



Ventura County Community College District

PURCHASING DEPARTMENT

Date: September 30, 2024

Dear Prospective Bidders,

Attached is the bid packet for **Bid #692 OC Administration Building HVAC Replacement (Phase II)**

A mandatory Job-Walk will begin at 10:00am Wednesday, October 9, 2024. Bidders are to meet at the Oxnard College, Maintenance & Operations Dept., 4000 S Rose Ave., Oxnard CA, 93033

For directions call (805) 678-5191

Following the job-walk, all further questions are to be emailed to the Purchasing Specialist as listed below.

The Deadline for Questions is 3:00pm, Wednesday, October 16, 2024.

The Deadline for Proposal Submission is 3:00 p.m., Wednesday, October 23, 2024. 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 electronic 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. 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 **A, or B, or 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 project at the email address listed below or by calling **805-652-5540**.

Sincerely, Renée Knight
Purchasing Specialist / rknight@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 #692 Oxnard College Administration Building HVAC Replacement (Phase II)**. 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 Wednesday, October 23, 2024**, 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 <https://purchasing.vcccd.edu/>. Bidders must be pre-qualified and registered CUPCCAA contractors with VCCCD. To register, visit <https://www.qualitybidders.com/> and fill out the CUPCCAA and pre-qualification applications. **A mandatory Job-Walk will begin at 10:00 a.m., Wednesday, October 9, 2024.** Bidders are to meet at **Oxnard College Maintenance & Operations Dept, 4000 S. Rose Ave, Oxnard CA 93033**. Pursuant to Public Contract Code §3300, Bidder must possess a current **A, or B or 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.

Renée Knight , Purchasing Specialist

Publication Dates: **09/30/2024** and **10/07/2024**, Ad #10606059

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) calendar 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 together with all substantiating data, no later than seven (7) calendar 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.

- 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"), at 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:

Bid #692 OC Administration Building HVAC Replacement (Phase II)

Base Bid Amount: \$

(Total bid amount in figures)

Dollars

(Total bid amount in words)

B. 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.

(initial) **No Addenda Issued**

(initial) **Addenda Nos. _____ received, acknowledged and 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. All amounts will be entered on the proposal in the written amount and listed in figures. In the event there is a discrepancy between the bidder's written amounts and figures, the written amount will prevail.

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

Name of Vendor: _____ **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 _____, 202____ 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 #692 OC Administration Building HVAC Replacement (Phase II)** 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)

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

(Area Code and Telephone Number of Surety)

(Attach Attorney-in-Fact Certificate)

SECTION 00310 AGREEMENT

THIS AGREEMENT is made this _____ day of _____, 20____, in the City of Camarillo, 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 #692 Oxnard College Administration Building HVAC Replacement (Phase II)**.

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 **by June 30, 2025**, as 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	Iran Act Cert (Projects over \$1Mill)
Statement of Bidder's Qualifications	General Conditions
Bid Security Bond	Special Conditions
Agreement	Specifications
Labor Compliance Program	Drawings
Proof of DIR Registration Per SB 854	Guarantee

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: Cathy Bojorquez

Title: Vice Chancellor, Business and
Administration 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 #692 OC Administration Building HVAC Replacement (Phase II)**.

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 #692 OC Administration Building HVAC Replacement (Phase II)**.

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 ("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 Obligor to the Surety demanding that the Surety perform its obligations under this Bond, and the Obligor shall be entitled to enforce any remedy available to Obligor.

Within fifteen (15) calendar days of Obligor's 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 Obligor 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 Obligor 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 Obligor within the time provided for herein above, the Obligor 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 Obligor for all damages and costs sustained by the Obligor 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 Obligor is required to engage the services of an attorney in connection with enforcement of this Bond, each shall pay Obligor's 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 _____, 20____
(City and State)

(Signature)

(Typed or Printed Name)

IRAN CONTRACTING ACT CERTIFICATION/EXEMPTION
Public Contract Code §§ 2202-2208

Prior to bidding on, submitting a proposal or executing a contract or renewal for a contract for goods or services of \$1,000,000 or more, a vendor must either: a) certify it is **not** on the current list of persons engaged in investment activities in Iran created by the California Department of General Services ("DGS") pursuant to Public Contract Code §2203(b) and is not a financial institution extending twenty million dollars (\$20,000,000) or more in credit to another person, for 45 days or more, if that other person will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS; or b) demonstrate it has been exempted from the certification requirement for that solicitation or contract pursuant to Public Contract Code §2203(c) or (d).

To comply with this requirement, please insert your vendor or financial institution name and Federal ID Number (if available) and complete **one** of the options below. Please note: California law establishes penalties for providing false certifications, including civil penalties equal to the greater of \$250,000 or twice the amount of the contract for which the false certification was made; contract termination; and three-year ineligibility to bid on contracts. See Public Contract Code §2205.

OPTION #1 - CERTIFICATION

I, the official named below, certify I am duly authorized to execute this certification on behalf of the vendor/financial institution identified below, and the vendor/financial institution identified below is **not** on the current list of persons engaged in investment activities in Iran created by DGS and is not a financial institution extending twenty million dollars (\$20,000,000) or more in credit to another person/vendor, for 45 days or more, if that other person/vendor will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS.

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

OPTION #2 – EXEMPTION

Pursuant to Public Contract Code §§ 2203(c) and (d), a public entity may permit a vendor/financial institution engaged in investment activities in Iran, on a case-by-case basis, to be eligible for, or to bid on, submit a proposal for, or enters into or renews, a contract for goods and services.

If you have obtained an exemption from the certification requirement under the Iran Contracting Act, please fill out the information below, and attach documentation demonstrating the exemption approval.

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

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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

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 certifications 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 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 decline to pay the Contractor, or reduce or withhold any portion of a payment otherwise due the Contractor for any progress payment or final payment on account of:

- 8.5.1** In the District's opinion, the Work cannot be completed for the unpaid balance of the Contract Price;
- 8.5.2** In the District's opinion, the Work will not be completed within the Contract Time and the unpaid balance of the Contract Price would not be adequate to cover liquidated damages resulting from the anticipated delay;
- 8.5.3** Any damage has occurred to the District or any Subcontractor, Material Supplier or another contractor, and the Contractor may be liable for such damage;
- 8.5.4** The Contractor fails to perform any portion of the Work in accordance with the Contract Documents or otherwise violates any provision of the Contract Documents or fails to discharge any Contractor obligation thereunder;
- 8.5.5** Any claims, liens, labor compliance withholds, or stop payment notices are filed in connection with the Work or asserted against the District, the Project or the Site;
- 8.5.6** The Contractor fails to reimburse the District for any costs or expenses incurred by the District, or amounts advanced by the District, on behalf of the Contractor as may be provided or permitted in this Contract;
- 8.5.7** Notification has been given that a penalty will be assessed by any State, local or municipal agency or by the District for violations of any applicable laws, including, without limitation, tax laws, labor laws and/or fair employment laws;
- 8.5.8** Any current and non-resolved non-compliance notices issued by any public agency;
- 8.5.9** Defective Work or Work not in conformity with the Contract Documents which is not remedied as required in Article 12 herein;
- 8.5.10** Stop Payment Notices or other liens or third party claims served upon the District as a result of the Contract;
- 8.5.11** Liquidated damages incurred by the District for delays to the Project;
- 8.5.12** Unsatisfactory prosecution of the Work by the Contractor;
- 8.5.13** Failure to store and properly secure materials;
- 8.5.14** Failure of the Contractor to submit, on a timely basis, proper, sufficient, and acceptable documentation required by the Contract Documents, including, without limitation, a Construction Schedule, updated Schedule, Schedule of Submittals, Schedule of Values, monthly progress schedules, Shop Drawings, Product Data and samples, proposed product lists, and/or executed Change Orders;
- 8.5.15** Failure of the Contractor to maintain As-Built Drawings;

- 8.5.16** Erroneous estimates by the Contractor of the value of the Work performed, or other false statements in an Application for Payment;
- 8.5.17** Unauthorized deviations from the Contract Documents;
- 8.5.18** Failure of the Contractor to prosecute the Work in a timely manner in compliance with the Construction Schedule, established progress schedules, milestones, and/or other completion dates;
- 8.5.19** Failure to properly pay prevailing wages as defined in Labor Code §§1720 et seq. or failure to comply with any other Labor Code requirements;
- 8.5.20** Failure to properly maintain or clean up the Site;
- 8.5.21** Failure to indemnify, defend, or hold harmless the District;
- 8.5.22** Failure to make payments due to the District, including but not limited to payments for failed tests, utilities changes, or permits;
- 8.5.23** Failure of the Contractor to make payments when due Subcontractors or Material Suppliers for materials or labor; or
- 8.5.24** Contractor is otherwise in breach, default, or in substantial violation of any provision of this Contract.

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 Manager 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 commence on the Start Date listed on the Notice to Proceed issued by the District to the Contractor and shall be completed (Substantial Completion) **by June 30, 2025**, as 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 Oxnard, 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 as necessary for execution of work. The Contractor will arrange distribution service point for electric power with the Director of Facilities, Maintenance and Operations (DFMO). Contractor shall provide meters, necessary wiring, switches, receptacles, etc., and make connections to distribution points. Contractor is to pay all 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 contaminants from the building.

1.11 Temporary Telephone and Fax Service.

Provide maintain and pay for duration of work, for temporary telephone and fax service including installation, maintenance and removal for construction needs.

1.12 Temporary Water Services.

1.12.1 The District will provide and pay for water at existing mains as shown on the drawings. The Contractor shall provide meter and service lines to site. Temporary service lines shall be installed and removed by the Contractor, who shall pay all charges for making the connections, running temporary lines, installing meter, removing same at the completion of the work, and disconnecting the services.

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 All relocations required to clear work of others shall be performed when requested by the District. 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.

1.12.4 Drinking water shall be available in the Construction trailer.

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.

Provide and maintain temporary toilet facilities for duration of operations. Properly proportion number of fixtures for the number of workers employed all in accordance with CAL OSHA requirements. Provide water tight and floored structures. Maintain in a clean and sanitary condition acceptable to District.

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).

1.18.1 Prior to starting work, provide and maintain for duration of operations, separate temporary office facilities as required for Contractor's administration; likewise, all necessary sheds and facilities for proper storage of tools, materials, and equipment employed in performance of work.

1.18.2 The office shall be conveniently located in area as directed by the District, substantially and neatly constructed, weather-tight, well lighted, and neatly painted inside and out. The office shall be heated and cooled. It shall have doors, which are separately keyed, and two or more windows on opposite sides.

1.19 Temporary Office (Contractor's Trailer).

1.19.1 Prior to starting work, provide and maintain for duration of operations, temporary office facilities as required for Contractor's administration; likewise, all necessary sheds and facilities for proper storage of tools, materials, and equipment employed in performance of work.

1.19.2 The office shall be a separate structure. The location of the office trailer will be determined at the time of mobilization to be acceptable to the District. The office structure shall be substantially and neatly constructed, weather-tight, well lighted, and neatly painted inside and out. The office shall be heated and cooled. It shall have doors that are separately keyed and two or more windows on opposite sides.

1.19.3 The facilities for Contractor's use shall be not less than described herein. The facilities shall be of suitable size to accommodate the office, and shall be furnished with whatever facilities the Contractor needs.

1.19.4 Costs of the field office and utilities, including cleaning service not less than once per week, shall be borne by the Contractor.

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 DFMO.

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/DFMO 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 DFMO, the Project Manager and Inspector of Records (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 DFMO 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 Facilities, 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 DFMO 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 Director of Facilities, Maintenance & Operations 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 Director of Facilities, Maintenance & Operations 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 Director of Facilities, Maintenance & Operations 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 DFMO 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.

1.46.1 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.

1.46.2 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	General Contingency	\$25,000.00
Total Allowances		\$25,000.00

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 Oxnard College is
Jacob Norris, Oxnard College Director of Facilities, Maintenance & Operations,
4000 S Rose Ave., Oxnard CA 93033, Cell: 805-804-7116.

[End Of Section]

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 #692 OC Administration Building HVAC Replacement (Phase II)**. ("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: _____ Date: _____

Subcontractor's Signature _____ Date: _____

Representative to be contacted for services:

Name: _____

Address: _____

Phone No.: _____ Fax No.: _____

Email.: _____

TECHNICAL SPECIFICATIONS

Section 01000

1.01 GENERAL INFORMATION

A. Job Walk

All bidders are required to attend the job walk to be eligible to bid on this project.

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

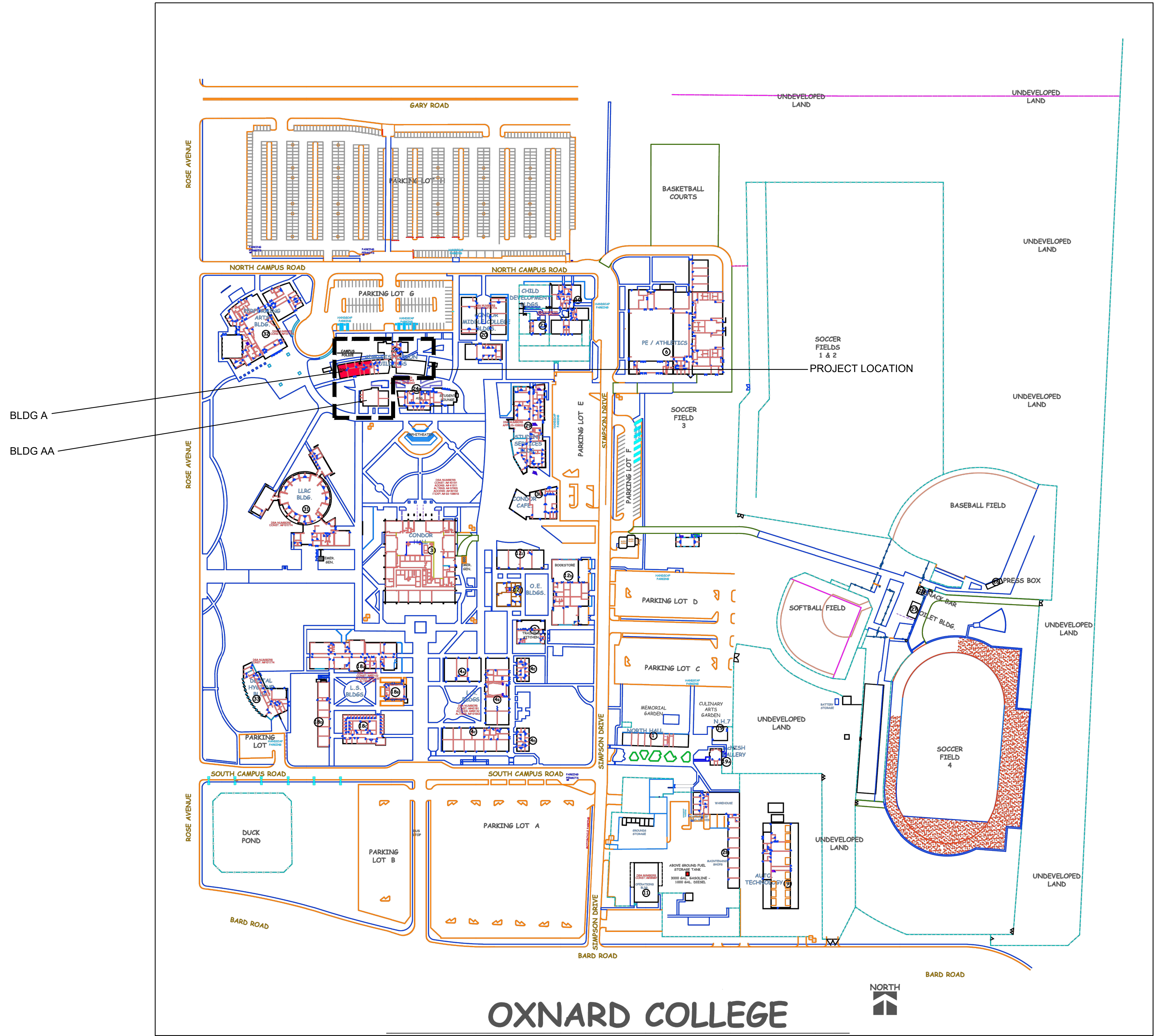
Technical specifications continue on the following pages. All questions regarding this bid and or specifications should be directed to the Purchasing Department of the District. Questions should be addressed by e-mail to the Purchasing Specialist handling this bid. Questions must be submitted by e-mail no later than **3:00pm Wednesday, October 16, 2024**

E. Technical Specifications & Plan Drawings

The technical specifications and the plan drawings continue on the following pages and are considered a part of this bid package:

Please see attached Plans and Specifications pages.

OXNARD COLLEGE ADMINISTRATION BUILDINGS HVAC REPLACEMENT PROJECT 4000 S ROSE AVE, CALIFORNIA 93033



OXNARD COLLEGE

CAMPUS MAP
NO SCALE

SCOPE OF WORK

1. DEMO EXISTING INDOOR FAN COILS AND OUTDOOR CONDENSING UNITS.
2. RE-USE EXISTING REFRIGERANT PIPING WITH TREATMENT. INSTALL NEW INSULATION ON ALL LINESET PIPING.
3. CLEAN EXISTING DUCTING PER N.A.D.C.A. STANDARDS.
4. INSTALL NEW FAN COILS AND OUTDOOR HEAT PUMP UNITS. RECONNECT TO EXISTING ELECTRICAL AND CONDENSATE. RE-INSTALL UV LIGHTS.
5. INSTALL NEW CONTROL SYSTEM.

CONSULTANTS

MECHANICAL ENGINEER
HUGH MCTERNAN
838 E. Front St. Ventura Ca. 93001
805 653-1722 hugh@aegroupme.com

SHEET INDEX

- T-1.0 TITLE SHEET
- M-1.0 MECHANICAL NOTES
- M-1.1 MECHANICAL SCHEDULE
- M-2.0 BUILDING A FIRST FLOOR OVERALL MECHANICAL PLANS
- M-2.1 BUILDING A SECOND FLOOR OVERALL MECHANICAL PLANS
- M-2.2 BUILDING A FIRST FLOOR WEST SIDE MECHANICAL PLANS
- M-2.3 BUILDING A FIRST FLOOR NORTH SIDE MECHANICAL PLANS
- M-2.4 BUILDING A FIRST FLOOR EAST SIDE MECHANICAL PLANS
- M-2.5 BUILDING A SECOND FLOOR WEST SIDE MECHANICAL PLANS
- M-2.6 BUILDING A SECOND FLOOR NORTH SIDE MECHANICAL PLANS
- M-2.7 BUILDING A SECOND FLOOR EAST SIDE MECHANICAL PLANS
- M-2.8 BUILDING A ROOF MECHANICAL PLANS
- M-3.0 BUILDING AA FIRST FLOOR MECHANICAL PLANS
- M-3.1 BUILDING AA ROOF MECHANICAL PLANS
- M-4.0 MECHANICAL DETAILS

Revisions	

AE Group
Mechanical Engineers
838 East Front Street
Ventura, California 93001
(805) 653-1722
hugh@aegroupme.com



OXNARD COLLEGE
HVAC REPLACEMENT PROJECT
OXNARD COLLEGE ADMINISTRATIVE BUILDINGS
4000 S ROSE AVE, OXNARD, CA 93033

Sheet Content
TITLE SHEET

Date: 8-20-24
Drawn: HAM
Sheet Number T1.0 of Sheets

MECHANICAL SCHEDULE

TAG	MANUF.	MODEL	TYPE	LOCATION	SUPPLY CFM	REFRIGERANT	SEER2	COOLING (MBTUH) TOTAL	HEATING (MBTUH) TOTAL @ 47°F	ELECTRICAL					WT. LBS.	ACCESSORIES	EXISTING UNIT MODEL NUMBER	EXISTING UNIT WEIGHT (LBS)
										VOLT	PHASE	HZ	MCA	MOCP				
OU 1	YORK	YH2F60TB21	OUTDOOR UNIT	BLDG. A ROOF	N.A.	R454B	16.0	56.0	56.0	208	1	60	31.5	50	282	COATED COILS SQUARE D 60 AMP FUSED DISCONNECT	38YCS060300	237
IU 1	ADP	AX600CT	INDOOR UNIT	BLDG. A 1st FLR EAST	1950		16.0	56.0	56.0	208	1	60	4.6	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 2	YORK	YH2F36TB21	OUTDOOR UNIT	BLDG. A ROOF	N.A.	R454B	16.0	34.2	32.6	208	1	60	20.6	30	204	COATED COILS SQUARE D 60 AMP FUSED DISCONNECT	38YCS036300	185
IU 2	ADP	AX361CT	INDOOR UNIT	BLDG. A 1st FLR EAST	1180		16.0	34.2	32.6	208	1	60	3.0	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 3	YORK	YH2F24TB21	OUTDOOR UNIT	BLDG. A ROOF	N.A.	R454B	16.0	34.2	32.6	208	1	60	17	30	204	COATED COILS SQUARE D 60 AMP FUSED DISCONNECT	38YCS024300	143
IU 3	ADP	AX241CT	INDOOR UNIT	BLDG. A 1st FLR EAST	800		16.0	34.2	32.6	208	1	60	3.0	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 4	YORK	YH2F48TB21	OUTDOOR UNIT	BLDG. A ROOF	N.A.	R454B	15.0	48.0	46.0	208	1	60	28.2	45	243	COATED COILS SQUARE D 60 AMP FUSED DISCONNECT	38YCS048310	226
IU 4	ADP	AX480CT	INDOOR UNIT	BLDG. A 1st FLR WEST	1600		15.0	48.0	46.0	208	1	60	4.6	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 5	YORK	YH2F48TB21	OUTDOOR UNIT	BLDG. A ROOF	N.A.	R454B	15.0	48.0	46.0	208	1	60	28.2	45	243	COATED COILS SQUARE D 60 AMP FUSED DISCONNECT	38YCS048310	226
IU 5	ADP	AX480CT	INDOOR UNIT	BLDG. A 1st FLR WEST	1600		15.0	48.0	46.0	208	1	60	4.6	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH W/ 4S J BOX RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 6	YORK	YH2F36TB21	OUTDOOR UNIT	BLDG. A ROOF	N.A.	R454B	16.0	34.2	32.6	208	1	60	20.6	30	204	COATED COILS SQUARE D 60 AMP FUSED DISCONNECT	38YCS036300	215
IU 6	ADP	AX361CT	INDOOR UNIT	BLDG. A 1st FLR WEST	1200		16.0	34.2	32.6	208	1	60	3.0	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH W/ 4S J BOX RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 7	YORK	YH2F60TB21	OUTDOOR UNIT	BLDG. A ROOF	N.A.	R454B	16.0	56.0	56.0	208	1	60	31.5	50	282	COATED COIL SQUARE D 60 AMP FUSED DISCONNECT	38YCS060300	259
IU 7	ADP	AX600CT	INDOOR UNIT	BLDG. A 1st FLR WEST	1950		16.0	56.0	56.0	208	1	60	4.6	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH W/ 4S J BOX RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 8	YORK	YH2F60TB21	OUTDOOR UNIT	BLDG. A ROOF	N.A.	R454B	16.0	56.0	56.0	208	1	60	31.5	50	282	COATED COILS SQUARE D 60 AMP FUSED DISCONNECT	38YCS060300	259
IU 8	ADP	AX600CT	INDOOR UNIT	BLDG. A 1st FLR WEST	1960		16.0	56.0	56.0	208	1	60	4.6	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH W/ 4S J BOX RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 9	YORK	YH2F30TB21	OUTDOOR UNIT	BLDG. A ROOF	N.A.	R454B	16.0	28.8	26.8	208	1	60	19.0	30	177	COATED COILS SQUARE D 30 AMP FUSED DISCONNECT	38YCS030310	215
IU 9	ADP	AX360	INDOOR UNIT	BLDG. A 1st FLR NORTH	1000		16.0	28.8	26.8	208	1	60	3.0	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH W/ 4S J BOX RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 10	YORK	YH2F48TB21	UNIT	BLDG. A ROOF	N.A.	R454B	15.0	46.5	42	208	1	60	28.2	45	243	COATED COILS SQUARE D 60 AMP FUSED DISCONNECT	38YCS048310	226
IU 10	ADP	AX482	INDOOR UNIT	BLDG. A 1st FLR NORTH	1800		15.2	46.5	42	208	1	60	4.6	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH W/ 4S J BOX RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 11	YORK	YH2F36TB21	OUTDOOR UNIT	BLDG. A ROOF	N.A.	R454B	16.0	34.2	32.6	208	1	60	20.6	30	204	SQUARE D 60 AMP FUSED DISCONNECT	38YCS036300	215
IU 11	ADP	AX361CT	INDOOR UNIT	BLDG. A 1st FLR NORTH	1200		16.0	34.2	32.6	208	1	60	3.0	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH W/ 4S J BOX RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 12	YORK	YH2F60TB21	OUTDOOR UNIT	BLDG. A ROOF	N.A.	R454B	16.0	56.0	56.0	208	1	60	31.5	50	282	COATED COIL SQUARE D 60 AMP FUSED DISCONNECT	38YCS060310	259
IU 12	ADP	AX600CT	INDOOR UNIT	BLDG. A 2ND FLR EAST	1995		16.0	56.0	56.0	208	1	60	4.6	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH W/ 4S J BOX RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 13	YORK	YH2F36TB21	OUTDOOR UNIT	BLDG. A ROOF	N.A.	R454B	16.0	28.8	26.8	208	1	60	20.6	30	204	COATED COIL SQUARE D 30 AMP FUSED DISCONNECT	38YCS036300	215
IU 13	ADP	AX361CT	INDOOR UNIT	BLDG. A 2ND FLR EAST	1200		16.0	28.8	26.8	208	1	60	3.0	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH W/ 4S J BOX RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 14	YORK	YH2F36TB21	OUTDOOR UNIT	BLDG. A ROOF	N.A.	R454B	16.0	34.2	32.6	208	1	60	20.6	30	204	COATED COIL SQUARE D 30 AMP FUSED DISCONNECT	38YCS036300	215
IU 14	ADP	AX361CT	INDOOR UNIT	BLDG. A 2ND FLR EAST	1200		16.0	34.2	32.6	208	1	60	3.0	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH W/ 4S J BOX RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 15	YORK	YH2F60TB21	OUTDOOR UNIT	BLDG. A ROOF	N.A.	R454B	16.0	56.0	56.0	208	1	60	31.5	50	282	COATED COIL SQUARE D 60 AMP FUSED DISCONNECT	38YCS060300	259
IU 15	ADP	AX600CT	INDOOR UNIT	BLDG. A 2ND FLR EAST	1980		16.0	56.0	56.0	208	1	60	4.6	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH W/ 4S J BOX RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 16	YORK	YH2F60TB21	OUTDOOR UNIT	BLDG. A ROOF	N.A.	R454B	16.0	56.0	56.0	208	1	60	31.5	50	282	COATED COIL SQUARE D 60 AMP FUSED DISCONNECT	38YCS060310	259
IU 16	ADP	AX600CT	INDOOR UNIT	BLDG. A 2ND FLR WEST	1950		16.0	56.0	56.0	208	1	60	4.6	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH W/ 4S J BOX RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 17	YORK	YH2F48TB21	OUTDOOR UNIT	BLDG. A ROOF	N.A.	R454B	15.2	46.5	42	208	1	60	28.2	45	243	COATED COIL SQUARE D 60 AMP FUSED DISCONNECT	38YCS048310	226
IU 17	ADP	AX482	INDOOR UNIT	BLDG. A 2ND FLR WEST	1600		15.2	46.5	42	208	1	60	4.6	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH W/ 4S J BOX RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 18	YORK	YH2F36TB21	OUTDOOR UNIT	BLDG. A ROOF	N.A.	R454B	16.0	34.2	32.6	208	1	60	20.6	30	204	COATED COIL SQUARE D 60 AMP FUSED DISCONNECT	38YCS036300	215
IU 18	ADP	AX361CT	INDOOR UNIT	BLDG. A 2ND FLR WEST	1200		16.0	34.2	32.6	208	1	60	3.0	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH W/ 4S J BOX RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 19	YORK	YH2F60TB21	OUTDOOR UNIT	BLDG. A ROOF	N.A.	R454B	16.0	56.0	56.0	208	1	60	31.5	50	282	COATED COIL SQUARE D 60 AMP FUSED DISCONNECT	38YCS060300	259
IU 19	ADP	AX600CT	INDOOR	BLDG. A 2ND FLR WEST	1790		16.0	56.0	56.0	208	1	60	4.6	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH W/ 4S J BOX RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 20	YORK	YH2F60TB21	OUTDOOR UNIT	BLDG. A ROOF	N.A.	R454B	16.0	56.0	56.0	208	1	60	31.5	50	282	COATED COIL SQUARE D 60 AMP FUSED DISCONNECT	38YCS060300	259
IU 20	ADP	AX600CT	INDOOR	BLDG. A 2ND FLR WEST	1980		16.0	56.0	56.0	208	1	60	4.6	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH W/ 4S J BOX RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 21	YORK	YH2F60TB21	OUTDOOR UNIT	BLDG. A ROOF	N.A.	R454B	16.0	56.0	56.0	208	1	60	31.5	50	282	COATED COIL SQUARE D 30 AMP FUSED DISCONNECT	38YCS060300	259
IU 21	ADP	AX600CT	INDOOR UNIT	BLDG. A 2ND FLR NORTH	1950		16.0	56.0	56.0	208	1	60	4.6	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH W/ 4S J BOX RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 22	YORK	YH2F30TB21	OUTDOOR UNIT	BLDG. A ROOF	N.A.	R454B	16.0	34.2	32.6	208	1	60	20.6	30	204	COATED COIL SQUARE D 60 AMP FUSED DISCONNECT	38YCS030310	
IU 22	ADP	AX301CT	INDOOR UNIT	BLDG. A 2ND FLR NORTH	900		16.0	34.2	32.6	208	1	60	3.0	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH W/ 4S J BOX RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 31	YORK	YH2F60TB21	OUTDOOR UNIT	BLDG. AA ROOF	N.A.	R454B	16.0	56.0	56.0	208	1	60	31.5	50	282	COATED COIL SQUARE D 60 AMP FUSED DISCONNECT	38YCS060310	
IU 31	ADP	AX600CT	INDOOR UNIT	BLDG. AA 1ST FLR	2000		16.0	56.0	56.0	208	1	60	4.6	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH W/ 4S J BOX RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 32	YORK	YH2F60TB21	OUTDOOR UNIT	BLDG. AA ROOF	N.A.	R454B	16.0	56.0	56.0	208	1	60	31.5	50	282	COATED COIL SQUARE D 60 AMP FUSED DISCONNECT	38YCS060310	
IU 32	ADP	AX600CT	INDOOR UNIT	BLDG. AA 1ST FLR	1800		16.0	56.0	56.0	208	1	60	4.6	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH W/ 4S J BOX RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		
OU 33	YORK	YH2F60TB21	OUTDOOR UNIT	BLDG. AA ROOF	N.A.	R454B	16.0	56.0	56.0	208	1	60	31.5	50	282	COATED COIL SQUARE D 60 AMP FUSED DISCONNECT	38YCS060300	
IU 33	ADP	AX600CT	INDOOR UNIT	BLDG. AA 1ST FLR	1800		16.0	56.0	56.0	208	1	60	4.6	15	155	MERV 13 FILTERS W/ FILTER RACK MOTOR RATED DPDT SWITCH W/ 4S J BOX RE-INSTALL UV LIGHTS. CONDENSATE PUMP LITTLE GIANT OR EQUAL		

ZONE DAMPER

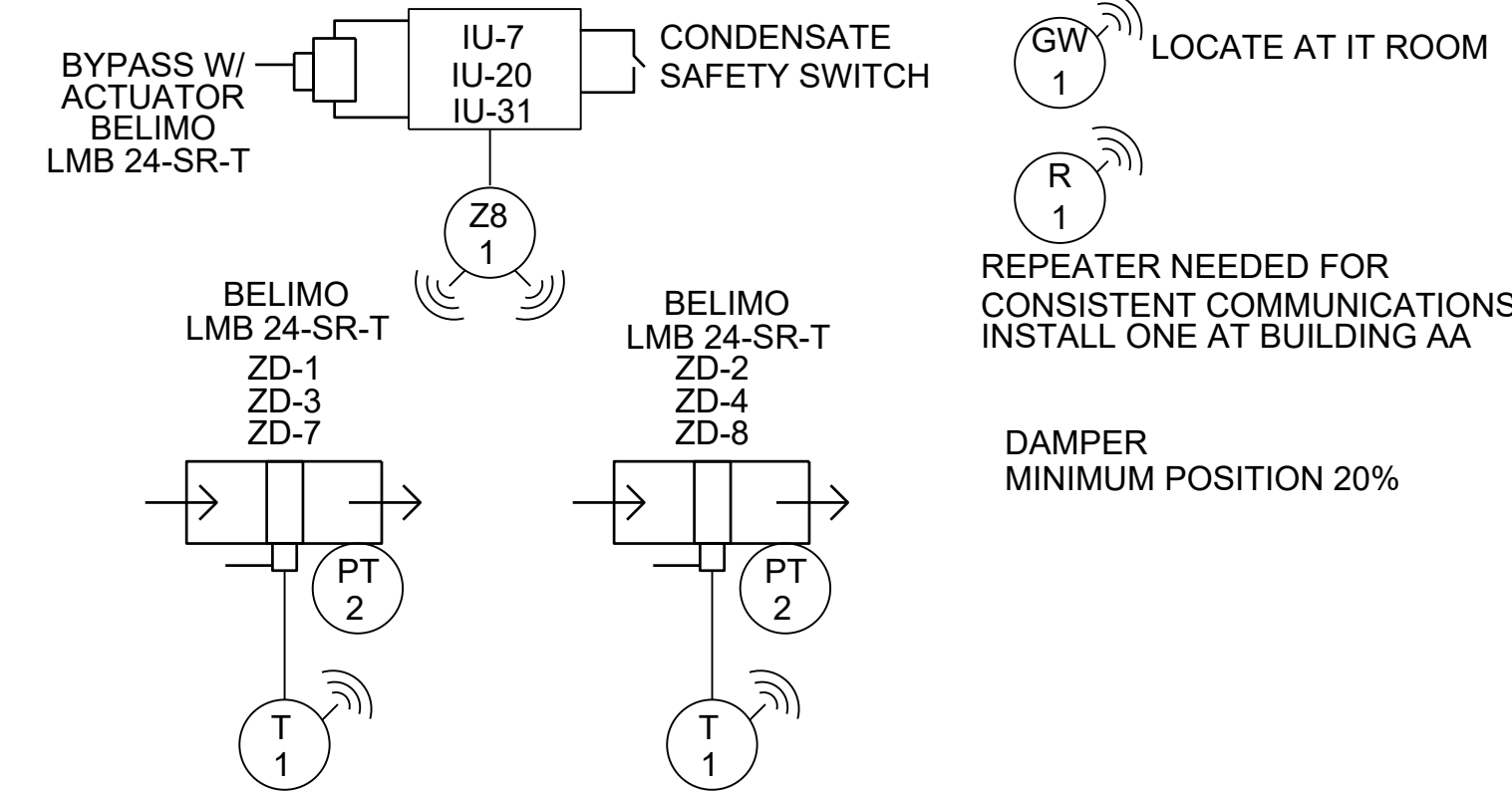
POTTORFF MODEL CD22R CONTROL DAMPER
BELIMO ACTUATOR COMPATIBLE WITH PELICAN CONTROLS

FAN COIL TAG SIZE
IU-7 ZD-1 16" Ø
IU-7 ZD-2 14" Ø
IU-7 BP-1 12" Ø

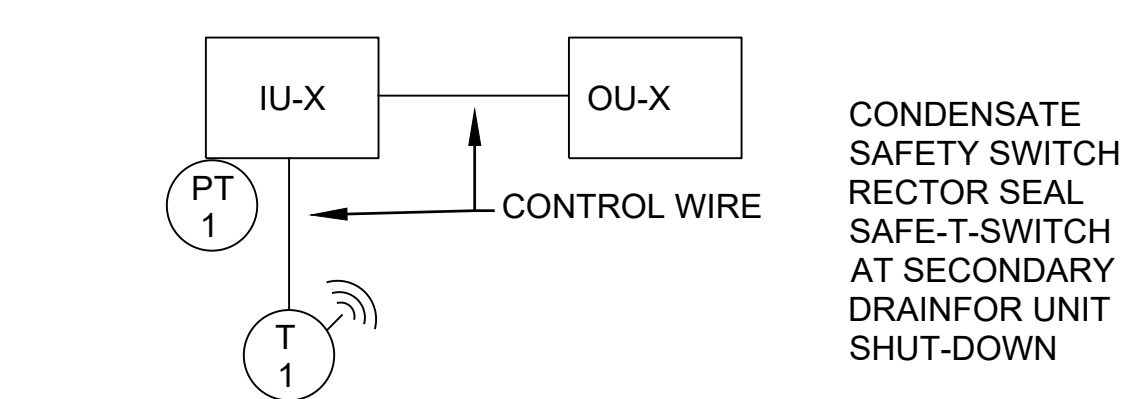
IU-20 ZD-3 16" Ø
IU-20 ZD-4 14" Ø
IU-20 BP-2 20" Ø

IU-31 ZD-7 16" Ø
IU-31 ZD-8 14" Ø
IU-31 BP-4 14" Ø

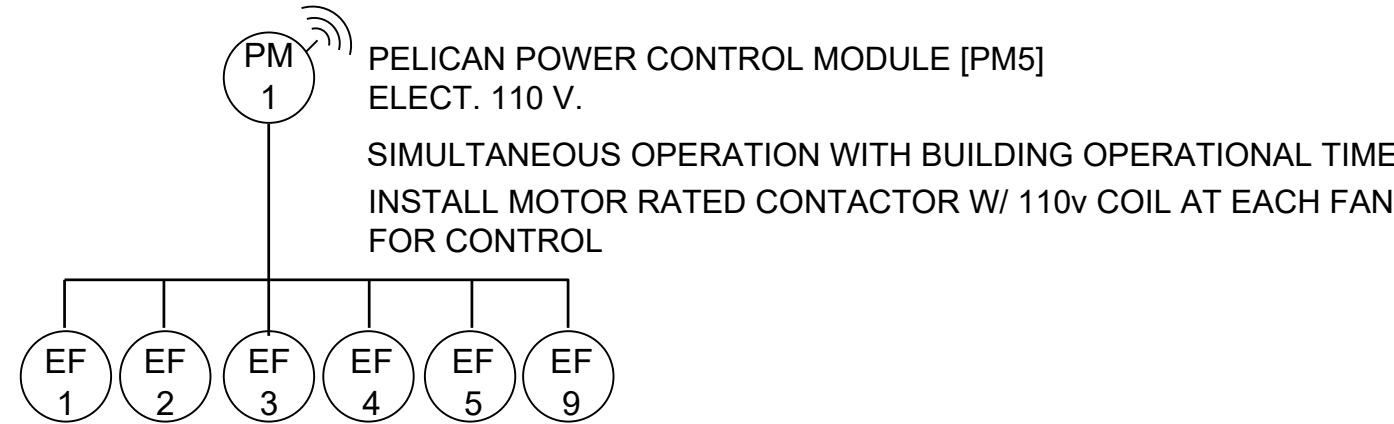
TYPICAL CONTROL AT ZONED INDOOR UNIT SYSTEMS (3 TOTAL)



TYPICAL CONTROL AT SINGLE ZONE INDOOR UNIT SYSTEMS (TYP OF 22 SYSTEMS)



TYPICAL CONTROL OF COMMON EXHAUST SYSTEMS



CONTROL SCHEDULE

- T 1 THERMOSTAT. PELICAN MODEL TC3. PROGRAMMABLE W/ BUILT-IN CO2 SENSOR. FOR INDOOR UNIT CONTROL. INSTALL ALL WIRING IN CONDUIT. INTERNET CONNECTIVITY. PROVIDE REPEATERS AS NEEDED FOR COMMUNICATION WITH GATEWAY.
- T 2 THERMOSTAT. PELICAN MODEL TC3. PROGRAMMABLE W/ BUILT-IN CO2 SENSOR. FOR INDOOR UNIT CONTROL. INSTALL ALL WIRING IN CONDUIT. INTERNET CONNECTIVITY. PROVIDE REPEATERS AS NEEDED FOR COMMUNICATION WITH GATEWAY. INSTALL WITH PROTECTIVE COVER.
- GW 1 GATEWAY. PELICAN GW 400. WIRELESS GATEWAY WITH CABLE AND 110V ADAPTER. LOCATE IN IT ROOM (VERIFY W/ SCHOOL DISTRICT).
- R 1 REPEATER. PELICAN WR400. INSTALL AS NEEDED FOR CAMPUS WIDE NETWORK. ELECT. 110 V. BUDGET 6 ADDITIONAL PER CAMPUS.
- PM 1 PELICAN POWER CONTROL MODULE [PM5] ELECT. 110 V.
- PT 1 PELICAN TEMP. & ALARM SENSOR, MODEL TA1 AND PROBE TI. (INSTALL AT ALL SUPPLY AIR PLENUMS)
- PT 2 PELICAN TEMP. & ALARM SENSOR, MODEL TA1 AND PROBE -TI. (INSTALL AT VVT TERMINAL OUTLETS)
- ZB 1 PELICAN ZONE COORDINATOR (INSTALL AT VVT FAN COILS)

CONDENSATE PUMP

REVIEW EXISTING CONDENSATE PIPE CONDITIONS. SOME UNITS WILL NOT REQUIRE A CONDENSATE PUMP FOR PROPER DRAINAGE. POWER PUMP FROM INDOOR UNIT.

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Sheet Content

MECHANICAL
SCHEDULE

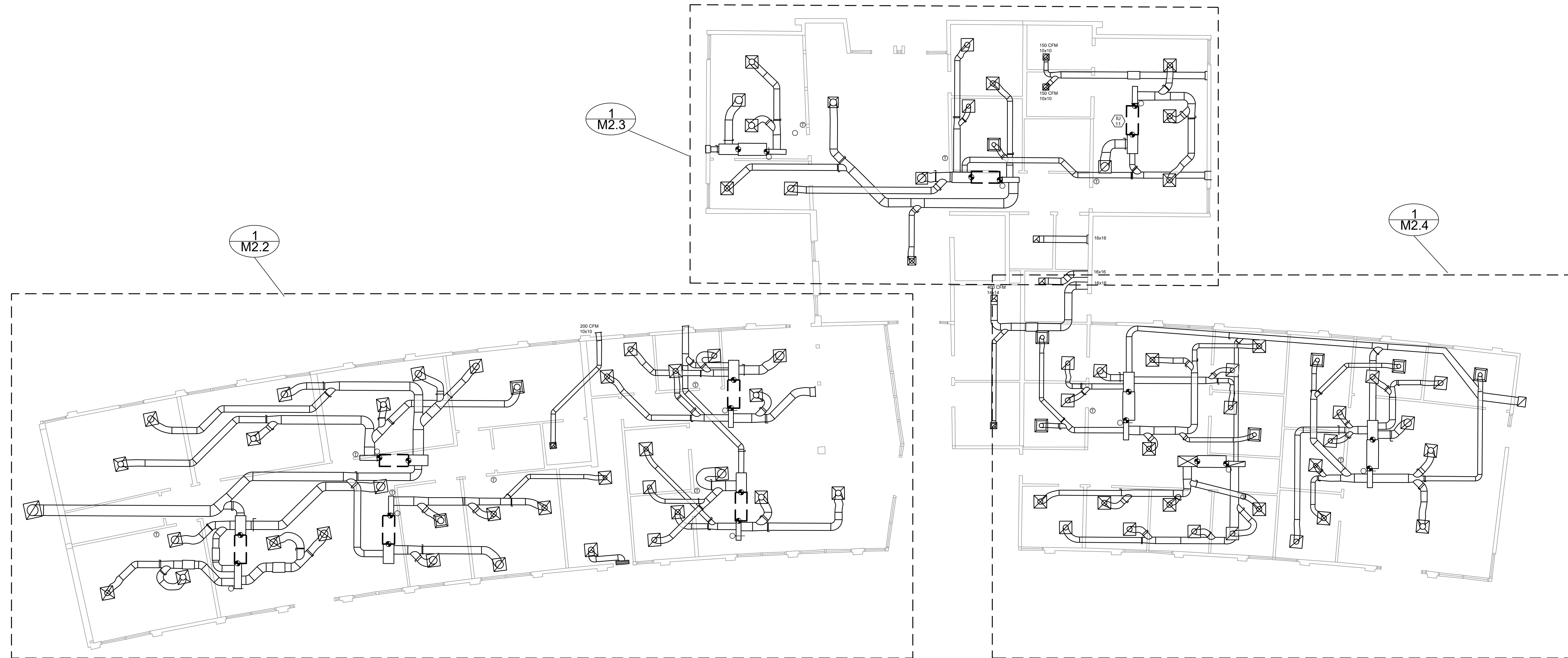
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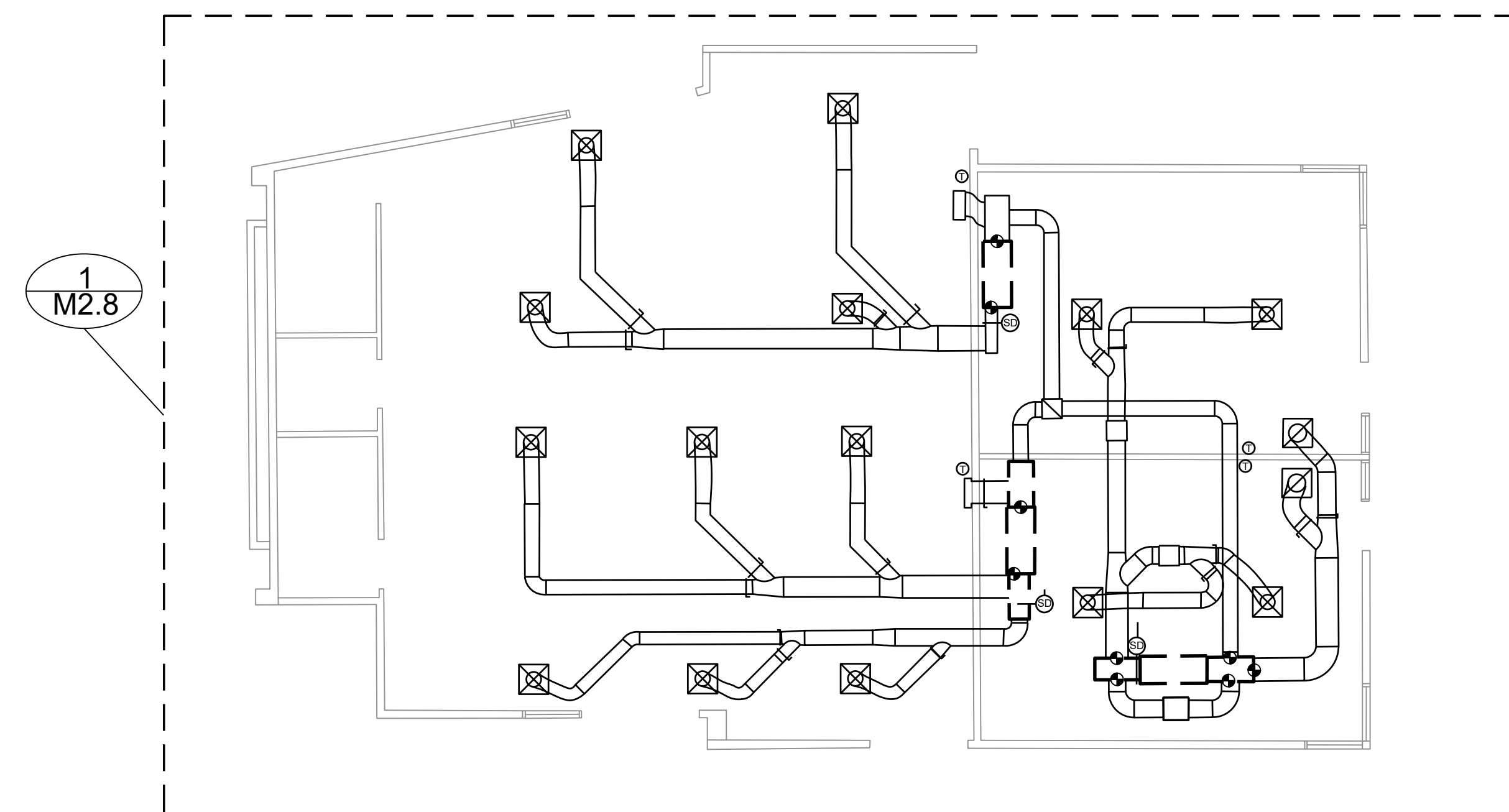
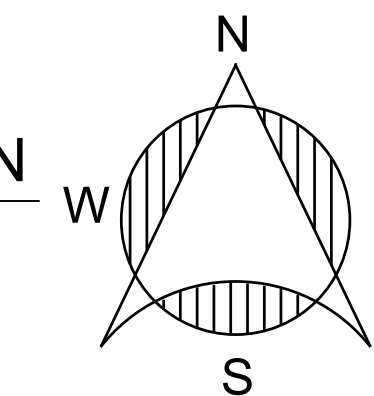
Sheet Number

M1.1

of Sheets



1
M2.0 BUILDING A FIRST FLOOR-OVERALL MECHANICAL PLAN
SCALE: 1/8"=1'



2
M2.0 BUILDING AA FIRST FLOOR-OVERALL MECHANICAL PLAN
SCALE: 1/8"=1'

Revisions

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Sheet Content

**BUILDING A-AA
FIRST FLOOR
OVERALL
MECHANICAL
PLAN**

Date: 8-20-24

Drawn: HAM

Sheet Number

M2.0

of Sheets

Revisions	

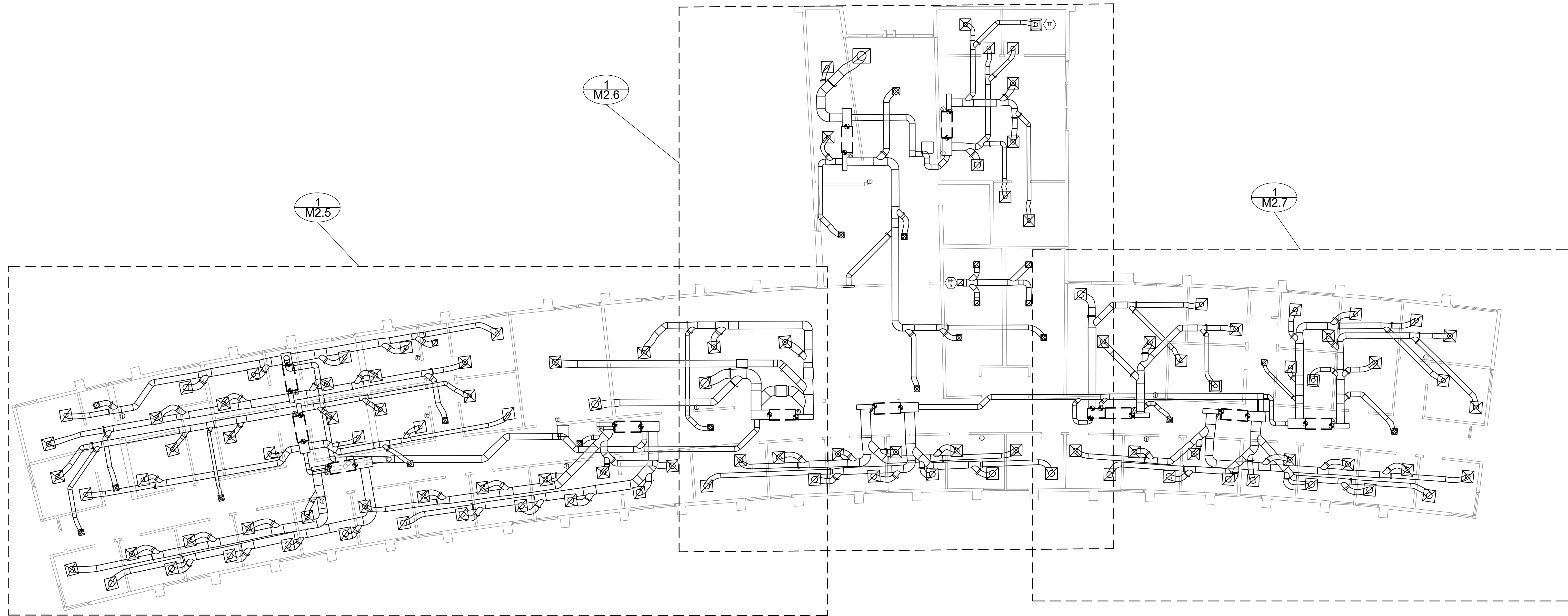
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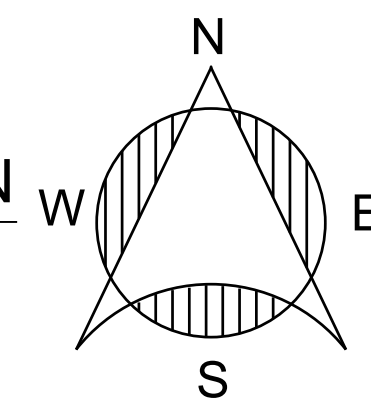
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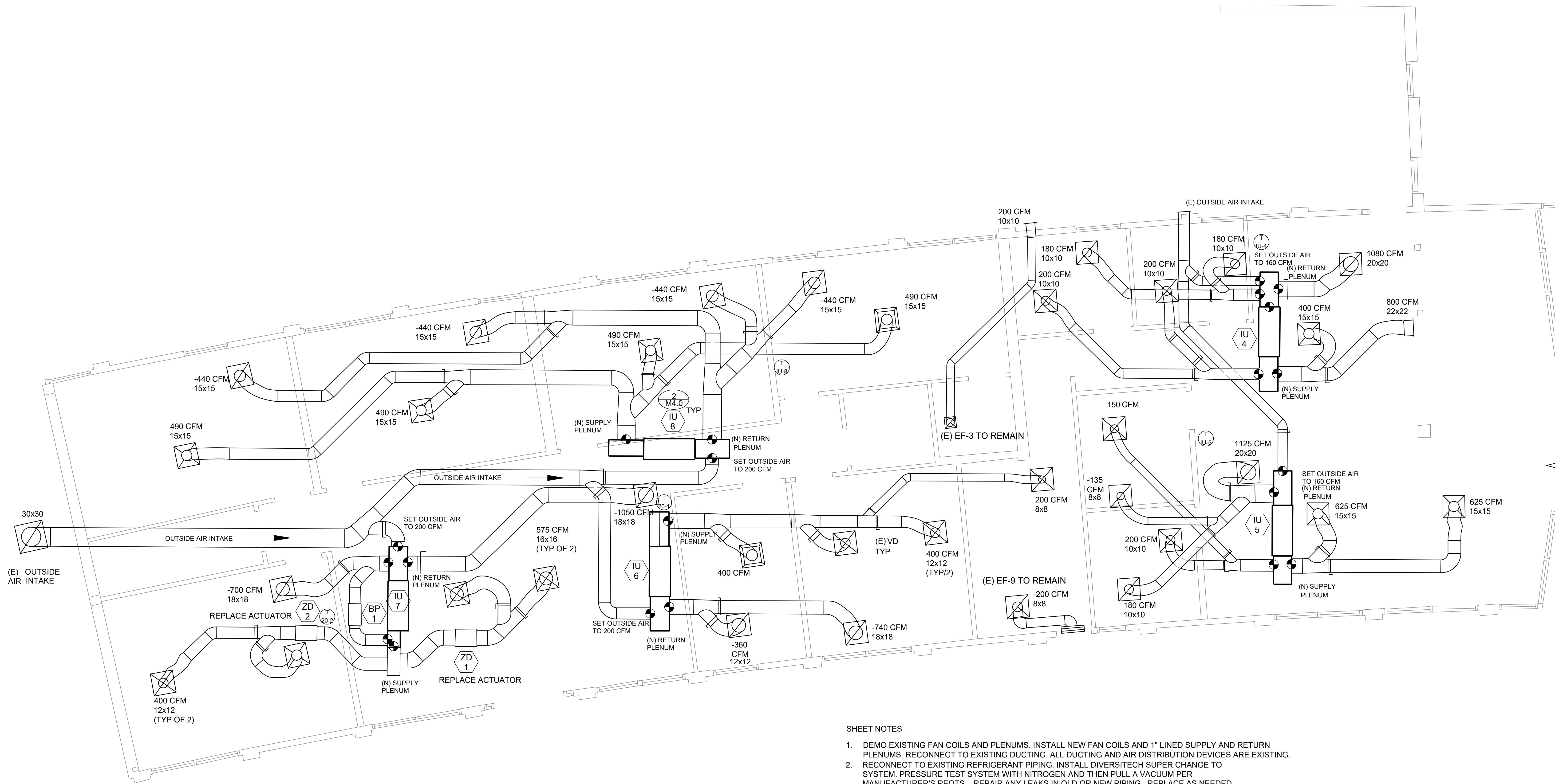
Sheet Content
**BUILDING A
SECOND
FLOOR
OVERALL
MECHANICAL
PLAN**

Date: 8-20-24
Drawn: HAM
Sheet Number
M2.1
of Sheets



1
M2.1
BUILDING A SECOND FLOOR - OVERALL MECHANICAL PLAN
SCALE: 1/8"=1'

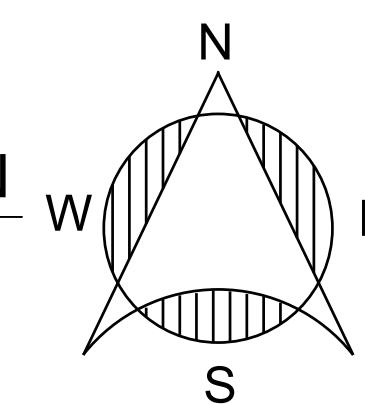




SHEET NOTES

1. DEMO EXISTING FAN COILS AND PLENUMS. INSTALL NEW FAN COILS AND 1" LINED SUPPLY AND RETURN PLENUMS. RECONNECT TO EXISTING DUCTING. ALL DUCTING AND AIR DISTRIBUTION DEVICES ARE EXISTING.
2. RECONNECT TO EXISTING REFRIGERANT PIPING. INSTALL DIVERSITECH SUPER CHANGE TO SYSTEM. PRESSURE TEST SYSTEM WITH NITROGEN AND THEN PULL A VACUUM PER MANUFACTURER'S REQTS. REPAIR ANY LEAKS IN OLD OR NEW PIPING. REPLACE AS NEEDED.
3. DEMO EXISTING REFRIGERANT PIPE INSULATION AND REINSULATE ALL EXISTING PIPING WITH CLOSED CELL ARMAFLEX WITH SEALED JOINTS TO THE GREATEST EXTENT POSSIBLE WITHOUT DEMOLISHING EXISTING CONSTRUCTION. INSULATE NEW PIPING WITH CLOSED CELL ARMAFLEX. THICKNESS PER TITLE 24 REQUIREMENTS.
4. CLEAN ALL EXISTING DUCTING AND AIR DISTRIBUTION DEVICES
5. RE-BALANCE SYSTEMS TO AIR QUANTITIES SHOWN.
6. VERIFY CONDENSATE LOCATION AND SLOPE. MARK ON PLANS CONDENSATE DISCHARGE LOCATIONS. INSTALL CONDENSATE PUMP IF REQUIRED FOR PROPER DRAINAGE.

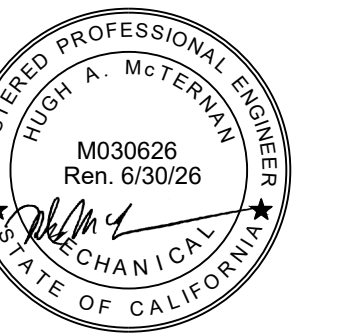
1
M2.2 BUILDING A FIRST FLOOR-OVERALL MECHANICAL PLAN
SCALE: 1/4"=1'



Revisions

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Sheet Content

**BUILDING A
FIRST FLOOR
WEST SIDE
MECHANICAL
PLAN**

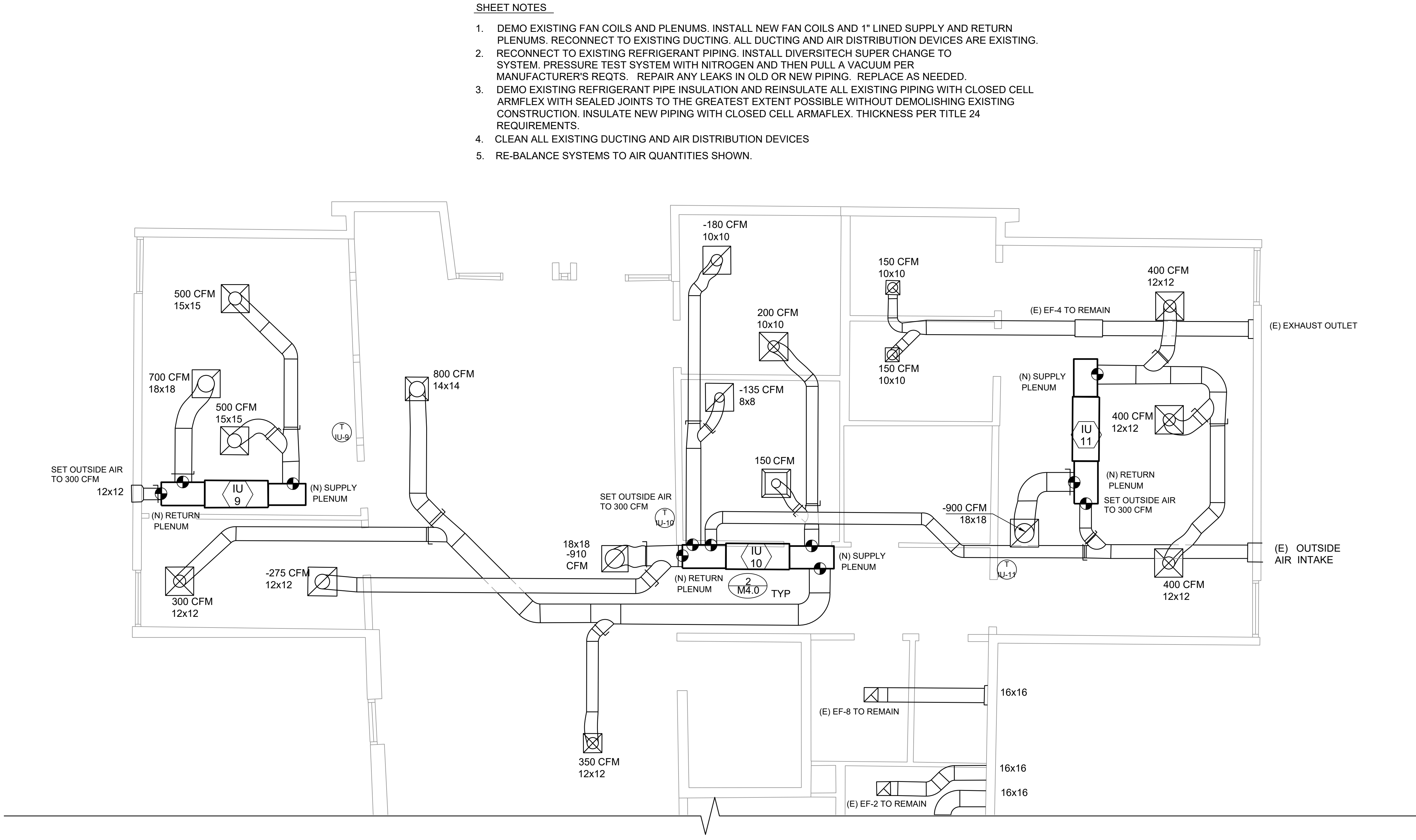
Date: 8-20-24

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Sheet Number

M2.2

of Sheets



BUILDING A FIRST FLOOR-NORTH SIDE MECHANICAL PLAN
SCALE: 1/4"=1'

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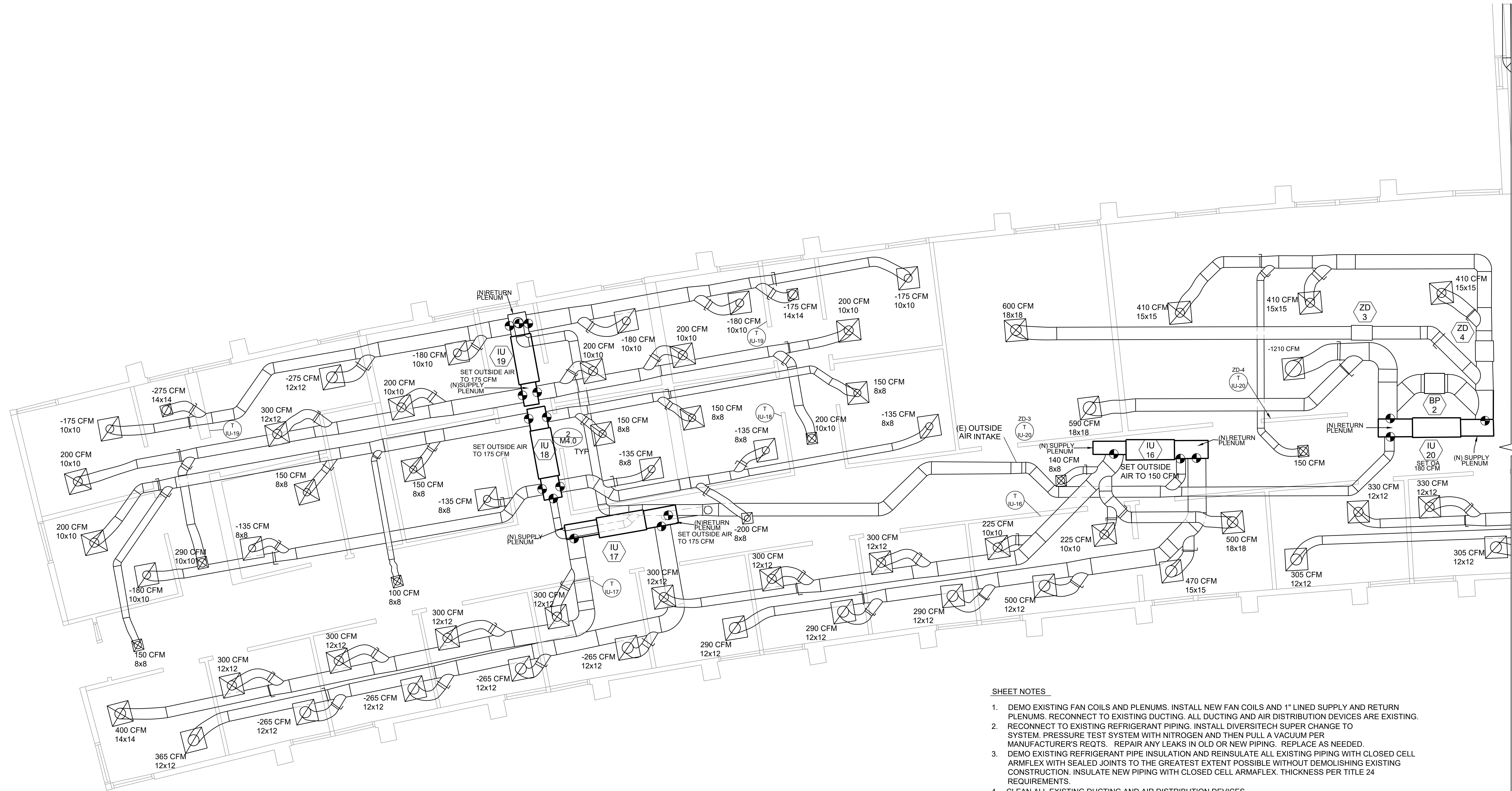
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Sheet Content
**BUILDING A
FIRST FLOOR
NORTH SIDE
MECHANICAL
PLAN**

Date: 8-20-24
Drawn: HAM
Sheet Number
M2.3
of Sheets



SHEET NOTES

1. DEMO EXISTING FAN COILS AND PLENUMS. INSTALL NEW FAN COILS AND 1" LINED SUPPLY AND RETURN PLENUMS. RECONNECT TO EXISTING DUCTING. ALL DUCTING AND AIR DISTRIBUTION DEVICES ARE EXISTING.
2. RECONNECT TO EXISTING REFRIGERANT PIPING. INSTALL DIVERSITECH SUPER CHANGE TO SYSTEM. PRESSURE TEST SYSTEM WITH NITROGEN AND THEN PULL A VACUUM PER MANUFACTURER'S REOTS. REPAIR ANY LEAKS IN OLD OR NEW PIPING. REPLACE AS NEEDED.
3. DEMO EXISTING REFRIGERANT PIPE INSULATION AND REINSULATE ALL EXISTING PIPING WITH CLOSED CELL ARMFLEX WITH SEALED JOINTS TO THE GREATEST EXTENT POSSIBLE WITHOUT DEMOLISHING EXISTING CONSTRUCTION. INSULATE NEW PIPING WITH CLOSED CELL ARMFLEX. THICKNESS PER TITLE 24 REQUIREMENTS.
4. CLEAN ALL EXISTING DUCTING AND AIR DISTRIBUTION DEVICES
5. RE-BALANCE SYSTEMS TO AIR QUANTITIES SHOWN.

1
M2.5 BUILDING A SECOND FLOOR-WEST SIDE MECHANICAL PLAN
SCALE: 1/4"=1'

Revisions

NO.	DESCRIPTION	DATE

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Sheet Content

**BUILDING A
SECOND
FLOOR
WEST SIDE
MECHANICAL
PLAN**

Date: 8-20-24

Drawn: HAM

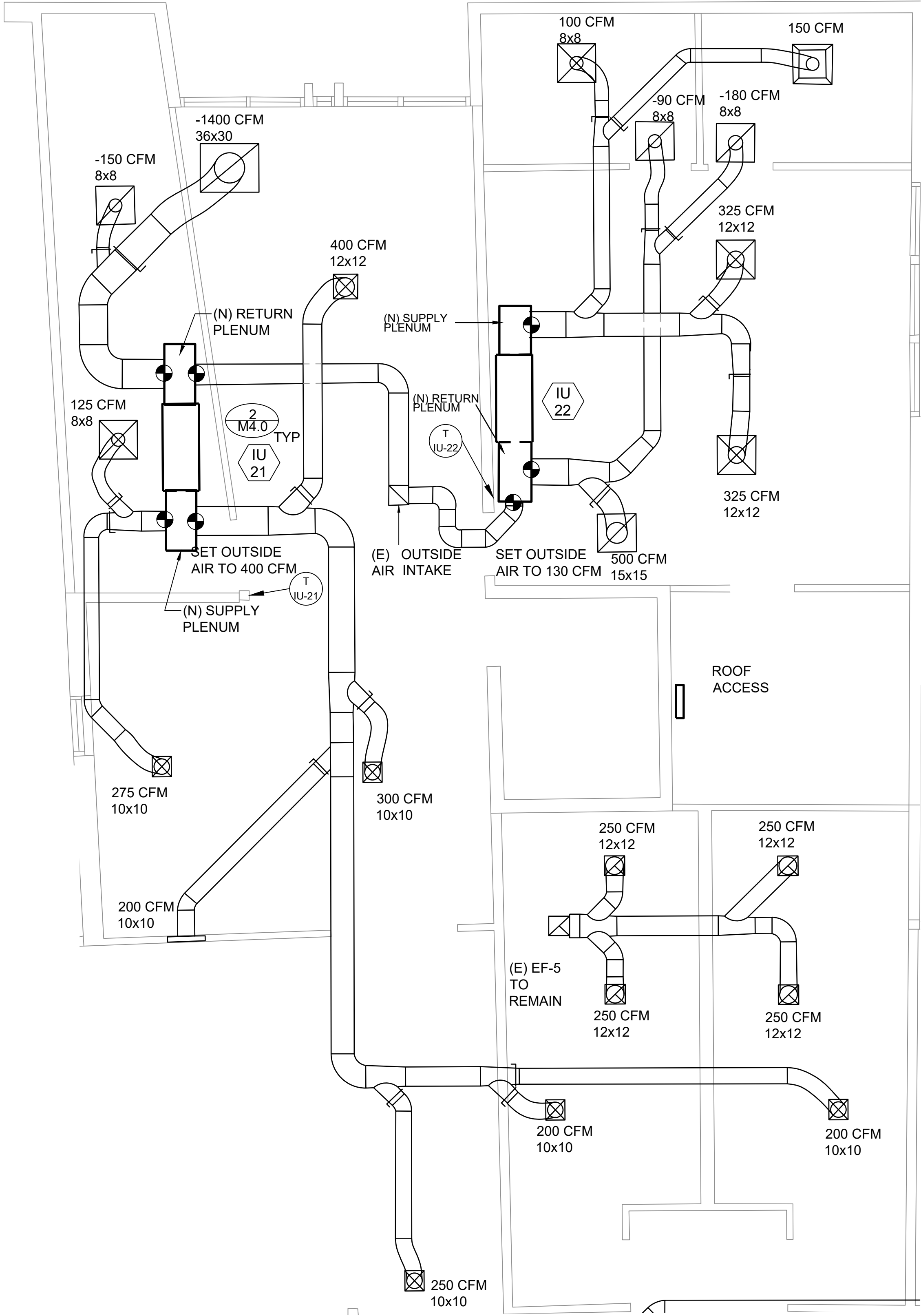
Sheet Number

M2.5

of Sheets

SHEET NOTES

1. DEMO EXISTING FAN COILS AND PLENUMS. INSTALL NEW FAN COILS. RECONNECT TO EXISTING DUCTING. ALL DUCTING AND AIR DISTRIBUTION DEVICES ARE EXISTING.
2. RECONNECT TO EXISTING REFRIGERANT PIPING. INSTALL DIVERSITECH SUPER CHANGE TO SYSTEM. PRESSURE TEST SYSTEM WITH NITROGEN AND THEN PULL A VACUUM PER MANUFACTURER'S REQTS. REPAIR ANY LEAKS IN OLD OR NEW PIPING. REPLACE AS NEEDED.
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4. CLEAN ALL EXISTING DUCTING AND AIR DISTRIBUTION DEVICES
5. RE-BALANCE SYSTEMS TO AIR QUANTITIES SHOWN.



1 M2.6 BUILDING A SECOND FLOOR-NORTH SIDE MECH PLAN
SCALE:1/4"=1'

Revisions	

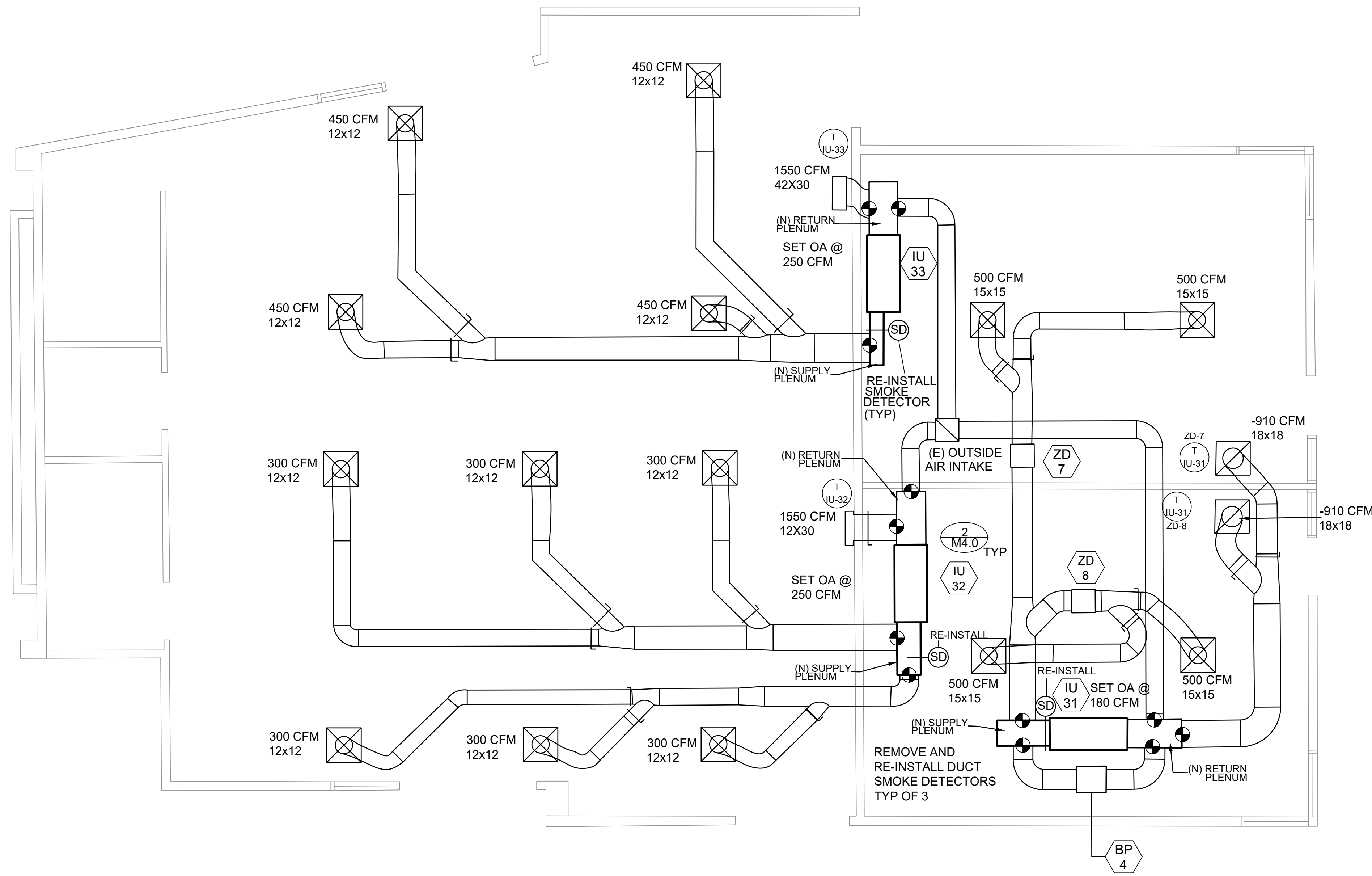
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Sheet Content
**BUILDING A
SECOND
FLOOR
NORTH SIDE
MECH PLAN**

Date: 8-20-24
Drawn: HAM
Sheet Number
M2.6
of Sheets



SHEET NOTES

1. DEMO EXISTING FAN COILS AND PLENUMS. INSTALL NEW FAN COILS AND 1" LINED SUPPLY AND RETURN PLENUMS. RECONNECT TO EXISTING DUCTING. ALL DUCTING AND AIR DISTRIBUTION DEVICES ARE EXISTING.
2. RECONNECT TO EXISTING REFRIGERANT PIPING. INSTALL DIVERSITECH SUPER CHANGE TO SYSTEM. PRESSURE TEST SYSTEM WITH NITROGEN AND THEN PULL A VACUUM PER MANUFACTURER'S REQTS. REPAIR ANY LEAKS IN OLD OR NEW PIPING. REPLACE AS NEEDED.
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4. CLEAN ALL EXISTING DUCTING AND AIR DISTRIBUTION DEVICES
5. RE-BALANCE SYSTEMS TO AIR QUANTITIES SHOWN.



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Sheet Content
BUILDING AA FIRST FLOOR MECHANICAL PLAN

Date: 8-20-24
Drawn: HAM
Sheet Number M2.8
of Sheets

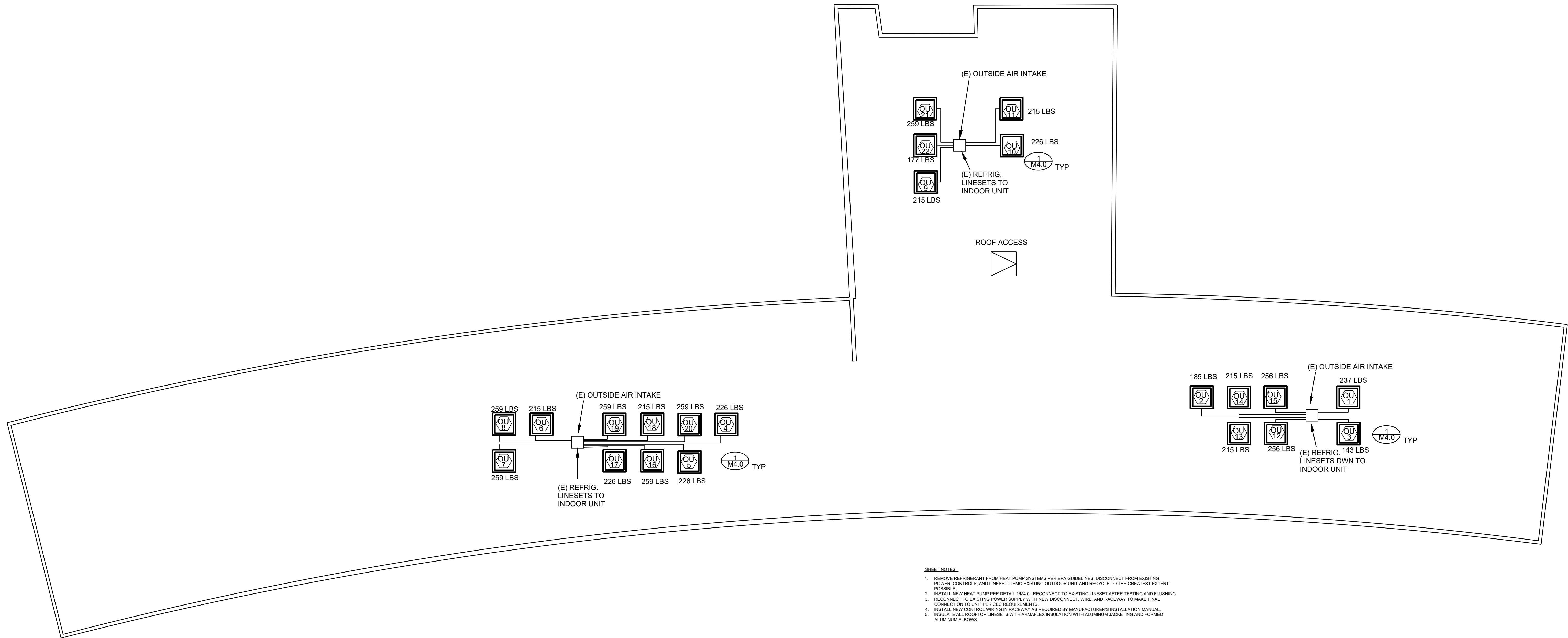
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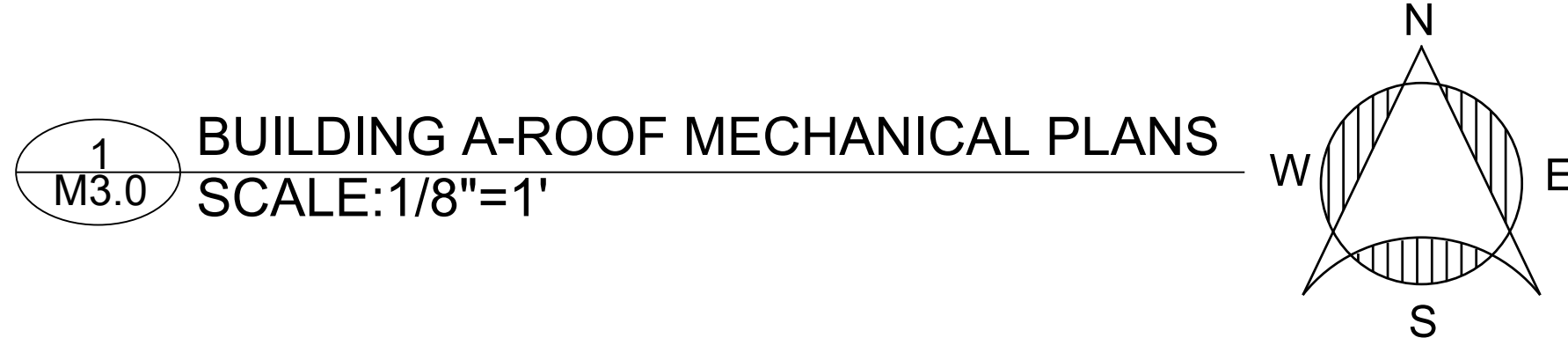


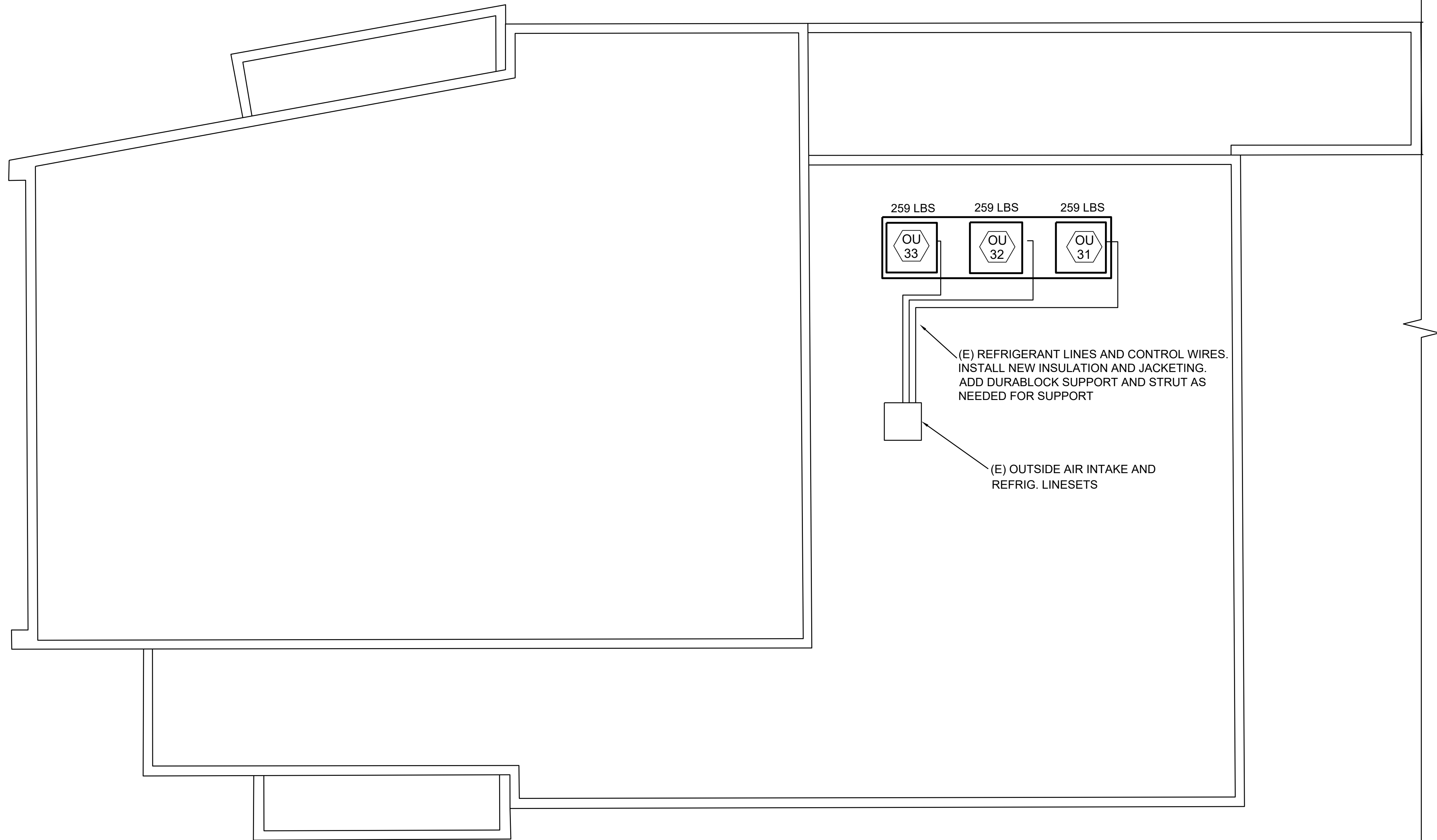
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Sheet Content	
BUILDING A ROOF MECHANICAL PLAN	
Date: 8-20-24	Sheet Number
Drawn: HAM	M3.0
of	Sheets



- SHEET NOTES:**
1. REMOVE REFRIGERANT FROM HEAT PUMP SYSTEMS PER EPA GUIDELINES. DISCONNECT FROM EXISTING POWER, CONTROLS, AND LINESET. DEMO EXISTING OUTDOOR UNIT AND RECYCLE TO THE GREATEST EXTENT POSSIBLE.
 2. INSTALL NEW HEAT PUMP PER DETAIL 104.0. RECONNECT TO EXISTING LINESET AFTER TESTING AND FLUSHING.
 3. RECONNECT TO EXISTING POWER SUPPLY WITH NEW DISCONNECT. WIRE AND BACKWAY TO MAKE FINAL CONNECTION TO UNIT PER CEC REQUIREMENTS.
 4. INSTALL NEW CONTROLS. WIRING IN RACEWAY AS REQUIRED BY MANUFACTURER'S INSTALLATION MANUAL.
 5. INSULATE ALL ROOFTOP LINESETS WITH ARMAFLEX INSULATION WITH ALUMINUM JACKETING AND FORMED ALUMINUM ELBOWS.



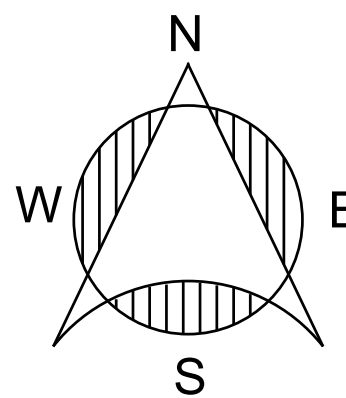


SHEET NOTES

1. REMOVE REFRIGERANT FROM HEAT PUMP SYSTEMS PER EPA GUIDELINES. DISCONNECT FROM EXISTING POWER, CONTROLS, AND LINESET. DEMO EXISTING OUTDOOR UNIT AND RECYCLE TO THE GREATEST EXTENT POSSIBLE. SEE M1.0 NOTES FOR LINESET CLEANING.
2. INSTALL NEW HEAT PUMP PER DETAIL 1/M4.0. RECONNECT TO EXISTING LINESET AFTER TESTING AND FLUSHING.
3. RECONNECT TO EXISTING POWER SUPPLY WITH NEW DISCONNECT, WIRE, AND RACEWAY TO MAKE FINAL CONNECTION TO UNIT PER CEC REQUIREMENTS.
4. INSTALL NEW CONTROL WIRING IN RACEWAY AS REQUIRED BY MANUFACTURER'S INSTALLATION MANUAL.
5. INSULATE ALL ROOFTOP LINESETS WITH ARMAFLEX INSULATION WITH ALUMINUM JACKETING AND FORMED ALUMINUM ELBOWS

1
M3.1

BUILDING AA ROOF-MECHANICAL PLAN
SCALE: 1/4"=1'



Revisions	

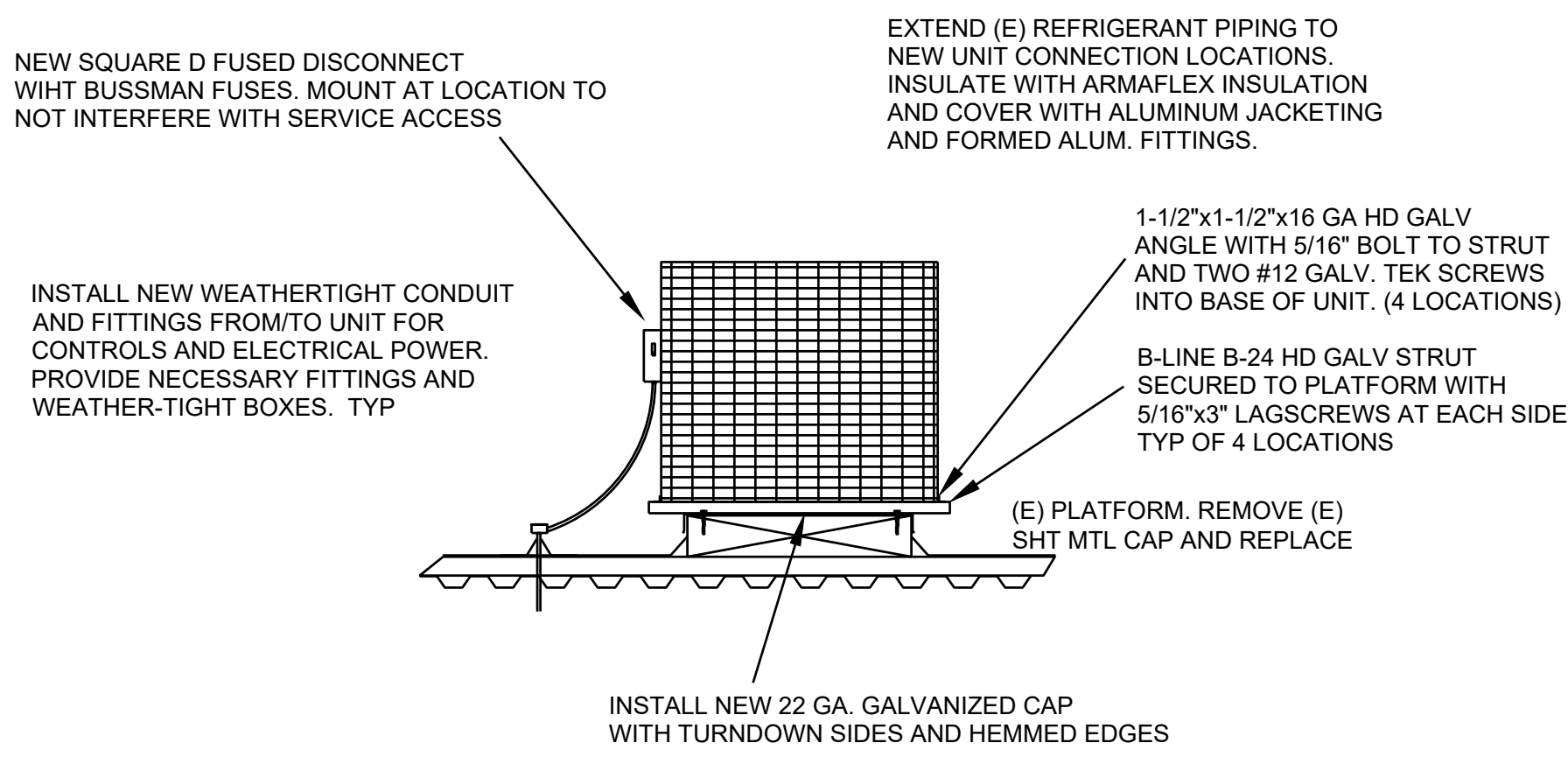
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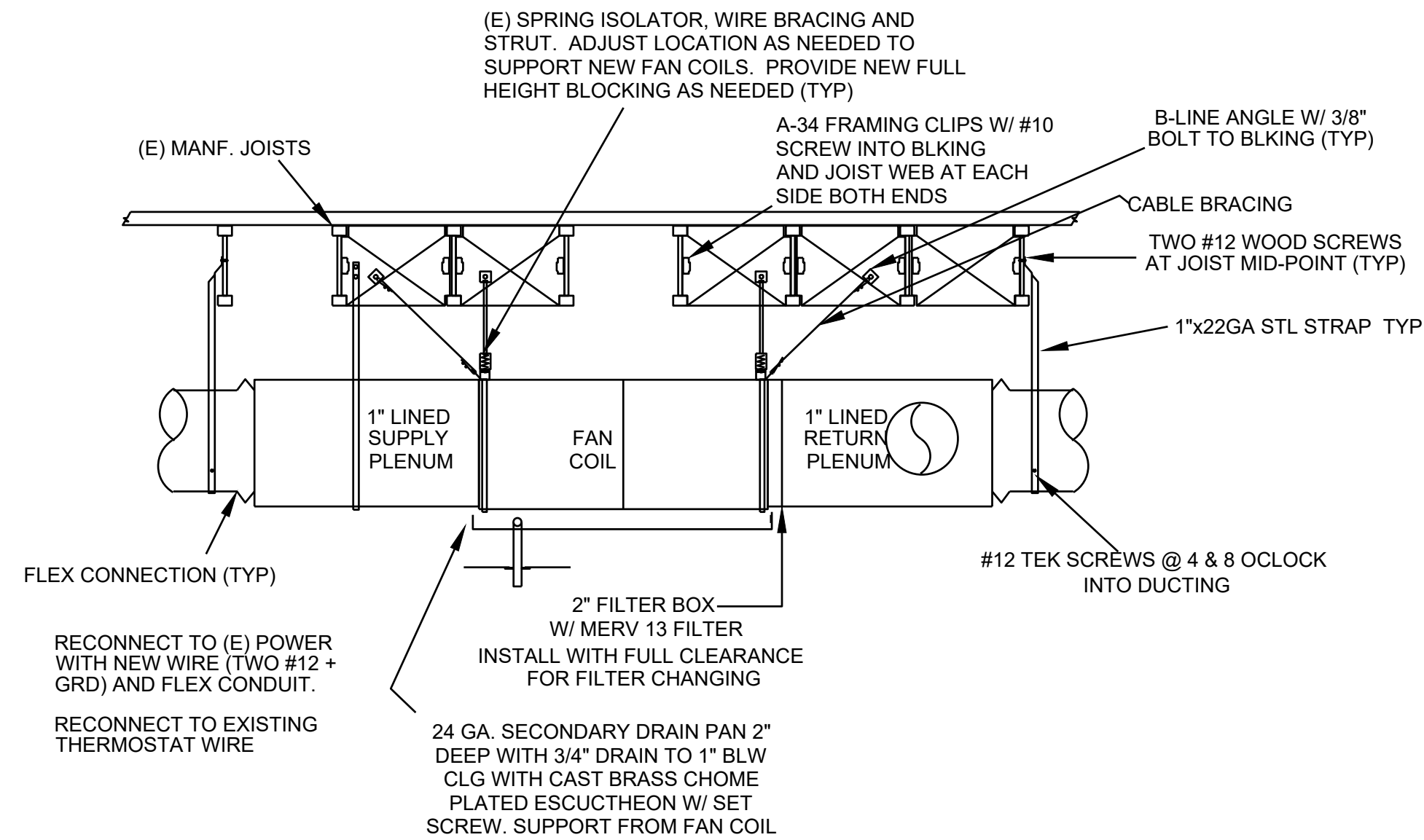
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Sheet Content
BUILDING AA
ROOF
MECHANICAL
PLAN

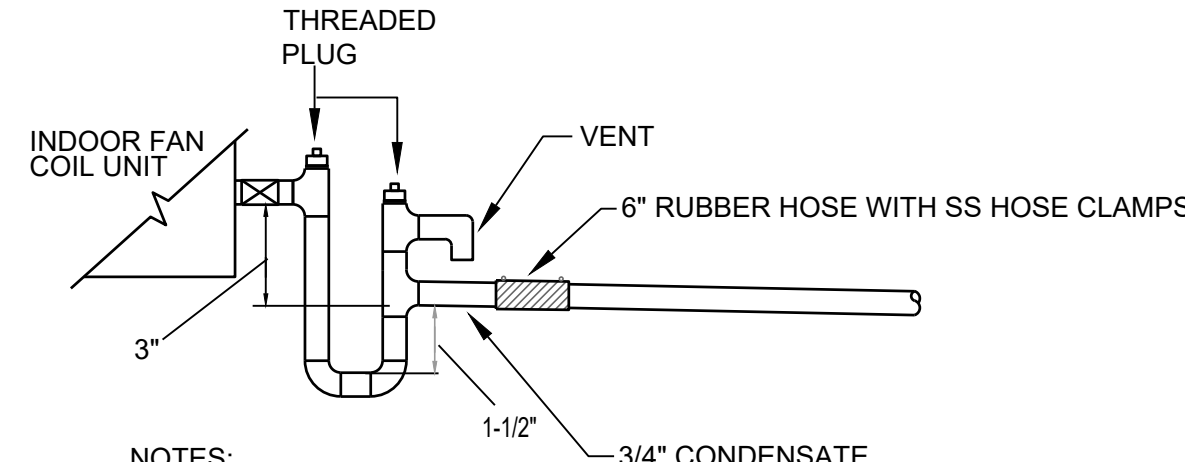
Date: 8-20-24
Drawn: HAM
Sheet Number
M3.1
of Sheets



1 CONDENSING UNIT DETAIL
M4.0 NO SCALE



2 FAN COIL DETAIL
M4.0 NO SCALE



- NOTES:
1. SLOPE 1/8" PER FOOT TO DRAIN
 2. INSULATE INTERIOR CONDENSATE PIPING
 3. CONDENSATE PIPING SHALL BE TYPE L COPPER W/ SOLDERED WROT COPPER OR BRASS FITTINGS
 4. RE-CONNECT TO EXISTING CONDENSATE DRAIN. AT THE BEGINNING OF THE PROJECT DURING DEMOLITION VERIFY INTEGRITY OF EXISTING PIPING VIA WATER FLOW TEST. SHOW ON AS-BUILT DRAWINGS THE TERMINATION LOCATION.
 5. INSULATE FIRST FIVE FEET OF CONDENSATE PIPING.

3 CONDENSATE DETAIL
M4.0 NO SCALE

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Sheet Content
MECHANICAL
NOTES

Date: 8-20-24
Drawn: HAM
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M4.0
of Sheets

SECTION 23 0500 - COMMON WORK RESULTS FOR HVAC**PART 1 - GENERAL****1.1 SECTION INCLUDES**

- A. Basic Mechanical Requirements specifically applicable to Division 23 Sections, in addition to the General Requirements.
- B. Mechanical work includes the following: furnish and install all mechanical equipment shown on the mechanical, plumbing, architectural, electrical, and civil engineering 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, cutting and patching.

1.2 WORK SEQUENCE

- A. Install work in phases to accommodate Owner's construction requirements. Refer to Architectural, Structural, Civil, 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.

1.3 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.

1.4 SUBMITTALS

- A. Submit the following:
- B. Proposed Products List: Include Products specified in the following Sections:
 - 1. Section 23 - Mechanical.
 - 2. Project Drawings
- C. Submit shop drawings and product data grouped to include complete submittals of related systems, products, and accessories in a single submittal. Submittals shall be specific to the

fixtures/device/unit being submitted; the data shall be highlighted or marked to be quite clear as to the fixtures/devices/units that shall be provided.

- 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.
- G. Maintain a complete set of the most current reviewed submittal and shop drawings on site during construction.
- H. Submittals shall have table of contents organized by specification section and shall clearly identify electrical characteristics, options provided, color, model number and equipment tag as indicated on the drawings.

1.5 REGULATORY REQUIREMENTS

- A. Conform to 2022 California Building Code.
- B. Fire Protection: Conform to 2022 California Fire Code, and California State Fire Marshall Regulations, Title 19, Public Safety.
- C. Plumbing: Conform to 2022 California Plumbing Code.
- D. Mechanical: Conform to 2022 California Mechanical Code.
- E. Electrical: Conform to 2022 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.

1.6 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. It is not the intent of the drawings to show necessary offsets required to avoid structure or other trades. It is the intent of this paragraph that all costs associated with this paragraph be borne by the contractor.
- 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 architectural drawings, the prime contractor shall request in writing that the architect or engineer provide clarification or the specific dimension.
- F. As equal: For an item to be substituted "as equal" the contractor must provide to the engineer a complete submittal no later than 7 days prior to the bid opening. Contractor shall be responsible for any cost associated with the change including architectural design, mechanical, structural and electrical engineering and changes in any element of the building.
- G. Unit and duct locations: Heating and air conditioning unit and duct locations shown are approximate only. Contractor shall verify locations of all structural members, other trades, and existing conditions in the field, and locate units and ductwork to avoid interference. All clearances required by unit manufacturer shall be maintained. Entire installation shall be in accordance with codes and the recommended installation procedures published by the manufacturers. It is not the intent of the drawings to show necessary offsets and transitions required to avoid structure or other trades. It is the intent of this paragraph that all costs associated with this paragraph be borne by the contractor.
- H. Contractor will verify with owner and site conditions the exact existing roofing system in place and provide compatible roofing materials and products. Contractor to provide written statement regarding existing roofing system and proposed roofing system and provide manufacturer information prior to procurement and installation.
- I. Proceed with roofing work only when existing and forecasted weather conditions will permit a unit of work to be installed in accordance with manufacturer's recommendations and warranty requirements.
- J. Flashings and trim assemblies as indicated shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Complete flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.

- K. Patching Materials, General: As required for original installation and to match surrounding construction.
 - 1. Contractor shall provide same products or types of construction as that in existing structure, as needed to patch, extend or match existing.
 - 2. Generally, the Contract Documents will not define products or standards of workmanship present in existing construction. Contractor shall determine products by inspection and necessary testing and determine quality of workmanship by using existing as a sample for comparison.
 - 3. The presence of a product, finish, or type of construction requires that patching, extending or matching shall be performed as necessary to make work complete and consistent with identical standards of quality.
- L. Patching of Building Finish Materials: Contractor shall match existing products and finishes. Contractor shall confirm colors, patterns, and textures with Architect/Owner. Contractor shall custom cut new materials to fit and to match joint patterns with existing materials. Contractor shall custom cut new materials to size to match existing constructions.
- M. Patching of Roof: Contractor shall patch and match existing adjacent surface. Where penetrations have occurred to finish surface to remain, contractor shall patch penetrations and repair. Restore exposed finishes of patch areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.

1.7 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. Engage an experienced installer to perform work who has specialized in installing roofing similar to that required for this project; who is approved, authorized, or licensed by the roofing system manufacturer to install manufacturer's product; and who is eligible to receive the standard roofing manufacturer's warranty.
- C. Maintain uniformity of manufacturer for equipment used in similar applications and sizes.
- D. Provide products and materials that are new, clean, free from defects, damage, and corrosion.
- E. 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.
- F. 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.

1.8 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, 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 thereunder 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 architect. Install and coordinate the work in cooperation with the other trades.

PART 2 – NOT USED

PART 3 - EXECUTION

3.1 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.
- C. All equipment shall be firmly anchored to building structural elements.
- D. Install all equipment to permit proper service of equipment. Arrange pipes, ducts, conduits, etc to allow accessibility to equipment.
- E. Do not install equipment, pipes, or ducts above electrical room

- F. Install accessible plumbing fixtures at height shown on architectural drawings. Report any discrepancies or layout issues to Architect promptly.

3.2 COORDINATION OF WORK

- A. The contract documents establish scope, materials, and quality but are not detailed installation instructions. Drawings are diagrammatic.
- B. The contract documents show the general arrangement of equipment, ductwork, piping, and accessories. Provide offsets, fittings, and accessories which may be required but are not shown on the drawings. Investigate the site and review the other trades installation locations and requirements to determine conditions affecting the work and provide such work and accessories as may be required to accommodate such conditions.
- C. Whenever work interconnects with the work of other trades, coordinate to insure that all parties concerned have the necessary information required for a proper installation.
- D. Provide access doors as required to allow service and accessibility to valves, dampers, coils, etc. Install fire rated access doors in rated assemblies. Coordinate with framing and ceiling contractors.
- E. Furnish and set sleeves for passage of pipes, ducts, and conduits that pass through structural masonry and concrete walls, roofs, floors and elsewhere as required for the proper protection of each item passing through the building elements. See structural drawings for further details.
- F. Install UL Approved firestopping around all pipes, conduits, ducts, etc which pass through rated walls, partitions, and floors in strict accordance with manufacturer's listing and element rating.

3.3 OPERATING INSTRUCTIONS AND OPERATOR TRAINING

- A. Provide two copies of all operating and maintenance manuals to owner. Include parts lists and suppliers' names and phone numbers.
- B. Provide four hours of training to the owner for the proper operation (start-up, operation, and shutdown) and servicing of the installed equipment. Provide three weeks notice to the owner, architect and engineer of the date of the training. Arrange for subcontractors to attend and participate where applicable.

3.4 RECORD DRAWINGS

- A. Maintain on a daily basis at the project site a complete set of record drawings reflecting an accurate dimensional record of all deviations between work shown on the drawing and that actually installed.
- B. Show any changes to specified equipment such as manufacturer, voltage, model number, capacity, etc. on record drawings.

- C. Provide two reproducible copies of the record drawing to the owner.

3.5 COMMISSIONING

- A. At the conclusion of the installation the contractor shall convene a pre-commissioning meeting to review the implementation of the commissioning process.
- B. Contractor shall verify that all building services, gas, electric, water, sewer, and information technologies are functional prior to beginning commissioning.
- C. The commissioning team shall comprise the general, mechanical, electrical, controls and plumbing contractors, the project manager, test and balance company, and the mechanical engineer. Provide sample forms for review to the mechanical engineer prior at pre-commissioning meeting.
- D. The commissioning process shall be including function testing all equipment, controls, natural gas, and electrical systems. All testing shall be documented in an item by item report with dates of test, test parameters and results.
- E. Provide commissioning report to project manager within two weeks of completion.

3.5 ROOF PATCHING

- A. At location where roofing is impacted by construction the patching shall be of a similar type to the existing roof and shall be performed by a licensed roofing contractor.

- 3.6 Patching of Building Finish Materials: Contractor shall match existing products and finishes. Contractor shall confirm colors, patterns, and textures with Architect/Owner. Contractor shall custom cut new materials to fit and to match joint patterns with existing materials. Contractor shall custom cut new materials to size to match existing constructions. Paint and finish to match adjacent surfaces.

END OF SECTION 23 0500

SECTION 23 0529 - HANGERS AND SUPPORTS FOR HVAC EQUIPMENT**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following hangers and supports for HVAC system piping and equipment:
 - 1. Metal framing systems.
 - 2. Fastener systems.
 - 3. Equipment supports.
- B. Related Sections include the following:
 - 1. Division 23 Section(s) "Metal Ducts" for duct hangers and supports.

1.3 DEFINITIONS

- A. MSS: Manufacturers Standardization Society for The Valve and Fittings Industry Inc.
- B. Terminology: As defined in MSS SP-90, "Guidelines on Terminology for Pipe Hangers and Supports."

1.4 PERFORMANCE REQUIREMENTS

- A. Design seismic-restraint hangers and supports for piping and equipment per 2008 SMACNA Seismic Restraint Manual Guidelines for Mechanical Systems. Hazard level is "A."

1.5 SUBMITTALS

- A. Product Data: For the following:
 - 1. Strut and fittings.
 - 2. Fasteners.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 STEEL PIPE HANGERS AND SUPPORTS

- A. Description: MSS SP-58, Types 1 through 58, factory-fabricated components. Refer to Part 3 "Hanger and Support Applications" Article for where to use specific hanger and support types.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. B-Line Systems, Inc.; A Division of Cooper Industries.
 - 2. ERICO/Michigan Hanger Co.
- C. Galvanized, Metallic Coatings: Pre-galvanized or hot dipped.
- D. Nonmetallic Coatings: Plastic coating, jacket, or liner.
- E. Refrigerant Pipe Support: Provide EPDM clamp insert at all pipe clamps at refrigerant piping.

2.3 TRAPEZE PIPE HANGERS

- A. Description: MSS SP-69, Type 59, shop- or field-fabricated pipe-support assembly made from structural-steel shapes with MSS SP-58 hanger rods, nuts, saddles, and U-bolts.

2.4 METAL FRAMING SYSTEMS

- A. Description: MFMA-3, shop- or field-fabricated pipe-support assembly made of steel channels and other components.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. B-Line Systems, Inc.; a division of Cooper Industries.
 - 2. ERICO/Michigan Hanger Co.; ERISTRUT Div.
 - 3. Unistrut Corp.; Tyco International, Ltd.
- C. Coatings: At Interior - Manufacturer's standard finish – At exterior - Hot dipped galvanized.
- D. Nonmetallic Coatings: Plastic coating, jacket, or liner.

2.5 FASTENER SYSTEMS

- A. Mechanical-Expansion Anchors: Insert-wedge-type interior/exterior steel, for use in hardened portland cement concrete with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used. Install per ICC listing.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Hilti, Inc.
 - b. ITW Ramset/Red Head.
- C. Wood Screws for secure pipe and duct supports to wood structure
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Simpson SDS Screws
 - b. or equal with self drilling feature and ICC report
- D. Sheet Metal Screws
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. TEK Screws
 - b. or equal with self drilling feature and ICC report

2.6 EQUIPMENT SUPPORTS

- A. Description: Welded, shop- or field-fabricated equipment support made from structural-steel shapes.

2.7 MISCELLANEOUS MATERIALS

- A. Structural Steel: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized. All exterior steel shall be hot dipped aluminized.

PART 3- EXECUTION

3.1 HANGER AND SUPPORT APPLICATIONS

- A. Use hangers and supports with hot dipped galvanized, at exterior locations.
- B. Hanger-Rod Attachments: Unless otherwise indicated and except as specified in piping system sections, install the following types:

1. Steel Clevises (MSS Type 14): For 120 to 450 deg F piping installations.
 2. Swivel Turnbuckles (MSS Type 15): For use with MSS Type 11, split pipe rings.
 3. Malleable-Iron Sockets (MSS Type 16): For attaching hanger rods to various types of building attachments.
 4. Steel Weldless Eye Nuts (MSS Type 17): For 120 to 450 deg F piping installations.
- C. Building Attachments: Unless otherwise indicated and except as specified in piping system sections, install the following types:
1. Welded-Steel Brackets: For support of pipes from below, or for suspending from above by using clip and rod. Use one of the following for indicated loads:
 - a. Light (MSS Type 31): 750 lb.
 - b. Medium (MSS Type 32): 1500 lb.
 - c. Heavy (MSS Type 33): 3000 lb.
- D. Saddles and Shields: Unless otherwise indicated and except as specified in piping system sections, install the following types:
1. Steel Pipe-Covering Protection Saddles (MSS Type 39): To fill interior voids with insulation that matches adjoining insulation.
 2. Protection Shields (MSS Type 40): Of length recommended in writing by manufacturer to prevent crushing insulation.
 3. Thermal-Hanger Shield Inserts: For supporting insulated pipe.
- E. Use mechanical-expansion anchors where required in concrete construction.
- ### 3.2 HANGER AND SUPPORT INSTALLATION
- A. Steel Pipe Hanger Installation: Install hangers, supports, clamps, and attachments as required to properly support piping from building structure.
- B. Metal Framing System Installation: Arrange for grouping of parallel runs of piping and support together on field-assembled metal framing systems.
- C. Fastener System Installation:
1. Install mechanical-expansion anchors in concrete after concrete is placed and completely cured. Install fasteners according to manufacturer's written instructions.
- D. Install hangers and supports complete with necessary inserts, bolts, rods, nuts, washers, and other accessories.
- E. Install hangers and supports to allow controlled thermal and seismic movement of piping systems, to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.

- F. Load Distribution: Install hangers and supports so piping live and dead loads and stresses from movement will not be transmitted to connected equipment.
- G. All pipes and ducts shall be braced per 2008 SMACNA Seismic Restraint Manual Guidelines for Mechanical Systems. Seismic hazard level is "A".

3.3 EQUIPMENT SUPPORTS

- A. Fabricate structural-steel stands to suspend equipment from structure overhead or to support equipment above floor.
- B. Provide lateral bracing, to prevent swaying, for equipment supports.
- C. Anchor all equipment to resist seismic motion.

3.4 METAL FABRICATIONS

- A. Cut, drill, and fit miscellaneous metal fabrications for trapeze pipe hangers and equipment supports.
- B. Fit exposed connections together to form hairline joints. Field weld connections that cannot be shop welded because of shipping size limitations.
- C. Field Welding: Comply with AWS D1.1 procedures for shielded metal arc welding, appearance and quality of welds, and methods used in correcting welding work, and with the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. Finish welds at exposed connections so no roughness shows after finishing and contours of welded surfaces match adjacent contours.

3.5 ADJUSTING

- A. Hanger Adjustments: Adjust hangers to distribute loads equally on attachments and to achieve indicated slope of pipe.
- B. Trim excess length of continuous-thread hanger and support rods to 1-1/2 inches.

3.6 PAINTING

- A. Touch Up: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces. If material is galvanized spray with cold galvanizing.
 - 1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils.

- B. Touch Up: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal are specified in Division 09.
- C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply three coats of galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION 23 0529

SECTION 23 0593 - TESTING, ADJUSTING, AND BALANCING FOR HVAC**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY**A. Section Includes:**

- 1. Balancing Air Systems:
 - a. Constant-volume air systems.

1.3 DEFINITIONS

- A. AABC: Associated Air Balance Council.
- B. NEBB: National Environmental Balancing Bureau.
- C. TAB: Testing, Adjusting, and Balancing.
- D. TABB: Testing, Adjusting, and Balancing Bureau.
- E. TAB Specialist: An entity engaged to perform TAB Work.

1.4 SUBMITTALS

- A. Certified TAB reports.
- B. Sample report forms.
- C. Instrument calibration reports, to include the following:
 - 1. Instrument type and make.
 - 2. Serial number.
 - 3. Application.
 - 4. Dates of use.
 - 5. Dates of calibration.

1.5 QUALITY ASSURANCE

- A. TAB Contractor Qualifications: Engage a TAB entity certified by AABC, NEBB, or TABB.

1. TAB Field Supervisor: Employee of the TAB contractor and certified by AABC, NEBB or TABB.
 2. TAB Technician: Employee of the TAB contractor and who is certified by AABC, NEBB or TABB as a TAB technician.
- B. TAB Conference: Meet with Engineer on approval of the TAB strategies and procedures plan to develop a mutual understanding of the details. Require the participation of the TAB field supervisor and technicians. Provide seven days' advance notice of scheduled meeting time and location.
1. Agenda Items:
 - a. The Contract Documents examination report.
 - b. The TAB plan.
 - c. Coordination and cooperation of trades and subcontractors.
 - d. Coordination of documentation and communication flow.
- C. Certify TAB field data reports and perform the following:
1. Review field data reports to validate accuracy of data and to prepare certified TAB reports.
 2. Certify that the TAB team complied with the approved TAB plan and the procedures specified and referenced in this Specification.
- D. TAB Report Forms: Use standard TAB contractor's forms approved by Engineer.
- E. Instrumentation Type, Quantity, Accuracy, and Calibration: As described in ASHRAE 111, Section 5, "Instrumentation."

1.6 COORDINATION

- A. Notice: Provide seven days' advance notice for each test. Include scheduled test dates and times.
- B. Perform TAB after leakage and pressure tests on air and water distribution systems have been satisfactorily completed.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine the Contract Documents to become familiar with Project requirements and to discover conditions in systems' designs that may preclude proper TAB of systems and equipment.
- B. Examine systems for installed balancing devices, such as test ports, gage cocks, thermometer wells, flow-control devices, balancing valves and fittings, and manual volume dampers. Verify that locations of these balancing devices are accessible.
- C. Examine the approved submittals for HVAC systems and equipment.

- D. Examine design data including HVAC system descriptions, statements of design assumptions for environmental conditions and systems' output, and statements of philosophies and assumptions about HVAC system and equipment controls.
- E. Examine ceiling plenums and underfloor air plenums used for supply, return, or relief air to verify that they meet the leakage class of connected ducts as specified in Division 23 Section "Metal Ducts" and are properly separated from adjacent areas. Verify that penetrations in plenum walls are sealed and fire-stopped if required.
- F. Examine equipment performance data including fan and pump curves.
 - 1. Relate performance data to Project conditions and requirements, including system effects that can create undesired or unpredicted conditions that cause reduced capacities in all or part of a system.
- G. Examine system and equipment installations and verify that field quality-control testing, cleaning, and adjusting specified in individual Sections have been performed.
- H. Examine test reports specified in individual system and equipment Sections.
- I. Examine HVAC equipment and filters and verify that bearings are greased, belts are aligned and tight, and equipment with functioning controls is ready for operation.
- J. Examine terminal units, such as variable-air-volume boxes, and verify that they are accessible, and their controls are connected and functioning.
- K. Examine strainers. Verify that startup screens are replaced by permanent screens with indicated perforations.
- L. Examine three-way valves for proper installation for their intended function of diverting or mixing fluid flows.
- M. Examine heat-transfer coils for correct piping connections and for clean and straight fins.
- N. Examine system pumps to ensure absence of entrained air in the suction piping.
- O. Examine operating safety interlocks and controls on HVAC equipment.
- P. Report deficiencies discovered before and during performance of TAB procedures. Observe and record system reactions to changes in conditions. Record default set points if different from indicated values.

3.2 PREPARATION

- A. Prepare a TAB plan that includes strategies and step-by-step procedures where applicable.
- B. Complete system-readiness checks and prepare reports. Verify the following:

1. Permanent electrical-power wiring is complete.
2. Hydronic systems are filled, clean, and free of air.
3. Automatic temperature-control systems are operational.
4. Equipment and duct access doors are securely closed.
5. Balance, smoke, and fire dampers are open.
6. Isolating and balancing valves are open and control valves are operational.
7. Ceilings are installed in critical areas where air-pattern adjustments are required and access to balancing devices is provided.
8. Windows and doors can be closed so indicated conditions for system operations can be met.

3.3 GENERAL PROCEDURES FOR TESTING AND BALANCING

- A. Perform testing and balancing procedures on each system according to the procedures contained in AABC's "National Standards for Total System Balance", ASHRAE 111, NEBB's "Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems", or SMACNA's "HVAC Systems – Testing, Adjusting, and Balancing" and in this Section.
 1. Comply with requirements in ASHRAE 62.1-2004, Section 7.2.2, "Air Balancing."
- B. Cut insulation, ducts, pipes, and equipment cabinets for installation of test probes to the minimum extent necessary for TAB procedures.
 1. After testing and balancing, patch probe holes in ducts with same material and thickness as used to construct ducts.
 2. After testing and balancing, install test ports and duct access doors that comply with requirements in Division 23 Section "Air Duct Accessories."
 3. Install and join new insulation that matches removed materials. Restore insulation, coverings, vapor barrier, and finish according to Division 23 Section "HVAC Insulation."
- C. Mark equipment and balancing devices, including damper-control positions, valve position indicators, fan-speed-control levers, and similar controls and devices, with paint or other suitable, permanent identification material to show final settings.
- D. Take and report testing and balancing measurements in inch-pound (IP) units.

3.4 GENERAL PROCEDURES FOR BALANCING AIR SYSTEMS

- A. Prepare test reports for both fans and outlets. Obtain manufacturer's outlet factors and recommended testing procedures. Crosscheck the summation of required outlet volumes with required fan volumes.
- B. Prepare schematic diagrams of systems' "as-built" duct layouts.
- C. For variable-air-volume systems, develop a plan to simulate diversity.
- D. Determine the best locations in main and branch ducts for accurate duct-airflow measurements.

- E. Check airflow patterns from the outdoor-air louvers and dampers and the return- and exhaust-air dampers through the supply-fan discharge and mixing dampers.
- F. Locate start-stop and disconnect switches, electrical interlocks, and motor starters.
- G. Verify that motor starters are equipped with properly sized thermal protection.
- H. Check dampers for proper position to achieve desired airflow path.
- I. Check for airflow blockages.
- J. Check condensate drains for proper connections and functioning.
- K. Check for proper sealing of air-handling-unit components.
- L. Verify that air duct system is sealed as specified in Division 23 Section "Metal Ducts."

3.5 PROCEDURES FOR CONSTANT-VOLUME AIR SYSTEMS

- A. Adjust fans to deliver total indicated airflows within the maximum allowable fan speed listed by fan manufacturer.
 - 1. Measure total airflow.
 - a. Where sufficient space in ducts is unavailable for Pitot-tube traverse measurements, measure airflow at terminal outlets and inlets and calculate the total airflow.
 - 2. Measure fan static pressures as follows to determine actual static pressure:
 - a. Measure outlet static pressure as far downstream from the fan as practical and upstream from restrictions in ducts such as elbows and transitions.
 - b. Measure static pressure directly at the fan outlet or through the flexible connection.
 - c. Measure inlet static pressure of single-inlet fans in the inlet duct as near the fan as possible, upstream from the flexible connection, and downstream from duct restrictions.
 - d. Measure inlet static pressure of double-inlet fans through the wall of the plenum that houses the fan.
 - 3. Measure static pressure across each component that makes up an air-handling unit, rooftop unit, and other air-handling and -treating equipment.
 - a. Report the cleanliness status of filters and the time static pressures are measured.
 - 4. Measure static pressures entering and leaving other devices, such as sound traps, heat-recovery equipment, and air washers, under final balanced conditions.
 - 5. Review Record Documents to determine variations in design static pressures versus actual static pressures. Calculate actual system-effect factors. Recommend adjustments to accommodate actual conditions.

6. Obtain approval from Engineer for adjustment of fan speed higher or lower than indicated speed. Comply with requirements in Division 23 Sections for air-handling units for adjustment of fans, belts, and pulley sizes to achieve indicated air-handling-unit performance.
 7. Do not make fan-speed adjustments that result in motor overload. Consult equipment manufacturers about fan-speed safety factors. Modulate dampers and measure fan-motor amperage to ensure that no overload will occur. Measure amperage in full-cooling, full-heating, economizer, and any other operating mode to determine the maximum required brake horsepower.
- B. Adjust volume dampers for main duct, submain ducts, and major branch ducts to indicated airflows within specified tolerances.
1. Measure airflow of submain and branch ducts.
 - a. Where sufficient space in submain and branch ducts is unavailable for Pitot-tube traverse measurements, measure airflow at terminal outlets and inlets and calculate the total airflow for that zone.
 2. Measure static pressure at a point downstream from the balancing damper and adjust volume dampers until the proper static pressure is achieved.
 3. Remeasure each submain and branch duct after all have been adjusted. Continue to adjust submain and branch ducts to indicated airflows within specified tolerances.
- C. Measure air outlets and inlets without making adjustments.
1. Measure terminal outlets using a direct-reading hood or outlet manufacturer's written instructions and calculating factors.
- D. Adjust air outlets and inlets for each space to indicated airflows within specified tolerances of indicated values. Adjust using branch volume dampers rather than extractors and the dampers at air terminals.
1. Adjust each outlet in same room or space to within specified tolerances of indicated quantities without generating noise levels above the limitations prescribed by the Contract Documents.
 2. Adjust patterns of adjustable outlets for proper distribution without drafts.

3.6 PROCEDURES FOR MOTORS

- A. Motors, 1/2 HP and Larger: Test at final balanced conditions and record the following data:

3. Manufacturer's name, model number, and serial number.
4. Motor horsepower rating.
5. Motor rpm.
6. Efficiency rating.
7. Nameplate and measured voltage, each phase.

8. Nameplate and measured amperage, each phase.
9. Starter thermal-protection-element rating.

- B. Motors Driven by Variable-Frequency Controllers: Test for proper operation at speeds varying from minimum to maximum. Test the manual bypass of the controller to prove proper operation. Record observations including name of controller manufacturer, model number, serial number, and nameplate data.

3.7 TOLERANCES

- A. Set HVAC system's air flow rates and water flow rates within the following tolerances:

1. Supply, Return, and Exhaust Fans and Equipment with Fans: Plus or minus 10 percent.
2. Air Outlets and Inlets: Plus or minus 10 percent.
3. Heating-Water Flow Rate: Plus or minus 10 percent.
4. Cooling-Water Flow Rate: Plus or minus 10 percent.

3.8 REPORTING

- A. Initial Construction-Phase Report: Based on examination of the Contract Documents as specified in "Examination" Article, prepare a report on the adequacy of design for systems' balancing devices. Recommend changes and additions to systems' balancing devices to facilitate proper performance measuring and balancing. Recommend changes and additions to HVAC systems and general construction to allow access for performance measuring and balancing devices.
- B. Status Reports: Prepare weekly progress reports to describe completed procedures, procedures in progress, and scheduled procedures. Include a list of deficiencies and problems found in systems being tested and balanced. Prepare a separate report for each system and each building floor for systems serving multiple floors.

3.9 FINAL REPORT

- A. General: Prepare a certified written report; tabulate and divide the report into separate sections for tested systems and balanced systems.
1. Include a certification sheet at the front of the report's binder, signed and sealed by the certified testing and balancing engineer.
 2. Include a list of instruments used for procedures, along with proof of calibration.
- B. Final Report Contents: In addition to certified field-report data, include the following:
1. Pump curves.
 2. Fan curves.
 3. Manufacturers' test data.
 4. Field test reports prepared by system and equipment installers.

5. Other information relative to equipment performance; do not include Shop Drawings and product data.

C. General Report Data: In addition to form titles and entries, include the following data:

1. Title page.
2. Name and address of the TAB contractor.
3. Project name.
4. Project location.
5. Architect's name and address.
6. Engineer's name and address.
7. Contractor's name and address.
10. Report date.
11. Signature of TAB supervisor who certifies the report.
12. Table of Contents with the total number of pages defined for each section of the report. Number each page in the report.
13. Summary of contents including the following:
 - a. Indicated versus final performance.
 - b. Notable characteristics of systems.
 - c. Description of system operation sequence if it varies from the Contract Documents.
14. Nomenclature sheets for each item of equipment.
15. Data for terminal units, including manufacturer's name, type, size, and fittings.
16. Notes to explain why certain final data in the body of reports vary from indicated values.
17. Test conditions for fans and pump performance forms including the following:
 - a. Settings for outdoor-, return-, and exhaust-air dampers.
 - b. Conditions of filters.
 - c. Cooling coil, wet- and dry-bulb conditions.
 - d. Face and bypass damper settings at coils.
 - e. Fan drive settings including settings and percentage of maximum pitch diameter.
 - f. Inlet vane settings for variable-air-volume systems.
 - g. Settings for supply-air, static-pressure controller.
 - h. Other system operating conditions that affect performance.

D. System Diagrams: Include schematic layouts of air and hydronic distribution systems. Present each system with single-line diagram and include the following:

1. Quantities of outdoor, supply, return, and exhaust airflows.
2. Water and steam flow rates.
3. Duct, outlet, and inlet sizes.
4. Pipe and valve sizes and locations.
5. Terminal units.
6. Balancing stations.
7. Position of balancing devices.

E. Air-Handling-Unit Test Reports: For air-handling units with coils, include the following:

1. Unit Data:
 - a. Unit identification.
 - b. Location.
 - c. Make and type.
 - d. Model number and unit size.
 - e. Manufacturer's serial number.
 - f. Unit arrangement and class.
 - g. Discharge arrangement.
 - h. Sheave make, size in inches, and bore.
 - i. Center-to-center dimensions of sheave, and amount of adjustments in inches.
 - j. Number, make, and size of belts.
 - k. Number, type, and size of filters.
2. Motor Data:
 - a. Motor make, and frame type and size.
 - b. Horsepower and rpm.
 - c. Volts, phase, and hertz.
 - d. Full-load amperage and service factor.
 - e. Sheave make, size in inches, and bore.
 - f. Center-to-center dimensions of sheave, and amount of adjustments in inches.
3. Test Data (Indicated and Actual Values):
 - a. Total air flow rate in cfm.
 - b. Total system static pressure in inches wg.
 - c. Fan rpm.
 - d. Discharge static pressure in inches wg.
 - e. Filter static-pressure differential in inches wg.
 - f. Preheat-coil static-pressure differential in inches wg.
 - g. Cooling-coil static-pressure differential in inches wg.
 - h. Heating-coil static-pressure differential in inches wg.
 - i. Outdoor airflow in cfm.
 - j. Return airflow in cfm.
 - k. Outdoor-air damper position.
 - l. Return-air damper position.
 - m. Vortex damper position.

F. Apparatus-Coil Test Reports:

1. Coil Data:
 - a. System identification.
 - b. Location.

- c. Coil type.
- d. Number of rows.
- e. Fin spacing in fins per inch o.c.
- f. Make and model number.
- g. Face area in sq. ft..
- h. Tube size in NPS.
- i. Tube and fin materials.
- j. Circuiting arrangement.

2. Test Data (Indicated and Actual Values):

- a. Air flow rate in cfm.
- b. Average face velocity in fpm.
- c. Air pressure drop in inches wg.
- d. Outdoor-air, wet- and dry-bulb temperatures in deg F.
- e. Return-air, wet- and dry-bulb temperatures in deg F.
- f. Entering-air, wet- and dry-bulb temperatures in deg F.
- g. Leaving-air, wet- and dry-bulb temperatures in deg F.
- h. Water flow rate in gpm.
- i. Water pressure differential in feet of head or psig.
- j. Entering-water temperature in deg F.
- k. Leaving-water temperature in deg F.
- l. Refrigerant expansion valve and refrigerant types.
- m. Refrigerant suction pressure in psig.
- n. Refrigerant suction temperature in deg F.
- o. Inlet steam pressure in psig.

G. Gas- and Oil-Fired Heat Apparatus Test Reports: In addition to manufacturer's factory startup equipment reports, include the following:

1. Unit Data:

- a. System identification.
- b. Location.
- c. Make and type.
- d. Model number and unit size.
- e. Manufacturer's serial number.
- f. Fuel type in input data.
- g. Output capacity in Btu/h.
- h. Ignition type.
- i. Burner-control types.
- j. Motor horsepower and rpm.
- k. Motor volts, phase, and hertz.
- l. Motor full-load amperage and service factor.
- m. Sheave make, size in inches, and bore.
- n. Center-to-center dimensions of sheave, and amount of adjustments in inches.

2. Test Data (Indicated and Actual Values):

- a. Total air flow rate in cfm.
- b. Entering-air temperature in deg F.
- c. Leaving-air temperature in deg F.
- d. Air temperature differential in deg F.
- e. Entering-air static pressure in inches wg.
- f. Leaving-air static pressure in inches wg.
- g. Air static-pressure differential in inches wg.
- h. Low-fire fuel input in Btu/h.
- i. High-fire fuel input in Btu/h.
- j. Manifold pressure in psig.
- k. High-temperature-limit setting in deg F.
- l. Operating set point in Btu/h.
- m. Motor voltage at each connection.
- n. Motor amperage for each phase.
- o. Heating value of fuel in Btu/h.

H. Fan Test Reports: For supply, return, and exhaust fans, include the following:

1. Fan Data:

- a. System identification.
- b. Location.
- c. Make and type.
- d. Model number and size.
- e. Manufacturer's serial number.
- f. Arrangement and class.
- g. Sheave make, size in inches, and bore.
- h. Center-to-center dimensions of sheave, and amount of adjustments in inches.

2. Motor Data:

- a. Motor make, and frame type and size.
- b. Horsepower and rpm.
- c. Volts, phase, and hertz.
- d. Full-load amperage and service factor.
- e. Sheave make, size in inches, and bore.
- f. Center-to-center dimensions of sheave, and amount of adjustments in inches.
- g. Number, make, and size of belts.

3. Test Data (Indicated and Actual Values):

- a. Total airflow rate in cfm.
- b. Total system static pressure in inches wg.
- c. Fan rpm.
- d. Discharge static pressure in inches wg.

- e. Suction static pressure in inches wg.
- I. Round, Flat-Oval, and Rectangular Duct Traverse Reports: Include a diagram with a grid representing the duct cross-section and record the following:
 - 1. Report Data:
 - a. System and air-handling-unit number.
 - b. Location and zone.
 - c. Traverse air temperature in deg F.
 - d. Duct static pressure in inches wg.
 - e. Duct size in inches.
 - f. Duct area in sq. ft..
 - g. Indicated air flow rate in cfm.
 - h. Indicated velocity in fpm.
 - i. Actual air flow rate in cfm.
 - j. Actual average velocity in fpm.
 - k. Barometric pressure in psig.
- J. Air-Terminal-Device Reports:
 - 1. Unit Data:
 - a. System and air-handling unit identification.
 - b. Location and zone.
 - c. Apparatus used for test.
 - d. Area served.
 - e. Make.
 - f. Number from system diagram.
 - g. Type and model number.
 - h. Size.
 - i. Effective area in sq. ft..
 - 2. Test Data (Indicated and Actual Values):
 - a. Air flow rate in cfm.
 - b. Air velocity in fpm.
 - c. Preliminary air flow rate as needed in cfm.
 - d. Preliminary velocity as needed in fpm.
 - e. Final air flow rate in cfm.
 - f. Final velocity in fpm.
 - g. Space temperature in deg F.
- K. System-Coil Reports: For reheat coils and water coils of terminal units, include the following:
 - 1. Unit Data:

- a. System and air-handling-unit identification.
 - b. Location and zone.
 - c. Room or riser served.
 - d. Coil make and size.
 - e. Flowmeter type.
2. Test Data (Indicated and Actual Values):
 - a. Air flow rate in cfm.
 - b. Entering-water temperature in deg F.
 - c. Leaving-water temperature in deg F.
 - d. Water pressure drop in feet of head or psig.
 - e. Entering-air temperature in deg F.
 - f. Leaving-air temperature in deg F.

M. Instrument Calibration Reports:

1. Report Data:
 - a. Instrument type and make.
 - b. Serial number.
 - c. Application.
 - d. Dates of use.
 - e. Dates of calibration.

3.10 INSPECTIONS

A. Initial Inspection:

1. After testing and balancing are complete, operate each system and randomly check measurements to verify that the system is operating according to the final test and balance readings documented in the final report.
2. Check the following for each system:
 - a. Measure airflow of at least 10 percent of air outlets.
 - b. Measure water flow of at least 5 percent of terminals.
 - c. Measure room temperature at each thermostat/temperature sensor. Compare the reading to the set point.
 - d. Verify that balancing devices are marked with final balance position.
 - e. Note deviations from the Contract Documents in the final report.

B. Final Inspection:

1. After initial inspection is complete and documentation by random checks verifies that testing and balancing are complete and accurately documented in the final report, request that a final inspection be made by Engineer.

2. The TAB contractor's test and balance engineer shall conduct the inspection in the presence of Engineer.
 3. Engineer shall randomly select measurements, documented in the final report, to be rechecked. Rechecking shall be limited to either 10 percent of the total measurements recorded or the extent of measurements that can be accomplished in a normal 8-hour business day.
 4. If rechecks yield measurements that differ from the measurements documented in the final report by more than the tolerances allowed, the measurements shall be noted as "FAILED."
 5. If the number of "FAILED" measurements is greater than 10 percent of the total measurements checked during the final inspection, the testing and balancing shall be considered incomplete and shall be rejected.
- C. TAB Work will be considered defective if it does not pass final inspections. If TAB Work fails, proceed as follows:
1. Recheck all measurements and make any adjustments. Revise the final report and balancing device settings to include all changes; resubmit the final report and request a second final inspection.
 2. If the second final inspection also fails, Owner may contract the services of another TAB contractor to complete TAB Work according to the Contract Documents and deduct the cost of the services from the original TAB contractor's final payment.
- D. Prepare test and inspection reports.

END OF SECTION 23 0593

SECTION 23 0700 - HVAC INSULATION**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Insulation Materials:

- a. Flexible elastomeric.
 - b. Mineral fiber.

- 2. Adhesives.

- 3. Sealants.

- 4. Field-applied jackets.

- 5. Tapes.

- 6. Securements.

- B. Related Sections:

- 1. Division 22 Section "Plumbing Insulation."
 - 2. Division 23 Section "Metal Ducts" for duct liners.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include thermal conductivity, thickness, and jackets (both factory and field applied, if any).
- B. Shop Drawings:
- C. Qualification Data: For qualified Installer.
- D. Material Test Reports: From a qualified testing agency acceptable to authorities having jurisdiction indicating, interpreting, and certifying test results for compliance of insulation materials, sealers, attachments, cements, and jackets, with requirements indicated. Include dates of tests and test methods employed.
- E. Field quality-control reports.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Skilled mechanics who have successfully completed an apprenticeship program or another craft training program certified by the Department of Labor, Bureau of Apprenticeship and Training.
- B. Fire-Test-Response Characteristics: Insulation and related materials shall have fire-test-response characteristics indicated, as determined by testing identical products per ASTM E 84, by a testing and inspecting agency acceptable to authorities having jurisdiction. Factory label insulation and jacket materials and adhesive, mastic, tapes, and cement material containers, with appropriate markings of applicable testing and inspecting agency.
 - 1. Insulation Installed Indoors: Flame-spread index of 25 or less, and smoke-developed index of 50 or less.
 - 2. Insulation Installed Outdoors: Flame-spread index of 75 or less, and smoke-developed index of 150 or less.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Packaging: Insulation material containers shall be marked by manufacturer with appropriate ASTM standard designation, type and grade, and maximum use temperature.

1.6 COORDINATION

- A. Coordinate size and location of supports, hangers, and insulation shields specified in Division 23 Section "Hangers and Supports for HVAC Piping and Equipment."
- B. Coordinate clearance requirements with piping Installer for piping insulation application, duct Installer for duct insulation application, and equipment Installer for equipment insulation application. Before preparing piping and ductwork Shop Drawings, establish and maintain clearance requirements for installation of insulation and field-applied jackets and finishes and for space required for maintenance.
- C. Coordinate installation and testing of heat tracing.

1.7 SCHEDULING

- A. Schedule insulation application after pressure testing systems and, where required, after installing and testing heat tracing. Insulation application may begin on segments that have satisfactory test results.
- B. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

PART 2 - PRODUCTS

2.1 INSULATION MATERIALS – REFRIGERANT PIPING

- A. Flexible Elastomeric for refrigerant pipes: Closed-cell, sponge- or expanded-rubber materials. Comply with ASTM C 534, Type I for tubular materials and Type II for sheet materials. Glue all joints with manufacturer sealant.
 - 1. Products: Subject to compliance with requirements, include, but are not limited to, the following:
 - a. Aeroflex USA Inc.; Aerocel.
 - b. Armacell LLC; AP Armaflex.
 - c. RBX Corporation; Insul-Sheet 1800 and Insul-Tube 180.
 - 2. Pipe insulation must be installed strictly in accordance with insulation manufactures installation instructions. Insulation thickness shall be per the 2019 building energy efficiency standards, requirements for pipe insulation and table 120.3-a

2.2 FIELD-APPLIED JACKETS

- A. Field-applied jackets shall comply with ASTM C 921, Type I, unless otherwise indicated.
- B. Metal Jacket: Install at exterior locations.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Childers Products, Division of ITW; Metal Jacketing Systems.
 - b. PABCO Metals Corporation; Surefit.
 - c. RPR Products, Inc.; Insul-Mate.
 - 2. Aluminum Jacketing with formed aluminum fittings.

2.3 SECUREMENTS

- A. Bands:
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Childers Products; Bands.
 - b. PABCO Metals Corporation; Bands.
 - c. RPR Products, Inc.; Bands.
 - 2. Aluminum: ASTM B 209, Alloy 3003, 3005, 3105, or 5005; Temper H-14, 0.020 inch thick, ½ inch.

3. Springs: Twin spring set constructed of stainless steel with ends flat and slotted to accept metal bands. Spring size determined by manufacturer for application.

B. Insulation Pins and Hangers:

1. Capacitor-Discharge-Weld Pins: Copper- or zinc-coated steel pin, fully annealed for capacitor-discharge welding, 0.106-inch-diameter shank, length to suit depth of insulation indicated.
 - a. Products: Subject to compliance with requirements, provide one of the following:
 - 1). AGM Industries, Inc.; CWP-1.
 - 2). GEMCO; CD.
 - 3). Midwest Fasteners, Inc.; CD.
 - 4). Nelson Stud Welding; TPA, TPC, and TPS.

2.4 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

3.1 EXAMINATION

- A. Examine substrates and conditions for compliance with requirements for installation and other conditions affecting performance of insulation application.
 - 1. Verify that systems and equipment to be insulated have been tested and are free of defects.
 - 2. Verify that surfaces to be insulated are clean and dry.
 - 3. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.

3.3 GENERAL INSTALLATION REQUIREMENTS

- A. Install insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of equipment, ducts and fittings, and piping including fittings, valves, and specialties.
- B. Install insulation materials, forms, vapor barriers or retarders, jackets, and thicknesses required for each item of equipment, duct system, and pipe system as specified in insulation system schedules.
- C. Install accessories compatible with insulation materials and suitable for the service. Install accessories that do not corrode, soften, or otherwise attack insulation or jacket in either wet or dry state.
- D. Install insulation with longitudinal seams at top and bottom of horizontal runs.
- E. Keep insulation materials dry during application and finishing.
- F. Install insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by insulation material manufacturer.
- G. Install insulation with least number of joints practical.

3.4 INSTALLATION

- A. Install materials in accordance with Manufacturer's instructions.

- B. Insulated ductwork conveying air below ambient temperature:
 - 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.
- C. Insulated ductwork conveying air above ambient temperature:
 - 1. Provide with or without standard vapor barrier jacket.
 - 2. Insulate fittings and joints. Where service access is required, bevel and seal ends of insulation.

3.5 TOLERANCE

- A. Substituted insulation materials shall provide thermal resistance within 10 percent at normal conditions, as materials indicated.

END OF SECTION 23 0700

SECTION 23 0802 - AIR CLEANING**PART 1 - GENERAL****1.1 WORK INCLUDED**

- A. Disposable panel filters.

1.2 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.

1.3 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.

1.4 SUBMITTALS

- A. Submit product data under provisions of the general conditions on filter media, filter performance data, filter assembly and filter frames.

1.5 OPERATION AND MAINTENANCE DATA

- A. Submit operation and maintenance data under provisions of the General Conditions.
- B. Include instructions for operation, changing, and periodic cleaning.

1.6 EXTRA STOCK

- A. Provide one set of each size disposable panel filters under provisions of Section the General Conditions for every unit installed.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store and protect products under provisions of General Conditions.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. FARR 2" MERV 13 FILTERS

2.2 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.

PART 3 - EXECUTION

3.1 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 filters (temporary or permanent) are in place. One month after completion of construction replace all filters.
- D. Provide one spare set of filters to owner for every unit.

END OF SECTION 23 0802

SECTION 23 0922 - HVAC CONTROLS**PART 1 - GENERAL****1.1 RELATED SECTIONS**

- A. The General Conditions of the Contract, Supplementary Conditions, and General Requirements are part of this specification and shall be used in conjunction with this section as part of the contract documents. Consult the above for further instructions pertaining to this work. The Contractor is bound by the provisions of Division 00 and Division 01.

1.2 CONTROL SYSTEM DESCRIPTIONS

- A. The Building Automation System (BAS) shall be as indicated on the drawings and described in these specifications. System shall include a network of commercial Internet-programmable thermostats, their accessories, and any other networked devices required for complete climate management. Devices shall communicate across a wireless network using IEEE 802.15.4 technical standards. Wireless communication shall be of an automated mesh communication type, which self-establishes network addresses, communication routes, and all other setup requirements to establish connection across the entire campus. A single Ethernet-connected Gateway shall be able to connect the wireless mesh network to the Internet, allowing for climate management through a cloud based web-application. This network design is to be used to isolate the BAS from the school's private Ethernet network (LAN) and/or WiFi networks. IEEE 802.11 or any other wireless standard of communication or a wired network communication protocol between devices is not acceptable by these BAS specifications. The Gateway is to connect to a single outbound Ethernet connection on the owner's wide area network (WAN) over a TCP/IP connection. The owner's firewall shall not require any inbound port assignments for the Gateway to connect to the cloud servers. The Gateway shall not require a Public IP and it shall not run any standard available operating systems, such as Windows or Linux, for security purposes.
- B. Access and control of BAS shall be through a web-based graphical management platform. The BAS platform shall sit on a cloud server and be accessible on both local personal computers and remotely by use of a web-browser that supports HTML5 or later.
- C. No on-site servers are to be installed or used for the BAS. No software licensing fees or future software licensing fees shall be required as part of the BAS. These specifications and guidelines are to create a cohesive and secure network that provides full management over the facility's climate through the cloudBAS.

- D. The BAS shall accommodate an unlimited simultaneous multiple-user operation. Access to the BAS shall be limiting based on security permissions of each operator's role managed by owner site Administrators.

1.3 APPROVED BUILDING AUTOMATION SYSTEM MANUFACTURERS

- A. Pelican Wireless Systems

1.4 SUBMITTALS

- A. Shop drawings and manufacturer's standard specification data sheets on all hardware shall be provided for this project. No work may begin on any segment of this project until the Engineer and Owner have reviewed submittals for conformity with the plan and specifications.
- B. All submittals shall be bound, in a three-ring binder, or provided digitally on a USB stick with a table of contents and related section tabs. Five (5) copies shall be submitted to the Architect or Engineer for distribution and review.
- C. Shop drawings shall include basic floor plans depicting locations of all equipment and wiring (installed by others) to be controlled by system and locations of thermostats, gateways, and other equipment provided under this section. Drawings shall also show location of electrical power, low voltage wiring and data ports, provided by others, required for proper installation of systems of this section.
- D. Submit five (5) copies of submittal data and shop drawings to the Engineer for review prior to ordering or fabrication of the equipment. The Contractor prior to submitting shall check all documents for accuracy.
- E. The Engineer will make corrections, if required, and return to the Contractor. The Contractor will then resubmit with the corrected or additional data. This procedure shall be repeated until all corrections are made to the satisfaction of the Engineer and the submittals are fully approved.

1.5 SYSTEM STARTUP & COMMISSIONING

- A. Each BAS component in the system shall be tested for both hardware and software functionality. In addition, each mechanical and electrical system under control of the BAS will be tested against the appropriate sequence of operation specified herein. Documentation shall be provided to the owner that proves installation and testing has been completed and points out any mechanical issues found which are not related to the installation of the BAS. Successful completion of the system tests shall constitute the beginning of the warranty period.

- B. The BAS Contractor shall provide all manpower and engineering services required to assist the HVAC Contractor and Balancing Contractor in testing, adjusting, and balancing all systems in the building. The BAS Contractor shall have a trained technician available on request during the balancing of the systems. The BAS Contractor shall coordinate all requirements to provide a complete air balance with the Balancing Contractor and shall include all labor and materials in his contract to assist with functional testing of system as it relates to the BAS.
- C. Upon completion of installation, submit three (3) copies of record documents. The documents shall be submitted for approval prior to final completion and include:
 - 1. Testing and Commissioning Reports and Checklists signed off by trained field commissioning personnel.
 - 2. Name, address and telephone number of Contractor personnel managing and installing equipment, along with service personnel responsible for supporting the ongoing warranty and services of the control system.
 - 3. Procedures for operating the BAS, including logging on/off, alarm management, reading reports, trends, modification of setpoints, scheduling, and other interactive system requirements.
 - 4. Provide information on how to receive support from Pelican Wireless Systems and communicate that they are a direct supporting resource. Contact information for Technical Support from Pelican Wireless Systems is to be provided.

1.6 CODES AND STANDARDS

- A. Codes and Standards. Meet requirements of all applicable standards and codes, except when more detailed or stringent requirements are indicated by the Contract Documents, including requirements of this Section:
 - 1. California 2019 Title 24 Compliant
 - 2. California Energy Commission Occupant Control Smart Thermostat (OCST) certified
 - 3. OpenADR 2.0 certified
- B. TRAINING The BAS Contractor shall provide training for two (2) owner representatives and/or maintenance personnel. The BAS Contractor shall provide on-site training to the District's representative(s) and maintenance personnel per the following description:
- C. On-site training shall consist of a minimum of (1) hours, as indicated above of hands-on instruction geared at the operation and maintenance of the systems. The curriculum shall include:

1. System Overview
2. System Application and Operation
3. System Access
4. Application Features Overview
5. Changing Set Points and other attributes
6. Scheduling
7. Editing configurable variables
8. Graphics
9. Viewing Historical Reports
10. Operational sequences including start-up, shutdown, adjusting and balancing
11. Equipment maintenance

1.7 OPERATING AND MAINTENANCE MANUALS

- A. The operation and maintenance manuals shall contain all information necessary for the operation, maintenance, replacement, installation, and parts procurement for the entire BAS.
- B. Following project completion and testing, the BAS contractor will submit as-built documentation reflecting the exact installation of the system.

1.8 WARRANTY

- A. The BAS contractor shall warrant the system for 12 months after system acceptance and beneficial use by the owner. During the warranty period, the BAS contractor shall be responsible for all necessary revisions as required to provide a complete and workable system consistent with the letter and intent of the Sequence of Operation section of the specification. BAS equipment shall include a limited-warranty by the manufacturer for a period of five (5) years from the time of system acceptance.
- B. Limited-warranty by manufacturer is limited to replacement of defective products.

1.9 WORK BY OTHERS

- A. The BAS Contractor shall coordinate with other contractors prior to performing the work on this project and cooperate as necessary to achieve a complete and neat installation. To that end, each contractor shall consult the drawings and specifications for all trades to determine the nature and extent of others' work prior to fabrication and installation. The owner's representative shall be immediately notified if an area of conflict occurs between trades prior to fabrication and installation. BAS Contractor shall provide field supervision to the Mechanical Contractor for pre-installation of control components.

- B. Low-voltage thermostat wiring between equipment and thermostat locations shall be furnished and installed in conduit.. Unless otherwise noted all new low-voltage wiring shall be multiple conductor thermostat wiring (wire count as indicated in Thermostat Manufacturer's Installation Instructions) installed per owner's specifications. (Wiring in existing installations shall be minimum three (3) conductor/18-gauge wires per BAS manufacturer's standard specifications, multiple conductor/18-gauge thermostat wiring preferred - see Installation Instructions for specific conductor counts depending on heating and cooling modes of existing equipment.)
- C. Related work provided by others:
 - 1. 110V outlets shall be provided within five (5) feet of each Gateway or Wireless Repeater location. Coordinate with electrical contractor.
 - 2. One (1) Ethernet data port shall be provided within ten (10) feet of each Gateway location.
- D. Equipment start-up and servicing.

1.10 SCOPE OF WORK

- A. Except where otherwise noted, the system shall consist of a network of commercial Internet-programmable thermostats, their accessories, and any other networked climate management device(s) required to fill the intent of the specification, sequence of operations, and provide for a complete and operable system.
- B. The BAS contractor shall review and study existing building/site conditions where applicable and all new construction drawings for the project including HVAC drawings and the entire project specifications to familiarize themselves with the equipment and system operation prior to bidding and submittal of a bid/price and notify the owner immediately of any conflicts between the project and the scope of work of this section, including work to be completed by others. All equipment and installation of control devices associated with the equipment listed below shall be provided under this BAS contractor.
- C. When the BAS is fully installed and operational, the BAS contractor will make themselves available to meet with the designated representatives of the owner to review the as-installed condition of the system. At that time, the BAS contractor shall demonstrate the operation of the system and prove that it complies with the intent of the drawings and specifications.
- D. The BAS contractor shall furnish and install a complete BAS control system, including all necessary hardware and all operating and applications software necessary to perform the control sequences of operation as called for in this specification.

- E. Provide and install BAS controls for the HVAC Equipment as noted on the drawings.
- F. Provide technical support necessary for commissioning of system in coordination with the HVAC Contractor, Balancing Contractor, and the owner's team.
- G. Shall provide one training session in the operation of the system for owner's personnel.
- H. All work performed under this section of the specifications will be in compliance with all codes and regulations as mandated by the authority having jurisdiction.

PART 2 PRODUCTS

2.0 ACCEPTABLE MANUFACTURERS

- A. Unless otherwise noted, all product shall be of a single manufacturer. The standard of design and quality shall be products as manufactured by Pelican Wireless Systems.

2.1 COMMUNICATION

- A. This project shall be comprised of a network of devices that use an IEEE 802.15.4 self-creating and self-healing wireless mesh communication network to reach an Ethernet Gateway.
- B. The Gateway shall communicate to cloud servers via a single Ethernet connection at the owner's wide area network (WAN) over a TCP/IP connection. The facility's firewall shall not require any inbound port assignments for the Gateway to connect to the cloud servers. The Gateway shall not require a Public IP.
- C. No BACnet, modBus, LON, or any other device-to-device wired communication protocol shall be used in the communication network.

2.2 OPERATOR INTERFACE

- A. The BAS shall be controlled, managed, and configured using a Web-App on any personal computer, smartphone, and/or tablet that runs a browser with HTML5 or newer.
- B. The Web-App platform shall run on cloud servers which allow for virtual access. Platform shall not run on a local on-site server.
- C. The Web-App shall support at a minimum, the following functions:
 - 1. Personal user log-on identifications (email addresses) and unique passwords shall be

required.

2. Custom HTML programming shall not be required to display any graphics, data, or build the Web-App. There shall be no development cost, commissioning costs, or software upgrade cost required to obtain and use the Web-App.
3. Storage of historical data shall reside on the cloud server and shall not sit within the client's computer, internal network, or other devices. A BAS, which requires on-site data storage, is not acceptable.
4. System shall allow for administrator and user defined access privileges.
5. A Push/Pull OpenAPI interface with XML data output shall be available.
6. Servers shall not run a Windows operating system.

D. Control and Override

1. The BAS shall provide view, override, and edit of the status of any object and property in the system. The status of the device shall be defined graphically and shall not require any custom programs or programming.
2. Temporary Overrides. The BAS shall be able to provide temporary override (wherever an override is allowed) and automatically remove the override after a specified period of time.
3. Any override and edit of a object virtually or at the device, if allowable, shall be historically tracked.

E. Scheduling

1. The BAS shall provide users with scheduling of application devices through a graphical interface. Scheduling shall include, but is not limited to:
 - i. Occupied/Unoccupied Schedules. Shall allow 12 scheduled set-time changes in a single day, be configurable for Daily, Weekly, and Weekday/Weekend layouts, and shall be able to be unique to individual devices or easily shared between multiple devices, where applicable.
 - ii. Event Schedules. Shall allow for advanced one-time or repeating event type schedules. Event schedules shall override Occupied/Unoccupied Schedules. After the Event schedule ends, the device shall revert back to the Occupied/Unoccupied Schedule automatically.
 - iii. Vacation Schedules. A 360-day Calendar shall provide override of schedules during vacation days. Thermostats shall be able to automatically or be manually switched to follow Vacation Schedules instead of Occupied/Unoccupied Schedules.

F. Alarm Notification

1. Alarm Notification(s) shall be generated if there are failures detected by devices part of the

BAS. These failures shall be, but are not limited to: temperature deviations, temperatures missing targets, temperatures too high or too low, failures of equipment, etc. Alarm Notification(s) shall be posted on the BAS and shall be able to be sent either via email or text message to an unlimited number of users.

G. Reports and Logs

1. Data shall be logged and stored on cloud servers for all devices part of BAS in real-time. Every device real-time “state change”, when applicable, shall be stored and viewable for at least one week, with the option of up to two (2) years.
 - i. Each space temperature
 - ii. Each temperature set point(s)
 - iii. Each current call: heat, cool, number of stages, fan, economizer, etc.
 - iv. Each damper position
 - v. Each CO² change
 - vi. Each CO² setting
 - vii. Each current call for ventilation due to high CO²
 - viii. Each Fan speed adjustment
 - ix. Supply duct static pressure
 - x. Supply, Return, Outside air temperatures
2. Data shall be represented on historical graphs that allow for easy viewing of device state change at different times.
3. Excel outputs shall not be required to view data. Historical data shall be viewable through BAS.

2.3 APPLICATION-SPECIFIC CONTROLLERS

- A. Application Specific Controllers shall not require custom programming and shall control specific equipment through simple configuration settings done through the cloud-based BAS. All configuration changes shall automatically upload into the device once set on the BAS and shall be stored by the device’s internal memory.
- B. Gateways are devices which connected to an Ethernet port and act as a bridge between the BAS cloud servers and the wireless mesh network.
 1. Shall be capable of providing Internet connection to up to 2,000 devices.
 2. Shall be capable of automatically addressing routing tables to all devices part of wireless mesh network and shall not require manual programming or addressing.
 3. Shall communicate to cloud servers over a TCP/IP outbound-only connection.
 4. Shall not require a Public IP address, custom VPNs, or any on-site servers.
 5. Shall communicate to other BAS devices over the dedicated and isolated 802.15.4 IEEE

technical standard.

6. Shall be secured using AES (Advanced Encryption Standards).
- C. Internet-Enabled Thermostats are controllers which detect a space/zone temperature and operate equipment or dampers which supply heating, cooling, ventilation, or a combination of the three mechanical states, to their space/zone. Examples are thermostats for VAV, VVT, Fan-Powered Boxes, Fan Coil, Blower Coils, Unit Ventilators, Heat Pumps, Water Source Heat Pumps, and Conventional DX and/or Gas heat equipment.
1. Shall be capable of providing 24VAC outputs which can be configured to provide control of the following: two stages of fan, three stages of cooling, two stages of heating, one stage of auxiliary heat (heat pumps), floating point zone dampers, two position zone dampers, floating point zone reheat valves, and two position zone reheat valves.
 2. Shall include a removable wiring terminal module that allows for thermostat installation even in situations where there are only three wires between equipment and where the thermostat is to be installed.
 3. Shall be available with the following internal sensors: temperature only, temperature and humidity, temperature, humidity, and CO², and temperature and CO². All sensors required by the specifications are to be internal to the thermostat and not require two devices on the wall.
 4. Shall be able to accept expansion accessories that allow for more advanced control sequences, and additional temperature detection. Examples are economizer controllers, outside air ventilation control, supply air temperature detection, unit ventilator face/bypass control, and modulating valve control.
 5. Shall communicate with the wireless mesh network through an internal wireless antenna that runs on the 802.15.4 technical standards. Shall be able to automatically repeat the wireless mesh network to additional devices part of the BAS.
 6. Shall automatically push to the BAS all "state changes" so as to be viewable historically and in real-time from BAS. Examples are changes in equipment operation (heat, cool, fan), number of stages active, the temperatures in the space, damper position, valve position, temperature set-points, etc.
 7. Shall be able to lock-out heat pump compressor(s) based on outside air temperature.
 8. Shall provide set-point (heat & cool) temperature limitations through BAS.
 9. Shall provide full local keypad lock-out from BAS.
 10. Shall meet California 2019 Title 24 code standards.
 11. Shall have a programmable three (3°F) degree heat/cool temperature range which auto-adjusts to a five (5°F) degree deadband.
 12. Shall have both a heat setpoint, cool setpoint, and auto-changeover.

13. Shall have Optimum Start algorithms that will calculate start times based on at least seven (7) days of previous run-time temperature and rate-of-change historical data for its space. Optimum Start algorithm shall recalculate each optimized schedule time before each optimized schedule.
 14. Shall be able to be manually overridden through BAS.
 15. Shall be configured through BAS.
- D. Wired Temperature Inputs are to be available to provide external temperature detection for specific BAS devices. Examples are to provide supply air temperature, water temperature, refrigeration temperature, outside air temperature, etc. to a thermostat or other device.
1. Shall accept 10K type II thermistors.
 2. Shall push to the BAS real-time temperature changes so as to be viewable historically and in real-time from the BAS.
 3. Shall accept a thermistor at a maximum of up to 100 feet from input terminal.
 4. Shall be configured through the BAS.
- E. Internet-Enabled Economizer Controller are controllers that modulate an outside air damper to provide ventilation and economization to a single zone.
1. Shall only require a dry-bulb outside air temperature sensor and dry-bulb supply air temperature sensor. No dry-bulb return air temperature sensor or dry-bulb mixing box temperature sensor shall be required.
 2. Shall communicate with thermostat to determine space temperature and space temperature setpoint in order to decide when economization can be used.
 3. Shall continue to economize as its only source of cooling as long as the outside air temperature is able to keep the space temperature within 1°F of the cool temperature setpoint. Shall be able to enable mechanical cooling at the same time as economization.
 4. Shall be able to prevent the supply air temperature from dropping below 56°F during economization.
 5. Shall provide enthalpy by use of pulling humidity and barometric pressure information from the Internet based on the zip code of installation location. Enthalpy shall not require any additional probes other than the dry-bulb probe and shall be free to enable.
 6. If connected to a CO² thermostat, shall be able to provide demand ventilation control of outside air damper.
 7. Shall have a minimum ventilation damper position and a maximum ventilation damper position.
 8. Shall be able to be scheduled to not open the outside air damper for ventilation during unoccupied hours.
 9. Shall be able to control a Variable Frequency Drive (VFD) with up to five (5) fan speed

- inputs. Example of fan speed changes are during ventilation, stage one cooling, stage two cooling, stage one heating, stage two heating.
10. Shall modulate an outside air damper by use of a 0-10VDC signal.
 11. Shall accept a 0-10VDC signal feedback input from the outside air damper actuator to confirm outside air damper is working correctly.
 12. Shall meet all California 2019 Title 24 codes, including Fault Detection and Diagnostic requirements.
 13. Shall send Fault Detection and Diagnostic information to the BAS.
 14. Shall accept a minimum of three (3) 10K type II thermistors.
 15. Shall be able to modulate a 0-10VDC hot water valve for heating and outside air tempering.
 16. Shall be able to control a face/bypass damper.
 17. Shall push all "state changes" to the BAS as to be viewable historically and in real-time from BAS. Examples are changes in equipment operation (heat, cool, fan, economization, ventilation), number of stages active, the supply air temperature, the return air temperature, hot water valve position, face/bypass damper position, variable speed fan setting, etc.
 18. Shall be able to be manually overridden through the BAS.
 19. Shall be configured through the BAS.
- F. Internet-Enabled Power Relay Module are controllers which have dry-contact relays able to start/stop different electrical equipment. Examples are exhaust fans, lights, pumps, valves, boilers, chillers, etc.
1. Shall have relays with a max rating of 120 VAC @ 15 AMPs or 240/277 VAC @ 10 AMPs.
 2. Shall have a low-voltage terminal for momentary contact override inputs. Override time shall be configurable for a specific amount of minutes through a configuration from the BAS. Shall be able to provide Lead/Lag sequencing between relays.
 3. Shall be able to accept an external dry-contact input used to verify flow if being used as a pump controller. If being used as a lead/lag pump controller, shall be able to alarm the BAS if flow is not detected when Pump A is enabled and start Pump B as a stand-by pump.
 4. Shall communicate with the wireless mesh network through an external wireless antenna that runs on the 802.15.4 technical standards. Antenna shall be able to communicate with Power Relay Module over three (3) 18-gauge wires up to 500 feet between device terminal inputs.
 5. Shall be able to automatically repeat the wireless mesh network to additional devices part of the BAS.
 6. Shall push all "state changes" to the BAS as to be viewable historically and in real-time from the BAS. Examples are changes in relay positions On or Off.
 7. Shall be able to be manually overridden through the BAS.

8. Shall be configured through the BAS.
- G. Zone Controllers are controllers which operate equipment which supply heating, cooling and ventilation, or a combination of these mechanical states to multiple zones.
1. Shall communicate with the wireless mesh network through a removable wireless antenna that runs on the 802.15.4 technical standards. Antenna shall be able to communicate to Zone Controller over three (3) 18-gauge wires up to 500 feet between devices terminal inputs.
 2. Communication from the Zone Controller to all zone/space Thermostats shall be over the wireless mesh network.
 3. Shall be capable of providing 24VAC outputs which can be configured to provide control of the following: multiple stages of fan, multiple stages of cooling, and multiple stages of heating.
 4. Shall be capable of providing 0-10VDC outputs which can be configured to provide control of the following: variable speed fan (VFD), modulating outside air damper, modulating heating valve.
 5. Shall have integrated outside air damper control logic and not require a third-party or additional controllers to provide economization and ventilation control.
 6. Shall directly accept a supply duct static pressure probe. Shall have an integrated short-term and long-term learning PID loop algorithm for maintaining target supply static configurations. PID loop shall not require any type of cost for programming and is to be factory loaded into controller.
 7. Shall only require dry-bulb outside, return, and supply air temperature sensors.
 8. If communicating to CO² thermostat(s), shall be able to provide demand ventilation control of outside air damper.
 9. Shall push all "state changes" to the BAS as to be viewable historically and in real-time from the BAS. Examples are changes in equipment operation (heat, cool, fan, economization, ventilation), number of stages active, the supply air temperature, the return air temperature, the outside air temperature, hot water valve position, supply duct static reading, variable speed fan setting, etc.
 10. Shall be able to be manually overridden through the BAS.
 11. Shall be configured through the BAS.
- H. Wireless Proximity Sensors are thermostat accessories which are able to detect when a door or window is opened or closed, or be able to accept a dry-contact input from an occupancy sensor.
1. Shall be able to communicate to a single Internet-Programmable Thermostat over wireless mesh network.
 2. Shall communicate with the wireless mesh network through an internal wireless antenna

- that runs on the 802.15.4 technical standards.
 - 3. Shall run on two AA batteries and not require any unique type of battery to operate.
 - 4. Shall push all “state changes” to the BAS as to be viewable historically and in real-time from the BAS. Examples are if the door is open, if the space is unoccupied, if a window is open.
 - 5. Shall be configured through the BAS.
- I. Remote Wireless Sensors are thermostat accessories which are used to either average temperatures between the sensors location and a master thermostat or to relocate the sensing location of the master thermostat without having to run new wire.
- 1. Shall be able to communicate to a single Internet-Programmable Thermostat over wireless mesh network.
 - 2. Shall communicate with the wireless mesh network through an internal wireless antenna that runs on the 802.15.4 technical standards.
 - 3. Shall run on two AA batteries and not require any unique type of battery to operate.
 - 4. Shall push all “state changes” to the BAS as to be viewable historically and in real-time from the BAS. Examples are changes in equipment operation (heat, cool, fan), number of stages active, the temperatures in the space, temperature set-points, etc.
 - 5. Shall be configured through the BAS.
6. Wireless Repeaters are devices which extend the 802.15.4 wireless mesh network across large expanses or where BAS devices are unable to repeat the wireless mesh network on their own. Examples are when bridging the wireless mesh network from one building to another. Shall communicate with the wireless mesh network through an internal wireless antenna that runs on the 802.15.4 technical standards.
- 7. Shall be able to automatically repeat the wireless mesh network to additional devices part of the BAS.
 - 8. Shall not require an Ethernet connection or any TCP/IP connection.
 - 9. Shall only require a single 120V outlet for power.
- J. Software
- 1. To meet the sequence of operation for each controller, the controller shall be configured through the BAS by the installing contractor. No custom programming or downloading by use of a service tool shall be required.
 - 2. Stand-Alone Operation: Each piece of equipment specified shall provide stand-alone operation. BAS devices shall not require web connection or communication to the BAS to run under normal operations.

PART 3 EXECUTION

3.0 EXAMINATION

- A. The Contract Documents shall be thoroughly examined for coordination of control devices, their installation, wiring, and commissioning. Coordinate and review mechanical equipment specifications, locations, and identify any discrepancies, conflicts, or omissions that shall be reported to the Architect/Engineer for resolution before rough-in work is started.
- B. The BAS manufacturer shall be available to provide assistance to BAS Contractor in order to verify that control equipment can be installed as required, and any discrepancies, conflicts, or omissions shall be reported to the Architect/Engineer for resolution before rough-in work is started.

3.1 PROTECTION

- A. The BAS installing contractor shall protect all work and material from damage by their work or personnel, and shall be liable for all damage thus caused.
- B. The BAS installing contractor shall be responsible for their work and equipment until final inspection, testing, and acceptance. The BAS installing contractor shall protect their work against theft or damage, and shall carefully store material and equipment received on site that is not immediately installed. The Contractor shall close all open ends of work with temporary covers or plugs during storage and construction to prevent entry of foreign objects. Installation of BAS shall be performed by an approved Contractor. Approved contractor is one whom either has installed the BAS before and has been approved by the BAS manufacturer. The Contractor shall certify all work as proper and complete. Under no circumstance shall the design, scheduling, coordination, programming, training, and warranty requirements for the project be delegated to a subcontractor without prior written approval of the owner.
- C. Demolition. Remove controls which do not remain as part of the BAS. The owner will inform the Contractor of any equipment which is to be removed that will remain the property of the owner. All other equipment which is remove will be disposed of by the Contractor.
- D. Access to Site. Unless notified otherwise, entrance to building is restricted. No one will be permitted to enter the building unless their names have been cleared with the owner or an owner-approved representative.
- E. Code Compliance. All wiring shall be installed in accordance with all applicable electrical codes and will comply with equipment manufacturer's recommendations.

- F. Clean Up. During installation, contractor shall maintain a clean environment. At the completion of the work, all equipment pertinent to this contract shall be checked and thoroughly cleaned, and all other areas shall be cleaned around equipment provided under this contract.

3.2 TEST AND BALANCE

- A. Coordinate with Air Test And Balance Contractor!

3.3 WIRING, CONDUIT, AND CABLE

- A. All control wires between mechanical equipment and BAS devices are to be furnished and installed by BAS contractor is responsible for this part of the installation. This work may be subcontracted to the electrical contractor at the discretion of the BAS contractor. All electrical work shall comply with the California Electrical Code.

3.4 HARDWARE INSTALLATION

- A. Installation Practices for Devices. All devices are to be mounted level/plumb and per the manufacturer's installation documentation.
- B. Identification.
 - 1. Identify all control wires with labeling tape or sleeves using either words, letters, or numbers that can be exactly cross-referenced with as-built drawings.
 - 2. All field enclosures, other than controllers, shall be identified with a nameplate. The lettering shall be in white against a black or blue background.
 - 3. Junction box covers will be marked to indicate that they are a part of the BAS.
 - 4. All field devices (except space sensors) that are not mounted within FIP's shall be identified with name plates.
 - 5. All field devices inside FIP's shall be labeled.
- C. Existing Controls. Existing controls are not to be reused. All BAS devices will be new.
- D. Control System Switch-Over. The installing contractor shall minimize control system downtime during switch-over. Sufficient installation mechanics will be on-site so that the entire switch-over can be accomplished in a reasonable time frame.
- E. Location.
 - 1. The location of sensors is as indicated in the mechanical and architectural drawings.

2. Space temperature, humidity, and CO² sensors will be mounted away from machinery generating heat, direct light, and/or diffuser air streams.
3. If external temperature sensors are installed, sensors will be mounted away from machinery generating heat, direct light, and/or diffuser air streams.
4. If outdoor air temperature sensors are installed, sensors are to be installed such that the effects of heat radiated from the building or sunlight is minimized.

3.5 SYSTEM CONFIGURATION

- A. General. The installing contractor shall provide all labor necessary to install, initialize, start-up and troubleshoot all system hardware and configurations described in this section. This includes any requirements necessary to access the web application on third-party devices.
- B. Installing contractor shall work with owner's representative to determine configuration parameters including but not limited to hours of operation, set points, system variables, naming of devices, and site naming. Naming of devices and the site shall be performed by the installing contractor. Naming convention of space thermostats shall be space served. Naming convention of zone controllers shall be the equipment serial number. All naming shall be provided by or agreed upon with the owner.

3.6 SYSTEM COMMISSIONING AND SYSTEM STARTUP

- A. Each BAS component in the system shall be tested for both hardware and software functionality. In addition, each mechanical and electrical system under control of the BAS will be tested against the appropriate sequence of operation specified herein. Documentation shall be provided to the owner that proves installation and testing has been completed and points out any mechanical issues found that are not related to the installation of the BAS. Successful completion of the system tests shall constitute the beginning of the warranty period.
- B. The BAS Contractor shall provide all manpower and engineering services required to assist the HVAC Contractor and Balancing Contractor in testing, adjusting, and balancing all systems in the building. The BAS Contractor shall have a trained technician available on request during the balancing of the systems. The BAS Contractor shall coordinate all requirements to provide a complete air balance with the Balancing Contractor and shall include all labor and materials in his contract to assist with functional testing of system as it relates to BAS.
- C. Upon completion of installation, submit three (3) copies of record documents. The documents shall be submitted for approval prior to final completion and include:
 1. Testing and Commissioning Reports and Checklists signed off by trained field

- commissioning personnel.
2. Name, address and telephone number of Contractor personnel managing and installing equipment, along with service personnel responsible for supporting the ongoing warranty and services of the control system.
 3. Procedures for operating the BAS including logging on/off, alarm management, reading reports, trends, modification of setpoints, scheduling, and other interactive system requirements.
 4. Provide information on how to receive support from Pelican Wireless Systems and demonstrate that they are a direct supporting resource. Contact information for Technical Support from Pelican Wireless Systems is to be provided.

END OF SECTION 23 0922

SECTION 23 1500 - VIBRATION ISOLATION**PART 1 - GENERAL****1.1 SECTION INCLUDES**

- A. Vibration isolation.

1.2 PERFORMANCE REQUIREMENTS

- A. Provide vibration isolation on motor driven equipment and connected ductwork.

1.3 SUBMITTALS

- A. Submit under provisions of the General Conditions.
- B. Shop Drawings Indoor / Outdoor Units: 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**2.1 FLEXIBLE DUCT CONNECTIONS**

- A. Manufacturers
 - 1. Ductmate Vinyl Super Duty
 - 2. Or equal.

2.2 VIBRATION ISOLATORS

- A. Manufacturers
 - 1. MW Sausse'

PART 3 - EXECUTION**3.1 INSTALLATION**

- A. Install in accordance with Manufacturer's instructions.

- B. At air handling units provide flexible duct connections at connection to existing ducting.
- C. Provide flexible refrigerant, condensate and electrical connections to all equipment.
- D. Adjust springs after installation per Manufacturer's installation instructions.
- E. Reuse existing spring assemblies. Adjust locations as needed to fit new units. Allow for maintenance access.

END OF SECTION 23 1500

SECTION 23 2300 - REFRIGERANT PIPING**PART 1 GENERAL****1.1 SECTION INCLUDES**

- A. Piping.
- B. Refrigerant.
- C. Moisture and liquid indicators.
- D. Valves.
- E. Strainers.
- F. Check valves.
- G. Pressure relief valves.
- H. Filter-driers.
- I. Solenoid valves.
- J. Expansion valves.

1.2 RELATED SECTIONS

- A. Section 23 07 00 - HVAC Insulation.
- B. Section 23 81 26 – Variable Flow Heat Pump.

1.3 REFERENCES

- A. ARI 710 - Liquid Line Dryers.
- B. ARI 730 - Flow-Capacity Rating and Application of Suction-Line Filters and Filter-Driers
- C. ARI 750 - Thermostatic Refrigerant Expansion Valves.
- D. ARI 760 - Solenoid Valves for Use With Volatile Refrigerants.
- E. ASHRAE 15 - Safety Code for Mechanical Refrigeration.
- F. ASHRAE 34 - Number Designation of Refrigerants.
- G. ASME - Boiler and Pressure Vessel Codes, SEC 9 Qualification Standard for Welding and Brazing Procedures, Welders, Brazers, and Welding and Brazing Operators.
- H. ASME B16.22 - Wrought Copper and Copper Alloy Solder Joint Pressure Fittings.

- I. ASME B16.26 - Cast Copper Alloy Fittings For Flared Copper Tubes.
- J. ASME B31.5 - Refrigeration Piping.
- K. ASTM B280 - Seamless Copper Tube for Air Conditioning and Refrigeration Field Service.
- L. AWS A5.8 - Brazing Filler Metal.

1.4 SYSTEM DESCRIPTION

- A. Where more than one piping system material is specified ensure system components are compatible and joined to ensure the integrity of the system is not jeopardized. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.
- B. Valves
 - 1. Use factory-supplied service valves on condensing units.
- C. Replaceable Cartridge Filter-Driers:
- D. Solenoid Valves:
 - 1. Use in liquid line of single evaporator systems.

1.5 SUBMITTALS

- A. Submit under provisions of the general requirements.
- B. Shop Drawings: Indicate schematic layout of system, including equipment, critical dimensions, and sizes.
- C. Product Data: Provide general assembly of specialties, including manufacturers catalogue information. Provide manufacturers catalog data including load capacity.
- D. Manufacturer's Installation Instructions: Indicate support, connection requirements, and isolation for servicing.
- E. Submit welders certification of compliance.

1.6 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of the general requirements.
- B. Record exact locations of equipment and refrigeration accessories on record drawings.

1.7 OPERATION AND MAINTENANCE DATA

- A. Submit under provisions of the general requirements.
- B. Maintenance Data: Include instructions for changing cartridges, assembly views, spare parts lists.

1.8 REGULATORY REQUIREMENTS

- A. Conform to ASME B31.9 for installation of piping system.
- B. Welding Materials and Procedures: Conform to ASME SEC 9.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of the general requirements.
- B. Deliver and store piping and specialties in shipping containers with labeling in place.
- C. Protect piping and specialties from entry of contaminating material by leaving end caps and plugs in place until installation.
- D. Dehydrate and charge components such as piping and receivers, seal prior to shipment, until connected into system.

1.10 WARRANTY

- A. Provide one year warranty under provisions of the general requirements.

PART 2 PRODUCTS

2.1 PIPING

- A. Copper Tubing: ASTM B280, Type ACR annealed.
 - 1. Fittings: ASME B16.22 wrought copper.
 - 2. Joints: Braze, AWS A5.8 BCuP silver/phosphorus/copper alloy with melting range 1190 to 1480 degrees F (640 to 805 degrees C).
- B. Pipe Supports and Anchors:
 - 1. Conform to Section 23 05 29

2.2 REFRIGERANT

- A. Refrigerant: ASHRAE 34
 - 1. R-454B.

2.3 REFRIGERANT PIPING

- A. Insulate with closed cell neoprene insulation per Title 24 requirements. Install PABCO Aluminum corrugated jacketing (0.016) with aluminum formed fittings at exterior.

PART 3 EXECUTION

3.1 PREPARATION

- A. Ream pipe and tube ends. Remove burrs.
- B. Remove scale and dirt on inside and outside before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

3.2 INSTALLATION

- A. Install refrigeration specialties in accordance with manufacturer's instructions.
- B. Route piping in orderly manner, with plumbing parallel to building structure, and maintain gradient.
- C. Install piping to conserve building space and not interfere with use of space.
- D. Group piping whenever practical at common elevations and locations. Slope piping one percent in direction of oil return.
- E. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- F. Arrange piping to return oil to compressor.
- G. Provide clearance for installation of insulation and access to valves and fittings.
- H. Flood piping system with nitrogen when brazing.
- I. Where pipe support members are welded to structural building frame, brush clean, and apply one coat of zinc rich primer to welding.
- J. Prepare unfinished pipe, fittings, supports, and accessories ready for finish painting. Refer to the general requirements.
- K. Insulate piping per CEC Title 24 requirements and install aluminum jacket at exterior locations. Piping shall be install straight and true to allow for installation of aluminum fitting covers.
- L. Follow ASHRAE 15 procedures for charging and purging of systems and for disposal of refrigerant.
- M. Provide replaceable cartridge filter-driers.
- N. Fully charge completed system with refrigerant after testing.
- O. Test piping per manufacturer's installation manual.
- P. Disconnect existing refrigerant piping from existing fan coils and outdoor units. Test the existing piping per manufacturer's requirements. Clean existing piping to remove oils and contaminants. Provide some metal for cleaning material. Connect outdoor and indoor units to existing piping with new ACR hard copper and brazed fittings. Test piping per manufacturer's requirements. Evacuate piping per manufacturers requirements prior to installation of refrigerant.

END OF SECTION 23 2300

SECTION 23 3000 - SPLIT SYSTEM HEAT PUMPS**PART 1 - GENERAL****1.1 SECTION INCLUDES**

- A. Outdoor Heat Pump Unit.
- B. Indoor Heat Pump Unit.
- C. Charge of refrigerant and oil.
- D. Controls and control connections.
- E. Refrigerant piping connections.
- F. Motor starters.
- G. Electrical power connections.

1.2 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, and Air-Source Heat Pump Equipment.
- F. ANSI/UL 465 - Central Cooling Air Conditioners.
- G. ARI 210/240 - Unitary Air-Conditioning and Air-Source Heat Pump 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.

1.3 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.

1.4 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.

1.5 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.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Outdoor Heat Pump Unit.
 - 1. Manufacturer.
 - a. York
- B. Indoor Heat Pump Unit.
 - 1. Manufacturer.
 - a. Advanced Distributor Products (ADP)
 - 1) Include 2" filter rack with 2" MERV 13 filter.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Provide for connection to electrical service.
- C. Provide connection to refrigeration piping system and evaporators. Comply with ANSI/ASHRAE 15. Coordinate condensate drain installation.

- D. Install condensate pumps Little Giant or equal. Modify piping as needed for new condensate connections.
- E. Provide new Pelican thermostats. Typical of each indoor unit. See mechanical plans for more information.
- F. Replace filters after 30 days of operation. Verify all operations of unit at this time again. Provide report to owner.
- G. Reinstall UV lights. Locate lights in supply plenum.

END OF SECTION 23 3000

SECTION 23 3113 - METAL DUCTS**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Single-wall rectangular ducts and fittings.
 - 2. Single-wall round ducts and fittings.
 - 3. Sheet metal materials.
 - 4. Sealants and gaskets.
 - 5. Hangers and supports.

1.3 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Duct hangers and supports and seismic restraints shall withstand the effects of gravity and seismic loads and stresses within limits and under conditions described in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" and SMACNA's "Seismic Restraint Manual: Guidelines for Mechanical Systems."

- 1. Seismic Hazard Level A: Seismic force to weight ratio, 0.48.

- B. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1-2019.

1.4 SUBMITTALS

- A. Product Data: For each type of the following products:
 - 1. Ductwork materials
 - 2. Sealants and gaskets.
- B. Coordination Drawings: Plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
 - 1. Duct installation in congested spaces, indicating coordination with general construction, building components, and other building services. Indicate proposed changes to duct layout.
 - 2. Suspended ceiling components.

3. Structural members to which duct will be attached.
4. Penetrations of smoke barriers and fire-rated construction.

1.5 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel," for hangers and supports.
- B. Welding Qualifications: Qualify procedures and personnel according to the following:
 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel," for hangers and supports.
 2. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum," for aluminum supports.
 3. AWS D9.1M/D9.1, "Sheet Metal Welding Code," for duct joint and seam welding.
- C. ASHRAE Compliance: Applicable requirements in ASHRAE 62.1-2019, Section 5 - "Systems and Equipment" and Section 7 - "Construction and System Start-Up."
- D. ASHRAE/IESNA Compliance: Applicable requirements in ASHRAE/IESNA 90.1-2019, Section 6.4.4 - "HVAC System Construction and Insulation."

PART 2 - PRODUCTS

2.1 SINGLE-WALL RECTANGULAR DUCTS AND FITTINGS

- A. General Fabrication Requirements: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" based on indicated static-pressure class unless otherwise indicated.
- B. Transverse Joints: Select joint types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 1-4, "Transverse (Girth) Joints," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
- C. Longitudinal Seams: Select seam types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 1-5, "Longitudinal Seams - Rectangular Ducts," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
- D. Elbows, Transitions, Offsets, Branch Connections, and Other Duct Construction: Select types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Chapter 2, "Fittings and Other Construction," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."

2.2 SINGLE-WALL ROUND DUCTS AND FITTINGS

- A. General Fabrication Requirements: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Chapter 3, "Round, Oval, and Flexible Duct," based on indicated static-pressure class unless otherwise indicated.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Lindab Inc.
 - b. McGill AirFlow LLC.
 - c. SEMCO Incorporated.
 - d. Sheet Metal Connectors, Inc.
 - e. Spiral Manufacturing Co., Inc.
 - f. Omni Duct Systems.

2.3 SHEET METAL MATERIALS

- A. General Material Requirements: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for acceptable materials, material thicknesses, and duct construction methods unless otherwise indicated. Sheet metal materials shall be free of pitting, seam marks, roller marks, stains, discolorations, and other imperfections.
- B. Galvanized Sheet Steel: Comply with ASTM A 653/A 653M.
 - 1. Galvanized Coating Designation: G60 or G-90 at exterior.
 - 2. Finishes for Surfaces Exposed to View: Mill phosphatized.
 - 3. Welded Connections.
 - 4. Spiralmate connections.
- C. Hanger Rods for Noncorrosive Environments: Cadmium-plated steel rods and nuts.
- D. Hanger Rods for Corrosive Environments: Electrogalvanized, all-thread rods or galvanized rods with threads painted with zinc-chromate primer after installation.
- E. Strap and Rod Sizes: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Table 4-1, "Rectangular Duct Hangers Minimum Size," and Table 4-2, "Minimum Hanger Sizes for Round Duct."
- F. Steel Cables for Galvanized-Steel Ducts: Galvanized steel complying with ASTM A 603.
- G. Self-tapping metal screws; compatible with duct materials.
- H. Trapeze and Riser Supports:
 - 1. Supports for Galvanized-Steel Ducts: Galvanized-steel shapes and plates.
 - 2. Supports for Stainless-Steel Ducts: Stainless-steel shapes and plates.

3. Supports for Aluminum Ducts: Aluminum or galvanized steel coated with zinc chromate.

2.4 SEISMIC-RESTRAINT DEVICES

- A. Manufacturers: Subject to compliance with requirements, provide a product by one of the following:
 1. Cooper B-Line, Inc.; a division of Cooper Industries.
 2. Ductmate Industries, Inc.
 3. Hilti Corp.
 4. Mason Industries.
 5. Unistrut Corporation; Tyco International, Ltd.

PART 3 - EXECUTION

3.1 DUCT INSTALLATION

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of duct system. Indicated duct locations, configurations, and arrangements were used to size ducts and calculate friction loss for air-handling equipment sizing and for other design considerations. Install duct systems as indicated unless deviations to layout are approved on Shop Drawings and Coordination Drawings.
- B. Install ducts according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" unless otherwise indicated.
- C. Install round and flat-oval ducts in maximum practical lengths.
- D. Install ducts with fewest possible joints.
- E. Install factory- or shop-fabricated fittings for changes in direction, size, and shape and for branch connections.
- F. Unless otherwise indicated, install ducts vertically and horizontally, and parallel and perpendicular to building lines.
- G. Install ducts close to walls, overhead construction, columns, and other structural and permanent enclosure elements of building.
- H. Duct sizes shown on plans is internal clear dimension, allow for the thickness of liner where shown. Install ducts with a clearance of 1 inch, plus allowance for insulation thickness.
- I. Route ducts to avoid passing through transformer vaults and electrical equipment rooms and enclosures.

- J. Where ducts pass through non-fire-rated interior partitions and exterior walls and are exposed to view, cover the opening between the partition and duct or duct insulation with sheet metal flanges of same metal thickness as the duct. Overlap openings on four sides by at least 1-1/2 inches.
- K. Where ducts pass through fire-rated interior partitions and exterior walls, install fire dampers. Comply with requirements in Division 23 Section "Air Duct Accessories" for fire and smoke dampers.
- L. Protect duct interiors from moisture, construction debris and dust, and other foreign materials.

3.2 DUCT SEALING

- A. Seal ducts for duct static-pressure, seal classes, and leakage classes specified in "Duct Schedule" Article according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
- B. Seal ducts to the following seal classes according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible":
 - 1. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
 - 2. Conditioned Space, Supply-Air Ducts in Pressure Classes 2-Inch wg and Lower: Seal Class C.
 - 3. Conditioned Space, Exhaust Ducts: Seal Class B.
 - 4. Conditioned Space, Return-Air Ducts: Seal Class C.

3.3 HANGER AND SUPPORT INSTALLATION

- A. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Chapter 4, "Hangers and Supports."
- B. Hanger Spacing: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Table 4-1, "Rectangular Duct Hangers Minimum Size," and Table 4-2, "Minimum Hanger Sizes for Round Duct," for maximum hanger spacing; install hangers and supports within 24 inches of each elbow and within 48 inches of each branch intersection.
- C. Hangers Exposed to View: Threaded rod and angle or channel supports.
- D. Support vertical ducts with steel angles or channel secured to the sides of the duct with welds, bolts, sheet metal screws, or blind rivets; support at each floor and at a maximum intervals of 16 feet.
- E. Install upper attachments to structures. Select and size upper attachments with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.

3.4 SEISMIC-RESTRAINT-DEVICE INSTALLATION

- A. Install ducts with hangers and braces designed to support the duct and to restrain against seismic forces required by applicable building codes. Comply with SMACNA's "Seismic Restraint Manual: Guidelines for Mechanical Systems."
- B. Select seismic-restraint devices with capacities adequate to carry present and future static and seismic loads.
- C. Install cables so they do not bend across edges of adjacent equipment or building structure.
- D. Install cable restraints on ducts that are suspended with vibration isolators.

3.5 CONNECTIONS

- A. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for branch, outlet and inlet, and terminal unit connections.

3.6 PAINTING

- A. Paint interior of metal ducts that are visible through registers and grilles and that do not have duct liner. Apply one coat of flat, black, latex paint over a compatible galvanized-steel primer.

3.7 DUCT SCHEDULE

- A. Fabricate ducts with galvanized sheet steel except as otherwise indicated and as follows:
- B. Ducts:
 - 1. Ducts Connected to Indoor Units:
 - a. Pressure Class: Positive 2-inch wg.
 - b. Minimum SMACNA Seal Class: A.
 - c. SMACNA Leakage Class for Rectangular: 12.
- C. Elbow Configuration:
 - 1. Rectangular Duct: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 2-2, "Rectangular Elbows."
 - a. Velocity 1000 fpm or Lower:
 - 1) Radius Type RE 1 with minimum 0.5 radius-to-diameter ratio.
 - 2) Mitered Type RE 4 without vanes.
 - 2. Round Duct: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 3-3, "Round Duct Elbows."

- a. Minimum Radius-to-Diameter Ratio and Elbow Segments: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Table 3-1, "Mitered Elbows." Elbows with less than 90-degree change of direction have proportionately fewer segments.
 - 1) Velocity 1000 fpm or Lower: 0.5 radius-to-diameter ratio and three segments for 90-degree elbow.
 - 2) Velocity 1000 to 1500 fpm: 1.0 radius-to-diameter ratio and four segments for 90-degree elbow.
- b. Round Elbows, 12 Inches and Smaller in Diameter: Stamped or pleated.
- c. Round Elbows, 14 Inches and Larger in Diameter: Standing seam or Welded.

D. Branch Configuration:

- 1. Rectangular Duct: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 2-6, "Branch Connections."
 - a. Rectangular Main to Rectangular Branch: 45-degree entry.
 - b. Rectangular Main to Round Branch: Spin in.
- 2. Round and Flat Oval: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 3-4, "90 Degree Tees and Laterals," and Figure 3-5, "Conical Tees."
 - a. Velocity 1000 fpm or less 45-degree lateral.

3.8 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Duct System Cleanliness Tests:
 - 1. Visually inspect duct system to ensure that no visible contaminants are present.
- C. Duct system will be considered defective if it does not pass tests and inspections.
- D. Prepare test and inspection reports.

END OF SECTION 23 3113

SECTION 23 3300 - AIR DUCT ACCESSORIES**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Manual volume dampers.
 - 2. Flange connectors.
 - 3. Turning vanes.
 - 4. Duct Accessory Hardware
- B. Related Sections:
 - 1. Division 23 Section "Metal Ducts".

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.

1.4 QUALITY ASSURANCE

- A. Comply with NFPA 90A, "Installation of Air Conditioning and Ventilating Systems," and with NFPA 90B, "Installation of Warm Air Heating and Air Conditioning Systems."
- B. Comply with AMCA 500-D testing for damper rating.

PART 2 - PRODUCTS**2.1 MATERIALS**

- A. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for acceptable materials, material thicknesses, and duct construction methods unless otherwise indicated. Sheet metal materials shall be free of pitting, seam marks, roller marks, stains, discolorations, and other imperfections.
- B. Galvanized Sheet Steel: Comply with ASTM A 653/A 653M.
 - 1. Galvanized Coating Designation: G60 (Z180) and G90 (Z275).
 - 2. Exposed-Surface Finish: Mill phosphatized.
- C. Stainless-Steel Sheets: Comply with ASTM A 480/A 480M, Type 304, and having a No. 2 finish for concealed ducts and exposed ducts.

- D. Aluminum Sheets: Comply with ASTM B 209 (ASTM B 209M), Alloy 3003, Temper H14; with mill finish for concealed ducts and standard, 1-side bright finish for exposed ducts.
- E. Reinforcement Shapes and Plates: Galvanized-steel reinforcement where installed on galvanized sheet metal ducts; compatible materials for aluminum and stainless-steel ducts.
- F. Tie Rods: Galvanized steel, 1/4-inch (6-mm) minimum diameter for lengths 36 inches (900 mm) or less; 3/8-inch (10-mm) minimum diameter for lengths longer than 36 inches (900 mm).

2.2 MANUAL VOLUME DAMPERS

- A. Standard, Steel, Manual Volume Dampers:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Air Balance Inc.; a division of Mestek, Inc.
 - b. McGill AirFlow LLC.
 - c. METALAIRE, Inc.
 - d. Nailor Industries Inc.
 - e. Pottorff; a division of PCI Industries, Inc.
 - f. Ruskin Company.
 - 2. Standard leakage rating.
 - 3. Suitable for horizontal or vertical applications.
 - 4. Frames:
 - a. Hat-shaped, galvanized-steel channels, 0.064-inch (1.62-mm) minimum thickness.
 - b. Mitered and welded corners.
 - c. Flanges for attaching to walls and flangeless frames for installing in ducts.
 - 5. Blades:
 - a. Single blade for ducts up to 24". Multiple blades for ducts greater than 24".
 - b. Opposed blade design for multiple blade dampers.
 - c. Stiffen damper blades for stability.
 - d. Galvanized-steel, 0.064 inch (1.62 mm) thick.
 - 6. Blade Axles: Galvanized steel.
 - 7. Bearings:
 - a. Oil-impregnated bronze.
 - b. Dampers in ducts with pressure classes of 3-inch wg (750 Pa) or less shall have axles full length of damper blades and bearings at both ends of operating shaft.
 - 8. Tie Bars and Brackets: Galvanized steel.
 - 9. Where damper is not accessible install remote damper operator adjustment assembly.

2.3 FLANGE CONNECTORS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Ductmate Industries, Inc.
- B. Description: Add-on, factory-fabricated, slide-on transverse flange connectors, gaskets, and components.
- C. Material: Galvanized steel for galvanized steel ducts.
- D. Material: Stainless steel for stainless steel ducts.
- E. Gauge and Shape: Match connecting ductwork.

2.4 TURNING VANES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Ductmate Industries, Inc.
 - 2. Duro Dyne Inc.
 - 3. METALAIRE, Inc.
 - 4. SEMCO Incorporated.
 - 5. Ward Industries, Inc.; a division of Hart & Cooley, Inc.
- B. Manufactured Turning Vanes for Metal Ducts: Curved blades of galvanized sheet steel; support with bars perpendicular to blades set; set into vane runners suitable for duct mounting.
- C. General Requirements: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible"; Figures 2-3, "Vanes and Vane Runners," and 2-4, "Vane Support in Elbows."
- D. Vane Construction: Single wall.
- E. Vane Construction: Single wall for ducts up to 48 inches (1200 mm) wide and double wall for larger dimensions.

2.5 FLEXIBLE CONNECTORS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Ductmate Industries, Inc.
 - 2. Duro Dyne Inc.
 - 3. Ventfabrics, Inc.
 - 4. Ward Industries, Inc.; a division of Hart & Cooley, Inc.
- B. Materials: Flame-retardant or noncombustible fabrics.

- C. Coatings and Adhesives: Comply with UL 181, Class 1.
- D. Metal-Edged Connectors: Factory fabricated with a fabric strip 3-1/2 inches (89 mm) wide attached to 2 strips of 2-3/4-inch- (70-mm-) wide, 0.028-inch- (0.7-mm-) thick, galvanized sheet steel or 0.032-inch- (0.8-mm-) thick aluminum sheets. Provide metal compatible with connected ducts.
- E. Indoor System, Flexible Connector Fabric: Glass fabric double coated with neoprene.
 - 1. Minimum Weight: 26 oz./sq. yd. (880 g/sq. m).
 - 2. Tensile Strength: 480 lbf/inch (84 N/mm) in the warp and 360 lbf/inch (63 N/mm) in the filling.
 - 3. Service Temperature: Minus 40 to plus 200 deg F (Minus 40 to plus 93 deg C).
- F. Outdoor System, Flexible Connector Fabric: Glass fabric double coated with weatherproof, synthetic rubber resistant to UV rays and ozone.
 - 1. Minimum Weight: 24 oz./sq. yd. (810 g/sq. m).
 - 2. Tensile Strength: 530 lbf/inch (93 N/mm) in the warp and 440 lbf/inch (77 N/mm) in the filling.
 - 3. Service Temperature: Minus 50 to plus 250 deg F (Minus 45 to plus 121 deg C).
- G. Thrust Limits: Combination coil spring and elastomeric insert with spring and insert in compression, and with a load stop. Include rod and angle-iron brackets for attaching to fan discharge and duct.
 - 1. Frame: Steel, fabricated for connection to threaded rods and to allow for a maximum of 30 degrees of angular rod misalignment without binding or reducing isolation efficiency.
 - 2. Outdoor Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.
 - 3. Minimum Additional Travel: 50 percent of the required deflection at rated load.
 - 4. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
 - 5. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.
 - 6. Elastomeric Element: Molded, oil-resistant rubber or neoprene.
 - 7. Coil Spring: Factory set and field adjustable for a maximum of 1/4-inch (6-mm) movement at start and stop.

2.6 DUCT ACCESSORY HARDWARE

- A. Instrument Test Holes: Cast iron or cast aluminum to suit duct material, including screw cap and gasket. Size to allow insertion of pitot tube and other testing instruments and of length to suit duct-insulation thickness.
- B. Adhesives: High strength, quick setting, neoprene based, waterproof, and resistant to gasoline and grease.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install duct accessories according to applicable details in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for metal ducts.
- B. Install duct accessories of materials suited to duct materials; use galvanized-steel accessories in galvanized-steel and stainless-steel accessories in stainless-steel ducts.
- C. Install volume dampers at points on supply, return, and exhaust systems where branches extend from larger ducts. Where dampers are installed in ducts having duct liner, install dampers with hat channels of same depth as liner, and terminate liner with nosing at hat channel.
 - 1. Install steel volume dampers in steel ducts.
 - 2. Install aluminum volume dampers in aluminum ducts.
- D. Set dampers to fully open position before testing, adjusting, and balancing.
- E. Install test holes at fan inlets and outlets for testing and elsewhere as indicated.
- F. Piping and Equipment" to indicate the purpose of access door.
- G. Install flexible connectors to connect ducts to equipment.
- H. For fans developing static pressures of 5-inch wg (1250 Pa) and more, cover flexible connectors with loaded vinyl sheet held in place with metal straps.
- I. Install Penthouse louvers with duct connection and backdraft damper on reliefs where shown.

3.2 FIELD QUALITY CONTROL

- A. Tests and Inspections:
 - 1. Operate dampers to verify full range of movement.
 - 2. Inspect locations of access doors and verify that purpose of access door can be performed.
 - 3. Inspect turning vanes for proper and secure installation.
 - 4. Operate remote damper operators to verify full range of movement of operator and damper.

END OF SECTION – 23 3300