. Warranties: Documentation indicated that existing warranties are still in effect after completion of selective demolition.

#### 1.06 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.
- B. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

#### 1.07 QUALITY ASSURANCE

- A. Carefully perform demolition work, by skilled workers experience in building demotion procedures, using appropriate tools and equipment. Perform work, at all times under the direct supervision of a supervisor.
- B. Coordinate demolition with other trades to ensure correct sequence, limits, and methods of proposed demolitions. Schedule work to create the least possible inconvenience to the public and to facility operations.

#### 1.08 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and wit materials so as not to void existing warranties. Notify warrantor before proceeding. Existing warranties include the following:
- B. Notify warrantor on completion of selective demolition, and obtain documentation verifying that existing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

### PART 2 – PROJECTS

#### 2.01 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

## PART 3 – EXECUTION

## 3.01 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review record documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in record documents.
- C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Engineer.
- E. Survey of Existing Conditions: Record existing conditions by use of measured drawings.

## 3.02 GENERAL

- A. Protection:
  - 1. Do not begin demolition until safety partitions, barricades, warning signs and other forms of protection are installed.
  - 2. Provide safeguards, including warning signs, lights and barricades, for protection of occupants and the general public during demolition.
  - 3. Provide and maintain fire extinguishers. Comply with requirements of governing authorities.
  - 4. Maintain existing utilities which are to remain in service and protect from damage during operations.
- B. Safety: If at any time safety of existing construction appears to be endangered, take immediate measures to correct such conditions; cease operations and immediately notify the Owner Inspector. Do not resume demolition until directed by the Owner Inspector.
- C. Dust Control: Use water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt. Comply with governing environmental protection regulations. Do not create hazardous or objectionable conditions, such as flooding and pollution, when using water.
- D. Debris Removal: Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grades level.
- E. Progress Cleaning: Clean adjacent buildings and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to condition existing before start of demolition.

## 3.03 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/ systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

### 3.04 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
  - 1. Comply with requirements for access and protection specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
- C. Temporary shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

### 3.05 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations.
- B. Removed and Salvaged Items:
  - 1. Clean salvaged items.
  - 2. Pack or crate items after cleaning. Identify contents of containers.
  - 3. Store items in a secure area until delivery to Owner.
  - 4. Transport items to Owner's storage area designated by Owner.
  - 5. Protect items from damage during transport and storage.
- C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by City, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

### 3.06 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill. Recycle materials to the greatest extent possible.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

### 3.07 PATCHING AND RESTORATION

- A. Patching: Where removals leave holes and damaged surfaces that will be exposed in the completed construction, such holes and damaged surfaces shall be patched and resorted to match adjacent finished surfaces.
- B. Restoration of Building Finishes: Touch up scratched finishes as recommended by manufacturer of original finish.

3.08 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 02220

**SECTION 15010 - BASIC MECHANICAL REQUIREMENTS**

## PART 1 GENERAL

## 1.01 SECTION INCLUDES

- A. Basic Mechanical Requirements specifically applicable to Division 15 Sections, in addition to the general requirements.
- B. Plumbing work includes the following: furnish and install all piping shown on the plumbing and mechanical drawings and described in these specifications. In connection with this work, contractor shall also furnish and install all necessary work, devices, hardware and systems required to make said systems properly and safely operable, including, but not limited to, mounting hardware, framing, insulation, and valves.
- C. Mechanical work includes the following: furnish and install all mechanical equipment shown on the mechanical, plumbing and electrical drawings and described in these specifications. Contractor shall furnish and install, make operable, and test all mechanical equipment shown on the plans. In connection therewith, contractor shall also furnish and install all necessary work, devices, hardware and systems required to make said equipment properly and safely operable, including but not limited to, mounting hardware and framing, insulation, vibration control devices, duct systems, flashing, piping, valves, systems, energy management systems, and equipment installation startup and commissioning.

## 1.02 WORK SEQUENCE

- A. Install work in phases to accommodate Owner's construction requirements. Refer to Mechanical and Electrical Drawings for the construction details and coordinate the work of this division with that of other divisions. Order the work of this division so that progress will harmonize with that of other divisions and all work will proceed expeditiously. During the construction period, coordinate mechanical schedule and operations with General Contractor and any other related subcontractor.

## 1.03 ALTERNATES

- A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at the Owner's option. Accepted Alternates will be identified in Owner-Contractor Agreement.
- B. Coordinate related work and modify surrounding work as required.

## 1.04 SUBMITTALS

- A. Submit the following:
- B. Proposed Products List: Include Products specified in the following Sections:
  - 1. Section 15 - Plumbing.
  - 2. Section 15 - Mechanical.
  - 3. Project Drawings
- C. Submit shop drawings and product data grouped to include complete submittals of related systems, products, and accessories in a single submittal.
- D. Equipment and materials shall be ordered only after satisfactory review by Owner and

Engineer.

- E. The following statement applies to all items reviewed. "Checking is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the plans and specifications. Contractor is responsible for dimensions which shall be confirmed at the job site; fabrication processes and techniques of construction; coordination of his work with that of other trades; and the satisfactory performance of his work."
- F. Contractor shall clearly mark the submittal sheet as to which model number, size, color, etc. when there is more than one choice available.

#### 1.05 REGULATORY REQUIREMENTS

- A. Conform to 2016 California Building Code.
- B. Fire Protection: Conform to 2016 California Fire Code, and California State Fire Marshall Regulations, Title 19, Public Safety.
- C. Plumbing: Conform to 2016 California Plumbing Code.
- D. Mechanical: Conform to 2016 California Mechanical Code.
- E. Electrical: 2016 California Electrical Code.
- F. Obtain approved inspections from authority having jurisdiction.
- G. Conflicts: Where conflict or variation exists amongst Codes, the most stringent shall govern.

#### 1.06 PROJECT/SITE CONDITIONS

- A. Install work in locations shown on drawings, unless prevented by project conditions.
- B. Prepare drawings showing proposed rearrangement of work to meet project conditions, including changes to work specified in other Sections. Obtain permission of owner before proceeding.
- C. PIPING LOCATIONS: Piping locations shown are diagrammatic only. Contractor shall verify locations of all lateral stubs, offsets, etc. required in the field. The actual locations of lines, cleanouts and connections may vary provided that complete systems are installed in compliance with codes.
- D. CONSTRUCTION OBSERVATION: In addition to the requirement for obtaining inspections by the local jurisdiction, contractor shall notify Engineer at appropriate times during the construction process so that Engineer can visit site to become generally familiar with the progress and quality of contractor's work and to determine if the work is proceeding in general accordance with the contract documents.
- E. SCALING OF DRAWINGS: In no case shall working dimensions be scaled from plans, sections, or details from the working drawings. If no dimension is shown on the drawings, the prime contractor shall request in writing that the Engineer provide clarification or the specific dimension.

#### 1.07 QUALITY ASSURANCE

- A. Qualification of Manufacturer: Products used in work shall be produced by manufacturers



regularly engaged in the manufacture of similar items.

- B. Qualification of Installer: Use adequate number of skilled workman, thoroughly trained and experienced in the necessary crafts, and completely familiar with the specified requirements contained in the plans and specifications.
- C. Applicable equipment and materials to be listed by Underwriters' Laboratories and manufactured in accordance with ASME, AWWA, or ANSI standards. Power using equipment shall be meet the California energy efficiency standards as defined in the current Title 24 requirements.
- D. Welding procedures and testing shall comply with ANSI Standard B31.1.0 standard code for pressure piping and the American Welding Society – Welding Handbook. Welding shall also comply with Division of the State Engineer and structural plan requirements for materials, procedures, qualifications, and inspections.

#### 1.08 DRAWINGS AND SPECIFICATIONS

- A. Drawings and specifications are intended to complement each other. Where a conflict exists between the requirements of the drawings and/or specifications, the contractor shall immediately and before commencing work, request clarification from Engineer.
- B. The Engineer shall interpret the drawings and the specifications, and the Engineer's decision as to the true intent and meaning thereof and the quality, quantity, and sufficiency of the materials and workmanship furnished there under shall be accepted as final and conclusive.
- C. In case of conflicts not clarified prior to bidding deadline, use the most costly alternative (better quality, greater quantity, or larger size) in preparing the Bid. A clarification will be issued to the successful Bidder as soon as feasible after the Award and if appropriate a deductive change order will be issued.
- D. All provisions shall be deemed mandatory except as expressly indicated as optional by the word "may" or "option".
- E. Examine and compare the contract drawings and specifications with the drawings and specifications of other trades. Report any discrepancies to the Engineer. Install and coordinate the work in cooperation with the other trades.

#### PART 2 PRODUCTS

- A. Maintain uniformity of manufacturer for equipment used in similar applications and sizes.
- B. Provide products and materials that are new, clean, free from defects, damage, and corrosion.
- C. Provide name/data plates on major components with manufacturer's name, model number, serial number, date of manufacturer, capacity data, and electrical characteristics permanently attached in a conspicuous location on the equipment.
- D. Protect materials stored at site and installed from damage.
- E. Verify dimensions of equipment and fixtures prior to ordering.

#### PART 3 EXECUTION

##### 3.01 INSTALLATION

- A. Install all equipment per the manufacturer's instructions for installing, connecting, and adjusting. A copy of the instructions shall be kept at the equipment during installation and provided to the engineer at his/her request.
- B. Adjust pipes, ducts, panels, equipment, etc., to accommodate the work to prevent interferences.
  - 1. Right-of-Way: Lines which pitch have the right-of-way over those which do not pitch. Lines whose elevations cannot change have right-of-way over lines whose elevations can be changed.
  - 2. Provide offsets, transitions, and changes in directions of pipes and ducts as required to maintain proper head room and pitch on sloping lines. Provide traps, air vents, drains, etc., as required. It is the intent of this paragraph that all cost associated with compliance be borne by the contractor.
  - 3. All equipment shall be firmly anchored to building structural elements.
  - 4. Carefully check space requirements with other trades and existing conditions to insure material, fixtures or equipment can be installed in the spaces allotted.
- C. Install all mechanical equipment and plumbing fixtures to allow for service and replacement of coils, motors, belts, filters, gaskets, sheaves, controls, and any other part requiring periodic replacement or maintenance.

### 3.02 COMMISSIONING

- A. All mechanical equipment including indoor and outdoor units shall be commissioned and fully-function tested to verify the proper operation. Provide a written operation report of all equipment testing to the owner prior to completion.
- B. Variable frequency drives and air handlers shall have factory startup & owner training. A written start-up report shall be provided to the owner with set-points and specific operational details.

### 3.03 SPECIAL TOOLS AND TRAINING

- A. The contractor shall provide to the owner any special tools need to service and access the equipment provided in this contract.
- B. The mechanical contractor shall provide to the owner four hours of training on operation and maintenance of the new mechanical equipment.
- C. Provide three copies of equipment manuals.

END OF SECTION 15010

**SECTION 15140 - SUPPORTS AND ANCHORS****PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Pipe and equipment hangers and supports.
- B. Equipment bases and supports.
- C. Sleeves and seals.
- D. Flashing and sealing equipment and pipe stacks.

**1.02 RELATED SECTIONS**

- A. Section 15245 - Vibration Isolation.
- B. Section 15260 - Piping Insulation.

**1.03 REFERENCES**

- A. ASME B31.2 - Fuel Gas Piping.
- B. ASME B31.9 - Building Services Piping.
- C. ASTM F708 - Design and Installation of Rigid Pipe Hangers.
- D. MSS SP58 - Pipe Hangers and Supports - Materials, Design and Manufacturers.
- E. MSS SP69 - Pipe Hangers and Supports - Selection and Application.
- F. MSS SP89 - Pipe Hangers and Supports - Fabrication and Installation Practices.

**1.04 SUBMITTALS**

- A. Submit the following:
- B. Product Data: Provide Manufacturers catalog data including load capacity.

**1.05 REGULATORY REQUIREMENTS**

- A. Conform to 2016 California Plumbing Code for support of piping
- B. 2008 SMACNA Manual for Seismic Restraint. Seismic Hazard Level is A.
- C. Chapter 16 of the 2016 California Building Code

**PART 2 PRODUCTS****2.01 PIPE HANGERS, STEEL STRUT, AND SUPPORTS**

- A. Manufacturers:
  - 1. Cooper B-Line's Tolco™.
  - 2. Other acceptable Manufacturers offering equivalent products.

- a) Unistrut.
- b) Michigan Hanger
- c) Or equal.

B. Plumbing Piping – Condensate Drains:

- 1. Conform to ASTM F708.
- 2. Hangers for Pipe Sizes 1/2 to 1-1/2 Inch (13 to 38 mm): Carbon steel, adjustable swivel, split ring, copper plated for copper pipes.
- 3. Hangers for Cold Pipe Sizes 2 Inches (50 mm) and Over: Carbon steel, adjustable, clevis.
- 4. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.
- 5. Wall Support for Pipe Sizes to 3 Inches (76 mm): Cast iron hook.
- 6. Vertical Support: Steel riser clamp.
- 7. Floor Support for Cold Pipe: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
- 8. Cold & Hot Copper Pipe Support: Carbon steel ring, adjustable, copper plated.

C. Equipment

- 1. Support or anchor all equipment per CBC requirements.
- 2. Equipment and ducting shall be supported per SMACNA guidelines if not shown on the plans.
- 3. All equipment shall be braced to resist seismic induced motion.
- 4. All materials that are to be installed outside shall be hot dipped galvanized or powder coated epoxy.

2.02 ACCESSORIES

- A. Hanger Rods: Mild steel threaded both ends, threaded one end, or continuous threaded.

2.03 INSERTS

A. Manufacturers:

- 1. Hilti
- 2. Fee & Mason.
- 3. Grinnell.
- 4. Or equal.

- B. Inserts: Malleable iron case of galvanized steel shell and expander plug for threaded connection with lateral adjustment, top slot for reinforcing rods, lugs for attaching to forms; size inserts to suit threaded hanger rods.

2.04 ANCHORS

A. Steel Wedge Type A.

- 1. Install per ICC report requirements.
- 2. All anchors shall be tighten prior to inspection request.
- 3. Test per CBC, DSA, and structural plans requirements

B. Manufacturers:

- 1. Hilti KB-TZ (ICC ER – 1917)

2. Simpson Wedge-All (ICC ESR-1396)
3. Redhead Tru-bolt (ICC ESR-1372)

## 2.05 SEISMIC RESTRAINT

1. Materials for piping and duct seismic restraint is specified in the SMACNA manual for Seismic Restraint.

## PART 3 EXECUTION

### 3.01 INSTALLATION

- A. Install in accordance with Manufacturer's instructions.
- B. Support ducting per 2016 California Mechanical Code Requirements.
- C. Brace all piping & ducting per the requirements of the 2008 SMACNA Manual for Seismic Restraint. Seismic Hazard Level is A.

### 3.02 PIPE HANGERS AND SUPPORTS

- A. Support horizontal piping as scheduled.
- B. Install hangers to provide minimum 1/2 inch (13 mm) space between finished covering and adjacent work.
- C. Place hangers within 12 inches (300 mm) of each horizontal elbow.
- D. Use hangers with 1-1/2 inch (38 mm) minimum vertical adjustment.
- E. Support horizontal cast iron pipe adjacent to each hub, with 5 feet (1.5 m) maximum spacing between hangers.
- F. Support vertical piping at every floor. Support vertical cast iron pipe at each floor at hub.
- G. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
- H. Support riser piping independently of connected horizontal piping.
- I. Provide copper plated hangers and supports for copper piping.
- J. Design hangers for pipe movement without disengagement of supported pipe.
- K. Prime coat exposed steel hangers and supports. Refer to Section 09900. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.
- M. All pipes shall be braced to resist seismic induced motion based upon the 2008 version of the SMACNA Seismic Restraint Manual. The building is seismic hazard level A.

### 3.03 EQUIPMENT BASES AND SUPPORTS

- A. Provide templates, anchor bolts, and accessories for mounting and anchoring equipment.

### 3.04 FLASHING

- A. Provide flashing and metal counter-flashing where piping penetrates weather or waterproofed walls, floors, and roofs.

3.05	SCHEDULES MAXIMUM PIPE SIZE Inches (mm)	HANGER ROD HANGER SPACING Feet (m)	DIAMETER Inches (mm)
	1/2 to 1-1/4 (12 to 32)	6.5 (2)	3/8 (9)

END OF SECTION 15140

**SECTION 15190 - MECHANICAL IDENTIFICATION****PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Valve and automatic damper identification.
- B. Equipment identification.
- C. Piping and ductwork identification.

**1.02 RELATED SECTIONS**

- A. Section 15890 - Ductwork.

**1.03 REFERENCES**

- A. ASME A13.1 - Scheme for the Identification of Piping Systems.

**1.04 SUBMITTALS**

- A. Submit under provisions of Division 1.
- B. Submit list of wording, symbols, letter size, and color coding for mechanical identification.
- C. Submit valve and damper chart and schedule, including valve tag number, location, function, and valve manufacturer's name and model number. Submit lists of pipe and equipment to be labeled.
- D. Product Data: Provide manufacturers catalog literature for each product required, including samples of valve and damper tags, equipment identification and piping identification. .
- E. Manufacturer's Installation Instructions: Indicate special procedures, and installation.
- F. Maintenance Manuals: Provide valve and damper tag schedules for inclusion in maintenance manuals.

**1.05 PROJECT RECORD DOCUMENTS**

- A. Submit under provisions of Division 1.
- B. Record actual locations of tagged valves.

**PART 2 PRODUCTS****2.01 ACCEPTABLE MANUFACTURERS**

- A. Brady / Seton
- B. Stranco

**2.02 LABELS**

- A. Labels shall have 2 inch high letters and integral directional flow arrows. Smaller letters may be used only when space does not permit 2 inch high lettering.
- B. For piping up to 5 inch diameter, use pre-formed snap-on markers - Seton "Setmark" or equal. For piping 6" diameter and up, used pre-formed strap-on markers - Seton "Setmark" or equal.
- C. Pressure sensitive tapes are not acceptable.

#### 2.03 EQUIPMENT IDENTIFICATION

- A. Mechanical equipment shall be identified by means of nameplates permanently screw fastened to the equipment. Nameplates shall be black surface, white core laminated bakelite with engraved letters. Plates shall be a minimum of 3" long by 2" wide with white letters 3/8" high.
- B. Color code as follows:
  - 1. Yellow - HVAC equipment

### PART 3 EXECUTION

#### 3.01 VALVE AND AUTOMATIC DAMPER IDENTIFICATION

- A. Identify equipment with identical letters and/or numbers as used on drawings. Where space is available use full name of equipment. Attach nameplates in a permanent manner in a location that will be clearly visible after installation is complete.

#### 3.02 EQUIPMENT IDENTIFICATION

- A. Install tags at Fan Coils and Outdoor Units. Tags shall uniquely identify the unit, describe the area served, and related equipment.

END OF SECTION 15190



**SECTION 15245 - VIBRATION ISOLATION****PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Vibration isolation.

**1.02 PERFORMANCE REQUIREMENTS**

- A. Provide vibration isolation on motor driven equipment plus connected ductwork.

**1.03 SUBMITTALS**

- A. Submit under provisions of the General Conditions.
- B. Shop Drawings: Indicate and locate vibration isolators with static and dynamic load on each.
- C. Product Data: Provide schedule of vibration isolator type with location and load on each.
- D. Manufacturer's Installation Instructions: Indicate special procedures and setting dimensions.
- E. Manufacturer's Certificate: Certify that the isolators are properly installed and adjusted.

**PART 2 PRODUCTS****2.01 DUCT FLEXIBLE CONNECTION**

- A. Manufacturers
  - 1. Ductmate Vinyl Super Duty or equal

**PART 3 EXECUTION****3.01 INSTALLATION**

- A. Install in accordance with Manufacturer's instructions.
- B. At air handling units provide flexible duct connections at connection to air handler ducting.
- C. Provide flexible electrical connections to all equipment.

END OF SECTION 15245

**SECTION 15260 - PIPING INSULATION**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Piping insulation.
- B. Jackets and accessories.

1.02 RELATED SECTIONS

- A. Section 15245 – Vibration Isolation.

1.03 REFERENCES

- A. ASTM C177 - Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus.
- B. ASTM C195 - Mineral Fiber Thermal Insulation Cement.
- C. ASTM C335 - Steady-State Heat Transfer Properties of Horizontal Pipe Insulation.
- D. ASTM C449 - Mineral Fiber Hydraulic-setting Thermal Insulating and Finishing Cement.
- E. ASTM C518 - Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
- F. ASTM C547 - Mineral Fiber Preformed Pipe Insulation.
- G. ASTM C552-88 - Cellular Glass Block and Pipe Thermal Insulation.
- H. ASTM C585 - Inner and Outer Diameters of Rigid Thermal Insulation for Nominal Sizes of Pipe and Tubing (NPS System).
- I. ASTM C921 - Properties of Jacketing Materials for Thermal Insulation.
- J. ASTM C1136 - Flexible Low Permeance Vapor Retarders for thermal Insulation: Types I & II.
- K. ASTM E96 - Water Vapor Transmission of Materials.
- L. NFPA 255 - Surface Burning Characteristics of Building Materials.

1.04 SUBMITTALS

- A. Submit the following:
- B. Product Data: Provide product description, list of materials and thickness for each service, and locations.
- C. Manufacturer's Installation Instructions: Indicate procedures, which ensure acceptable workmanship and installation standards will be achieved.

1.05 QUALITY ASSURANCE

- A. Materials: Flame spread/smoke developed rating of 25/50 or less in accordance with NFPA

255.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect, and handle products to site under provisions of the general conditions.
- B. Deliver materials to site in original factory packaging, labeled with Manufacturer's identification, including product density and thickness.
- C. Store insulation in original wrapping and protect from weather and construction traffic.
- D. Protect insulation against dirt, water, chemical, and mechanical damage.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Maintain ambient temperatures and conditions required by Manufacturer of adhesives, mastics, and insulation cements.
- B. Maintain temperature during and after installation for minimum period of 24 hours.

PART 2 PRODUCTS

2.01 GLASS FIBER FOR INTERIOR CONDENSATE PIPING

- A. Manufacturers:
  - 1. Knauf.
  - 2. Johns-Manville.
  - 3. Or equal.
- B. Insulation: ASTM C547; rigid molded, noncombustible.
  - 1. 'K' ('ksi') value: ASTM C335, 0.24 at 75 degrees F (0.035 at 24 degrees C).
  - 2. Minimum Service Temperature: -20 degrees F (-28.9 degrees C).
  - 3. Maximum Service Temperature: 300 degrees F (150 degrees C).
  - 4. Maximum Moisture Absorption: 0.2 percent by volume.
- C. Vapor Barrier Jacket
  - 1. ASTM C921, White kraft paper reinforced with glass fiber yarn and bonded to aluminized film.
  - 2. Moisture Vapor Transmission: ASTM E96; 0.02 perm inches.
  - 3. Secure with self-sealing longitudinal laps and butt strips.
  - 4. Secure with outward clinch expanding staples and vapor barrier mastic.
- D. Tie Wire: 18 gage stainless steel with twisted ends on maximum 12 inch (300 mm) centers.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that piping has been tested before applying insulation materials.
- B. Verify that surfaces are clean, foreign material removed, and dry.

3.02 INSTALLATION

- A. Install materials in accordance with Manufacturer's instructions.
- B. On exposed piping, locate insulation and cover seams in least visible locations.
- C. For insulated pipes conveying fluids above ambient temperature:
  - 1. Provide standard jackets, with or without vapor barrier, factory applied or field applied.
  - 2. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe.
  - 3. Finish with glass cloth and adhesive.
  - 4. PVC fitting covers may be used at interior locations.
- D. Finish insulation at supports, protrusions, and interruptions.
- E. Exterior insulation shall be covered with aluminum jacket with formed aluminum covers.

3.03 TOLERANCE

- A. Substituted insulation materials shall provide thermal resistance within 10 percent at normal conditions, as materials indicated.

3.04 GLASS FIBER INSULATION SCHEDULE

PIPING SYSTEMS	PIPE SIZE Inch (mm)	THICKNESS Inch (mm)
Interior condensate piping	3/4"-1-1/2"(19.05-38.1)	1" (25.4)

END OF SECTION 15260

**SECTION 15290 - DUCTWORK INSULATION****PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Ductwork insulation.
- B. Duct Liner.
- C. Insulation jackets.

**1.02 RELATED SECTIONS**

- A. Section 15890 - Ductwork: Glass fiber ductwork.
- B. Section 15890 - Ductwork: Duct liner.

**1.03 REFERENCES**

- A. ASTM C518 - Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
- B. ASTM C553 - Mineral Fiber Blanket and Felt Insulation.
- C. NFPA 255 - Surface Burning Characteristics of Building Materials.
- D. SMACNA - HVAC Duct Construction Standards - Metal and Flexible.

**1.04 SUBMITTALS**

- A. Submit the following:
- B. Product Data: Provide product description, list of materials and thickness for each service, and locations.
- C. Manufacturer's Installation Instructions: Indicate procedures which ensure acceptable workmanship and installation standards will be achieved.

**1.05 QUALITY ASSURANCE**

- A. Materials: Flame spread/smoke developed rating of 25/50 in accordance with NFPA 255.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver, store, protect and handle products to site under provisions of the general conditions.
- B. Deliver materials to site in original factory packaging, labeled with Manufacturer's density and thickness.
- C. Store insulation in original wrapping and protect from weather and construction traffic.
- D. Protect insulation against dirt, water, chemical, and mechanical damage.

**1.07 ENVIRONMENTAL REQUIREMENTS**

- A. Maintain ambient temperatures and conditions required by Manufacturer of adhesives, mastics, and insulation cements.
- B. Maintain temperature during and after installation for minimum period of 24 hours.

## PART 2 PRODUCTS

### 2.01 GLASS FIBER, FLEXIBLE

- A. Manufacturers:
  - 1. Johns Manville Microlite
  - 2. Knauf PermaWick
  - 3. Or equal.
- B. Insulation: ASTM C553 C612; flexible, noncombustible blanket.
  - 1. 'K' ('Ksi') value: ASTM C518, 0.29 at 75 degrees F (0.042 at 24 degrees C).
  - 2. Maximum service temperature: 250 degrees F (121 degrees C).
  - 3. Maximum moisture absorption: 0.20 percent by volume.
- C. Vapor Barrier Jacket
  - 1. Kraft paper reinforced with glass fiber yarn and bonded to aluminized film 0.0032 inch (0.081 mm) vinyl.
  - 2. Moisture vapor transmission: ASTM E96; 0.04 perm.
  - 3. Secure with pressure sensitive tape.
- D. Vapor Barrier Tape
  - 1. Manufacturers:
    - a) Polyken Model 236.
    - b) Or equal.
- E. Tie Wire: Annealed steel, 16 gage (1.5 mm).

### 2.02 GLASS FIBER DUCT LINER, FLEXIBLE

- A. Manufacturers:
  - 1. Certainteed Tough Guard R with ES.
  - 2. Or equal.
- B. Insulation: ASTM C553; flexible, noncombustible blanket.
  - 1. 'K' ('Ksi') value: ASTM C518, 0.24 at 75 degrees F (0.035 at 24 degrees C).
  - 2. Maximum service temperature: 250 degrees F (121 degrees C).
- C. Adhesive
  - 1. Waterproof fire-retardant type
  - 2. Manufacturers:
    - a) Kingco/Glenkote Seal-Flex Model 11-500.
    - b) Or equal.

- D. Liner Fasteners: Galvanized steel, self-adhesive pad with integral head.

### PART 3 EXECUTION

#### 3.01 EXAMINATION

- A. Verify that ductwork has been tested before applying insulation materials.
- B. Verify that surfaces are clean, foreign material removed, and dry.

#### 3.02 INSTALLATION

##### A. Insulated ductwork:

1. Provide insulation with vapor barrier jackets.
2. Finish with tape and vapor barrier jacket.
3. Continue insulation through walls, sleeves, hangers, and other duct penetrations.
4. Insulate entire system including fittings, joints, flanges, fire dampers, flexible connections, and expansion joints.

##### B. External Duct Insulation Application:

1. Secure insulation with vapor barrier with wires and seal jacket joints with vapor barrier adhesive or tape to match jacket.
2. Install without sag on underside of ductwork. Use adhesive or mechanical fasteners where necessary to prevent sagging. Lift ductwork off trapeze hangers and insert spacers.
3. Seal vapor barrier penetrations by mechanical fasteners with vapor barrier adhesive.
4. Stop and point insulation around access doors and damper operators to allow operation without disturbing wrapping.

##### C. Plenum Liner Application:

1. Adhere insulation with adhesive for 100 percent coverage.
2. Secure insulation with mechanical liner fasteners. Refer to SMACNA Standards for spacing.
3. Seal and smooth joints.
4. Seal liner surface penetrations with adhesive.
5. Unless indicated otherwise on plans, duct dimensions indicated are net inside dimensions required for air flow. Increase duct size to allow for liner thickness.

#### 3.03 TOLERANCE

- A. Substituted insulation materials shall provide thermal resistance within 10 percent at normal conditions, as materials indicated.

3.04 FLEXIBLE GLASS FIBER DUCTWORK INSULATION SCHEDULE

DUCTWORK	THICKNESS Inch (mm)	FINISH
Supply Ducts in conditioned space	2" (76.2)	Alum. Foil
Return Ducts in conditioned space	2" (76.2)	Alum. Foil
PLENUM		
Liner	2"	

END OF SECTION 15290



**SECTION 15520 - REFRIGERANT PIPING**

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. This Section includes refrigerant piping used for air-conditioning applications.

## 1.3 PERFORMANCE REQUIREMENTS

- A. Line Test Pressure for Refrigerant R-410A:
  - 1. Suction Lines for Heat-Pump Applications: 535 psig (3689 kPa).
  - 2. Hot-Gas and Liquid Lines: 535 psig (3689 kPa).

## 1.4 SUBMITTALS

- A. Product Data: For each type of valve and refrigerant piping specialty indicated. Include pressure drop, based on manufacturer's test data, for the following:
  - 1. Piping and fittings.
  - 2. Filter dryers.
  - 3. Strainers.
- B. Operation and Maintenance Data: For refrigerant valves and piping specialties to include in maintenance manuals.

## 1.5 QUALITY ASSURANCE

- A. Welding: Qualify procedures and personnel according to ASME Boiler and Pressure Vessel Code: Section IX, "Welding and Brazing Qualifications."
- B. Comply with ASHRAE 15, "Safety Code for Refrigeration Systems."
- C. Comply with ASME B31.5, "Refrigeration Piping and Heat Transfer Components."

## 1.6 PRODUCT STORAGE AND HANDLING

- A. Store piping in a clean and protected area with end caps in place to ensure that piping interior and exterior are clean when installed.

## 1.7 COORDINATION

- A. Coordinate size and location of equipment pads, equipment supports and wall penetrations.

## PART 2 - PRODUCTS

## 2.1 COPPER TUBE AND FITTINGS

- A. Copper Tube: ASTM B 280, Type ACR.
- B. Wrought-Copper Fittings: ASME B16.22.
- C. Wrought-Copper Unions: ASME B16.22.

- D. Solder Filler Metals: ASTM B 32. Use 95-5 tin antimony or alloy HB solder to join copper socket fittings on copper pipe.
- E. Brazing Filler Metals: AWS A5.8.

## 2.2 VALVES AND SPECIALTIES

- A. Straight-Type Strainers.
- B. Moisture/Liquid Indicators:
  - 1. Body: Forged brass.
  - 2. Window: Replaceable, clear, fused glass window with indicating element protected by filter screen.
  - 3. Indicator: Color coded to show moisture content in ppm.
  - 4. Minimum Moisture Indicator Sensitivity: Indicate moisture above 60 ppm.
  - 5. End Connections: Socket or flare.
- C. Replaceable-Core Filter Dryers: Comply with ARI 730.
  - 1. Body and Cover: Painted-steel shell with ductile-iron cover, stainless-steel screws, and neoprene gaskets.
  - 2. Filter Media: 10 micron, pleated with integral end rings; stainless-steel support.
  - 3. Desiccant Media: Activated alumina or charcoal.
  - 4. Designed for reverse flow (for heat-pump applications).
  - 5. End Connections: Socket.
- D. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Atofina Chemicals, Inc.
  - 2. DuPont Company; Fluorochemicals Div.
  - 3. Honeywell, Inc.; Genetron Refrigerants.
  - 4. INEOS Fluor Americas LLC.
- E. ASHRAE 34, R-410A: Pentafluoroethane/Difluoromethane.
- F. Insulate with closed cell neoprene insulation. Install PABCO or equal aluminum jacketing (0.016) with formed fittings at exterior.

## PART 3 - EXECUTION

### 3.1 PIPING APPLICATIONS FOR REFRIGERANT R-410A

- A. Hot-Gas and Liquid Lines, and Suction Lines for Heat-Pump Applications: Copper, Type ACR, annealed- or drawn-temper tubing and wrought-copper fittings with brazed or soldered joints.

### 3.2 VALVE AND SPECIALTY APPLICATIONS

- A. Install service valves for gage taps at inlet and outlet of hot-gas bypass valves and strainers if they are not an integral part of valves and strainers.
- B. Except as otherwise indicated, install diaphragm packless valves on inlet and outlet side of filter dryers.
- C. Install moisture/liquid indicators in liquid line at the inlet of the thermostatic expansion valve or at the inlet of the evaporator coil capillary tube.
- D. Install strainers upstream from and adjacent to the following unless they are furnished as an integral assembly for device being protected:
  - 1. Compressor.

- E. Install filter dryers in liquid line between compressor and thermostatic expansion valve, and in the suction line at the compressor.
- F. Install receivers sized to accommodate pump-down charge.
- G. Install flexible connectors at compressors.

### 3.3 PIPING INSTALLATION

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems; indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations.
- B. Install refrigerant piping according to ASHRAE 15 and manufacturer's installation requirements.
- C. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.
- D. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
- E. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.
- F. Install piping adjacent to machines to allow service and maintenance.
- G. Install piping free of sags and bends.
- H. Install fittings for changes in direction and branch connections.
- I. Select system components with pressure rating equal to or greater than system operating pressure.
- J. Install piping as short and direct as possible, with a minimum number of joints, elbows, and fittings.
- K. Arrange piping to allow inspection and service of refrigeration equipment. Install valves and specialties in accessible locations to allow for service and inspection. Install access doors or panels as specified in Division 08 Section "Access Doors and Frames" if valves or equipment requiring maintenance is concealed behind finished surfaces.
- L. Install refrigerant piping in protective conduit where installed belowground.
- M. Slope refrigerant piping as follows:
  - 1. Install horizontal hot-gas discharge piping with a uniform slope downward away from compressor.
  - 2. Install horizontal suction lines with a uniform slope downward to compressor.
  - 3. Install traps and double risers to entrain oil in vertical runs.
  - 4. Liquid lines may be installed level.
- N. When brazing or soldering, remove solenoid-valve coils and sight glasses; also remove valve stems, seats, and packing, and accessible internal parts of refrigerant specialties. Do not apply heat near expansion-valve bulb.
- O. Install pipe sleeves at penetrations in exterior walls and floor assemblies.
- P. Seal penetrations through fire and smoke barriers according to Division 07 Section "Penetration Firestopping."
- Q. Install piping with adequate clearance between pipe and adjacent walls and hangers or between pipes for insulation installation.
- R. Install sleeves through floors, walls, or ceilings, sized to permit installation of full-thickness insulation.
- S. Seal pipe penetrations through exterior walls according to Division 07 Section "Joint Sealants" for materials and methods.
- T. Identify refrigerant piping and valves according to Division 23 Section "Identification for HVAC Piping and Equipment."
- U. Insulate refrigerant piping. Outdoor insulation shall be covered with aluminum jacketing with formed aluminum fittings.

### 3.4 PIPE JOINT CONSTRUCTION

- A. Ream ends of pipes and tubes and remove burrs.
- B. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
- C. Fill pipe and fittings with an inert gas (nitrogen or carbon dioxide), during brazing or welding, to prevent scale formation.
- D. Soldered Joints: Construct joints according to ASTM B 828 or CDA's "Copper Tube Handbook."
- E. Brazed Joints: Construct joints according to AWS's "Brazing Handbook," Chapter "Pipe and Tube."
  - 1. Use Type BcuP, copper-phosphorus alloy for joining copper socket fittings with copper pipe.
- F. Perform tests and inspections and prepare test reports.
- G. Tests and Inspections:
  - 1. Comply with ASME B31.5, Chapter VI.
  - 2. Test refrigerant piping, specialties, and receivers. Isolate compressor, condenser, evaporator, and safety devices from test pressure if they are not rated above the test pressure.
  - 3. Test high- and low-pressure side piping of each system separately at not less than the pressures indicated in Part 1 "Performance Requirements" Article.
    - a. Fill system with nitrogen to the required test pressure.
    - b. System shall maintain test pressure at the manifold gage throughout duration of test.
    - c. Test joints and fittings with electronic leak detector or by brushing a small amount of soap and glycerin solution over joints.
    - d. Remake leaking joints using new materials, and retest until satisfactory results are achieved.

### 3.5 SYSTEM CHARGING

- A. Charge system using the following procedures:
  - 1. Install core in filter dryers after leak test but before evacuation.
  - 2. Evacuate entire refrigerant system with a vacuum pump to 500 micrometers (67 Pa). If vacuum holds for 12 hours, system is ready for charging.
  - 3. Break vacuum with refrigerant gas, allowing pressure to build up to 2 psig (14 kPa).
  - 4. Charge system with a new filter-dryer core in charging line.

### 3.6 ADJUSTING

- A. Adjust thermostatic expansion valve to obtain proper evaporator superheat.
- B. Adjust high- and low-pressure switch settings to avoid short cycling in response to fluctuating suction pressure.
- C. Adjust set-point temperature of air-conditioning or chilled-water controllers to the system design temperature.
- D. Perform the following adjustments before operating the refrigeration system, according to manufacturer's written instructions:
  - 1. Open shutoff valves in condenser water circuit.
  - 2. Verify that compressor oil level is correct.
  - 3. Open compressor suction and discharge valves.
  - 4. Open refrigerant valves except bypass valves that are used for other purposes.
  - 5. Check open compressor-motor alignment and verify lubrication for motors and bearings.

- E. Replace core of replaceable filter dryer after system has been adjusted and after design flow rates and pressures are established.

END OF SECTION 15520

**SECTION 15623 – FAN COIL**

## PART 1 GENERAL

## 1.01 SECTION INCLUDES

- A. Fan Coil.
- B. Controls.

## 1.02 RELATED SECTIONS

- A. Section 15290 - Ductwork Insulation: Duct Liner.
- B. Section 15885 - Air Cleaning.

## 1.04 REFERENCES

- A. ANSI/ASHRAE 15 - Safety Code for Mechanical Refrigeration.
- B. ANSI/ASHRAE - 90A - Energy Conservation in New Building Design.
- C. ANSI/ASHRAE - 103 - Heating Seasonal Efficiency of Central Furnaces and Boilers, Methods of Testing.
- D. ANSI/NEMA MG 1 - Motors and Generators.
- E. ANSI/NFPA 90B - Installation of Warm Air Heating and Air Conditioning Systems.
- F. ANSI/UL 207 - Refrigerant - Containing Components and Accessories, Non-Electrical.
- G. ANSI/UL 303 - Refrigeration and Air-Conditioning Condensing, and Air-Source Heat Pump Equipment.
- H. ARI 210/240 - Unitary Air-Conditioning and Air-Source Heat Pump Equipment.
- I. ARI 270 - Sound Rating of Outdoor Unitary Equipment.
- J. ARI 520 - Positive Displacement Refrigerant Compressors, Compressor Units and Condensing Units.
- K. ASHRAE 52 - Method of Testing Air Cleaning Devices Used in General Ventilation for Removing Particulate Matter.
- L. FS F-F 310A - Filter, Air Conditioning: Viscous Impingement and Dry Types, Replaceable.
- M. NFPA 90A - Installation of Air Conditioning and Ventilating Systems.

## 1.05 SUBMITTALS

- A. Submit shop drawings under provisions of the general requirements.
- B. Submit shop drawings indicating assembly, required clearances, and location and size of field connections.

- C. Product Data: Provide rated capacities, weights, accessories, electrical nameplate data, and wiring diagrams.
- D. Design data: Indicate refrigerant pipe sizing.
- E. Manufacturer's Installation Instructions: Indicate rigging, assembly, and installation instructions.

#### 1.06 OPERATION AND MAINTENANCE DATA

- A. Submit operation data under provisions of the general requirements.
- B. Include manufacturer's descriptive literature, operating instructions, installation instructions, maintenance and repair data, and parts listing.

#### 1.07 QUALITY ASSURANCE

- A. Perform Work in accordance with ANSI/ASHRAE 15.
- B. Maintain one copy of each document on site.

#### 1.08 WARRANTY

- A. Provide three year warranty under provisions of the general requirements.
- B. Warranty: Include coverage for furnace.

#### 1.09 EXTRA MATERIALS

- A. See Section 15885 for extra filter requirements.

### PART 2 PRODUCTS

#### 2.01 MANUFACTURERS

- A. Mitsubishi
  1. Multiposition heat pump type with wired controller Model PACYT53CRAU.
  2. Outdoor unit provides power for indoor unit.

### PART 3 EXECUTION

#### 3.01 EXAMINATION

- A. Verify that floors are ready for installation of units.
- B. Verify that proper power supply is available for Fan Coil.

#### 3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install to NFPA 90A and ANSI/NFPA 90B.
- C. Clean return plenum prior to delivery to owner.

- D. Seal all fan coil connection to ductwork, and plenums.
- E. Secure fan coil to resist seismic motion.
- F. Install filter box in a manner to allow for filter changing.
- G. Connect refrigerant piping to unit per Manufacturer's requirements
- H. Install condensate piping with p- trap.
- I. Install flexible connections to ducting.
- J. Install thermostat wiring in conduit or wire mold at exposed locations.

END OF SECTION 15623



**SECTION 15671 - SPLIT-SYSTEM HEAT PUMP**

## PART 1 GENERAL

## 1.01 SECTION INCLUDES

- A. Split-System Heat Pump.
- B. Charge of refrigerant and oil.
- C. Controls and control connections.
- D. Refrigerant piping connections.
- E. Motor starters.
- F. Electrical power connections.

## 1.02 RELATED SECTIONS

- A. Section 15260 - Piping Insulation.
- B. Section 15570 - Refrigeration Piping.
- C. Section 15623 – Fan Coil.
- D. Division 16 - Electrical.

## 1.03 REFERENCES

- A. ANSI/ASHRAE 15 - Safety Code for Mechanical Refrigeration.
- B. ANSI/ASHRAE 90A - Energy Conservation in new Building Design.
- C. ANSI/NEMA MG 1 - Motors and Generators.
- D. ANSI/UL 207 - Refrigerant-Containing Components and Accessories, Non-Electrical.
- E. ANSI/UL 303 - Refrigeration and air-conditioning Condensing Equipment.
- F. ANSI/UL 465 - Central Cooling Air Conditioners.
- G. ARI 210/240 - Unitary Air-Conditioning Equipment.
- H. ARI 520 - Positive Displacement Refrigerant Compressors, Compressor Units and Condensing Units.
- I. ASHRAE 14 - Methods of Testing for Rating Positive Displacement Condensing Units.
- J. ARI 270 - Sound Rating of Outdoor Unitary Equipment.

## 1.04 SUBMITTALS

- A. Submit shop drawings under provisions of the general conditions.

- B. Submit shop drawings indicating components, assembly, dimensions, weights and loadings, required clearances, and location and size of field connections. Include schematic layouts showing condensing units, cooling coils, refrigerant piping, and accessories required for complete system.
- C. Submit product data under provisions of the general conditions.
- D. Submit product data indicating rated capacities, weights specialties and accessories, electrical nameplate data, and wiring diagrams.
- E. Submit design data indicating pipe and equipment sizing.
- F. Submit manufacturer's installation instructions.

#### 1.05 OPERATION AND MAINTENANCE DATA

- A. Submit operation and maintenance data under provisions of the general conditions.
- B. Include start-up instructions, maintenance instructions, parts lists, controls, and accessories.

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site under provisions of the general conditions.
- B. Store and protect products under provisions of the general conditions.
- C. Comply with manufacturer's installation instructions for rigging, unloading, and transporting units.
- D. Protect units on site from physical damage. Protect coils.

#### 1.07 WARRANTY

- A. Provide manufacturer's warranty under provisions of the general conditions.
- B. Warranty: Include coverage for refrigerant compressors.

### PART 2 PRODUCTS

#### 2.01 MANUFACTURERS

- A. Mitsubishi
- 1. Heat pump type, R410-a refrigerant, relay kit, coil coating.

### PART 3 EXECUTION

#### 3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Provide for connection to electrical service. Provide connection to refrigeration piping system. Refer to Section 15185. Comply with ANSI/ASHRAE 15. Provide power and control wiring for indoor unit.

- C. Install units on new reinforced concrete slab over sand. Construct reinforced block wall enclosure with steel gate. Block wall shall be finished with La Habra smooth plaster. After curing paint wall with Dunn Edwards paint. Construct gate per plans. Slab shall slope to gate opening at 1%. Slab shall have smooth finish. Block wall shall be straight and plumb.

END OF SECTION 15671

**SECTION 15885 - AIR CLEANING**

## PART 1 GENERAL

## 1.01 WORK INCLUDED

- A. Disposable panel filters.

## 1.02 RELATED WORK

- A. Section 15623 – Fan Coil.

## 1.03 REFERENCES

- A. ANSI/UL 586 - Test Performance of High Efficiency Particulate, Air Filter Units.
- B. ANSI/UL 900 - Test Performance of Air Filter Units.
- C. ASHRAE 52 - Method of Testing Air Cleaning Devices Used in General Ventilation for Removing Particulate Matter.

## 1.04 QUALITY ASSURANCE

- A. Filter media shall be ANSI/UL 900 listed, Class 1 or Class 2, as approved by local authorities.
- B. Provide all filters as product of one Manufacturer.
- C. Assemble filter components to form filter banks from products of one Manufacturer.

## 1.05 SUBMITTALS

- A. Submit product data under provisions of Division 1 on filter media, filter performance data, filter assembly and filter frames.

## 1.06 OPERATION AND MAINTENANCE DATA

- A. Submit operation and maintenance data under provisions of Division 1.
- B. Include instructions for operation, changing, and periodic cleaning.

## 1.07 EXTRA STOCK

- A. Provide one set of each size disposable panel filters under provisions of Division 1 for every unit installed, in addition to one set of temporary filters to be installed at startup, one set after startup, and another set to be installed by contractor 30 days after startup.

## 1.08 DELIVERY, STORAGE, AND HANDLING

- A. Store and protect products under provisions of Division 1.

## PART 2 PRODUCTS

## 2.01 ACCEPTABLE MANUFACTURERS

- A. GLASSFLOSS MR-8

## B. FARR

## 2.02 DISPOSABLE, EXTENDED AREA PANEL FILTERS

- A. Media: Pleated, lofted, non-woven, reinforced cotton and synthetic fabric; supported and bonded to welded wire grid; enclosed in cardboard frame.
- B. Rating: ASHRAE 52; 20 percent dust spot efficiency, 85 percent weight arrestance; 500 FPM (2.54 m/sec) face velocity, 0.30 inch WG (75 Pa) initial resistance, 1.0 inch WG (250 Pa) recommended final resistance.

## 2.03 FILTER FRAMES

- A. General: Fabricate filter frames and supporting structures of 16 gage (1.50 mm) galvanized steel or extruded aluminum T-section construction with necessary gasketing between frames and walls.

## 2.04 BAG FILTERS

- A. Farr P-series. 85% efficiency.

## PART 3 EXECUTION

## 3.01 INSTALLATION

- A. Install air cleaning devices in accordance with Manufacturer's instructions.
- B. Prevent passage of unfiltered air around filters with felt, rubber, or neoprene gaskets.
- C. Do not operate fan system until temporary filters are in place. After startup, replace temporary filters with permanent filters. In addition, one month after completion of construction, replace all filters.
- D. Provide one spare set of filters for every unit to owner in addition to the filters described in item C.

END OF SECTION 15885

**SECTION 15890 - DUCTWORK****PART 1 GENERAL****1.01 WORK INCLUDED**

- A. Low pressure ducts.

**1.02 RELATED WORK**

- A. Section 15290 - Duct Insulation.
- B. Section 15910 - Ductwork Accessories.
- C. Section 15936 - Air inlets and Outlets.
- D. Section 15990 - Testing, Adjusting and Balancing.

**1.03 REFERENCES**

- A. SMACNA 2006 Duct Construction Standards
- B. ASHRAE - Handbook 1996 Equipment; Chapter 16 - Duct Construction.
- C. ASTM A 90 - Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles.
- D. ASTM A 525 - General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
- E. ASTM A 527 - Steel Sheet, Zinc-Coated (Galvanized) by Hot-Dip Process, Lock Forming Quality.
- F. NFPA 90A - Installation of Air Conditioning and Ventilating Systems.
- G. NFPA 90B - Installation of Warm Air Heating and Air Conditioning Systems.
- H. SMACNA - Low Pressure Duct Construction Standards.
- I. UL 181 - Factory-Made Air Ducts and Connectors.

**1.04 DEFINITIONS**

- A. Duct Sizes: Inside clear dimensions. For lined ducts, maintain sizes inside lining.
- B. Low Pressure: Three pressure classifications: 1/2 inch WG (125 Pa) positive or negative static pressure and velocities less than 2,000 fpm (10 m/sec); 1 inch WG (250 Pa) positive or negative static pressure and velocities less than 2,500 fpm (12.7 m/sec) and 2 inch WG (500 Pa) positive or negative static pressure and velocities less than 2,500 fpm (12.7 m/sec).

**1.05 REGULATORY REQUIREMENTS**

- A. Construct ductwork to NFPA 90A and NFPA 90B standards.

**1.06 SUBMITTALS**

- A. Submit shop drawings and product data under provisions of Division 1.
- B. Indicate duct fittings, particulars such as gages, sizes, welds, and configuration prior to start of work.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site under provisions of Division 1.
- B. Store and protect products under provisions of Division 1.

### PART 2 PRODUCTS

#### 2.01 ACCEPTABLE MANUFACTURERS

- A. Omni Duct Systems (galvanized ductwork)
- B. Casco Silent Flex II, or JP Lamborne AMR or AMF (acoustical flex at diffusers and return air grilles).

#### 2.02 MATERIALS

- A. Steel Ducts: ASTM A525 galvanized steel sheet, lock-forming quality, having zinc coating of 1.25 oz per sq ft (382 g/sq m) for each side in conformance with ASTM A90.
- B. Fasteners: Rivets, bolts, or sheet metal screws.
- C. Sealant: Non-hardening, water resistant, fire resistive, compatible with mating materials; liquid used alone or with tape, or heavy mastic. Sealant and duct tape shall comply with State of California Title 24 requirements.
- D. Hanger Rod: Steel, galvanized; threaded both ends, threaded one end, or continuously threaded.
- E. Acoustical Flex Duct.
- F. Rectangular Ductwork – All rectangular ducts longer than 23" on the largest side shall be connected with Ducmate Industries Rectangular Duct Connection System. All exterior ducts shall be connected with Ducmate Industries Rectangular Duct Connection System #35. Provide submittal.

#### 2.03 LOW PRESSURE DUCTWORK

- A. Fabricate and support in accordance with 2006 SMACNA Low Pressure Duct Construction Standards and ASHRAE handbooks, except as indicated. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.
- B. Size round ducts installed in place of rectangular ducts in accordance with ASHRAE table of equivalent rectangular and round ducts. No variation of duct configuration or sizes permitted except by written permission.
- C. Construct T's, bends, and elbows with radius of not less than 1-1/2 times width of duct on centerline. Where not possible and where rectangular elbows are used, provide air foil turning vanes. Where acoustical lining is indicated, provide turning vanes of perforated metal with glass fiber insulation.

- D. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible. Divergence upstream of equipment shall not exceed 30 degrees; convergence downstream shall not exceed 45 degrees.
- E. Provide easements where low pressure ductwork conflicts with piping and structure. Where easements exceed 10 percent duct area, split into two ducts maintaining original duct area.
- F. Use crimp joints with or without bead for joining round duct sizes 8 inch (200 mm) and smaller with crimp in direction of air flow. Seal all joints.
- G. Use double nuts and lock washers on threaded rod supports.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.
- B. Use stainless steel or painted galvanized steel for ductwork exposed to view and stainless steel or galvanized steel for ducts where concealed.
- C. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.
- D. Flexible acoustic ductwork shall be used for the final connections (max 6 ft) at HVAC system diffusers and rags in concealed areas only.
- E. Support vertical ducting per SMACNA details.

3.02 DUCTWORK APPLICATION SCHEDULE

AIR SYSTEM

MATERIAL

Low Pressure Supply  
Return and Relief

Steel  
Steel

General Exhaust  
Final Connections  
per Sec. 3.01d above

Steel  
Acoustic Flex

END OF SECTION 15890



**SECTION 15910 - DUCTWORK ACCESSORIES****PART 1 GENERAL****1.01 WORK INCLUDED**

- A. Volume control dampers.
- B. Backdraft dampers.
- C. Air turning devices.
- D. Flex Connections

**1.02 RELATED WORK**

- A. Section 15245 - Vibration Isolation.
- B. Section 15890 - Ductwork.

**1.03 REFERENCES**

- A. NFPA 90A - Installation of Air Conditioning and Ventilating Systems.
- B. SMACNA - Low Pressure Duct Construction Standards.

**1.04 SUBMITTALS**

- A. Submit shop drawings and product data under provisions of Division 1.
- B. Provide shop drawings for shop fabricated assemblies indicated, including volume control dampers duct access doors. Provide product data for hardware used.

**PART 2 PRODUCTS****2.01 VOLUME CONTROL DAMPERS.**

- A. Fabricate in accordance with SMACNA Low Pressure Duct Construction Standards, and as indicated.
- B. Fabricate single blade dampers for duct sizes to 9-1/2 x 30 inch (240 x 760 mm). 12 x 48 inch (300 x 1220 mm).
- C. Fabricate multi-blade damper of opposed blade pattern with maximum blade sizes 12 x 72 inch (300 x 1825 mm). Assemble center and edge crimped blades in prime coated or galvanized channel frame with suitable hardware.
- D. Except in round ductwork 12 inches (300 mm) and smaller, provide end bearings. On multiple blade dampers, provide oil-impregnated nylon or sintered bronze bearings.
- E. Provide locking, indicating quadrant regulators on single and multi-blade dampers. Where rod lengths exceed 30 inches (750 mm) provide regulator at both ends.
- F. Provide access doors or Young Regulators at concealed locations. Paint to match adjacent surfaces. Access doors at restrooms shall be stainless steel.

## 2.02 AIR TUNING DEVICES

- A. Multi-blade device with blades aligned in short dimension; steel or aluminum construction; with individually adjustable blades.
- B. Install airfoil vanes in ducting larger than 18" in any dimension.
  - 1. Manufacturer
    - a) Aerodyne HEP Turning Vanes

## 2.03 FLEXIBLE DUCT CONNECTIONS

- A. ACCEPTABLE MANUFACTURERS:
  - 1. Ductmate.
    - a) Interior AHU'S – Vinyl Super Duty.
  - 2. Locations – Install at all ductwork connections to AHU's and SHC's.

## PART 3 EXECUTION

## 3.01 INSTALLATION

- A. Install accessories in accordance with Manufacturer's instructions.
- B. Provide balancing dampers at points on low pressure supply, return, and exhaust systems where branches are taken from larger ducts as required for air balancing. Use splitter dampers only where indicated.
- C. Provide flexible connections immediately adjacent to equipment in ducts associated with fans and motorized equipment, including furnaces.
- D. Provide duct access doors for inspection and cleaning before and after filters, coils, fans, at fire dampers, and elsewhere as indicated. Provide minimum 8 x 8 inch (200 x 200 mm) size for hand access, 18 x 18 inch (450 x 450 mm) size for shoulder access, and as indicated.
- E. Provide duct test holes where indicated and as required for testing and balancing purposes.

## 3.02 TESTING

- A. All control functions shall be tested for performance. This testing shall be done after all programming and graphics have been completed and installed on the owner's computer system.
- B. Reports shall be provided that details each element, including but not limited to sensors, fan coils, controllers, and its verified performance.
- C. After the reports are provided and reviewed, the engineer and owner shall witness test with controls contractor the operation of the system.

END OF SECTION 15910

**SECTION 15936 - AIR OUTLETS AND INLETS****PART 1 GENERAL****1.01 WORK INCLUDED**

- A. Diffusers.
- B. Registers/grilles.

**1.02 RELATED WORK**

- A. Section 15990 - Testing, Adjusting and Balancing.

**1.03 REFERENCES**

- A. ADC 1062 - Certification, Rating and Test Manual.
- B. AMCA 500 - Test Method for Louvers, Dampers and Shutters.
- C. ANSI/NFPA 90A - Installation of Air Conditioning and Ventilating Systems.
- D. ARI 650 - Air Outlets and Inlets.
- E. ASHRAE 70 - Method of Testing for Rating the Air Flow Performance of Outlets and Inlets.
- F. SMACNA - Low Pressure Duct Construction Standard.

**1.04 QUALITY ASSURANCE**

- A. Test and rate performance of air outlets and inlets in accordance with ADC Equipment Test Code 1062 and ASHRAE 70.
- B. Test and rate performance of louvers in accordance with AMCA 500.

**1.05 REGULATORY REQUIREMENTS**

- A. Conform to ANSI/NFPA 90A.

**1.06 SUBMITTALS**

- A. Submit product data under provisions of Division 1.
- B. Provide product data for items required for this project.
- C. Submit schedule of outlets and inlets indicating type, size, location, application, and noise level.
- D. Review requirements of outlets and inlets as to size, finish, and type of mounting prior to submitting product data and schedules of outlets and inlets.
- E. Submit Manufacturer's installation instructions under provisions of Division 1.

**PART 2 PRODUCTS**

2.01 CEILING DIFFUSERS AND RETURN REGISTERS/GRILLES.

- A. Manufacturers:
  - 1. See equipment schedule on plans.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install items in accordance with Manufacturer's instructions.
- B. Check location of outlets and inlets and make necessary adjustments in position to conform with features, symmetry, and lighting arrangement.
- C. Install diffusers to ductwork with air tight connection.
- D. Provide balancing dampers on duct take-off to diffusers, and grilles and registers, regardless of whether dampers are specified as part of the diffuser, or grille and register assembly.
- E. Paint ductwork visible behind air outlets and inlets matte black. Refer to Section 09900.
- F. All air outlets shall be factory painted unless otherwise noted at the Air Distribution Schedule.

3.02 AIR OUTLET AND INLET SCHEDULE

- A. See equipment schedule on plans

END OF SECTION 15936

**SECTION 15990 - TESTING, ADJUSTING, AND BALANCING**

## PART 1 GENERAL

## 1.01 SECTION INCLUDES

- A. Testing, adjustment, and balancing of air systems.
- B. Measurement of final operating condition of HVAC systems.

## 1.02 RELATED SECTIONS

- A. Section 15623 – Fan Coil

## 1.03 REFERENCES

- A. AABC - National Standards for Field Measurement and Instrumentation, Total System Balance.
- B. ASHRAE - 1984 Systems Handbook: Chapter 37, Testing, Adjusting and Balancing.
- C. NEBB - Procedural Standards for Testing, Balancing and Adjusting of Environmental Systems.

## 1.04 SUBMITTALS

- A. Submit name of adjusting and balancing agency for approval within 30 days after award of Contract.
- B. Submit test reports as a submittal under provisions of Division 1.
- C. Submit test reports under provisions of Division 1.
- D. Prior to commencing work, submit draft reports indicating adjusting, balancing, and equipment data required.
- E. Submit draft copies of report for review prior to final acceptance of Project. Provide final copies for Engineer/Engineer and for inclusion in operating and maintenance manuals.
- F. Provide reports in soft cover, letter size, 3-ring binder manuals, complete with index page and indexing tabs, with cover identification at front and side. Include set of reduced drawings with air outlets and equipment identified to correspond with data sheets, and indicating thermostat locations.
- G. Include detailed procedures, agenda, sample report forms.

## 1.05 REPORT FORMS

- A. Submit reports on AABC National Standards for Total System Balance forms.
- B. Forms shall include the following information:
  - 1. Title Page:
    - a) Company name
    - b) Company address
    - c) Company telephone number
    - d) Project name

- e) Project location
  - f) Project Engineer
  - g) Project Engineer
  - h) Project Contractor
  - i) Project altitude
2. Instrument List:
- a) Instrument
  - b) Manufacturers
  - c) Model
  - d) Serial number
  - e) Range
  - f) Calibration date
3. Air Moving Equipment:
- a) Location
  - b) Manufacturers
  - c) Model
  - d) Air flow, specified and actual
  - e) Return air flow, specified and actual
  - f) Outside air flow, specified and actual
  - g) Total static pressure (total external), specified and actual
  - h) Inlet pressure
  - i) Discharge pressure
  - j) Fan RPM
4. Exhaust Fan Data:
- a) Location
  - b) Manufacturers
  - c) Model
  - d) Air flow, specified and actual
  - e) Total static pressure (total external), specified and actual
  - f) Inlet pressure
  - g) Discharge pressure
  - h) Fan RPM
5. Return Air/Outside Air Data:
- a) Identification/location
  - b) Design air flow
  - c) Actual air flow
  - d) Design return air flow
  - e) Actual return air flow
  - f) Design outside air flow
  - g) Actual outside air flow
6. Electric Motors:
- a) Manufacturers
  - b) HP/BHP.
  - c) Phase, voltage, amperage; nameplate, actual, no load.
  - d) RPM
  - e) Service factor
  - f) Starter size, rating, heater elements
7. Air Distribution Test Sheet:
- a) Air terminal number

- b) Room number/location
- c) Terminal type
- d) Terminal size
- e) Area factor
- f) Design velocity
- g) Design air flow
- h) Test (final) velocity
- i) Test (final) air flow
- j) Percent of design air flow

#### 1.06 PROJECT RECORD DOCUMENTS

- A. Submit record documents under provisions of Division 1.
- B. Accumulate the following and deliver to the Owner's representative prior to final acceptance of the work
  - 1. Record (As-Built) Drawings: Furnish in accordance with Section 706.
  - 2. Operation and Maintenance Manual: Furnish an operation and maintenance manual covering the stipulated mechanical systems and equipment in accordance with Section 01700. Furnish one complete manual prior to the time that system or equipment tests are performed. Furnish the remaining manuals before the contract is completed. The following identification shall be inscribed on the cover:

OPERATION AND MAINTENANCE MANUAL  
 PROJECT TITLE.....  
 CONTRACTOR

Provide a table of contents. Insert tab sheets to identify discrete subjects. Instruction sheets shall be legible and easily understood, with large sheets of drawings folded in. The manual shall be complete in all respects for all materials, piping, valves, devices and equipment, controls, accessories and appurtenances stipulated. Include as a minimum the following:

- a) Updated approved materials list, shop drawings, catalog information, manufacturer's operations manuals for all fixtures and equipment indicated on plans and described in specifications.
- b) System layouts showing piping, valves, and controls.
- c) Wiring and control diagrams with data to explain detailed operation and control of each component.
- d) A control sequence describing start-up, operation and shutdown.
- e) Detailed description of the function of each principal component of the system.
- f) Procedure for starting.
- g) Procedure for operating.
- h) Shut-down instructions.

- i) Installation instructions.
- j) Adjustments, maintenance and overhaul instructions.
- k) Lubrication schedule including type, grade, temperature range, and frequency.
- l) Safety precautions, diagrams and illustrations.
- m) Test procedures.
- n) Performance data.
- o) Parts lists, with manufacturer's names and catalog numbers.
- p) Preventive maintenance schedule.
- q) Service organization with name, address and telephone numbers.
- r) Valve identification chart and schedule.
- s) ASME certificates.
- t) Air balance report.

#### 1.07 QUALITY ASSURANCE

- A. Agency shall be company specializing in the adjusting and balancing of systems specified in this Section.
- B. Total system balance shall be performed in accordance with AABC National Standards for Field Measurement and Instrumentation, Total System Balance.

#### 1.08 PRE-INSTALLATION CONFERENCE

- A. Convene a conference one week prior to commencing work of this Section.

### PART 2 EXECUTION

#### 2.01 EXAMINATION

- A. Before commencing work, verify that systems are complete and operable. Ensure the following:
  - 1. Equipment and pumps are operable and in a safe and normal condition.
  - 2. Temperature control systems are installed complete and operable.
  - 3. Proper thermal overload protection is in place for electrical equipment.
  - 4. Final filters are clean and in place. If required, install temporary media in addition to final filters.
  - 5. Duct systems are clean of debris.
  - 6. Correct fan rotation.



7. Fire and volume dampers are in place and open.
8. Coil fins have been cleaned and combed.
9. Access doors are closed and duct end caps are in place.
10. Air outlets are installed and connected.
11. Duct system leakage has been minimized.

- B. Report any defects or deficiencies noted during performance of services to Engineer/Engineer.
- C. Promptly report abnormal conditions in mechanical systems or conditions which prevent system balance.
- D. If, for design reasons, system cannot be properly balanced, report as soon as observed.
- E. Beginning of work means acceptance of existing conditions.

#### 2.02 PREPARATION

- A. Provide instruments required for testing, adjusting, and balancing operations. Make instruments available to Engineer/Engineer to facilitate spot checks during testing.
- B. Provide additional balancing devices as required.

#### 2.03 INSTALLATION TOLERANCES

- A. Adjust air handling systems and hydronic systems to plus or minus 5 percent for supply systems and plus or minus 10 percent for return and exhaust systems from figures indicated.

#### 2.04 ADJUSTING

- A. Adjust work under provisions of Division 1.
- B. Recorded data shall represent actually measured, or observed condition.
- C. Permanently mark settings of dampers, and other adjustment devices allowing settings to be restored. Set and lock memory stops.
- D. After adjustment, take measurements to verify balance has not been disrupted or that such disruption has been rectified.
- E. Leave systems in proper working order, replacing belt guards, closing access doors, closing doors to electrical switch boxes, and restoring thermostats to specified settings.
- F. At final inspection, recheck random selections of data recorded in report. Recheck points or areas as selected and witnessed by the Owner.

#### 2.05 AIR SYSTEM PROCEDURE

- A. Adjust air handling and distribution systems and hydronic systems to provide required or design supply, return, exhaust air quantities, and gpm flowrates.
- B. Make air quantity measurements in ducts by Pitot tube traverse of entire cross sectional area of duct.

- C. Measure air quantities at air inlets and outlets.
- D. Adjust distribution system to obtain uniform space temperatures free from objectionable drafts and noise.
- E. Use volume control devices to regulate air quantities only to extent that adjustments do not create objectionable air motion or sound levels. Effect volume control by duct internal devices such as dampers and splitters.
- F. Vary total system air quantities by adjustment of fan speeds. Provide drive changes required. Vary branch air quantities by damper regulation.
- G. Provide system schematic with required and actual air quantities recorded at each outlet or inlet.
- H. Measure static air pressure conditions on air supply units, including filter and coil pressure drops, and total pressure across the fan. Make allowances for 50 percent loading of filters.
- I. Adjust outside air automatic dampers, outside air, return air, and exhaust dampers for design conditions.

#### 2.06 VERIFICATION

- A. After air balance is complete promptly provide within 5 working days the air balance report to engineer for review.
- B. Provide technician with air balance instrument for verification of report. The engineer and owner shall require up to 10% of the elements to be retested to verify the report and operation of the various systems. If any serious discrepancy is discovered, another 10% will be tested until no discrepancy is found.

END OF SECTION 15990

**SECTION 16000 – GENERAL PROVISIONS**

## PART ONE GENERAL

- A. The general contract provisions of Section 1000 apply to this section and take precedent over this section in case of conflict.

## 1.01 GENERAL PROVISIONS

- A. This division supplements the applicable requirements of other divisions.

## 1.02 DEFINITIONS

- A. For the purposes of Division 16000, the following definitions apply:
  1. Provide: Furnish and install.
  2. Indicated: As shown on the drawings or specified herein.
  3. Circuit Designation: Panel designation and circuit number, i.e., LA-13.
  4. Approved equal: Approved by the engineer of record as equal in his sole determination.

## 1.03 SCOPE OF WORK

- A. The Specifications for Work of Division 16000 include, but are not limited to the following sections:
  - 16000–General Provisions
  - 16050–Basic Electrical Materials and Methods
  - 16060–Minor Electrical Demolition for Remodeling
  - 16111–Conduits
  - 16120–Conductors
  - 16130–Electrical Boxes
  - 16133–Terminal Cabinets
  - 16140–Wiring Devices
  - 16142–Nameplates and Warning Signs
  - 16163–Distribution Panelboards
  - 16164–Branch Circuit Panelboards
  - 16170–Disconnects
  - 16190–Support Devices
  - 16450–Grounding
  - 16901–General Control Devices
  - 16920–Motor Control
- B. Work Included: All labor, materials, appliances, tools, equipment, facilities, transportation and services necessary for and incidental to performing all operations in connection with furnishing, delivery and installation of the work of this division, complete, as shown on the drawings and/or specified herein. Work includes, but is not necessarily limited to the following:
  1. Examine all divisions for related work required to be included as work under this division.
  2. General provisions for electrical work.

3. Site observation including existing conditions.

C. Related Work Specified Elsewhere but included in the scope of work:

1. Motors and their installation.
2. Control wiring and conduit for heating, ventilating and air conditioning.

D. Work Not In Contract (N.I.C.):

1. Telephone instruments.

E. Coordination

1. The following supplements are additional General Requirements pertaining to work of this Division. Provisions of Division 1 - General Requirements shall remain in effect.

- a) Coordinate work of various sections of Division 16 and 17.
- b) Coordinate work of this Division 16 with work of Divisions 2 through 15.

#### 1.04 REFERENCE STANDARDS

- A. American National Standards Institute (ANSI).
- B. Association of Edison Illuminating Companies (AEIC).
- C. Electrical Testing Laboratories (ETL).
- D. Illuminating Engineering Society (IES).
- E. Institute of Electrical and Electronic Engineers (IEEE).
- F. Insulated Cable Engineers Association (ICEA).
- G. National Electrical Manufacturers Association (NEMA).
- H. National Fire Protection Association (NFPA).
- I. Underwriters Laboratories, Inc. (UL).
- J. California State Fire Marshal (CSFM).
- K. California Energy Commission (CEC) Title 24.

#### 1.05 QUALITY ASSURANCE

- A. Regulations: All the electrical equipment and materials, including their installations, shall conform to the following applicable latest codes and standards:
1. California Electric Code, Latest Adopted Edition (NEC), 2004 unless a more current version has been adopted.
  2. Local and State Fire Marshal.

3. Occupational Safety and Health Act (OSHA).
  4. Requirements of the Serving Utility Company.
  5. Local Codes and Ordinances.
  6. Requirements of the Office of the California State Architect (OSA).
  7. California Administrative Code, Title 8, Chapter 4, Industrial Safety Orders.
  8. California Administrative Code, Title 24.
  9. County of Los Angeles Codes and Regulations.
- B. Variances: In instances where two or more codes are at variance, the most restrictive requirement shall apply. In instances where plans and specifications are at variance or conflict the most restrictive requirement shall apply. Contractor shall be responsible for all his associated work and materials and also the work and materials of related or affected trades.
- C. Contractor's Expense: Obtain and pay for all required bonds, insurance, licenses, and pay for all taxes, fees and utility charges required for the electrical work.
- D. Testing and Adjustment:
1. Perform all necessary tests required to ascertain that the electrical system has been properly installed, that the power supply to each item of equipment is correct, and that the system is free of grounds, ground faults, and open circuits, that all motors are rotating in the proper directions, and such other tests and adjustments as may be required for the proper completion and operation of the electrical system. Contractor shall provide a copy of all test reports to prove these tests have been performed.
  2. If, during the course of testing, it is found that system imbalance is in excess of 20%, rearrange single-pole branch circuit in lighting and receptacle panels to bring system balance to within 20% on all phases. Record all such changes on the typewritten panelboard schedule and submit a summary of changes to the Engineer on the record drawings.

#### 1.06 SUBMITTALS

- A. Procedure: In accord with Section 01330.
- B. Shop drawings: Detailed shop drawings for the following equipment:
1. Plug-in busways.
  2. Distribution panelboards.
  3. Branch circuit panelboards.
  4. Circuit breaker load center.
  5. Cable trays and accessories.

6. Lightning protection.
  7. Uninterruptible power supplies.
  8. Switchboards.
  9. Ground fault protection.
  10. Ground fault detection and alarm.
  11. Highway and roadway light poles.
  12. Dimmer cabinets.
  13. Emergency generators.
  14. Fire alarm system.
  15. Vault alarm system.
  16. Motor control centers.
  17. Contactors and cabinet.
  18. Security system.
  19. Low voltage cabling riser diagram
- C. Product data: Detailed manufacturer's data for:
1. Underfloor duct.
  2. Cable tray.
  3. Cabinets.
  4. Concrete pull boxes.
  5. Disconnects.
  6. Individually mounted circuit breakers.
  7. Auto-transfer switches.
  8. Transformers.
  9. Capacitors.
  10. Lighting fixtures and associated equipment including control.
  11. Generators.
  12. AM & CS door alarms.

13. Electric door strikes.
  14. Audio systems.
  15. Gel-filled wire connectors.
- D. Test results for the following:
1. Generator systems.
  2. Fire alarm system.
  3. Vault alarm system.
  4. Circuit breakers.
  5. Grounding systems.
  6. Cables.
- E. Include sufficient information to indicate complete compliance with Contract Documents. Include illustrations, catalog cuts, installation instructions, drawings, and certifications. On each sheet show manufacturer's name or trademark.
- F. Operating, maintenance, and instruction data for:
1. Auto-transfer switches.
  2. Power supplies.
  3. Switchboards.
  4. Ground fault protection.
  5. Alarm and detection.
  6. Dimmer cabinets.
  7. Emergency generators.
  8. Audio equipment.
- G. Instruction materials:
1. Provide at the time of personnel instruction period three bound copies of instruction manuals for the systems as listed in Subparagraph 1.04.A.4.f.
  2. Include the following (minimum) information in each copy of instruction manual:
    - a) Manufacturers' names and addresses including phone numbers.
    - b) Serial numbers of items furnished.
    - c) Catalog cuts, exploded views and brochures, complete with technical and performance data for all equipment, marked to indicate actual items furnished and intended use.

- d) Recommended spare parts.

#### 1.07 OWNER'S PERSONNEL INSTRUCTIONS

- A. Prior to completion of the contract, and at the Owner's convenience, instruct verbally and demonstrate to the Owner's personnel, the operation of the systems as listed under operating, maintenance, and instructional data and/or emergency generator, automatic transfer switch and fire alarm annunciator panel.

#### 1.08 CLEANING

- A. Clean exterior surfaces and interiors of equipment and remove all dirt, cement, plaster and other debris. Protect interior of equipment from dirt during construction and clean thoroughly before energizing.
- B. Clean out cracks, corners and surfaces on equipment to be painted. Remove grease and oil spots so that paint may be applied without further preparation.

#### 1.09 PROJECT RECORD DOCUMENTS - Prepare the following and submit to the engineer before final acceptance:

- A. Mark Project Record Documents daily to indicate all changes made in the field.
  - 1. In addition to general requirements of Project Record Drawings, indicate on drawings, changes of equipment locations and ratings, trip sizes, and settings on circuit breakers, alterations in raceway runs and sizes, changes in wire sizes, circuit designations, installation details, one-line diagrams, control diagrams and schedules.
- B. Use green to indicate deletions and red to indicate additions.
  - 1. Use the same symbols and follow the same drafting procedures used on the Contract Drawings.
- C. Locate dimensionally off of contract drawings all underground conduit stubbed-out for future use, underground feeder conduits, and feeder pull box locations using building lines by indicating on the Project Record Drawings.
- D. At the completion of underground conduit installation provide underground conduit record documents to owner's representative.
- E. Two copies, in binder form, of all test results as required by these specifications - 16030.
- F. Two copies of local and/or state code enforcing authorities' final inspection certificates.
- G. Two copies, in binder form, of electrical equipment cut sheets, manufacturer's installation instructions, warranty certificates, and product literature for all products utilized on project.

#### 1.10 SERVICE INTERRUPTIONS AND UTILITY

- A. Coordinate with the Owner the interruption of services necessary to accomplish the work.
- B. Coordinate with the utility company all work associated with power and communications distribution systems and service entrance equipment.



- C. Electrical contractor shall supply temporary power for all trades.

#### 1.11 MINIMUM SPECIFICATION REQUIREMENTS (ALL WORK OF DIVISION 16000)

- A. As a minimum Specification requirement, all materials and methods shall comply with applicable governing codes.

#### 1.12 PENETRATION SEALING

- A. Seal penetration through exterior walls and fire rated walls, floors, ceilings, and roofs with 3M Firestopping materials of fire rating capacity rated per architectural plans and UBC or prevailing building code requirements.

#### 1.13 PLACING EQUIPMENT IN SERVICE

- A. Do not energize or place electrical equipment in service until all interested parties have been duly notified and are present or have waived their rights to be present. Where equipment to be placed in service involves service or connection from another contractor of the owner, notify the owner in writing when the equipment will be ready for final testing/connection and schedule to the owner's satisfaction of this service connection. Notify the owner two weeks in advance of the date the various items of equipment will be complete.

#### 1.14 OWNER-FURNISHED ITEMS

- A. Pick up Owner-furnished items and handle, deliver, install, and make all final connections.
  1. Assume responsibility for the items when consigned at the storage facility or in the field in accord with requirements of the Contract Documents.

#### 1.15 ELECTRIC ITEM LOCATION

- A. Electrical drawings are generally diagrammatic. Verify equipment sizes with shop drawings and manufacturers' data and coordinate location layout with other trades. Notify owner and engineer of any changes of location requirements prior to installation and obtain engineer's written acceptance for all changes/revisions.

#### 1.16 DEMOLITION

- A. Scope: Provide and perform demolition, preparatory and miscellaneous work as indicated and specified, complete.
- B. Principle Items of Work:
  1. Demolition and removal of existing electrical conduit, wiring and equipment required to complete the project.
  2. Preparation of the existing building to receive or connect the new work.
  3. Miscellaneous demolition, cutting, alteration, and repair work in and around the existing building necessary for the completion of the entire project.
  4. Disconnecting and reconnection of electrical equipment as required by the construction modifications.

- C. Existing Conditions: Make a detailed survey of the existing conditions pertaining to the work. Check the locations of all existing structures, equipment and wiring (branch circuiting and controls). Provide at bid time any exclusions for existing conditions work.
- D. Salvage and Disposal: All removed material other than items to be reused shall be returned to the owner or disposed of in accordance with instructions from the owner's representative. Disposal shall be done in accordance with EPA and governing body requirements and regulations. Contractor shall pay all fees and charges for disposal.

#### 1.17 ELECTRICAL WORKMANSHIP REQUIREMENTS

- A. It is required that all electrical construction of this Contract be performed by journeyman electricians. All journeyman electricians shall have a minimum of 4 years of apprenticeship training and hold a valid Certificate of Completion from an apprenticeship training course approved by the State of California Department of Industrial Relations, Division of Apprenticeship Standards. This is intended to mean that a person who does not hold a valid Certificate of Completion from an apprenticeship training course approved by the State of California Department of Industrial Relations, Division of Apprenticeship Standards will not be permitted to do electrical work of any kind that involves new construction, nor make repairs, alterations, additions, or changes of any kind to any existing system of electrical wiring, apparatus, equipment, light, heat, or power.
- B. Contractor may employ electrical helpers or apprentices on any job of electrical construction, new or existing, when the work of such helpers or apprentices is performed under direct and constant personal supervision of a journeyman electrician holding a valid Certificate of Completion from an apprenticeship training course approved by the State of California Department of Industrial Relations, Division of Apprenticeship Standards.
  - 1. Each journeyman electrician will be permitted to be responsible for quality of workmanship for a maximum of eight helpers or apprentices during any same time period, provided the nature of work is such that good supervision can be maintained and quality of workmanship achieved is the best, as expected by Owner and as implied by the latest edition of the California Electrical Code (National Electrical Code with State of California amendments).
  - 2. Before each journeyman electrician commences work, deliver to Owner at project site a photocopy of journeyman's valid Certificate of Completion from an apprenticeship training course approved by the State of California Department of Industrial Relations, Division of Apprenticeship Standards.
- C. All electrical systems shall be installed in a neat and workmanlike manner per National Electrical Code requirements and ANSI approved NEIS National Electrical Installation Standards.

#### 1.18 DESIGN CHANGES AFTER AWARD OF BID

- A. When a change in the quantity or size of conductors is made, the conduit size will remain in accordance with that indicated in the original contract drawings rather than the drawing symbol conduit table. When code permits, provide conductor insulation 'THWN' where required to maintain conduit fill conformance with the National Electrical Code.

#### 1.19 CREDITS AND EXTRAS (in case of conflict the provisions of section 1000 shall govern)

- A. Material prices shall be in accordance with the latest issue of Trade Service Publication Inc's.

'Electrical Trade Book', less contractor's discount, or submitted manufacturer's or supplier's quotes, plus tax and 1% cartage.

- B. Labor rates shall be based on local union scale and shall include only benefits required by the union.
- C. The maximum charged for the Foreman or General Foreman shall be the minimum required by the local union.
- D. The amount of labor charged to accomplish the required work shall be based on NECA's 'Manual of Labor Rates'.
- E. The amount of added direct labor cost shall not exceed 30% of the actual labor cost and shall include insurance, taxes, small tools, payroll expenses, office supervision, management development, training, and etc.
- F. Rental cost or rates shall be based on the American Equipment Dealers rated manual, less contractor's discount. Copies of the Equipment Rental Invoices shall be submitted to the architect.
- G. The contractor and the architect shall negotiate any cost item where it can be shown that the job conditions are beyond the scope of the above listed manuals. In this case, the burden of proof shall be the responsibility of the contractor. He shall provide invoices, detailed breakdowns, confirmation by the resident inspector of existing conditions and etc., as may be required to justify his claim.
- H. The fee for the prime electrical sub-contractor shall be in accordance with the general and supplemental conditions of the specification, but shall not exceed 5% overhead and 5% profit. No additional overhead and profit shall be allowed for sub-contractors to the prime sub-contractor.
- I. The contractor shall submit detailed material and labor cost breakdown on all cost changes to the contract in the form directed by the architect.
- J. For credit changes to the contract, the fee shall not be included, except where additions and deductions are made by a single change order, the cost shall be based on the net change in material and labor prior to determining the fee.

#### 1.20 MATERIAL AND EQUIPMENT SUBSTITUTION

- A. Where two or more trade names or manufacturers are mentioned, selection shall be made from the group listed for use in the base bid. The order in which names are listed is not intended to be any indication of preference.
- B. Where a single manufacturer, product or trade name is stated, that manufacturer, product or trade name shall be used in the base bid. The use of other manufacturers, products or trade names will be considered by the engineer of record (unless that product is indicated for no substitution) only if submitted as alternate items at the time of bidding, with evidence of equality and a statement of net price difference as compared to the specified item. After approval by the engineer of record, the architect and owner reserve the right to review such submittals and to determine the acceptability for use.
- C. Equipment other than that specified will be accepted only when written approval is given by the engineer of record and architect, in accordance with Division 1.

- D. The contractor shall be held responsible for all physical changes in piping, equipment, etc. resulting from equipment substitution and likewise bear any increased cost of other trades in making said substitution. Approval by the architect of equipment other than that specified does not relieve this contractor of this responsibility.

1.21 REQUESTS FOR INFORMATION

- A. The contractor shall submit all requests for information (RFI's) typewritten on the attached form.

END OF SECTION 16000

**SECTION 16050 – BASIC ELECTRICAL MATERIALS AND METHODS**

## PART 1 GENERAL

- 1.01 DESCRIPTION: Division 1 applies to this Section. This Section contains general requirements for the Sections in Division 16.
- A. Related Work Not in Division 16: Refer to individual Division 16 Sections.
- 1.02 QUALITY ASSURANCE:
- A. Codes: Entire installation shall comply with requirements of authorities having jurisdiction.
- B. Permits: Contractor shall pay for all permits required by work under this Division.
- C. Inspections: Contractor shall arrange for all inspections and correct non-complying installations.
- 1.03 SUBMITTALS: Refer to Division 1 for procedures.
- A. Material and Equipment: Prior to start of work, 6 copies of a list of all materials and equipment covered by Division 16 shall be submitted for approval. Contractor shall allow ample time for checking and processing and shall assume responsibility for delays incurred due to rejected items. No installation of material concerned shall be made until such written approval has been obtained. Approval of materials and equipment shall in no way obviate compliance with the Contract Documents. Each item proposed shall be referenced to the applicable Section, Page, and Paragraph of Division 16. For each item proposed, give name of manufacturer, trade name, catalog data, and performance data.
- B. Equipment Layout Drawings: Submit "Equipment Layout Drawings" for each equipment room or area containing equipment items furnished under this Division. Layout Drawings shall consist of plan view of room, to scale, showing projected outlines of all equipment, complete with dotted line indication of all required clearances including all those needed for removal or service. Location of all conduit and pull boxes shall be indicated.
- C. Service Manuals: Refer to Section 01700. Indexed Service Manuals shall be submitted which shall include test reports, service instructions, and renewal parts lists of all equipment.
1. Submission and Information: Service Manuals shall be submitted for approval at least 30 days before final inspection. The following information together with any pertinent data, shall be included in Service Manual:
- a) Renewal part numbers of all replaceable items.
  - b) Manufacturer's cuts and rating data.
  - c) Serial numbers of all principal pieces of equipment.
  - d) Supplier's name, address, and phone number.
  - e) Final settings for all breakers, relays, and control devices (See Section 16321 or 16322 as applicable).
2. Copies: Four (4) copies of approved Service Manual shall be delivered on or before date required.
- D. Record Drawings: Prepare and submit in accordance with requirements of Section 01700. Contractor shall make notations, neat and legible, daily as the work proceeds. Drawings shall

be available for inspection at all times and kept at the job site. All buried conduit and/or indicated future connections outside any building shall be located both by depth and by accurate measurement from a permanently established landmark such as a building or structure.

- E. Seismic Calculation: Refer to Article 3.01 herein.
- F. Spare Parts: Conform to Section 01700. Deliver following spare parts to Owner and obtain receipts. Submit at same time as Operating Instructions:
  - 1. Spare fuses; 1 set for each combination fuse breaker.
  - 2. Spare pilot light lamps of each type used on project, in quantity of 10%, but not less than 2%.
  - 3. Overload heater elements; 2 sets for each size used on project.
- G. Special Tools: If any part of the equipment furnished under Division 16 requires a special tool for assembly, adjustment, resetting, or maintenance thereof and such tool is not readily available on the commercial tool market, it shall be furnished with the equipment as a standard accessory and delivered to the Owner as specified in Section 01700.
- H. Maintenance Paint: One (1) can of touch-up paint shall be delivered to Owner for each different color factory finish which is to be the final finished surfaces of the product.

#### 1.04 DRAWINGS:

- A. Diagrammatic Drawings: For purposes of clarity and legibility, drawings are essentially diagrammatic although size and location of equipment is drawn to scale wherever possible, Contractor shall make use of data in all the Contract Documents and verify information at building site.
- B. Routing of Conduit and Piping: The drawings indicate required size and termination of conduits and raceways. It is not intent to indicate all necessary offsets and it shall be the responsibility under this Division to install conduit in such a manner as to conform to structure, avoid obstructions, preserve headroom, keep openings and passageways clear, and make all equipment requiring inspection, maintenance and repair accessible without extra cost to the Owner.
- C. Coordination with Other Trades: Check with other Divisions of the Specifications so that no interference shall occur and in order that elevations may be established for the work. Installed work which interferes with the work of other trades shall be removed and rerouted at the discretion of the Architect.

#### 1.05 DAMAGE AND REPAIRS:

- A. Emergency Repairs: Owner reserves the right to make temporary repairs as necessary to keep equipment in operating condition without voiding Contractor's warranty or relieving Contractor of his responsibility during warranty period.
- B. Responsibility for Damage: Contractor shall be responsible for damage to grounds, buildings, or equipment due to work furnished or installed under this Division 16.

#### 1.06 PROTECTION, CARE, AND CLEANING:

- A. Protection: Provide adequate protection for finished parts of materials and equipment against

physical damage from any cause during progress of work and until final completion. Sensitive electrical equipment shall not be installed until major construction is completed.

- B. Care: During entire construction, properly cap all lines and equipment to prevent entrance of sand and dirt. Protect equipment against moisture, plaster, cement, paint or work of other trades by covering with polyethylene sheets.
- C. Cleaning: After installation is completed, clean all systems as follows in addition to requirements specified in Section 01700:
  - 1. Field Painted Items: Clean exterior of conduits, raceways, piping and equipment exposed in completed structure; removing all rust, plaster, cement and dirt by wire brushing. Remove grease oil and similar materials by wiping with clean rags and suitable solvents.
  - 2. Factory Finished Items: Remove grease and oil on all factory finished items such as cabinets and controllers, and leave surfaces clean and polished.
- D. Connection: Prior to energizing, check all electrical connection hardware and torque where necessary.

## PART 2 PRODUCTS

- 2.01 PRODUCTS: Products and materials shall be as specified in the pertinent Sections of Division 16.
- 2.02 MATERIALS AND EQUIPMENT: Wherever possible, all materials and equipment used in installation of this work shall be of same manufacturer throughout for each class of material or equipment. Materials shall be new and bear UL label, wherever subject to such approval. Comply with ANSI, IEEE and NEMA standards, where applicable.

## PART 3 EXECUTION

- 3.01 SEISMIC REQUIREMENTS: Electrical equipment for emergency systems shall be braced to withstand the lateral forces that result from earthquakes. Under Work of Division 16, submit seismic calculations stamped and signed by a registered California structural engineer confirming size, number, and location of required anchoring hardware. Electrical equipment vendors shall furnish weights together with dimensions and the center of gravity location for all emergency electrical equipment for this purpose.
- 3.02 GENERAL LATERAL BRACING REQUIREMENTS: As shown on Drawings. Additional bracing requirements shall conform to specific requirements shown on Drawings or in other Sections of Division 16. Anchorages for equipment subject to thermal expansion and movement shall conform to manufacturer's recommendation and intent of general bracing requirements. When general and specific bracing requirements enumerated above are in conflict with referenced standards, the most stringent requirements shall govern.
- 3.03 EXCAVATION AND BACKFILL: Perform all excavation and back fill required to install Work of Division 16, both inside and outside. Perform all excavation and backfilling in accordance with Division 2.
  - A. Excavation: Bury conduits outside building to a depth of not less than 24" (or as required by Code) below finish grade, unless noted otherwise.
  - B. Backfilling: Do not backfill until after final inspection and approval of conduit installation by all

legally constituted authorities and recording of the buried items on the Record Drawings.

3.04 CUTTING AND PATCHING:

- A. Cutting of Existing Structural Work: Holes in existing slabs and concrete walls shall be cored to the minimum size required. The Contractor shall submit Drawings showing dimensioned sizes and locations for all such holes to Architect for approval before cutting. Where required for conduit installation, slabs on grade shall be saw-cut to minimum required width; submit cutting Drawings to the Architect for approval before cutting.
- B. Patching: Holes or chases shall be patched to match adjacent surfaces.

3.05 CONCRETE WORK: Concrete construction required for the Work of Division 16 shall be provided under the Work of Division 16.

3.06 PAINTING: Finish painting of electrical equipment will be as specified in Division 9, unless equipment is herein specified to be furnished with factory applied finish coats. Equipment to be field painted shall be furnished with a factory applied prime coat.

- A. Touch-Up: If factory finish on any equipment furnished under Division 16 is damaged in shipment or during construction of building, the equipment shall be refinished by Contractor to satisfaction of Architect.
- B. Concealed Equipment: Uncoated cast-iron or steel that will be concealed, or will not be accessible when installations are completed, shall be given one heavy coat of black asphaltum before installation.

3.07 OPERATING INSTRUCTIONS: Contractor to provide services of an experienced Engineer to instruct Owner in operation of entire installation. Instructional period shall be during normal work day hours. This instruction period may be simultaneous with compliance tests.

3.08 COMPLIANCE TESTS: Conduct such tests of all portions of installation as may be necessary to ensure full compliance with the Drawings and Specifications. Tests shall be made in the presence of the Owner. Costs of test shall be borne by Contractor and Contractor shall provide all instruments, equipment, labor and materials to complete all the tests. Tests may be required on any item between installation of Work and the end of 1 year warranty period. Should these tests develop any defective materials, poor workmanship or variance with requirements of Specifications, Contractor shall make any changes necessary and remedy any defects at his expense.

- A. All Feeders: Measure and record as follows:
  - 1. 600 volt conductors shall be tested with 500 volt megger to ground on each phase. Megger to be on test for one minute before any readings are taken. The minimum values on all feeders shall be 100,000 OHMS.
  - 2. Copies of the certified test readings shall be transmitted to Owner.

3.09 SYSTEM ACCEPTANCE:

- A. Final Review: The Contractor shall request a final review prior to system acceptance after:
  - 1. Completion of installation of all systems required under the Contract Documents.
  - 2. Submission and acceptance of operating and maintenance data.
  - 3. Completion of identification program.



- B. Acceptance: Is contingent on:
1. Completion of final review and correction of all deficiencies.
  2. Satisfactory completion of acceptance tests demonstrating compliance with all performance and technical requirements of Contract Documents.
  3. Satisfactory completion of training program and submission of manuals and Drawings required by Contract Documents.
- 3.10 PRELIMINARY OPERATION: The Owner reserves the right to operate portions of the electrical system on a preliminary basis without voiding the warranty or relieving the Contractor of his responsibilities.
- 3.11 CLEAN-UP: Conform to Section 01700. Upon completion and at other times during progress or Work, when required, remove all surplus materials, rubbish, and debris resulting from Work of Division 16.

END OF SECTION 16050

**SECTION 16060 – MINOR ELECTRICAL DEMOLITION FOR REMODELING****PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Electrical demolition.

**PART 2 PRODUCTS****2.01 MATERIALS AND EQUIPMENT**

- A. Materials and equipment for patching and extending work: As specified in individual Sections.

**PART 3 EXECUTION****3.01 EXAMINATION**

- A. Verify field measurements and circuiting arrangements are as shown on Drawings.
- B. Verify that abandoned wiring and equipment serve only abandoned facilities.
- C. Demolition Drawings are based on casual field observation and existing record documents. Report discrepancies to Owner and Architect/Engineer before disturbing existing installation.
- D. Beginning of demolition means installer accepts existing conditions.

**3.02 PREPARATION**

- A. Disconnect and make safe all electrical systems in walls, floors, and ceilings scheduled for removal.
- B. Coordinate utility service outages with Utility Company and Owner's representative.
- C. Provide temporary wiring and connections to maintain required existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.
- D. Existing Electrical Service: Maintain existing system in service until new system is complete and ready for service. Disable system only to make switchovers and connections. Obtain permission from Owner at least 72 hours before partially or completely disabling system. Minimize outage duration. Make temporary connections to maintain service in areas adjacent to work area when outage affects business operation.
- E. Existing Fire Alarm System: Maintain existing system in service until new system is accepted. Disable system only to make switchovers and connections. Notify Owner and local fire service at least 72 hours before partially or completely disabling system. Minimize outage duration. Make temporary connections to maintain service in areas adjacent to work area.
- F. Existing Telephone System: Maintain existing system in service until new system is complete and ready for service and new system is accepted. Disable system only to make switchovers and connections. Notify Owner and Telephone Utility Company at least 72 hours before partially or completely disabling system. Minimize outage duration. Make temporary connections to maintain service in areas adjacent to work area.

- G. Existing Security System: Maintain existing system in service until new system is complete and ready for service and new system is accepted. Disable system only to make switchovers and connections. Obtain permission from the Owner and security company at least 72 hours before partially or completely disabling system. Minimize outage duration. Make temporary connections to maintain service in areas adjacent to work area.

### 3.03 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

- A. Demolish and extend existing electrical work under provisions of this Section.
- B. Remove, relocate, and extend existing installations to accommodate new construction.
- C. Remove abandoned wiring to source of supply and re-label devices as spares.
- D. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.
- E. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets which are not removed.
- F. Disconnect and remove abandoned panelboards and distribution equipment.
- G. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.
- H. Disconnect and remove abandoned luminaires. Remove brackets, stems, hangers, and other accessories.
- I. Disconnect and remove abandoned conduit.
- J. Repair adjacent construction and finishes damaged during demolition and extension work.
- K. Maintain access to existing electrical installations which remain active. Modify installation or provide access panel as appropriate.
- L. Extend existing installations using materials and methods compatible with existing electrical installations, and in compliance with new project specifications.
- M. Modify existing as-built drawings to note changes.

### 3.04 CLEANING AND REPAIR

- A. Clean and repair existing materials and equipment which remain or are to be reused.
- B. Panelboards: Clean exposed surfaces and check tightness of electrical connections. Replace damaged circuit breakers and provide closure plates for vacant positions. Provide typed circuit directory showing revised circuiting arrangement.
- C. Luminaires: Remove existing luminaires for cleaning. Use mild detergent to clean all exterior and interior surfaces; rinse with clean water and wipe dry. Replace lamps, ballasts, and broken electrical parts.

3.05 INSTALLATION

- A. Install relocated materials and as required by this section and Owner's representative.

END OF SECTION 16060

**SECTION 16111 – CONDUITS****PART 1 GENERAL**

- A. The general provisions of Section 1000 apply to this section.

**1.01 WORK INCLUDED**

- A. Conduits; including:
  - 1. Rigid steel conduit.
  - 2. Intermediate metal conduit (IMC).
  - 3. Electrical metallic tubing (EMT).
  - 4. Rigid aluminum conduit.
  - 5. Polyvinyl chloride conduit (PVC).
  - 6. Flexible metal conduit.
  - 7. Liquid-tight flexible metal conduit.

**1.02 DEFINITION**

- A. Conduit: This term shall be construed to mean conduit and conduit fittings; and tubing and tubing fittings.

**1.03 RELATED WORK SPECIFIED ELSEWHERE**

- A. Support material: Section 16190.

**PART 2 PRODUCTS****2.01 MATERIAL AND FABRICATION - ALL MATERIALS SHALL BE MANUFACTURED IN THE USA.**

- A. Rigid Steel Conduit: Hot-dipped galvanized or sherardized including the threads, manufactured in accordance with ANSI C80.1 and UL6.
  - 1. Threaded, hot-dipped galvanized or sherardized fittings manufactured in accordance with ANSI C80.4.
- B. Intermediate Metal Conduit: Hot-dipped galvanized including the threads, manufactured in accordance with UL 1242.
- C. Electrical Metallic Tubing: Manufactured in accordance with ANSI C80.3 and UL 797.
  - 1. Provide compression fittings in walls, ceiling spaces or exposed construction areas.
  - 2. Provide compression (water tight) fittings in damp areas or areas exposed to weather.
- D. Rigid Aluminum Conduit: Manufactured in accordance with ANSI C80.5.
  - 1. Threaded fittings, manufactured in accordance with ANSI C80.4.
- E. Polyvinyl Chloride Conduit: Schedule 40 and schedule 80, manufactured in accordance with ANSI C33.91, UL 651, and Nema TC-2.
  - 1. Cemented type fittings of the same manufacturer as the conduit.

- F. Polyvinyl Chloride Conduit: Type EB, heavy wall, manufactured in accordance with ANSI C33.91, UL651, and Nema TC-8.
  - 1. Cemented fittings of the same manufacturer as the conduit.
- G. Flexible Metal Conduit: Hot-dipped galvanized steel, manufacturer in accordance with UL 1.
  - 1. Squeeze type, malleable iron, cadmium plated, straight and angle connectors for all sizes and twist-in connectors for 1/2-inch and 3/4-inch flexible metal conduit.
- H. Liquid-Tight Flexible Conduit: Hot-dipped galvanized with liquid-tight vinyl jacket.
  - 1. Liquid-tight fittings.

### PART 3 EXECUTION

#### 3.01 USE

- A. EMT for all exposed and concealed work except as indicated in Paragraphs B, C, D, E, F, and G.
- B. Rigid steel, IMC, or rigid aluminum conduit in areas where exposed conduit could be subject to physical damage or where conduit is exposed and conductor phase to ground voltage exceeds 300 volts.
- C. Rigid aluminum conduit may be used for all feeder runs exposed or concealed in stud walls and spaces above suspended ceilings.
- D. PVC Conduit:
  - 1. Schedule 40 for runs below grade in direct contact with earth.
  - 2. Schedule 40 in concrete floors, walls or roofs.
- E. Flexible Conduit (steel only permitted):
  - 1. For connection to equipment subject to vibration, maximum length 18 inches. In wet locations use liquid-tight flexible conduit.
  - 2. For connection to lighting fixtures above suspended ceilings. Lengths limited to 72 inches.
  - 3. Install ground conductors in all flexible conduits.
- F. Where 3/4-inch conduit runs are concealed in walls or ceilings and these runs are through wood studs and wood joists, flexible steel conduit may be used up to a maximum length of 6'0".
- G. All risers shall be PVC coated RGS with bushings.
- H. In concrete or below grade use conduit not smaller than 1 inch. Maximum size in concrete slab: 1 inch. Run larger sizes under slab.
- I. Use long sweep elbows with minimum radius 10 times nominal conduit diameter for all telephone and communication runs.

#### 3.02 INSTALLATION

- A. Provide conduit support and bracing in accordance with the latest published SMACNA guidelines.
- B. Perform excavating, trenching, backfilling, and compacting as specified in Division 2.
- C. Minimum cover for runs below finished grade outside buildings: 24 inches except where noted or required by the serving utility. Minimum cover for conduit in concrete floors, walls or roof: 1/3 thickness of slab. Minimum cover under building slabs is 12-inches.
- D. Minimum separation from uninsulated hot water pipes, steam pipes, heater flues or vents: 6 inches. Avoid running conduit directly under water lines.
- E. Protect inside of conduit from dirt and rubbish during construction by capping all openings with plastic caps intended for the purpose.
- F. Provide conduit bodies for exposed conduit runs at junctions, bends or offsets where required. Do not use elbows or bends around outside corners of beams, walls or equipment. Make conduit body covers accessible.
- G. Make conduit field cuts square with saw and ream out to full size. Shoulder conduits in couplings.
- H. Run a minimum of one 3/4-inch empty conduit for every three single pole spare circuit breakers, spaces or fraction thereof and not less than two 3/4-inch conduits from every flush mounted panel to an accessible space above the ceiling and below the floor.
- I. Make conduit projections from covered areas to areas exposed to the weather watertight by proper flashing. Extend flashing a minimum of 6 inches in all directions from conduit.
- J. Where conduit is to remain empty, install polypropylene or nylon pull-line 3/16" minimum diameter from end to end with tag at each end designating opposite terminations.
- K. Run conduit parallel and at right angle to building lines, when visible in finished construction.
- L. Cap conduits indicated to be stubbed-out underground using glued-on PVC caps intended for this purpose.
- M. Install a coupling flush with the floor on all conduits stubbed up through floors on grade.
- N. Make no bends with a radius less than 12 times the diameter of the cable it contains nor more than 90 degrees. Make field bends with tools designed for conduit bending. Heating of metallic conduit to facilitate bending is not permitted.
- O. Where conduit installed in concrete or masonry extends across building construction joints, provide expansion fittings as manufactured by O.Z.; Crouse-Hinds; Appleton; or equal, with approved ground straps and clamps.
- P. Concrete Wall or Slab Penetrations: All core drilling, sleeves, blockouts or other penetrations must be approved by the Structural Engineer prior to installation.
  - 1. Space sleeves and core drills to insure a minimum dimension of 3 times the nominal trade diameter of the largest adjacent conduit between sleeves or core drills.
  - 2. Use blockouts for concentrations of conduits in a confined area.

- Q. Do not penetrate walls with flexible conduit where subject to physical damage. Use recessed box with extension ring for transition from interior to exterior of wall.
- R. All homeruns shown shall be run to the panel indicated independently of all other homeruns. Provide pull points so as not to exceed total bends of 360 degrees between them unless otherwise indicated.
- S. At switchboards, manholes and floor standing distribution panelboards, provide insulated throat bushings or bell ends on all non-metallic conduit entries and bushings on all metallic conduit entries.
- T. Provide bushings on all conduit terminations sized 1" and larger.
- U. Provide weatherproof boxes and connectors for all exposed parking structure raceways and boxes.
- V. Provide bell ends on all conduits into pullboxes and manholes, seal all conduits after conductors are pulled.
- W. Cap all unused conduits with end cap. Do not tape.

END OF SECTION 16111



**SECTION 16120 – CONDUCTORS****PART 1 GENERAL****1.01 WORK INCLUDED**

- A. Conductors; for power, lighting, sound, communication and control, including conductors for general wiring, flexible cords and cables, and ground conductors.

**1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Submittals: Section 16000.

**PART 2 PRODUCTS****2.01 MATERIAL AND FABRICATION**

- A. Conductors for General Wiring: Thermoplastic insulated rated for 600V manufactured in accordance with UL 83.
  - 1. Provide 3/4 hard drawn copper conductors. Provide solid conductor for #12 AWG and smaller. Provide stranded conductors for #10 AWG and larger.
- B. Conductor Connectors for General Wiring:
  - 1. Sizes No. 14 to No. 8: Splice with insulated spring wire connectors.
    - a) Ideal No. 451, 455 and 453.
    - b) Minnesota Mining: Types Y, R, G, and B.
    - c) Buchanan No. B1, B2 and B4.
  - 2. Size No. 6 or Larger, Copper: Splice and terminate with compression or pressure type connectors and terminal lugs.
- C. Provide connector sealing packs for all area lighting and exterior box splices which require complete protection from dampness and water.
  - 1. Scotchlok No.'s 3576, 3577 and 3578, by 3M Company.

**PART 3 EXECUTION****3.01 USE**

- A. Conductors for General Wiring:
  - 1. Minimum 75 degrees C temperature rated insulation on conductors, except use minimum 90 degrees C temperature rated insulation on conductors in conduits exposed on roof, or where required due to ambient temperature.
  - 2. Stranded conductors at motors and other applications where subject to vibration.
  - 3. Minimum size conductors for power and lighting #12 AWG, except where noted.
  - 4. Minimum size conductors for control circuits #14 AWG stranded with THHN/THWN insulation.

- B. Use flexible cords and cables for connection of special equipment as indicated. Length not to exceed 72 inches.
- C. Ground Conductors:
  - 1. Provide an insulated green ground conductor for all branch circuit wiring where indicated.
  - 2. Bare copper conductor may be used.
    - a) Install ground conductors in all non-metallic conduits as required by code. Install ground conductors in all motor branch circuits and all feeders. Where ground conductor size is not indicated, provide size as required for an equipment ground conductor by the National Electrical Code.
    - b) Install ground conductors in all flexible metal conduits.

3.02 INSPECTION

- A. Check conduit system for damage and loose connections, replace damaged sections.
- B. Check for caps at conduit openings. Make sure that inside of conduit is free of dirt and moisture.
- C. Pull mandrel, one size smaller than the conduit, through entire length of all underground conduits prior to conductor installation.

3.03 INSTALLATION

- A. Conductors for General Wiring:
  - 1. Color code conductors insulation as follows:

CONDUCTOR	SYSTEM 208Y/120	VOLTAGE 480Y/277
Phase A	Black	Brown
Phase B	Red	Orange
Phase C	Blue	Yellow

- 2. For conductors #6 AWG or larger, permanent plastic colored tape may be used to mark conductor in lieu of coded insulation. Tape shall cover not less than 2 inches of conductor insulation within enclosure.
  - a) Provide color tape on each end and at all terminal points and splices on wire enclosed in conduit.
  - b) Provide color tape every 3 feet on wire not enclosed in a listed wireway.
- 3. When pulling conductors, do not exceed manufacturer's recommended values.
- 4. Use polypropylene or nylon ropes for pulling conductors.
- B. Insulate splices with plastic electrical tape: Scotch No. 33+, Tomic No. 1T, or equal.
- C. Terminate all control wires with terminal lugs on terminal boards not designed with pressure plates. If splices are needed, use same procedure, installing a terminal board in a junction box for protection.

- D. All splices or connections shall be compression type Thomas & Betts or Burndy, no split bolt connections are allowed.

#### 3.04 IDENTIFICATION

- A. Feeders: Identify with the corresponding circuit designation at over-current device and load ends, at all splices and in pull boxes.
- B. Branch Circuits: Identify with the corresponding circuit designation at the over-current device and at all splices and devices.
- C. Control Wires: Identify with the indicated number and/or letter designation at all terminal points and connections.
- D. Alarm and Detection Wires: Identify with the indicated wire and zone numbers at all connections, terminal points, and coiled conductors within cabinets.
- E. Conductors Terminated By Others: Indicate location of opposite end of conductor, i.e., Pull Box-Room 101.
- F. For identification of conductors, use heat shrinkable white marking sleeves such as Brady Permasleeve with type written identification.
- G. Circuit designation is construed to mean panel designation and circuit number, i.e., LA-13.

END OF SECTION 16120

**SECTION 16130  
ELECTRICAL BOXES**

**PART 1            GENERAL**

**1.01            WORK INCLUDED**

- A. Boxes; including:
1. Outlet boxes.
  2. Pull and junction boxes.
  3. Cabinets.

**1.02            RELATED WORK SPECIFIED ELSEWHERE**

- A. Submittals: Section 16000.
- B. Support Material: Section 16190.

**PART 2            PRODUCTS**

**2.01            MATERIAL AND FABRICATION**

- A. Outlet Boxes:
1. Pressed Steel Boxes: Knockout type, hot-dipped or electro-plate galvanized.
  2. Cast Iron Boxes: Hot-dipped or electro-plate galvanized with threaded hubs.
  3. Cast Iron Conduit Bodies: Hot-dipped or electro-plate galvanized with threaded hubs.
  4. Cast copper free aluminum conduit bodies with threaded hubs.
  5. Covers for Pressed Steel Boxes: Hot dipped or electro-plate galvanized.
  6. Outlet boxes manufactured in accordance with UL 514.
- B. Pull and Junction Boxes:
1. Sheet steel, hot-dipped or electro-plate galvanized, or prime coated and a final coat of manufacturer's standard enamel or lacquer finish. Manufactured in accordance with UL 50.
    - a) Where exposed to weather, provide raintight hubs for conduits entering the boxes, top and sides only.
  2. Floor Boxes:
    - a) Single gang, similar to Hubbell #B-2536.
    - b) Covers:
      - 1) Combination, similar to Hubbell #S-2525.
      - 2) Duplex receptacle, similar to Hubbell #S-3925.
    - c) Carpet flange, similar to Hubbell #S-3075 thru #S-3079.
    - d) Hubs: Provide hubs as required to suit the conduit arrangement.
  3. Pre-Cast Concrete Pull Boxes: As manufactured by Jensen Pre-Cast or Utility Vault and

shown on drawings.

4. High impact resistant PVC boxes: As manufactured by Carlon, Sedco, or R & G Sloan.
- C. Cabinets: Sheet metal, prime coat and final coat of manufacturer's standard enamel or lacquer finish. Manufactured in accordance with UL 50.
1. Control Cabinet: NEMA 1 enclosure, door with butt hinges and flush handle latches.
    - a) Provide with removable steel back panel.
  2. Terminal Cabinets: NEMA 1 enclosure, door with concealed hinges and spring catch type flush cylinder locks. Key locks alike, provide two keys with each lock.
  3. Provide engraved plastic nameplates with 1/2" minimum height letters indicating designation of control and terminal cabinets as shown on the drawings.
    - a) Secure nameplates with at least two screws or rivets. Cementing and adhesive installation not acceptable.

### PART 3 EXECUTION

#### 3.01 USE

##### A. Outlet Boxes:

1. Ceiling Outlet Boxes: Not less than 4" octagonal by 2" deep.
2. FDD cast iron or cast aluminum device boxes and conduit bodies with metal covers for exposed conduit installation. Provide gasket for covers in wet areas.
3. Intercom, Microphone and TV Outlet Boxes: Not less than 4-11/16" square x 2-1/8" deep.
4. Provide floor boxes with quantity of gangs as required for power, communication or control as indicated. Use boxes with barriers where required. Provide carpet flanges in carpeted areas.

##### B. Pull and Junction Boxes:

1. Use sheet steel boxes NEMA Type 1 for indoor and NEMA Type 3R for outdoor installation, except as follows.
2. Use pre-cast concrete boxes for boxes flush in finish grade where requiring a nominal capacity greater than 144 cubic inches, where located in vehicular traffic areas, or where indicated.
3. Use polyvinyl chloride (PVC) boxes flush in finish grade when the nominal internal volume is less than or equal to 144 cubic inches or where indicated.
4. Use cast iron boxes for boxes flush in slab on grade.

#### 3.02 INSTALLATION

- A. Provide 3/8" fixture studs in wall bracket and ceiling boxes.
- B. Provide covers suitable for the fixtures or devices used.
- C. Make outlet box covers flush with finished surfaces.
- D. Close unused open knockouts with knockout seals.

- E. Provide 1" deep plaster rings on recessed outlet boxes installed in areas where concrete will be exposed after construction is complete.
- F. Where boxes are concealed in exposed concrete unit masonry, use square cornered types or boxes fitted with rings of sufficient depth for the box to be recessed completely within cavity of block or tile. Install box to insure that ring fits an opening sawed out of the masonry, so that no mortar is required to fill between ring and construction.
- G. Provide a 6" base of compacted crushed rock under pre-cast concrete pull boxes.
- H. Adjust floor boxes so they are level with top of finished floors.
- I. Provide pull boxes and junction boxes in all branch circuit and feeder runs as indicated. Do not provide pull boxes unless they are indicated or required by the Electrical Code.

### 3.03 IDENTIFICATION

- A. Junction Boxes: Use permanent black marker, 2" high lettering, and on each cover plate indicate the power source and circuits contained within that junction box.

END OF SECTION 16130

**SECTION 16133 - TERMINAL CABINETS****PART 1 GENERAL**

1.01 DESCRIPTION: Division 1 and Section 16050 apply to this Section. Provide terminal cabinets for signal and communications terminals, complete.

A. Related Work Not In This Section:

1. Outlet, pull, and junction boxes.
2. Panelboards for lighting and power.

**PART 2 PRODUCTS**

2.01 MATERIALS: Cold rolled sheet steel, with hinged door and cylinder lock keyed to match panelboard cabinets.

2.02 DESIGN: To suit applicable system requirements; surface or flush-mounting as shown; knockouts as required. Design to match panelboard cabinets.

2.03 FABRICATION: One-piece, die-formed or continuously welded, and assembled in factory.

2.04 FINISH: Baked enamel on a suitable primer; color as specified elsewhere, required by standards, or as directs.

2.05 INTERIORS: Provide 5/8" plywood (fire resistant) backing in all signal and communications terminals.

**PART 3 EXECUTION**

3.01 INSTALLATION: Secure and substantial, cabinets attached to building walls or structure.

3.02 IDENTIFICATION: Provide identification nameplates; of engraved bakelite; riveted or screwed to each cabinet. Take text from Drawings and as approved by Architect.

END OF SECTION 16133

**SECTION 16140 – WIRING DEVICES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Wiring devices.

**1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Identification: Section 16030.
- B. Boxes: Section 16130.

**1.03 SUBMITTALS**

- A. In accord with Section 16010

**1.04 DEFINITION**

- A. Wiring devices: This term includes all wall switches, pushbuttons, receptacles, and plates used for general purpose installation.

**PART 2 PRODUCTS**

**2.01 MATERIAL AND FABRICATION**

- A. Wall switches:

1. Quiet toggle type, 20A – 120/277 VAC rated, with terminal screws to take up to No. 10 AWG conductors:

	SPST	DPST	3-WAY	SPST KEY SWITCH LOCK	4-WAY
Arrow-Hart	1991-I	1992-I	1993-I	1991-L	1994-I
Bryant	4901-I	4902-I	4903-I	4901-L	4904-I
General Electric	GE5951-2	GE5952-2	GE5953-2	GE5951-OL	GE5954-2
Hubbell	1221-I	1222-I	1223-I	1221-L	1224-I
Pass & Seymour/ Legrand	20AC1-I	20AC2-I	20AC3-I	20AC1-L	20AC4-I

2. Momentary contact type, 20A-120/277V, two-circuit, three-position, center off:



Arrow-Hart	1995-I
Bryant	4921-I
General Electric	GE5935-2
Hubbell	1557-I
Pass & Seymour/Legrand	1250-I

3. Passive infrared wall switch sensors: Ivory, 180° field of view, adjustable time out and ambient light, 1200 sq. ft. Coverage, 120 VAC, 60 Hz, 1500W. Maximum load, incandescent and fluorescent. As manufactured by Hubbell No. AT1201 or Owner- approved equivalent by Leviton or Pass & Seymour.
4. Fan speed controllers: AC unit rated 15A - 120V used to control up to twelve 56 in./52 in./48 in. ceiling fans or up to twenty 42 in. fans on a single circuit. Rinaudo's Reproductions No. 22394.

B. Passive infrared motion switching system:

1. Ceiling mount sensor, white, 500 sq. ft. coverage, requires control unit. Hubbell No. ATD500CRP.
2. Ceiling mount sensor, white, 2000 sq. ft. coverage, ceiling height dependent, requires control unit. Hubbell No. ATD2000CRP.
3. Ceiling or wall mount sensor, white, 1000 sq. ft. coverage, requires control unit. Hubbell No. ATD1000CRP.
4. Ceiling or wall mount hallway sensor, white, covers area 75 ft. long by 20 ft. wide, requires control unit. Hubbell No. PIR90HW1.
5. Low-voltage control unit, 120VAC, controls one to four sensors. Mount in 4 in. x 4in. enclosure. Hubbell No. CU120A.
6. Relay, 120VAC coil, used when load to be controlled exceeds capacity of a single circuit. Hubbell No. AAR

C. Receptacles, caps, and connectors:

1. 15A-125V, NEMA 5-15, parallel slot type with grounding pin:

	DUPLEX	SINGLE	GFI
Arrow-Hart	5252-I	5261-I	GF5242-I
Bryant	5252-I	5261-I	GFR52FT
General Electric	5252-2	5261-2	TGTR115F
Hubbell	5252-I	5251-I	GF5252-I
Pass & Seymour/LeGrand	5252-I	5261-I	1591-SHG

2. 15A-250V, NEMA 6-15, straight blade grounding type:

	RECEPTACLE	CAP
Arrow-Hart	5661-I	6666
Bryant	5661-I	5666-N
General Electric	GE4069-2	GED0611
Hubbell	5661-I	5666-C
Pass & Seymour/LeGrand	5662-I	5666-X

3. 15A-125V, NEMA L5-15, locking type with ground:

	RECEPTACLE	CAP	CONNECTOR
Arrow-Hart	4700	4721	4731
Bryant	4700	4721-NSY	4732-NSY
General Electric	GL4700	GLD0511	GLD0513
Hubbell	4700	4720-C	4729-C
Pass & Seymour/LeGrand	4700	L515-P	L515-C

4. 20A-125V, NEMA 5-20, straight blade grounding type:

	RECEPTACLE	CAP
Arrow-Hart	5361-I	5362-I
Bryant	5361-I	5362-I
General Electric	GE4102-2	GE4108-2
Hubbell	5361-I	5362-I
Pass & Seymour/LeGrand	5361-I	5362-I

5. 20A-125V, NEMA L5-20, two-pole, three-wire locking type, with ground:

	RECEPTACLE	CAP	CONNECTOR
Arrow-Hart	6200	6202	6204
Bryant	70520-FR	70520-NP	70520-NC
General Electric	GL0520	GLD0521	GLD0523
Hubbell	2310-A	2311	2313
Pass & Seymour/LeGrand	L520-R	L520-P	L520-C

6. 20A-125V, NEMA 5-20, two-pole, three-wire, straight blade isolated grounding type receptacle:

	DUPLEX	SINGLE
Arrow-Hart	IG5362	IG5361
Bryant	5362-IG	5361-IG
General Electric	GE8300-IG	GE8310-IG
Hubbell	IG-5362	IG-5361
Pass & Seymour/Legrand	IG-6300	IG-5361

7. 20A-125 VAC, two-pole, three-wire, NEMA 5-20, straight blade, specification grade, ivory color, ground fault circuit interrupter receptacle (GFCI), rated for feed-through wiring, with LED indicator light:

	GFCI RECEPTACLE
Hubbell	GF-5362I
Pass & Seymour	2091-S-L-I
Leviton	6898-I

8. 20A-125/250V, NEMA 14-20, three-pole, four-wire straight blade grounding type:

	RECEPTACLE	CAP
Arrow-Hart	5759	5757
Bryant	-	-
General Electric	GE1420	GED1421
Hubbell	8410	8411-C
Pass & Seymour/Legrand	L1420-R	L1420-P

9. 20A-250V, NEMA 6-20, two-pole, three-wire straight blade grounding type:

	RECEPTACLE	CAP	CONNECTOR
Arrow-Hart	8510	6866	6869
Bryant	5461	5466N	5469N
General Electric	GE4182	GED0621	GED0623
Hubbell	5461	HBL5466-C	HBL5469-C
Pass & Seymour/Legrand	5871	5466-X	5469-X

10. 20A-120/208V, NEMA L21-20, four-pole, five-wire locking and grounding type:

	RECEPTACLE	CAP	CONNECTOR
Arrow-Hart	6470	6472	6474
Bryant	72120-FR	72120-NP	72120-NC
General Electric	GL2120	GLD2121	GLD2123
Hubbell	2510A	2511	2513
Pass & Seymour/Legrand	L2120R	L2120P	L2120C

11. 20A-250V, NEMA L6-20, two-pole, three-wire locking and grounding type:

	RECEPTACLE	CAP	CONNECTOR
Arrow-Hart	6210	6212	6214
Bryant	70620FR	70620NP	70620NC
General Electric	GL0620	GLD0621	GLD0623
Hubbell	2320A	2321	2323
Pass & Seymour/Legrand	L620-R	L620-P	L620-C

12. 20A-480V, NEMA L16-20, three-pole, four-wire locking type:

	RECEPTACLE	CAP	CONNECTOR
Arrow-Hart	6430	6432	6434
Bryant	71620-FR	71620-NP	71620-NC
General Electric	GL1620	GLD1621	GLD1623
Hubbell	2430A	2431	2433
Pass & Seymour/Legrand	L1620-R	L1620-P	L1620-C

13. 30A-125V, NEMA 5-30, two-pole, three-wire straight blade grounding type:

	RECEPTACLE	CAP	CONNECTOR
Arrow-Hart	5716N	5717N	6716N
Bryant	9530-FR	9630-RP	-
General Electric	GE4138-3	GED0531	GED0533
Hubbell	9308	9309	-
Pass & Seymour/Legrand	3802	5921	-

14. 30A-125V, NEMA L5-30, two-pole, three-wire grounding and locking type:

	RECEPTACLE	CAP	CONNECTOR
Arrow-Hart	6330	6332	6334
Bryant	70530-FR	70530-NP	70530-NC
General Electric	GL0530	GLD0531	GLD0533
Hubbell	2610	2611	2613
Pass & Seymour/Legrand	L530-R	L530-P	L530-C

15. 30A-125/250V, NEMA 14-30, three-pole, four-wire straight blade grounding type:

	RECEPTACLE	CAP
Arrow-Hart	5744N	5746N
Bryant	9430-FR	5746
General Electric	GE4191-3	GED1431
Hubbell	9430	9431
Pass & Seymour/Legrand	5740	5741-AN

16. 30A-125/250V, NEMA L14-30, three-pole, four-wire grounding and locking type:

	RECEPTACLE	CAP	CONNECTOR
Arrow-Hart	6510	6512	6514
Bryant	71430-FR	71430-NP	71430-NC
General Electric	GL1430	GLD1431	GLD1433
Hubbell	2710-A	2711	2713
Pass & Seymour/Legrand	L1430-R	L1430-P	L1430-C

17. 30A-250V, NEMA L6-30, two-pole, three-wire locking blade grounding type:

	RECEPTACLE	CAP	CONNECTOR
Arrow-Hart	6340	6342	6344
Bryant	70630-FR	70630-NP	70630-NC
General Electric	GL0630	GLD0631	GLD0633
Hubbell	2620-A	2621	2623
Pass & Seymour/Legrand	L630-R	L630-P	L630-C

18. 30A-250V, NEMA 6-30, two-pole, three-wire straight blade grounding type:

	RECEPTACLE	CAP	CONNECTOR
Arrow-Hart	5700N	5701N	6700N
Bryant	9630-FR	9630-ANP	-
General Electric	GE4139-3	GE4328-9	GE4373-9
Hubbell	9330	9331	-
Pass & Seymour/Legrand	3801	5931	-

19. 50A-208V (50A-600V), three-pole, four-wire locking type with ground:

	RECEPTACLE	CAP	CONNECTOR
Arrow-Hart	3769	3765	3764
Bryant	3769	3765	3764
General Electric	LD3769	LD3765	LD3764
Hubbell	3769	3765-C	3764-C
Pass & Seymour/Legrand	3769	3765	3764

20. 50A-125/250V, NEMA 15-50, three-pole, four-wire grounding straight blade type:

	RECEPTACLE	CAP
Arrow-Hart	5754N	5745N
Bryant	9450-FR	5745
General Electric	GE4181-3	GE4180-3
Hubbell	9450	9451
Pass & Seymour/Legrand	5750	5751-AN

21. 50A-125/250V, three-pole, four-wire grounding locking blade type:

	RECEPTACLE	CAP	CONNECTOR
Arrow-Hart	CS6369	CS6365	CS6364
Bryant	CS6369	CS6365	CS6364
General Electric	-	-	-
Hubbell	CS6369	CS6365	CS6364
Pass & Seymour/Legrand	-	-	-

22. 50A-250V, NEMA 6-50, two-pole, three-wire grounding straight blade type:

	RECEPTACLE	CAP	CONNECTOR
Arrow-Hart	5709N	5710N	6709N
Bryant	9650-FR	9650-RP	-
General Electric	GE4141-3	GED0651	GED0653
Hubbell	9367	9368	-
Pass & Seymour/Legrand	3804	3869	-

23. 60A-120/208V, three-phase, 60 Hz, five-pole, five-wire, watertight, with threaded cap:

	BOX	ANGLE ADAPTER	RECEPTACLE BODY	COMPLETE ASSEMBLY
Hubbell	26401	26404	26520	-
Crouse-Hinds	-	-	-	Area-6575
Russell Stoll	-	-	-	DS6516-FRAB-

24. 60A-480V, NEMA L16-20, three-pole, four-wire locking type:

	RECEPTACLE	CAP	CONNECTOR
Arrow-Hart	-	-	-
Bryant	-	-	-
General Electric	-	-	-
Hubbell	HBL 26410	HBL 26402	HBL 26418
Pass & Seymour/Legrand	-	-	-

- D. Safety receptacle: 15A-125V, NEMA 5-15, straight blade grounding safety receptacle, Hubbell No. SG-62H-1.

- E. Door monitoring switches:

- General: Provide magnetic door switches (one per leaf) and key switches at specific door locations as indicated on Drawings. Refer to Electrical Drawings details for schematic installation details of door switches.
- Magnetic contact switches: Provide concealed magnetic SPDT switches with minimum 6-ft. wire leads, Sentrol No. 1076W-06 for hollow metal doors and frames. Where necessary, provide other similar Sentrol types to suit concealed installation conditions, as approved by Owner and compatible with Owner's ride control and/or existing security system equipment. Color of switches to closely match finish or paint color of door frame.

3. Key switches: Arrow-Hart No. 1191L.
- F. Device cover plates:
1. Interior plates: Specification grade plastic, 0.1 in. thick, ivory in color, UL listed.
    - a) Plates in kitchens and restrooms to be polished stainless steel, 0.040 in. thick except in kitchens use double lift lid weatherproof gasketed plates for convenience receptacles.
    - b) MATV plate: RMS No. CA-4028.
  2. Exterior plates: Choose type of exterior cover plate in accord with the device location and/or manner in which device will be used. Device cover plates shall be die-cast aluminum with hinged cover, rated for respective type of use specified below, or as indicated on Drawings.
    - a) Outlet box weatherproof hoods: NEMA 3R rating, gasketed, for unattended use with cover closed, padlockable latching cover to meet OSHA lockout/tagout requirements, large cord opening and UL listed. As manufactured by Hubbell, Intermatic or Leviton.
    - b) Low profile weatherproof cover: Gasketed, approved for use with cover open, self-closing hinged covers (two independent self-closing lids for duplex receptacles which are horizontally mounted), UL listed. As manufactured by Hubbell, Leviton or Pass & Seymour.
    - c) Communication outlet weatherproof hoods: NEMA 3R rating for unattended use with cover closed, two-cord openings and UL listed. As manufactured by Red Dot.

### PART 3 EXECUTION

#### 3.01 INSTALLATION

- A. Mount switches and receptacles in vertical position in building interiors.
- B. Mount receptacles with weatherproof plates in horizontal position.
- C. Install receptacles mounted vertically so that the ground contact falls on the top position, and horizontally-mounted receptacles with neutral pole in top position.
- D. Use plastic blank plates on J-boxes in public areas.
- E. Use mechanical type door switches for load control.
- F. Install receptacles for plug in lighting fixtures within 36 in. of fixture location.
- G. Use safety type receptacles with low profile weatherproof metal covers for all convenience outlets in guest accessible areas (i.e., queue lines, waiting areas, etc.).
- H. All GFI type exterior receptacles shall be provided with weatherproof metal hoods.
- I. GFI type receptacles shall not be fed-through wire.

END OF SECTION 16140

**SECTION 16142 – NAMEPLATES AND WARNING SIGNS****PART 2 PRODUCTS**

- 2.01 Nameplate shall be plastic laminate with 3/4" high letters in white on black background screwed onto equipment designations shall clearly state:
- A. Equipment Enclosure Nameplates.
    - 1. Manufacturer's nameplate including equipment design rating of current, voltage, KVA, HP, bus bracing rating, or as applicable.
    - 2. Equipment nameplate designating system usage and purpose, system nominal voltage, equipment rating for KVA, amperes, HP and RPM as applicable. Designation data per drawings or to be supplied with shop drawings approval.
  - B. Device nameplates: Device usage, purpose, or circuit number; manufacturer and electrical characteristic ratings including the following:
    - 1. Circuit Breakers: Voltage, continuous current, maximum interrupting current and trip current.
    - 2. Switches: Voltage, continuous current, horsepower or maximum current switching. If fused, include nameplate stating "Fuses must be replaced with current limiting type of identical characteristics."
    - 3. Contactors: Voltage, continuous current, horsepower or interrupting current, and whether "mechanically-held" or "electrically-held".
    - 4. Motors: Rated voltage, full load amperes, frequency, phases, speed, horsepower, code letter rating, time rating, type of winding, class and temperature.
    - 5. Controllers: Voltage, current, horsepower and trip setting of motor running over current protection.
- 2.02 Warning signs shall be minimum 18 gauge steel, white porcelain enamel finish with red lettering. Lettering to read "DANGER - HIGH VOLTAGE" in 1" letters. Warning signs to be included on door or immediately above door of all electrical equipment rooms, vaults or closets containing equipment rooms, vaults or closets containing equipment energized above 150 volts to ground, except where such spaces are accessible from public areas.
- 2.03 Warning designation in 1" red letters shall be painted by stencil or pre-printed adhesive on each pull box, cabinet or 1-foot length of exposed conduit stating "DANGER" and giving voltage of enclosed conductors such as "DANGER - 480 VOLTS", for all systems over 150 volts to ground.

**PART 3 EXECUTION**

- 3.01 Nameplates shall be mounted by self-tapping or threaded screws and bolts or by rivets.
- 3.02 Signs shall be permanently mounted with cadmium plated steel screws or nickel-plated brass bolts.

END OF SECTION 16142



**SECTION 16163 - DISTRIBUTION PANELBOARDS****PART 1 GENERAL****1.01 WORK INCLUDED**

- A. Distribution panelboards.

**1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Submittals: Section 16000.
- B. Overcurrent Protective Devices: Section 16180.
- C. Disconnects: Section 16170.
- D. Control Devices: Section 16901.

**PART 2 PRODUCTS****2.01 MATERIAL AND FABRICATION**

- A. Provide distribution panelboards with molded case breakers or fused switches for mains and feeders as indicated. All equipment shall be listed to meet or exceed the available short circuit current.
- B. Provide full length copper bussing including areas indicated as space only.
- C. Provide full size neutral bus where neutral bus is indicated.
- D. Provide copper ground bus adequate for number of grounded circuits.
- E. Circuit Breaker Type: Square-D Co. I-Line, with alternate bid for General Electric type AV Line.
- F. All circuit breakers shall be capable of being locked in the off position.

**PART 3 EXECUTION****3.01 INSTALLATION**

- A. Secure panelboards to structures to withstand wire pulling strains.
- B. Secure surface mounted panelboards to wood studs or channel material spanning metal studs.
- C. Do not use toggle bolts to wall mount units.
- D. Floor mounted units shall be on 4-inch concrete housekeeping pads.
- E. Secure to structure per seismic requirements.

**3.02 LABELING AND IDENTIFICATION**

- A. Provide engraved plastic nameplates on all distribution panelboards shown on the single line diagram.

- B. Provide panelboard and source feed designation on nameplates with minimum 3/8" lettering for the panel name and 3/4" height lettering for the source feed designation.

EXAMPLE:           DLA  
FED FROM:         T-2

- C. Provide engraved plastic nameplates with 1/4" minimum height letters at all branch overcurrent devices indicating the circuit designating and the load served.
- D. Secure nameplates with at least two screws or rivets. Cementing and adhesive installation not acceptable.

END OF SECTION 16163

**SECTION 16164 – BRANCH CIRCUIT PANELBOARDS**

## PART 1 GENERAL

## 1.01 WORK INCLUDED

- A. Branch circuit panelboards.

## 1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Submittals: Section 16000.
- B. Overcurrent Protective Devices: Section 16180.
- C. Control Devices: Section 16901.

## PART 2 PRODUCTS

## 2.01 MATERIAL AND FABRICATION

- A. Provide factory assembled, enclosed panelboards in dead front cabinets, with doors, surface mounted or recessed as indicated, not less than 20" wide and 5-3/4" deep. Height will depend on the number of breakers and spaces.
- B. Where a control compartment is indicated, provide an integral compartment with a separate hinged lockable door held with captive screws. Identify all internal control wiring with manufacturers wire numbering or control wire numbering when indicated, at all terminal points and connections.
- C. Provide feeder terminal lugs for both main lugs only and main breakers rated for use with copper conductors.
- D. Provide full length copper bussing including areas indicated as space only.
- E. Provide full size neutral bus where neutral bus is indicated. Provide equipment ground bus and bolt-on circuit breakers.
- F. Key all door locks alike.
- G. 120/208V, 3 Phase, 4 Wire Panelboards: Square-D Co. Type NQOD or Powerlink G3 NF with programmable module where designated, alternate bid for General Electric type AQ.
- H. 277/480V, 3 Phase, 4 Wire Panelboards: Square-D Co. Type NF, alternate bid for General Electric type CCB.
- I. All equipment shall be listed to meet or exceed the available fault current by 10%.
- J. Doors shall be hinged.
- K. All placards are welded steel type.

## PART 3 EXECUTION

## 3.01 INSTALLATION

- A. Secure panelboards to building structure to withstand wire pulling strains.
- B. Secure surface mounted panelboards to wood studs or channel material spanning metal studs.
- C. Do not use toggle bolts.
- D. Contractor shall program lighting control Powerlink panelboard per owner's requirements.

### 3.02 LABELING AND IDENTIFICATION

- A. Provide engraved plastic nameplates on all branch circuit panelboards shown on the single line diagram.
- B. Provide panelboard and source feed designation on nameplates with 3/8" minimum height lettering for the panel name and 1/4" height lettering for the source feed designation.

EXAMPLE:           LA  
FED FROM:         DLA

- C. Secure nameplates with at least two spaces or rivets. Cementing and adhesive installation not acceptable.
- D. Provide a typewritten directory for each branch circuit panelboard, showing each circuits and its use. Provide metal directory frame with plastic window.

END OF SECTION 16164

**SECTION 16170 – DISCONNECTS****PART 1 GENERAL****1.01 WORK INCLUDED**

- A. Disconnects: Switches, fused or unfused.

**1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Submittals: Section 16010.
- B. Fuses: Section 16180.

**PART 2 PRODUCTS****2.01 ACCEPTABLE MANUFACTURERS**

- A. Square D Company
- B. General Electric

**2.02 MATERIAL AND FABRICATION**

- A. Provide heavy duty type, quick-make, quick-break disconnects with cover interlocks.
- B. Provide NEMA Type 1 enclosure for dry locations, provide the proper enclosure for other locations as indicated.
- C. Provide motor rated toggle switches where indicated.
- D. Provide fused disconnect for elevator drive motors.
- E. Provide rejection clips on disconnects where rejection type fuses are to be installed.

**PART 3 EXECUTION****3.01 INSTALLATION**

- A. Securely fasten disconnects to structure to withstand wire pulling strains.

**3.02 LABELING AND IDENTIFICATION**

- A. Provide engraved plastic nameplates on individually mounted disconnects with minimum 1/4" height letters indicating the load served and the source feed designation.

EXAMPLE:   LOAD:            A/C-1  
              FED FROM:   DHA-1

- B. Secure nameplates with at least two screws or rivets. Cementing and adhesive installation not acceptable.

END OF SECTION 16170

**SECTION 16190 – SUPPORT DEVICES****PART 1 GENERAL****1.01 WORK INCLUDED**

- A. Support devices for conduit, boxes, lighting fixtures and equipment.

**PART 2 PRODUCTS****2.01 ACCEPTABLE MANUFACTURERS**

- A. Hangers, Straps and Beam Clamps:
  - 1. Efcor.
  - 2. Raco, Inc.
  - 3. Steel City.
  - 4. O.Z./Gedney Co.
  - 5. Caddy Fastening System by ERICO Products Inc.
- B. Channels and Fittings:
  - 1. Kindorf.
  - 2. Unistrut Corp.
- C. Anchors:
  - 1. Acherman-Johnson Corp.
  - 2. Phillips Drill Co.
  - 3. Rawl Products Co.

**2.02 MATERIAL AND FABRICATION**

- A. Hangers: Steel cadmium plated.
- B. Straps: One-hole and two-hole malleable iron, hot-dipped galvanized or steel, cadmium or zinc plated.
- C. Beam Clamps: Malleable iron, hot-dipped galvanized or cadmium plated.
- D. Channels and Fittings:
  - 1. Channels: Hot-dipped galvanized.
  - 2. Fittings: Galvanized.
- E. Anchors: Self drilling and expansion bolt types. No wood or fiber plugs or concrete nails are acceptable.

**PART 3 EXECUTION****3.01 USE**

- A. Use one-hole or two-hole straps for single conduit runs on walls or ceilings.

- B. Use hangers with solid steel rods for hanging single conduits.
- C. Use formed channel trapezes for groups of two or more conduits.
- D. To fasten boxes and supports to:
  - 1. Wood: Use wood screws or screw type nails of equal holding power.
  - 2. Brick and Concrete: Use bolts and expansion shields.
  - 3. Hollow Masonry Units: Use toggle bolts.
- E. Support sheet metal boxes from building structure directly or by bar hangers.
- F. Do not penetrate reinforced concrete beams with fastenings more than 1-1/2" or reinforced concrete joints with more than 3/4" fastenings to prevent contact with reinforcing steel.

END OF SECTION 16190

**SECTION 16450 – GROUNDING****PART 1 GENERAL****1.01 REFERENCES**

- A. N.E.C.: Article 250 "Grounding".
- B. Underwriter's Laboratories (U.L.). Standard A67 - "Grounding and Bonding Equipment". STD 869 - Grounding and Bonding.
- C. ITEE - Standards 142 and 241.

1.02 DESCRIPTION OF SYSTEM: A permanent grounding system with methods and materials in accordance with applicable Codes and Standards, able to conduct ground fault currents to the grounded neutral of electrical distribution systems, and limit potential differences between grounding conductors, raceways and enclosures.

**1.03 SUBMITTALS**

- A. Product Data: Submit manufacturer's data on grounding systems and accessories.
- B. Shop Drawings: Submit layout drawings of grounding systems and accessories including, but not limited to, ground wiring, copper braid and bus, ground rods, and plate electrodes.

1.04 QUALITY ASSURANCE: Installer qualifies with at least 3 years of successful installation experience on projects with electrical grounding experience similar to that required for project.

1.05 DELIVERY, STORAGE, AND HANDLING: Handle electrical grounding accessories and components carefully to avoid damage. Store in location that will protect from dirt and weather.

**PART 2 PRODUCTS**

2.01 GROUND RODS: Copper clad steel, unless indicated otherwise. Minimum dimension of 5/8" diameter by 8' long or larger if indicated and sectional rods with couplings where lengths exceeding 12' are specified or indicated, or where added driving depth is required to achieve a specified minimum resistance.

2.02 GROUNDING ELECTRODE: Bare stranded copper, 3/0 AWG unless indicated otherwise, for installation in soil or embedded in concrete and cable with type TW insulation when installed in raceway. Install without splice from connection to connection.

2.03 GROUNDING CONDUCTORS: Type TW insulation, unless specified or indicated otherwise with a continuous green outer insulating jacket for size #6 AWG and smaller and with green tape banding for #4 AWG and larger, marked at each access point (e.g.: Junction boxes, Enclosures).

2.04 CLAMPS AND PRESSURE CONNECTORS: Cast copper, copper alloy, or bronze alloy suitable for use with aluminum and copper. Double bolt type with formed shoe and "U" cable clamp for connection to pipe or conduit; Single bolt type with cable shoe and "U" clamp for connections to flat bar or metal; and double bolt, parallel conductor split clamp type for cable to cable connections.

2.05 WELDED CONNECTIONS: Exothermic process (Cadweld or Thermoweld).



- 2.06 EQUIPMENT ROOM GROUND TERMINAL BAR: Copper 1/4" X 2-1/2" X 24", unless otherwise indicated. Two rows of holes on 1-1/2" centers for 1/2" bolt, to receive cables from two directions.

PART 3 EXECUTION

- 3.01 GENERAL: Ground conductive raceways, cable trays and enclosures for electrical systems wiring. Make ground circuits complete to form permanent conductive paths. Solidly ground each low voltage electrical system unless indicated or specified as ungrounded, or grounded through an impedance of a specified value. Provide bare conductors when in open air or soil and provide 600 volt, green, insulated conductors when in raceway.
- 3.02 MAIN GROUNDING JUMPER: Install a main grounding jumper between the system neutral and the enclosure ground bus (or directly to enclosure where ground bus is not present) at each location where system grounding is required. Main grounding jumper:
- A. Formed bus in switchboards and panelboards.
  - B. Formed bus or copper cable in transformers not coupled in unitized assembly with distribution equipment.
- 3.03 GROUND CONNECTIONS: Make grounding electrode connections electrically ahead of any overcurrent or disconnect device or tap connection such that disconnection of neutral load conductors does not interfere with or remove the system ground connection. Use separate lugs on the transformer neutral terminals for neutral and main grounding jumpers when cable is used for transformer connections.
- 3.04 SEPARATELY DERIVED SYSTEMS: For each separately derived system, grounded or ungrounded, install a grounding electrode conductor between each system enclosure ground bus (or bolted connection to enclosure where ground bus is not present) and a cold water pipe or building structural steel of one (1) inch size or larger near the separately derived system ground connection. Make connections to water pipes or steel accessible for easy inspection. Provide a separate ground conductor for each audio, video, isolated panels and UPS as noted on the plans.
- 3.05 SERVICE GROUND: For each low voltage service, install a grounding electrode conductor between the system enclosure ground bus and the water service entrance to the building and install bonding jumpers around insulating unions and removable fittings in the water pipe between the grounding electrode conductor connection to the water pipe and the water service entrance.
- 3.06 GROUNDING ELECTRODE SYSTEM: Install a complete grounding electrode system with interconnecting cables and terminations at the equipment room ground terminal bar. Make connections to the grounding electrode system accessible. Install the following grounding electrode systems:
- A. Metal frame of building.
  - B. Grounding electrode encased by at least two inches of concrete, within and near the bottom of the building foundation or footing of the type specified in Part 2 - Products, at least 20 feet in length without splice from connection to connection.
  - C. Connection of other metal piping systems as required by National Electrical Code Article 250.

- D. Driven ground rods.
  - E. Driven steel piles.
  - F. Connection to water service with bonding jumper around water meter.
- 3.07 GROUNDING ELECTRODE CONDUCTORS: Install grounding electrode conductor in PVC or other non-conductive, non-metallic enclosure where a raceway system is indicated or necessary for conductor installation. Install grounding electrode conductors without splice from the enclosure ground bus to the connection at the grounding electrode system.
- 3.08 GROUND RODS: Install a vertical position, full length below grade unless specified otherwise, and with conductor and top of rod 6" minimum below grade. Provide exothermic welds at all connections.
- 3.09 EQUIPMENT ROOM GROUND TERMINAL BAR: Install in equipment rooms where indicated. Mount bar by anchors and bolts using 1-1/2" long segments of 1/2" rigid conduit as spacer between bar and wall. Use a minimum of two supports, 18" on center. Connect grounding electrode system conductors, system enclosure ground bus, and other indicated electrode systems to the terminal bar. Label permanently all ground conductors as to destination location, e.g. TR1, panel IPS, etcetera.
- 3.10 EQUIPMENT GROUND: Form the equipment ground circuits with rigid metallic raceways (e.g., EMT, rigid steel conduit) unless indicated otherwise. Make all threaded coupling connections wrench tight. Install bonding jumpers for continuity around fittings and terminations where the conductive raceway is made non-continuous. Where indicated or specified, install ground conductors in raceways to augment the circuits formed by the metallic raceway system. Bond the conductors to boxes or enclosures in which access is possible. Size conductors as specified, indicated, or required by code, whichever is larger. Install grounding bushings and bonding jumpers to enclosures or ground bussing for the following: Service entrance feeder; each location where multiple ring knockouts are damaged during conduit installation; each location where conduits are stubbed up into floor mounted and each conduit termination at a painted enclosure where paint is not removed before installation of raceway.
- 3.11 FLEXIBLE RACEWAY GROUNDING: Install a ground conductor inside all flexible raceways (e.g., Flexible steel, liquid tight) regardless of length. Bond the conductor to the enclosure or ground bus in the nearest box or access on either side of the flexible section. Size conductor as specified, indicated, or required by code, whichever is larger.
- 3.12 NON-CONDUCTIVE RACEWAY: Install a ground conductor in raceways of non-conductive materials. Bond conductor to conductive enclosures in which access is possible. Bond non-current carrying conductive equipment contained in a non-conductive enclosure. Install insulated or bare conductors, sized as specified, indicated, or required by code, whichever is larger.
- 3.13 SECTIONAL RACEWAY: Install a ground conductor in sectional raceways with removable covers for access (e.g., Plug-in strips, surface raceway systems, and wireways) unless specified otherwise. Size conductor in accordance with the N.E.C. for the largest phase conductor size installed in raceway, or as indicated. Bond sections of the raceway to the ground conductor. Connect receptacle ground terminals in the raceway to the ground conductor, and make other ground connections indicated on the drawings.
- 3.14 CABLE SUPPORT SYSTEMS: Ground elements of the cable support system to panelboards,

cabinets and switchboards from which their circuits originate. Install a ground conductor sized as required by code, as indicated, or #12 AWG, whichever is larger.

- 3.15 MULTI-CONDUCTOR CABLE, METALLIC SHEATH: Use multi-conductor cable with metallic sheath or armor approved for use as ground circuit conductor or install ground conductor(s). Size ground circuit conductor as required by code, as specified, or as indicated on the drawings, whichever is larger. Terminating devices for cable using the sheath or armor as the ground circuit conductor shall be approved for use as the connecting device between the cable and the enclosure. Terminate internal ground circuit conductors by lug to the interior of the enclosure or to the contained ground bus where present. Use bare or clearly identified internal grounding conductors.
- 3.16 MULTI-CONDUCTOR CABLE, NON-METALLIC SHEATHED: Use only non-metallic sheathed multi-conductor cables having a ground circuit conductor enclosed in the sheath the same size as the ungrounded conductors. Use bare or clearly identified internal grounding conductors. Terminate ground circuit conductor by lug to the enclosure ground bus where present or to the interior of the enclosure.
- 3.17 GROUND CONDUCTOR BONDING: Bond grounding conductors to boxes or enclosures at each access point. Do not use building steel as equipment grounding path. Use welded ground connections, at least where such are buried in soil, installed below slabs on grade, or embedded in concrete.

END OF SECTION 16450

**SECTION 16901 - GENERAL CONTROL DEVICES****PART 1 GENERAL****1.01 WORK INCLUDED**

- A. Pushbutton and selector switches.
- B. Control stations.
- C. Relays.
- D. Time delay relays.
- E. Control power transformers.
- F. Control panels.

**1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Control Cabinets: Section 16130.

**1.03 REFERENCES**

- A. NEMA ICS 1 - General Standards for Industrial Control Systems.
- B. NEMA ICS 2 - Standards for Industrial Control Devices, Controllers and Assemblies.
- C. NEMA ICS 6 - Enclosures for Industrial Controls and Systems.
- D. NEMA ST 1 - Standard for Specialty Transformers (Except General Purpose Type.)
- E. NFPA 70 - National Electrical Code.

**1.04 SUBMITTALS**

- A. Submit under provisions of Section 0100.
- B. Shop Drawings: Submit to NEMA ICS 1 indicating control panel layouts, wiring connections and diagrams, dimensions, support points.
- C. Product Data: Provide for each component showing electrical characteristics and connection requirements.
- D. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by Product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of Product.

**1.05 QUALIFICATIONS**

- A. Manufacturer: Company specializing in manufacturing the products specified in this section with minimum three years documented experience, and with service facilities within 100 miles of project.

#### 1.06 REGULATORY REQUIREMENTS

- A. Conform to requirements of NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and indicated.

### PART 2 PRODUCTS

#### 2.01 MATERIAL AND FABRICATION

- A. Contactors:
  - 1. Mechanically and Electrically Held Contactors: Open type, 120V coil, number of poles and ampere rating as indicated. Factory wired and installed in lighting panelboard compartment.
    - a) Square D Co. Class 8903.
- B. Time Switch:
  - 1. Intermatic time switch as shown on the drawings.
- C. Photo-Control With Time Delay:
  - 1. Rated for 1000W load or 1800 VA, sp-st, in weatherproof enclosure.
  - 2. General Electric Co. Cat. No. CR174H651, or equal.
- D. Control Relays:
  - 1. 120 VAC coil, 10A rated contacts with number of poles indicated. Square D Co. Class 8501 Type X.
  - 2. 48 VDC coil, 10A rated contacts. Square D Co. Class 8501 Type KDP-12.
  - 3. 24 VDC coil, 10A rated contacts, plug-in Type 3PDT. Square D Co. Class 8501 Type KDP-13 with NR62 socket.
  - 4. Pneumatic Time Delay Relay: Square D Co. Class 9050 Type B.
- E. Control Units, Such as Push Buttons, Pilot Lights, Selector Switches: Heavy duty, oil tight - Square D Co. Class 9001.
  - 1. Push buttons, standard, full guard. Red for stop, green for start.
  - 2. Pilot lights, transformer type, with color caps as indicated.
  - 3. Selector switches, 3 position (Hand-Off-Automatic) manual return.
  - 4. Legend Plates: Standard, with legends as indicated.

#### 2.02 LABELING AND IDENTIFICATION

- A. Provide engraved plastic nameplates with 1/4-inch minimum height letters indicating circuit designation of panel or device controlled on controls which are individually enclosed.

- B. Secure nameplates with at least two screws or rivets. Cementing and adhesive installation not acceptable.

END OF SECTION 16901

**SECTION 16920 – MOTOR CONTROL****PART 1 GENERAL****1.01 WORK INCLUDED**

- A. Motor control; including molded case circuit breakers or fusible disconnects, magnetic starters and other control devices.

**1.02 SUBMITTALS**

- A. Submit in accordance with Section 16000.

**1.03 RELATED WORK SPECIFIED ELSEWHERE**

- A. Motor Rated Switches: Section 16170.
- B. Control Units: Section 16901.
- C. Control Section: Division 15.

**PART 2 PRODUCTS****2.01 MATERIAL AND FABRICATION****A. Motor Control Centers:**

1. Provide factory assembled motor control centers consisting of one or more, minimum: 19 inch wide by 16 inch deep, dead front, dead rear, vertical sections bolted together.
2. Full voltage, non-reversing starter, unless otherwise indicated.
3. Conform with NEMA Class 1, Type B wiring for starter unit control.
4. Provide two normally open and one normally closed auxiliary contacts on each except where more contacts are indicated.
5. Provide full length copper bussing including areas indicated as space only.
6. Provide a horizontal copper ground bus drilled and tapped every 10 inches for 1/4-20 machine screws.
7. Provide an individual control transformer with the secondary fused and grounded for each starter. Size as required for the control devices indicated plus 25% spare capacity minimum.
8. Provide a 3-position selector switch (hand-off-auto), manual return, for each starter unless otherwise indicated.
9. Provide a transformer type push-to-test green pilot light energized by an auxiliary contact.
10. Provide approved pull apart terminal blocks or control circuit disconnect switch for all external wiring connections.
11. Identify all internal control wiring with manufacturers wire numbering or control wire numbering when indicated, at all terminal points and connections.
12. Allen-Bradley, GE or Square-D Co.

**B. Combination Motor Starters:**

1. Full voltage, non-reversing starters unless otherwise noted and magnetic trip only circuit breakers, or fusible disconnects in NEMA 1 enclosure for dry areas and NEMA 3R where indicated weatherproof, sized as indicated. Provide current limiters where indicated.
2. Provide two normally open and one normally closed auxiliary contacts on each starter,

- except where contacts are indicated.
3. Provide an individual control transformer with the secondary fused and grounded for each starter. Size as required for the control devices indicated plus 25% spare capacity minimum.
  4. Provide a 3-position selector switch (hand-off-auto), manual return, for each starter unless otherwise indicated.
  5. Provide a transformer type push-to-test green pilot light energized by an auxiliary contact.
  6. Identify all internal control wiring with manufacturers wire numbering or control wire numbering when indicated, at all terminal points and connections.
  7. Combination Starter and Circuit Breaker: Square-D Co. Class 8539, GE or Allen-Bradley.
  8. Combination Starter and Disconnect: Square-D Co. Class 8538, GE or Allen-Bradley.

C. Motor Manual Starters:

1. Single Phase:

- a) For fractional HP motors, single unit with toggle operator, in NEMA 1 enclosure for dry areas and NEMA 3R where indicated weatherproof.
- b) Number of poles as indicated.
- c) Provide overload protection.
- d) Square-D Co. Class 2510, GE or Allen-Bradley.

2. Three Phase:

- a) For integral horsepower motors, single unit 3-pole with toggle operator in NEMA 1 enclosure for dry areas and NEMA 3R where indicated weatherproof.
- b) Square-D Co. Class 2510, GE or Allen-Bradley.

D. Magnetic Motor Starters (Individually Mounted):

1. Non-reversing, in NEMA 1 enclosure for dry areas and a NEMA 3R enclosure where indicated weatherproof.
2. Provide start-stop push button on door otherwise indicated.
3. Square-D Co. Class 8536, GE or Allen-Bradley.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Bolt all sections of the control centers together tightly and secure to floor with anchor bolts after setting assembly plumb and level.
- B. Secure units to structures to withstand wire-pulling strains.
- C. Use motor nameplates data for selection of heater elements in motor starters, except where power factor correction is used. Size heater elements accordingly.

3.02 LABELING AND IDENTIFICATION

- A. Provide engraved plastic nameplates on all electrical distribution equipment shown on the single line diagram.
- B. Provide motor control center and source feed designation on nameplates with 3/8" minimum lettering for the motor control center name and 1/4" height lettering for the source feed designation.



EXAMPLE: MCC-A  
FED FROM: DHA-1

- C. Provide engraved plastic nameplates with 1/4-inch minimum height letters indicating circuit designation at branch overcurrent devices in motor control centers.
  - 1. Circuit designation and load served at branch overcurrent devices in motor control centers and combination starters.
  - 2. Circuit designation and load served at manual motor starters and individually mounted magnetic motor starters.
- D. Secure nameplates with at least two screws or rivets. Cementing and adhesive installation is not acceptable.

END OF SECTION 16920