

ADDENDUM TO THE CONTRACT DOCUMENTS

	ADDENDUM NO. 003
	Project: Solano Community College District Central Plant Replacement Project Project Number: 23-005
	Date: April 5 th , 2023

Addendum No. 003 – The following clarifications are provided and must be added/considered when completing your bid: Acknowledgement of receipt of this **Addendum No. 003**, is required on the Bid Form. Please clearly note the addendum date and number.

ITEM NO. 1 – GENERAL INFORMATION

1.1. See Spec Section 00910 – Addendum #3 attached, dated April 5th, 2023.

ITEM NO. 2 – DRAWINGS

2.1. See Spec Section 00910 – Addendum #3 attached, dated April 5th, 2023.

ITEM NO. 3 – RESPONSES TO QUESTIONS SUBMITTED

3.1. See attached Pre-Bid Questions & Responses Spreadsheet.

List of Attachments:

- Specification Section 00910 – Addendum #3, dated April 5th, 2023.
- Specification Section 00 01 20 – List of Schedules
- Specification Section 00 52 13 – Agreement
- Specification Section 01 52 13 – Scheduling of Work
- Technical Specifications – Table of Contents
- Specification Section 09 90 00 – Painting and Coatings
- Specification Section 22 10 05 – Plumbing Piping
- Specification Section 23 07 19 – HVAC Piping Insulation
- Specification Section 23 64 16 – Magnetic Bearing Centrifugal Water Cooled Chiller
- Drawing Sheet M-6.1 Mechanical Schedules, dated April 5th, 2023.
- Pre-Bid Questions & Responses Spreadsheet.

END OF DOCUMENT

SECTION 00910

ADDENDUM #3

PARTICULARS

1.01 DATE: April 5, 2023

1.02 PROJECT: Fairfield Central Plant Modernization

1.03 PROJECT NUMBER: 2200689

1.04 OWNER: Solano CCD

1.05 ARCHITECT: Salas O'Brien Engineers, Inc.

TO: PROSPECTIVE BIDDERS

2.01 This Addendum forms a part of the Contract Documents and modifies the Bidding Documents dated 2/1/2023, with amendments and additions noted below.

2.02 Acknowledge receipt of this Addendum in the space provided in the Bid Form. Failure to do so may disqualify the Bidder.

2.03 This Addendum consists of 146 pages and the following Drawings:

CHANGES TO THE PROJECT MANUAL

3.01 DIVISION 0 – SECTION 00 01 20 – LIST OF SCHEDULES

- A. Construction Schedule revised, providing dates for Substantial Project Completion, Phase 1 Commissioning, Phase 2 Commissioning, Temp. Heating (Bid Alt. #2), and Final Project completion.

3.02 DIVISION 0 – SECTION 00 52 13 – AGREEMENT

- A. Item #4, Time for Completion, was revised to the date of February 28th, 2025.
- B. Item #6, Liquidated Damages, was revised to clarify that liquidated damages will be enforced for each milestone date not met.
- C. Item #19, Alternate #01, was revised providing the description of Bid Alt. #1.
- D. Item #20, Alternate #02, was revised providing the description of Bid Alt. #2.

3.03 DIVISION 01 – SECTION 01 32 13 – SCHEDULING OF WORK

- A. Article 1.03-C, Milestone Schedule, was revised providing dates for Substantial Project Completion, Phase 1 Commissioning, Phase 2 Commissioning, Temp. Heating (Bid Alt. #2), and Final Project completion.

3.04 TABLE OF CONTENTS – TECHNICAL SPECIFICATIONS

- A. Table of Contents was revised adding Division 9 – Finishes, Section 09 90 00 – Painting and Coating.

3.05 DIVISION 09 – SECTION 09 90 00 – PAINTING AND COATING

- A. Section 09 90 00 was added to the project manual as a new section.

3.06 DIVISION 22 – SECTION 22 10 05 – PLUMBING PIPING

- A. Paragraph 3.02-O was added and reads as follows: **Exposed Piping Finishes: Refer to section 09 90 00 Painting and Coating for specifications on the preparation, priming, and painting of plumbing piping.**

3.07 DIVISION 23 – SECTION 23 07 19 – HVAC PIPING INSULATION

- A. Revise Paragraph 3.02-I. to read as follows: **Uninsulated** Pipe Exposed in Mechanical Equipment Rooms or Finished Spaces: **Prep, prime and paint uninsulated piping. Refer to section 09 90 00 Painting and Coating for specifications on the preparation, priming, and painting of plumbing piping.**

3.08 DIVISION 23 – SECTION 23 64 16 – MAGNETIC BEARING CENTRIFUGAL WATER-COOLED CHILLER

- A. Article 1.08, Warranty, was revised to state the following: Provide manufacturer's warranty for **10 years starting 6 months after shipment or upon completion of start-up**, whichever **occurs** first. Warranty shall cover parts, refrigerant and labor required to remedy defects in materials or workmanship for the entire chiller. Perform warranty work with manufacturer's factory-trained and factory-employed service technician.

CHANGES TO THE DRAWINGS

4.01 DRAWING M-6.1

- A. Replace Sheet M-6.1 in its entirety, reflecting the following modifications:
 - 1. Water Cooled Chiller Schedule, Note #11, was revised to state the following: **PROVIDE A 10-YEAR PARTS, REFRIGERANT AND LABOR WARRANTY AND A FIXED RATE 5-YEAR MAINTENANCE AGREEMENT INCLUDING THREE QUARTERLY INSPECTIONS AND AN ANNUAL TUBE BRUSHING.**
 - 2. VFD Schedule, Note #3, was revised to state the following: **WARRANTY SHALL BE 3 YEARS.**

DOCUMENT 00 01 20

LIST OF SCHEDULES

BID PHASE SCHEDULE

- Mandatory Pre-Bid Conference (web-based meeting via Microsoft Teams): Wednesday, March 15th, 2023, 11:00 am.
 - **Interested Parties need to register through the following link.**
[REGISTER HERE](#)
- Optional Site Walk: Thursday, March 16th, 2023, 10:00 am – 11:00 am.
- Last date to submit questions to Noe.Ramos@Solano.edu : By Wednesday, March 29th, 2023, 2:00 pm.
- Last addendum will be issued: By Wednesday, April 5th, 2023, 2:00 pm.
- **Bids Due: By Wednesday, April 12th, 2023, 2:00 pm.**
- Mandatory Post Bid Interview: Thursday, April 13th, 2023, Time TBD.
- Solano Community College Board of Trustees Approval: Wednesday, May 3rd, 2023.
- Notice of Award: Anticipated by Thursday, May 4th, 2023.
- Notice to Proceed: Anticipated by Monday, May 22nd, 2023.

CONSTRUCTION SCHEDULE

- Overall Project Duration: May 22nd, 2023 – February 28th, 2025
(Addendum #3)
 - **Construction Start: May 22nd, 2023**
 - **Substantial Project Completion: July 31st, 2024**
 - **Commissioning – Phase 1: Chiller Plant & Cooling Tower Systems: Summer 2024**
 - **Commissioning – Phase 2: Boiler Plant Systems: Winter 2024/2025 (no later than Feb. 2025)**
 - **Bid Alternate #2 – Temp. Heating: November 2024 – February 2025**
 - **Final Project Completion: February 28th, 2025**

END OF DOCUMENT

4. **Time for Completion:** It is hereby understood and agreed that the Work under this Contract shall be completed by **February 28th, 2025** ("Contract Time") **(Addendum #3)**.
5. **Completion - Extension of Time:** Should the Contractor fail to complete this Contract, and the Work provided herein, within the time fixed for completion, due allowance being made for the contingencies provided for herein, the Contractor shall become liable to the District for all loss and damage that the District may suffer on account thereof. The Contractor shall coordinate its Work with the Work of all other contractors. The District shall not be liable for delays resulting from Contractor's failure to coordinate its Work with other contractors in a manner that will allow timely completion of Contractor's Work. Contractor shall be liable for delays to other contractors caused by Contractor's failure to coordinate its Work with the Work of other contractors.
6. **Liquidated Damages:** Time is of the essence for all work under this Agreement. It is hereby understood and agreed that it is and will be difficult and/or impossible to ascertain and determine the actual damage that the District will sustain in the event of and by reason of Contractor's delay; therefore, Contractor agrees that it shall pay to the District the sum of Three Thousand Five Hundred Dollars and 00/100 (\$3,500.00) per day as liquidated damages for each and every day's delay beyond the time herein prescribed in completion of the Work. **Liquidated Damages will be enforced for each milestone date not met, as listed in Specification Section 00 01 20 and 01 32 13. (Addendum #3)**

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

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

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

7. **Loss Or Damage:** The District and its agents and authorized representatives shall not in any way or manner be answerable or suffer loss, damage, expense, or liability for any loss or damage that may happen to the Work, or any part thereof, or in or about the same during its construction and before acceptance, and the Contractor shall assume all liabilities of every kind or nature arising from the Work, either by accident, negligence, theft, vandalism, or any cause whatsoever; and shall hold the District and its agents and authorized representatives harmless from all liability of every kind and nature arising from accident, negligence, or any cause whatsoever.
8. **Limitation Of District Liability:** District's financial obligations under this Contract shall be limited to the payment of the compensation provided in this Contract. Notwithstanding any other provision of this Contract, in no event shall District be liable, regardless of whether any claim is based on contract or tort, for any special,

consequential, indirect or incidental damages, including, but not limited to, lost profits or revenue, lost bonding capacity, arising out of or in connection with this Contract for the services performed in connection with this Contract.

9. **Insurance and Bonds:** Prior to issuance of the Notice to Proceed by the District, Contractor shall provide all required certificates of insurance, insurance endorsements, and payment and performance bonds as evidence thereof.
10. **Prosecution of Work:** If the Contractor should neglect to prosecute the Work properly or fail to perform any provisions of this Contract, the District, may, pursuant to the General Conditions and without prejudice to any other remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.
11. **Authority of Architect, Project Inspector, and DSA:** Contractor hereby acknowledges that the Architect(s), the Project Inspector(s), and the Division of the State Architect ("DSA") have authority to approve and/or suspend Work if the Contractor's Work does not comply with the requirements of the Contract Documents, Title 24 of the California Code of Regulations, and all applicable laws and regulations. The Contractor shall be liable for any delay caused by its non-compliant Work.
12. **Assignment of Contract:** Neither the Contract, nor any part thereof, nor any moneys due or to become due thereunder, may be assigned by the Contractor without the prior written approval of the District, nor without the written consent of the Surety on the Contractor's Performance Bond (the "Surety"), unless the Surety has waived in writing its right to notice of assignment.
13. **Classification of Contractor's License:** Contractor hereby acknowledges that it currently holds valid **Type B Contractor's license(s)** issued by the State of California, Contractors' State License Board, in accordance with division 3, chapter 9, of the Business and Professions Code and in the classification called for in the Contract Documents.
14. **Registration as Public Works Contractor:** The Contractor and all Subcontractors currently are registered as public works contractors with the Department of Industrial Relations, State of California, in accordance with Labor Code section 1771.1.
15. **Payment of Prevailing Wages:** The Contractor and all Subcontractors shall pay all workers on all Work performed pursuant to this Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to sections 1770 et seq. of the California Labor Code.
16. **Labor Compliance Monitoring and Enforcement:** This Project is subject to labor compliance monitoring and enforcement by the Department of Industrial Relations pursuant to Labor Code section 1771.4 and Title 8 of the California Code of Regulations. Contractor specifically acknowledges and understands that it shall perform the Work of this Agreement while complying with all the applicable

provisions of Division 2, Part 7, Chapter 1, of the Labor Code, including, without limitation, the requirement that the Contractor and all of its Subcontractors shall timely submit complete and accurate electronic certified payroll records as required by the Contract Documents, or the District may not issue payment.

- 17. **Contract Price:** In consideration of the foregoing covenants, promises, and agreements on the part of the Contractor, and the strict and literal fulfillment of each and every covenant, promise, and agreement, and as compensation agreed upon for the Work and construction, erection, and completion as aforesaid, the District covenants, promises, and agrees that it will well and truly pay and cause to be paid to the Contractor in full, and as the full Contract Price and compensation for construction, erection, and completion of the Work hereinabove agreed to be performed by the Contractor, the following price:

_____ **DOLLARS**
AND xx/100 (\$ _____)

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

- 18. **Owner’s Allowance:** Included in the Contract Price above is a three percent (3% Percent) allowance for the Owner’s use only, for the following price:

_____ **DOLLARS**
AND xx/100 (\$ _____)

The above allowance shall only be used by authorization by the Owner. Contractor shall not bill for or be due any portion of this allowance unless the District has identified specific work, Contractor has submitted price for that work or the District has proposed a price for that work, the District has accepted the cost for that work, and the District has prepared a change order incorporating that work. Contractor hereby authorizes the District to execute a unilateral deductive Change Order at or near the end of the Project for all or any portion of the Allowance no allocated.

- 19. **ALTERNATE #01:** Included in the Contract Price above is Alternate #01, **for relocation of electrical equipment in the pool equipment room (ADDENDUM #3)**, for the following price:

_____ **DOLLARS AND xx/100 (\$ _____)**

- 20. **ALTERNATE #02:** Included in the Contract Price above is Alternate #02, **for temporary heating via temp boilers through winter of 2024/’25 (four months), for the following price: (ADDENDUM #3)**

_____ **DOLLARS AND xx/100 (\$ _____)**

- 21. **No Representations:** No representations have been made other than as set forth in writing in the Contract Documents, including this Agreement. Each of the Parties to this Agreement warrants that it has carefully read and understood the terms and

conditions of this Agreement and all Contract Documents, and that it has not relied upon the representations or advice of any other Party or any attorney not its own.

- 22. Entire Agreement:** The Contract Documents, including this Agreement, set forth the entire agreement between the parties hereto and fully supersede any and all prior agreements, understandings, written or oral, between the parties hereto pertaining to the subject matter thereof.
- 23. Severability:** If any term, covenant, condition, or provision in any of the Contract Documents is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the provisions in the Contract Documents shall remain in full force and effect and shall in no way be affected, impaired, or invalidated thereby.
- 24. Authority of Signatories:** Each party has the full power and authority to enter into and perform this Contract, and the person signing this Contract on behalf of each party has been properly authorized and empowered to enter into this Contract. This Contract may be executed in one or more counterparts, each of which shall be deemed an original. For this Agreement, and for all Contract Documents requiring a signature, a facsimile or electronic signature shall be deemed to be the equivalent of the actual original signature. All counterparts so executed shall constitute one Contract binding all the Parties hereto.

[SIGNATURES ON FOLLOWING PAGE]

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

CONTRACTOR

SOLANO COMMUNITY COLLEGE DISTRICT

By: _____

By: _____

Title: _____

Title: _____

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

END OF DOCUMENT

DOCUMENT 01 32 13

SCHEDULING OF WORK

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions;
- B. Special Conditions;
- C. Summary of Work; and
- D. Submittals.

1.02 SECTION INCLUDES

- A. Scheduling of Work under this Contract shall be performed by Contractor in accordance with requirements of this Section.
 - (1) Development of schedule, cost and resource loading of the schedule, monthly payment requests, and project status reporting requirements of the Contract shall employ computerized Critical Path Method ("CPM") scheduling ("CPM Schedule").
 - (2) CPM Schedule shall be cost loaded based on Schedule of Values as approved by District.
 - (3) Submit schedules and reports as specified in the General Conditions.
- B. Upon Award of Contract, Contractor shall immediately commence development of Initial and Original CPM Schedules to ensure compliance with CPM Schedule submittal requirements.

1.03 CONSTRUCTION SCHEDULE

- A. Within ten (10) days of issuance of the Notice to Proceed, and before request for first progress payment, the Contractor shall prepare and submit to the Project Manager a construction progress schedule conforming to the Milestone Schedule below.
- B. The Construction Schedule shall be continuously updated, and an updated schedule shall be submitted with each application for progress payment. Each revised schedule shall indicate the work actually accomplished during the previous period and the schedule for completion of the remaining work.

C. Milestone Schedule: (Addendum #3)

ACTIVITY DESCRIPTION:	REQUIRED COMPLETION
CONSTRUCTION STARTS:	MAY 22nd, 2023
SUBSTANTIAL PROJECT COMPLETION:	JULY 31st, 2024
COMMISSIONING – PHASE 1: CHILLER PLANT AND COOLING TOWER SYSTEMS	SUMMER 2024
COMMISSIONING – PHASE 2: BOILER PLANT SYSTEMS	WINTER 2024/2025 (no later than February 2025)
BID ALTERNATE #2: TEMP. HEATING	NOVEMBER 2024 – FEBRUARY 2025
FINAL PROJECT COMPLETION	FEBRUARY 28th, 2025

1.04 QUALIFICATIONS

- A. Contractor shall employ experienced scheduling personnel qualified to use the latest version of [i.e., Primavera Project Planner]. Experience level required is set forth below. Contractor may employ such personnel directly or may employ a consultant for this purpose.
- (1) The written statement shall identify the individual who will perform CPM scheduling.
 - (2) Capability and experience shall be verified by description of construction projects on which individual has successfully applied computerized CPM.
 - (3) Required level of experience shall include at least two (2) projects of similar nature and scope with value not less than three fourths ($\frac{3}{4}$) of the Total Bid Price of this Project. The written statement shall provide contact persons for referenced projects with current telephone and address information.
- B. District reserves the right to approve or reject Contractor's scheduler or consultant at any time. District reserves the right to refuse replacing of Contractor's scheduler or consultant, if District believes replacement will negatively affect the scheduling of Work under this Contract.

1.05 GENERAL

- A. Progress Schedule shall be based on and incorporate milestone and completion dates specified in Contract Documents.
- B. Overall time of completion and time of completion for each milestone shown on Progress Schedule shall adhere to times in the Contract, unless an earlier (advanced) time of completion is requested by Contractor and agreed to by District. Any such agreement shall be formalized by a Change Order.

- (1) District is not required to accept an early completion schedule, i.e., one that shows an earlier completion date than the Contract Time.
 - (2) Contractor shall not be entitled to extra compensation in event agreement is reached on an earlier completion schedule and Contractor completes its Work, for whatever reason, beyond completion date shown in its early completion schedule but within the Contract Time.
 - (3) A schedule showing the work completed in less than the Contract Time, and that has been accepted by District, shall be considered to have Project Float. The Project Float is the time between the scheduled completion of the work and the Completion Date. Project Float is a resource available to both District and the Contractor.
- C. Ownership Project Float: Neither the District nor Contractor owns Project Float. The Project owns the Project Float. As such, liability for delay of the Completion Date rests with the party whose actions, last in time, actually cause delay to the Completion Date.
- (1) For example, if Party A uses some, but not all of the Project Float and Party B later uses remainder of the Project Float as well as additional time beyond the Project Float, Party B shall be liable for the time that represents a delay to the Completion Date.
 - (2) Party A would not be responsible for the time since it did not consume the entire Project Float and additional Project Float remained; therefore, the Completion Date was unaffected by Party A.
- D. Progress Schedule shall be the basis for evaluating job progress, payment requests, and time extension requests. Responsibility for developing Contract CPM Schedule and monitoring actual progress as compared to Progress Schedule rests with Contractor.
- E. Failure of Progress Schedule to include any element of the Work, or any inaccuracy in Progress Schedule, will not relieve Contractor from responsibility for accomplishing the Work in accordance with the Contract. District's acceptance of schedule shall be for its use in monitoring and evaluating job progress, payment requests, and time extension requests and shall not, in any manner, impose a duty of care upon District, or act to relieve Contractor of its responsibility for means and methods of construction.
- F. Software: Contractor to use a scheduling software approved by the District / Construction Manager. Such software shall be compatible with Windows operating system. Contractor shall transmit contract file to District on compact disk at times requested by District.
- G. Transmit each item under the form approved by District.
- (1) Identify Project with District Contract number and name of Contractor.

- (2) Provide space for Contractor's approval stamp and District's review stamps.
- (3) Submittals received from sources other than Contractor will be returned to the Contractor without District's review.

1.06 INITIAL CPM SCHEDULE

- A. Initial CPM Schedule submitted for review at the pre-construction conference shall serve as Contractor's schedule for up to ninety (90) calendar days after the Notice to Proceed.
- B. Indicate detailed plan for the Work to be completed in first ninety (90) days of the Contract; details of planned mobilization of plant and equipment; sequence of early operations; procurement of materials and equipment. Show Work beyond ninety (90) calendar days in summary form.
- C. Initial CPM Schedule shall be time scaled.
- D. Initial CPM Schedule shall be cost and resource loaded. Accepted cost and resource loaded schedule will be used as basis for monthly progress payments until acceptance of the Original CPM Schedule. Use of Initial CPM Schedule for progress payments shall not exceed ninety (90) calendar days.
- E. District and Contractor shall meet to review and discuss the Initial CPM Schedule within seven (7) calendar days after it has been submitted to District.
 - (1) District's review and comment on the schedule shall be limited to Contract conformance (with sequencing, coordination, and milestone requirements).
 - (2) Contractor shall make corrections to schedule necessary to comply with Contract requirements and shall adjust schedule to incorporate any missing information requested by District. Contractor shall resubmit Initial CPM Schedule if requested by District.
- F. If, during the first ninety (90) days after Notice to Proceed, the Contractor is of the opinion that any of the Work included on its Initial CPM Schedule has been impacted, the Contractor shall submit to District a written Time Impact Evaluation ("TIE") in accordance with Article 1.12 of this Section. The TIE shall be based on the most current update of the Initial CPM Schedule.

1.07 ORIGINAL CPM SCHEDULE

- A. Submit a detailed proposed Original CPM Schedule presenting an orderly and realistic plan for completion of the Work in conformance with requirements as specified herein.
- B. Progress Schedule shall include or comply with following requirements:

- (1) Time scaled, cost and resource (labor and major equipment) loaded CPM schedule.
- (2) No activity on schedule shall have duration longer than fifteen (15) work days, with exception of submittal, approval, fabrication and procurement activities, unless otherwise approved by District.
 - (a) Activity durations shall be total number of actual work days required to perform that activity.
- (3) The start and completion dates of all items of Work, their major components, and milestone completion dates, if any.
- (4) District furnished materials and equipment, if any, identified as separate activities.
- (5) Activities for maintaining Project Record Documents.
- (6) Dependencies (or relationships) between activities.
- (7) Processing/approval of submittals and shop drawings for all material and equipment required per the Contract. Activities that are dependent on submittal acceptance or material delivery shall not be scheduled to start earlier than expected acceptance or delivery dates.
 - (a) Include time for submittals, re-submittals and reviews by District. Coordinate with accepted schedule for submission of Shop Drawings, samples, and other submittals.
 - (b) Contractor shall be responsible for all impacts resulting from re-submittal of Shop Drawings and submittals.
- (8) Procurement of major equipment, through receipt and inspection at jobsite, identified as separate activity.
 - (a) Include time for fabrication and delivery of manufactured products for the Work.
 - (b) Show dependencies between procurement and construction.
- (9) Activity description; what Work is to be accomplished and where.
- (10) The total cost of performing each activity shall be total of labor, material, and equipment, excluding overhead and profit of Contractor. Overhead and profit of the General Contractor shall be shown as a separate activity in the schedule. Sum of cost for all activities shall equal total Contract value.
- (11) Resources required (labor and major equipment) to perform each activity.

- (12) Responsibility code for each activity corresponding to Contractor or Subcontractor responsible for performing the Work.
 - (13) Identify the activities which constitute the controlling operations or critical path. No more than twenty-five (25%) of the activities shall be critical or near critical. Near critical is defined as float in the range of one (1) to (10) days.
 - (14) Twenty (20) workdays for developing punch list(s), completion of punch-list items, and final clean-up for the Work or any designated portion thereof. No other activities shall be scheduled during this period.
 - (15) Interface with the work of other contractors, District, and agencies such as, but not limited to, utility companies.
 - (16) Show detailed Subcontractor Work activities. In addition, furnish copies of Subcontractor schedules upon which CPM was built.
 - (a) Also furnish for each Subcontractor, as determined by District, submitted on Subcontractor letterhead, a statement certifying that Subcontractor concurs with Contractor's Original CPM Schedule and that Subcontractor's related schedules have been incorporated, including activity duration, cost and resource loading.
 - (b) Subcontractor schedules shall be independently derived and not a copy of Contractor's schedule.
 - (c) In addition to Contractor's schedule and resource loading, obtain from electrical, mechanical, and plumbing Subcontractors, and other Subcontractors as required by District, productivity calculations common to their trades, such as units per person day, feet of pipe per day per person, feet of wiring per day per person, and similar information.
 - (d) Furnish schedule for Contractor/Subcontractor CPM schedule meetings which shall be held prior to submission of Original CPM schedule to District. District shall be permitted to attend scheduled meetings as an observer.
 - (17) Activity durations shall be in Work days.
 - (18) Submit with the schedule a list of anticipated non-Work days, such as weekends and holidays. The Progress Schedule shall exclude in its Work day calendar all non-Work days on which Contractor anticipates critical Work will not be performed.
- C. Original CPM Schedule Review Meeting: Contractor shall, within sixty (60) days from the Notice to Proceed date, meet with District to review the Original CPM Schedule submittal.

- (1) Contractor shall have its Project Manager, Project Superintendent, Project Scheduler, and key Subcontractor representatives, as required by District, in attendance. The meeting will take place over a continuous one (1) day period.
- (2) District's review will be limited to submittal's conformance to Contract requirements including, but not limited to, coordination requirements. However, review may also include:
 - (a) Clarifications of Contract Requirements.
 - (b) Directions to include activities and information missing from submittal.
 - (c) Requests to Contractor to clarify its schedule.
- (3) Within five (5) days of the Schedule Review Meeting, Contractor shall respond in writing to all questions and comments expressed by District at the Meeting.

1.08 ADJUSTMENTS TO CPM SCHEDULE

- A. Adjustments to Original CPM Schedule: Contractor shall have adjusted the Original CPM Schedule submittal to address all review comments from original CPM Schedule review meeting and resubmit network diagrams and reports for District's review.
 - (1) District, within ten (10) days from date that Contractor submitted the revised schedule, will either:
 - (a) Accept schedule and cost and resource loaded activities as submitted, or
 - (b) Advise Contractor in writing to review any part or parts of schedule which either do not meet Contract requirements or are unsatisfactory for District to monitor Project's progress, resources, and status or evaluate monthly payment request by Contractor.
 - (2) District may accept schedule with conditions that the first monthly CPM Schedule update be revised to correct deficiencies identified.
 - (3) When schedule is accepted, it shall be considered the "Original CPM Schedule" which will then be immediately updated to reflect the current status of the work.
 - (4) District reserves right to require Contractor to adjust, add to, or clarify any portion of schedule which may later be discovered to be insufficient for monitoring of Work or approval of partial payment requests. No additional compensation will be provided for such adjustments, additions, or clarifications.

- B. Acceptance of Contractor's schedule by District will be based solely upon schedule's compliance with Contract requirements.
 - (1) By way of Contractor assigning activity durations and proposing sequence of Work, Contractor agrees to utilize sufficient and necessary management and other resources to perform work in accordance with the schedule.
 - (2) Upon submittal of schedule update, updated schedule shall be considered "current" CPM Schedule.
 - (3) Submission of Contractor's schedule to District shall not relieve Contractor of total responsibility for scheduling, sequencing, and pursuing Work to comply with requirements of Contract Documents, including adverse effects such as delays resulting from ill-timed Work.
- C. Submittal of Original CPM Schedule, and subsequent schedule updates, shall be understood to be Contractor's representation that the Schedule meets requirements of Contract Documents and that Work shall be executed in sequence indicated on the schedule.
- D. Contractor shall distribute Original CPM Schedule to Subcontractors for review and written acceptance, which shall be noted on Subcontractors' letterheads to Contractor and transmitted to District for the record.

1.09 MONTHLY CPM SCHEDULE UPDATE SUBMITTALS

- A. Following acceptance of Contractor's Original CPM Schedule, Contractor shall monitor progress of Work and adjust schedule each month to reflect actual progress and any anticipated changes to planned activities.
 - (1) Each schedule update submitted shall be complete, including all information requested for the Original CPM Schedule submittal.
 - (2) Each update shall continue to show all Work activities including those already completed. These completed activities shall accurately reflect "as built" information by indicating when activities were actually started and completed.
- B. A meeting will be held on approximately the twenty-fifth (25th) of each month to review the schedule update submittal and progress payment application.
 - (1) At this meeting, at a minimum, the following items will be reviewed: Percent (%) complete of each activity; Time Impact Evaluations for Change Orders and Time Extension Request; actual and anticipated activity sequence changes; actual and anticipated duration changes; and actual and anticipated Contractor delays.
 - (2) These meetings are considered a critical component of overall monthly schedule update submittal and Contractor shall have appropriate

personnel attend. At a minimum, these meetings shall be attended by Contractor's General Superintendent and Scheduler.

- (3) Contractor shall plan on the meeting taking no less than four (4) hours.
- C. Within five (5) working days after monthly schedule update meeting, Contractor shall submit the updated CPM Schedule update.
- D. Within five (5) work days of receipt of above noted revised submittals, District will either accept or reject monthly schedule update submittal.
 - (1) If accepted, percent (%) complete shown in monthly update will be basis for Application for Payment by the Contractor. The schedule update shall be submitted as part of the Contractor's Application for Payment.
 - (2) If rejected, update shall be corrected and resubmitted by Contractor before the Application for Payment is submitted.
- E. Neither updating, changing or revising of any report, curve, schedule, or narrative submitted to District by Contractor under this Contract, nor District's review or acceptance of any such report, curve, schedule or narrative shall have the effect of amending or modifying in any way the Completion Date or milestone dates or of modifying or limiting in any way Contractor's obligations under this Contract.

1.10 SCHEDULE REVISIONS

- A. Updating the Schedule to reflect actual progress shall not be considered revisions to the Schedule. Since scheduling is a dynamic process, revisions to activity durations and sequences are expected on a monthly basis.
- B. To reflect revisions to the Schedule, the Contractor shall provide District with a written narrative with a full description and reasons for each Work activity revised. For revisions affecting the sequence of work, the Contractor shall provide a schedule diagram which compares the original sequence to the revised sequence of work. The Contractor shall provide the written narrative and schedule diagram for revisions two (2) working days in advance of the monthly schedule update meeting.
- C. Schedule revisions shall not be incorporated into any schedule update until the revisions have been reviewed by District. District may request further information and justification for schedule revisions and Contractor shall, within three (3) days, provide District with a complete written narrative response to District's request.
- D. If the Contractor's revision is still not accepted by District, and the Contractor disagrees with District's position, the Contractor has seven (7) calendar days from receipt of District's letter rejecting the revision to provide a written narrative providing full justification and explanation for the revision. The Contractor's failure to respond in writing within seven (7) calendar days of

District's written rejection of a schedule revision shall be contractually interpreted as acceptance of District's position, and the Contractor waives its rights to subsequently dispute or file a claim regarding District's position.

- E. At District's discretion, the Contractor can be required to provide Subcontractor certifications of performance regarding proposed schedule revisions affecting said Subcontractors.

1.11 RECOVERY SCHEDULE

- A. If the Schedule Update shows a completion date twenty-one (21) calendar days beyond the Contract Completion Date, or individual milestone completion dates, the Contractor shall submit to District the proposed revisions to recover the lost time within seven (7) calendar days. As part of this submittal, the Contractor shall provide a written narrative for each revision made to recapture the lost time. If the revisions include sequence changes, the Contractor shall provide a schedule diagram comparing the original sequence to the revised sequence of work.
- B. The revisions shall not be incorporated into any schedule update until the revisions have been reviewed by District.
- C. If the Contractor's revisions are not accepted by District, District and the Contractor shall follow the procedures in paragraph 1.09.C, 1.09.D and 1.09.E above.
- D. At District's discretion, the Contractor can be required to provide Subcontractor certifications for revisions affecting said Subcontractors.

1.12 TIME IMPACT EVALUATION ("TIE") FOR CHANGE ORDERS, AND OTHER DELAYS

- A. When Contractor is directed to proceed with changed Work, the Contractor shall prepare and submit within fourteen (14) calendar days from the Notice to Proceed a TIE which includes both a written narrative and a schedule diagram depicting how the changed Work affects other schedule activities. The schedule diagram shall show how the Contractor proposes to incorporate the changed Work in the schedule and how it impacts the current schedule-update critical path. The Contractor is also responsible for requesting time extensions based on the TIE's impact on the critical path. The diagram must be tied to the main sequence of schedule activities to enable District to evaluate the impact of changed Work to the scheduled critical path.
- B. Contractor shall be required to comply with the requirements of Paragraph 1.09.A for all types of delays such as, but not limited to, Contractor/Subcontractor delays, adverse weather delays, strikes, procurement delays, fabrication delays, etc.
- C. Contractor shall be responsible for all costs associated with the preparation of TIEs, and the process of incorporating them into the current schedule update. The Contractor shall provide District with four (4) copies of each TIE.

- D. Once agreement has been reached on a TIE, the Contract Time will be adjusted accordingly. If agreement is not reached on a TIE, the Contract Time may be extended in an amount District allows, and the Contractor may submit a claim for additional time claimed by contractor.

1.13 TIME EXTENSIONS

- A. The Contractor is responsible for requesting time extensions for time impacts that, in the opinion of the Contractor, impact the critical path of the current schedule update. Notice of time impacts shall be given in accord with the General Conditions.
- B. Where an event for which District is responsible impacts the projected Completion Date, the Contractor shall provide a written mitigation plan, including a schedule diagram, which explains how (e.g., increase crew size, overtime, etc.) the impact can be mitigated. The Contractor shall also include a detailed cost breakdown of the labor, equipment, and material the Contractor would expend to mitigate District-caused time impact. The Contractor shall submit its mitigation plan to District within fourteen (14) calendar days from the date of discovery of the impact. The Contractor is responsible for the cost to prepare the mitigation plan.
- C. Failure to request time, provide TIE, or provide the required mitigation plan will result in Contractor waiving its right to a time extension and cost to mitigate the delay.
- D. No time will be granted under this Contract for cumulative effect of changes.
- E. District will not be obligated to consider any time extension request unless the Contractor complies with the requirements of Contract Documents.
- F. Failure of the Contractor to perform in accordance with the current schedule update shall not be excused by submittal of time extension requests.
- G. If the Contractor does not submit a TIE within the required fourteen (14) calendar days for any issue, it is mutually agreed that the Contractor does not require a time extension for said issue.

1.14 SCHEDULE REPORTS

- A. Submit four (4) copies of the following reports with the Initial CPM Schedule, the Original CPM Schedule, and each monthly update.
- B. Required Reports:
 - (1) Two activity listing reports: one sorted by activity number and one by total Project Float. These reports shall also include each activity's early/late and actual start and finish dates, original and remaining duration, Project Float, responsibility code, and the logic relationship of activities.

- (2) Cost report sorted by activity number including each activity's associated cost, percentage of Work accomplished, earned value- to date, previous payments, and amount earned for current update period.
- (3) Schedule plots presenting time-scaled network diagram showing activities and their relationships with the controlling operations or critical path clearly highlighted.
- (4) Cash flow report calculated by early start, late start, and indicating actual progress. Provide an exhibit depicting this information in graphic form.
- (5) Planned versus actual resource (i.e., labor) histogram calculated by early start and late start.

C. Other Reports:

In addition to above reports, District may request, from month to month, any two of the following reports. Submit four (4) copies of all reports.

- (1) Activities by early start.
- (2) Activities by late start.
- (3) Activities grouped by Subcontractors or selected trades.
- (4) Activities with scheduled early start dates in a given time frame, such as fifteen (15) or thirty (30) day outlook.

D. Furnish District with report files on compact disks containing all schedule files for each report generated.

1.15 PROJECT STATUS REPORTING

- A. In addition to submittal requirements for CPM scheduling identified in this Section, Contractor shall provide a monthly project status report (i.e., written narrative report) to be submitted in conjunction with each CPM Schedule as specified herein. Status reporting shall be in form specified below.
- B. Contractor shall prepare monthly written narrative reports of status of Project for submission to District. Written status reports shall include:
 - (1) Status of major Project components (percent (%) complete, amount of time ahead or behind schedule) and an explanation of how Project will be brought back on schedule if delays have occurred.
 - (2) Progress made on critical activities indicated on CPM Schedule.
 - (3) Explanations for any lack of work on critical path activities planned to be performed during last month.

- (4) Explanations for any schedule changes, including changes to logic or to activity durations.
- (5) List of critical activities scheduled to be performed next month.
- (6) Status of major material and equipment procurement.
- (7) Any delays encountered during reporting period.
- (8) Contractor shall provide printed report indicating actual versus planned resource loading for each trade and each activity. This report shall be provided on weekly and monthly basis.
 - (a) Actual resource shall be accumulated in field by Contractor, and shall be as noted on Contractor's daily reports. These reports will be basis for information provided in computer-generated monthly and weekly printed reports.
 - (b) Contractor shall explain all variances and mitigation measures.
- (9) Contractor may include any other information pertinent to status of Project. Contractor shall include additional status information requested by District at no additional cost.
- (10) Status reports, and the information contained therein, shall not be construed as claims, notice of claims, notice of delay, or requests for changes or compensation.

1.16 WEEKLY SCHEDULE REPORT

At the Weekly Progress Meeting, the Contractor shall provide and present a time-scaled three (3) week look-ahead schedule that is based and correlated by activity number to the current schedule (i.e., Initial, Original CPM, or Schedule Update).

1.17 DAILY CONSTRUCTION REPORTS

On a daily basis, Contractor shall submit a daily activity report to District for each workday, including weekends and holidays when worked. Contractor shall develop the daily construction reports on a computer-generated database capable of sorting daily Work, manpower, and man-hours by Contractor, Subcontractor, area, sub-area, and Change Order Work. Upon request of District, furnish computer disk of this data base. Obtain District's written approval of daily construction report data base format prior to implementation. Include in report:

- A. Project name and Project number.
- B. Contractor's name and address.
- C. Weather, temperature, and any unusual site conditions.

- D. Brief description and location of the day's scheduled activities and any special problems and accidents, including Work of Subcontractors. Descriptions shall be referenced to CPM scheduled activities.
- E. Worker quantities for its own Work force and for Subcontractors of any tier.
- F. Equipment, other than hand tools, utilized by Contractor and Subcontractors.

1.18 PERIODIC VERIFIED REPORTS

Contractor shall complete and verify construction reports on a form prescribed by the Division of the State Architect and file reports on the first day of February, May, August, and November during the preceding quarter year; at the completion of the Contract; at the completion of the Work; at the suspension of Work for a period of more than one (1) month; whenever the services of Contractor or any of Contractor's Subcontractors are terminated for any reason; and at any time a special verified report is required by the Division of the State Architect. Refer to section 4-336 and section 4-343 of Part 1, Title 24 of the California Code of Regulations.

PART 2 – PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

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SECTION 09 90 00
PAINTING AND COATING (ADDENDUM #3)

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Paint for Interior/Exterior Piping and Utilities
- B. Scope:
 - 1. Finish surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
 - a. Uninsulated hydronic piping (i.e., condenser water)
 - b. Gas piping
 - c. City/potable water and make-up water assembly piping
 - d. Sewer vent piping
 - e. Drain piping
 - f. Structural supports for cooling towers, piping, and other structural components exposed, interior or exterior.
 - 2. Refer to section 22 10 05 and 23 21 13 for utility piping material composition and structural drawings for structural support/member materials of construction.

1.02 REFERENCE STANDARDS

- A. CARB (SCM) - Suggested Control Measure for Architectural Coatings; California Air Resources Board; 2020.
- B. SSPC-SP 1 - Solvent Cleaning; 2015, with Editorial Revision (2016).
- C. SSPC-SP 2 - Hand Tool Cleaning; 2018.
- D. SSPC-SP 3 - Power Tool Cleaning; 2018.
- E. SSPC-SP 6 - Commercial Blast Cleaning; 2007.

1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide complete list of products to be used, with the following information for each:
 - 1. Product characteristics.
 - 2. Surface preparation instructions and recommendations.
 - 3. Primer requirements and finish specification.
 - 4. Storage and handling requirements and recommendations.
 - 5. Application methods.
 - 6. Clean-up information.
- C. Certification: By manufacturer that paints and finishes comply with VOC limits specified.

1.04 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in performing the type of work specified with minimum 3 years of experience and approved by manufacturer.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, product name, product code, color designation, VOC content, batch date, environmental handling, surface preparation, application, and use instructions.
- C. Paint Materials: Store at a minimum of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.
- D. Handling: Maintain a clean, dry storage area to prevent contamination or damage to materials.

1.06 FIELD CONDITIONS

- A. Do not apply materials when environmental conditions are outside the ranges required by manufacturer.
- B. Follow manufacturer's recommended procedures for producing the best results, including testing substrates, moisture in substrates, and humidity and temperature limitations.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Kelly Moore, <https://kellymoore.com/>
- B. Carboline, <https://www.carboline.com/>
- C. Or, approved equal.

2.02 PAINTINGS AND COATINGS

- A. General:
 - 1. Provide factory-mixed coatings unless otherwise indicated.
 - 2. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application.
 - 3. Do not reduce, thin, or dilute coatings or add materials to coatings unless specifically indicated in manufacturer's instructions.
- B. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

2.03 PAINT FOR PIPING AND UTILITIES:

- A. Black Steel:
 - 1. Primer: DuPont "373-Y-851," Kelly-Moore, or equal rust-resistant metal primer.
 - 2. Finish Coat: DuPont "81-23662," Kelly-Moore, or equal.
- B. Copper, Bronze, or Galvanized Steel:
 - 1. Primer and Activator:
 - a. DuPont "825-Y-8031," Kelly-Moore, or equal epoxy primer.
 - b. DuPont "VG-Y-8339," Kelly-Moore, or equal activator.
 - c. Finish Coat: DuPont "81-23662," Kelly-Moore
- C. Ferrous metals (select one system or approved equal):
 - 1. Carboline System:
 - a. Primer -Carbozinc 11 HS
 - b. Intermediate -Carboguard 891
 - c. Finish -Carbothane 133HB Satin
 - 2. Engard System:
 - a. Primer -519 Inorganic Zinc
 - b. Intermediate -460 H.S. Epoxy
 - c. Finish - 428 Urethane Semi-Gloss
 - 3. Tnemec System:
 - a. Primer -69-1211
 - b. Intermediate -69 Hi-Build Expoxoline II
 - c. Finish -75 Polyurethane, Semi-Gloss
- D. Color Schedule:
 - 1. Uninsulated hydronic piping (i.e., condenser water): Color match existing condenser water [blue] paint color.
 - 2. Gas piping: Color match existing gas [yellow] paint color.
 - 3. City/potable water and make-up water assembly piping: Bare copper at make-up water assemblies is acceptable. Flat black paint for all city water piping routed at ceiling, overhead.
 - 4. Sewer vent piping: Color match existing vent [white] paint color and color match existing wall [white] background color and determine best match.

5. Drain piping: Flat black paint for all drain piping
6. Structural supports for cooling towers, piping, and other structural components exposed, interior or exterior: Color match existing background (e.g., nearest wall). If no immediate material to use as "background", provide satin or semi-gloss white color.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- C. Test shop-applied primer for compatibility with subsequent cover materials.

3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove mildew from impervious surfaces by scrubbing with solution of water and bleach. Rinse with clean water and allow surface to dry.
- D. Copper, Bronze, and Galvanized Surfaces:
 1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
 2. Prepare surface according to SSPC-SP 2.
- E. Ferrous Metal:
 1. Solvent clean according to SSPC-SP 1.
 2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Prime bare steel surfaces.
 3. Remove rust, loose mill scale, and other foreign substances using methods recommended by paint manufacturer and blast cleaning according to SSPC-SP 6. Protect from corrosion until coated.

3.03 APPLICATION

- A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- B. Apply products in accordance with manufacturer's written instructions.
- C. Apply coatings at spread rate required to achieve manufacturer's recommended dry film thickness.
- D. Regardless of number of coats specified, apply additional coats until complete hide is achieved.

3.04 PRIMING

- A. Apply primer to all surfaces unless specifically not required by coating manufacturer. Apply in accordance with coating manufacturer's instructions.
- B. Primers specified in painting schedules may be omitted on items factory primed or factory finished items if acceptable to top coat manufacturers.

3.05 CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.
- B. Clean surfaces immediately of overspray, splatter, and excess material.
- C. After coating has cured, clean and replace finish hardware, fixtures, and fittings previously removed.

3.06 PROTECTION

- A. Protect finished coatings from damage until completion of project.
- B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

SECTION 22 10 05
PLUMBING PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Sanitary waste piping, buried within 5 feet of building.
- B. Drain/waste piping, above grade.
- C. Domestic and non-potable water piping, above grade.
- D. Natural gas piping, above grade.
- E. Pipe, pipe fittings, specialties, and connections for piping systems.
 - 1. Sanitary sewer.
 - 2. Domestic and non-potable water.
 - 3. Gas.
 - 4. Flanges, unions, and couplings.
 - 5. Pipe hangers and supports.
 - 6. Ball valves.
 - 7. Pressure reducing valves.
 - 8. Pressure relief valves.

1.02 REFERENCE STANDARDS

- A. ANSI Z21.22 - American National Standard for Relief Valves for Hot Water Supply Systems; 2015 (Reaffirmed 2020).
- B. ANSI Z223.1 - National Fuel Gas Code; 2021.
- C. ASME B16.3 - Malleable Iron Threaded Fittings: Classes 150 and 300; 2021.
- D. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings; 2021.
- E. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings; 2021.
- F. ASME B16.23 - Cast Copper Alloy Solder Joint Drainage Fittings: DWV; 2021.
- G. ASME B16.29 - Wrought Copper and Wrought Copper Alloy Solder-Joint Drainage Fittings - DWV; 2017.
- H. ASME B31.9 - Building Services Piping; 2020.
- I. ASME BPVC-IX - Boiler and Pressure Vessel Code, Section IX - Qualification Standard for Welding, Brazing, and Fusing Procedures; Welders; Brazers; and Welding, Brazing, and Fusing Operators; 2021.
- J. ASSE 1003 - Performance Requirements for Water Pressure Reducing Valves for Potable Water Distribution Systems; 2020.
- K. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2020.
- L. ASTM A234/A234M - Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service; 2019.
- M. ASTM B32 - Standard Specification for Solder Metal; 2020.
- N. ASTM B88 - Standard Specification for Seamless Copper Water Tube; 2020.
- O. ASTM B88M - Standard Specification for Seamless Copper Water Tube (Metric); 2020.
- P. ASTM B306 - Standard Specification for Copper Drainage Tube (DWV); 2020.
- Q. ASTM B813 - Standard Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube; 2016.

- R. ASTM B828 - Standard Practice for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings; 2016.
- S. ASTM C564 - Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings; 2020a.
- T. ASTM C1277 - Standard Specification for Shielded Couplings Joining Hubless Cast Iron Soil Pipe and Fittings; 2020.
- U. AWWA C651 - Disinfecting Water Mains; 2014, with Addendum (2020).
- V. CISPI 301 - Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications; 2018.
- W. CISPI 310 - Specification for Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications; 2018.
- X. California Code of Regulations, Title 24, Part 5: California Plumbing Code (CPC), latest edition.
- Y. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation; 2018, with Amendment (2019).
- Z. MSS SP-110 - Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends; 2010, with Errata .
- AA. NSF 61 - Drinking Water System Components - Health Effects; 2021.
- AB. NSF 372 - Drinking Water System Components - Lead Content; 2022.

1.03 SUBMITTALS

- A. See Division 1 for submittal procedures.
- B. Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.
- C. Welders' Certificates: Submit certification of welders' compliance with ASME BPVC-IX.
- D. Project Record Documents: Record actual locations of valves and locations of any underground utilities encountered with references to fixed surface features and elevations.
- E. Pipe Test Reports: Submit pipe pressure test reports for all piping installed under this contract indicating that piping systems have been tested in accordance with the California Plumbing Code.

1.04 QUALITY ASSURANCE

- A. Perform work in accordance with applicable codes.
- B. Valves: Manufacturer's name and pressure rating marked on valve body.
- C. Welder Qualifications: Certified in accordance with ASME BPVC-IX.

1.05 REGULATORY REQUIREMENTS

- A. Perform Work in accordance with State of California plumbing code.
- B. All wetted parts of pipe, valves, equipment and appurtenances for use in potable water systems shall be in compliance with the Reduction of Lead in Drinking Water Act, amendments to Section 1417 of the Safe Drinking Water Act which are effective January 4, 2014. Lead content shall not exceed 0.25% by weight.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Accept valves on site in shipping containers with labeling in place. Inspect for damage.
- B. Provide temporary protective coating on cast iron and steel valves.
- C. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.

- D. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

1.07 FIELD CONDITIONS

- A. Do not install underground piping when bedding is wet or frozen.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Potable Water Supply Systems: Provide piping, pipe fittings, and solder and flux (if used), that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.

2.02 SANITARY SEWER PIPING, BURIED WITHIN 5 FEET OF BUILDING

- A. Vent piping: Contractor to field verify and match existing.
- B. Cast Iron Pipe: CISPI 301, hubless.
 - 1. Fittings: Cast iron.
 - 2. Joints: CISPI 310, neoprene gasket and stainless steel clamp and shield assemblies.

2.03 SANITARY SEWER PIPING, ABOVE GRADE

- A. Vent piping: Contractor to field verify and match existing.

2.04 DOMESTIC WATER PIPING, ABOVE GRADE

- A. Copper Tube: ASTM B88 (ASTM B88M), Type L (B), Drawn (H).
 - 1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze.
 - 2. Joints: ASTM B32, alloy Sn95 solder.

2.05 NATURAL GAS PIPING, ABOVE GRADE

- A. Steel Pipe: ASTM A53/A53M Schedule 40 black.
 - 1. Fittings: ASME B16.3, malleable iron, or ASTM A234/A234M, wrought steel welding type.
 - 2. Joints: Threaded or welded to ASME B31.1.

2.06 FLANGES, UNIONS, AND COUPLINGS

- A. Unions for Pipe Sizes 3 Inches and Under:
 - 1. Ferrous pipe: Class 150 malleable iron threaded unions.
 - 2. Copper tube and pipe: Class 150 bronze unions with soldered joints.
- B. Flanges for Pipe Size Over 1 Inch:
 - 1. Ferrous Pipe: Class 150 malleable iron threaded or forged steel slip-on flanges; preformed neoprene gaskets.
 - 2. Copper Tube and Pipe: Class 150 slip-on bronze flanges; preformed neoprene gaskets.
- C. No-Hub Couplings:
 - 1. Testing: In accordance with ASTM C1277 and CISPI 310.
 - 2. Gasket Material: Neoprene complying with ASTM C564.
 - 3. Band Material: Stainless steel.
 - 4. Eyelet Material: Stainless steel.
- D. Dielectric Connections Through 2": Waterway with electro zinc plated casing, chemically inert, non-corrosive, self-cleaning NSF/FDA listed dielectric thermoplastic waterway. Thermoplastic liner shall meet requirements of ASTM Standard F-492. Threaded ends.
- E. Dielectric Connections >2" insulated class 150 flange kits.

2.07 PIPE HANGERS AND SUPPORTS

- A. Provide hangers and supports that comply with MSS SP-58.
 - 1. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.

2. Overhead Supports: Individual steel rod hangers attached to structure or to trapeze hangers.
3. Trapeze Hangers: Welded steel channel frames attached to structure.
4. Vertical Pipe Support: Steel riser clamp.
5. Hangers and supports for copper piping - copper clad or lined with insulating material to electrically isolate.

2.08 GAS BALL VALVES

- A. Manufacturers:
 1. Apollo: Series 80-100, for natural gas service through 3"
 2. Nibco, Inc: www.nibco.com.
- B. Construction, 4 Inches and Smaller: MSS SP-110, Class 150, 400 psi CWP, bronze or ductile iron body, 304 stainless steel or chrome plated brass ball, regular port, teflon seats and stuffing box ring, blow-out proof stem, lever handle with balancing stops, threaded or grooved ends with union.
- C. Valves for use with natural gas shall be constructed per applicable ANSI, ASME and CSA standards for service and pressure required. Chrome plated brass ball acceptable for gas use.

2.09 'LEAD FREE' BALL VALVES FOR DOMESTIC WATER

- A. Manufacturers:
 1. Apollo Valves Model: 77FLF-200 (3" and smaller)
- B. Construction: 3" and smaller, lead free, full port forged brass ball valve, 2 piece style solder connection valves, Superior RPTFE Seats and Packing, adjustable stem packing, blowout-proof stem, 316 SS, dezincification resistant materials, silicone free assembly, 400 CWP, temperature range: 0-350F, locking handle SS, SS ball & Stem, MSSP-SP-100, NSF/ANSI 372 Lead Free.

2.10 WATER PRESSURE REDUCING VALVES

- A. Manufacturers:
 1. Bell & Gossett, a brand of Xylem, Inc: www.bellgossett.com
- B. Operation: Automatically feeds make-up water to the hydronic system whenever pressure in the system drops below the pressure setting of the valve.
- C. 2 inch and Smaller:
 1. ASSE 1003, bronze body, stainless steel, and thermoplastic internal parts, fabric reinforced diaphragm, strainer, threaded single union ends.
 2. Pressure Reducing Pilot-Operator:
 - a. Operating Range: 5 to 50 psi.
 - b. Connected into brass or bronze pilot piping and fittings.
 - c. Fixed flow restrictor, pressure gauges, and isolation valves.

2.11 PRESSURE RELIEF VALVES

- A. Manufacturers:
 1. Bell & Gossett, a brand of Xylem, Inc: www.bellgossett.com
- B. Bronze body and spring cage, silicone seat, fabric reinforced molded diaphragm shall isolate spring from water at all times, automatic, direct pressure actuated, capacities ASME certified and labelled. Size and setting as shown on drawings.

PART 3 EXECUTION

3.01 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and dirt, on inside and outside, before assembly.

- C. Prepare piping connections to equipment with flanges or unions.

3.02 INSTALLATION

- A. Install and test all plumbing piping systems in strict accordance with the California Plumbing Code.
- B. Install in accordance with manufacturer's instructions.
- C. Provide non-conducting dielectric connections wherever jointing dissimilar metals.
- D. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
- E. Install piping to maintain headroom, conserve space, and not interfere with use of space.
- F. Group piping whenever practical at common elevations.
- G. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.
- H. Install vent piping penetrating roofed areas to maintain integrity of roof assembly..
- I. Install valves with stems upright or horizontal, not inverted.
- J. Install water piping to ASME B31.9.
- K. Copper Pipe and Tube: Make soldered joints in accordance with ASTM B828, using specified solder, and flux meeting ASTM B813; in potable water systems use flux also complying with NSF 61 and NSF 372.
- L. Sleeve pipes passing through partitions, walls, and floors.
 - 1. Firestop when penetrating fire wall between boiler and chiller rooms.
- M. Pipe Hangers and Supports:
 - 1. Install in accordance with ASME B31.9.
 - 2. Support horizontal piping as indicated.
 - 3. Place hangers within 12 inches of each horizontal elbow.
 - 4. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
 - 5. Provide copper plated hangers and supports for copper piping.
- N. When installing more than one piping system material, ensure system components are compatible and joined to ensure the integrity of the system. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.
- O. **Exposed Piping Finishes: Refer to section 09 90 00 Painting and Coating for specifications on the preparation, priming, and painting of plumbing piping. (Addendum #3)**

3.03 APPLICATION

- A. Install unions downstream of valves and at equipment or apparatus connections.
- B. Install ball valves for shut-off and to isolate equipment, part of systems, or vertical risers.
- C. Provide ball valves in natural gas systems for shut-off service.

3.04 FIELD TESTS AND INSPECTIONS

- A. Verify and inspect systems according to requirements by the Authority Having Jurisdiction. In the absence of specific test and inspection procedures proceed as indicated below.
- B. Test Results: Document and certify successful results, otherwise repair, document, and retest.

3.05 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

- A. Prior to starting work, verify system is complete, flushed and clean.

- B. Ensure acidity (pH) of water to be treated is between 7.4 and 7.6 by adding alkali (caustic soda or soda ash) or acid (hydrochloric).
- C. Inject disinfectant, free chlorine in liquid, powder, tablet or gas form, throughout system to obtain 50 to 80 mg/L residual.
- D. Bleed water from outlets to ensure distribution and test for disinfectant residual at minimum 15 percent of outlets.
- E. Maintain disinfectant in system for 24 hours.
- F. If final disinfectant residual tests less than 25 mg/L, repeat treatment.
- G. Flush disinfectant from system until residual equal to that of incoming water or 1.0 mg/L.
- H. Take samples no sooner than 24 hours after flushing, from 10 percent of outlets and from water entry, and analyze in accordance with AWWA C651.

END OF SECTION

SECTION 23 07 19
HVAC PIPING INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Piping insulation.
- B. Flexible removable and reusable blanket insulation.
- C. Jackets and accessories.

1.02 REFERENCE STANDARDS

- A. ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus; 2019.
- B. ASTM C534/C534M - Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form; 2020a.
- C. ASTM C547 - Standard Specification for Mineral Fiber Pipe Insulation; 2019.
- D. ASTM C795 - Standard Specification for Thermal Insulation for Use in Contact with Austenitic Stainless Steel; 2008 (Reapproved 2018).
- E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2021a.
- F. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2022.
- G. NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials; National Fire Protection Association; 2006.
- H. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials; Current Edition, Including All Revisions.

1.03 SUBMITTALS

- A. See Division 1 for submittal procedures.
- B. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.
- C. Samples: Submit two samples of any representative size illustrating each insulation type - cold and hot service removeable, reusable insulation blanket proposed for use on valves, pumps, and heat exchangers. Samples will not be returned.
- D. Manufacturer's Instructions: Indicate installation procedures that ensure acceptable workmanship and installation standards will be achieved.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with not less than five years of documented experience.
- B. Applicator Qualifications: Company specializing in performing the type of work specified in this section with minimum five years of experience.

1.05 WARRANTY

- A. Warrant all materials and workmanship on all removeable, re-usable insulation blankets for a period of 5 years from installation and acceptance.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Accept materials on site, labeled with manufacturer's identification, product density, and thickness.

1.07 FIELD CONDITIONS

- A. Maintain ambient conditions required by manufacturers of each product.
- B. Maintain temperature before, during, and after installation for minimum of 24 hours.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS

- A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.

2.02 GLASS FIBER, RIGID

- A. Manufacturers:
 - 1. Knauf Insulation; www.knaufinsulation.com
 - 2. Johns Manville; www.jm.com.
 - 3. Owens Corning Corp: www.owenscorning.com.
 - 4. Substitutions: See Division 1.
- B. Insulation: ASTM C547 and ASTM C795; rigid molded, noncombustible.
 - 1. K Value: ASTM C177, 0.24 at 75 degrees F.
 - 2. Maximum Service Temperature: 850 degrees F.
 - 3. Maximum Moisture Absorption: 0.2 percent by volume.
- C. Vapor Barrier Jacket: White kraft paper with glass fiber yarn, bonded to aluminized film; moisture vapor transmission when tested in accordance with ASTM E96/E96M of 0.02 perm-inches.
- D. Vapor Barrier Lap Adhesive: Compatible with insulation.
 - 1. Compatible with insulation.

2.03 FLEXIBLE ELASTOMERIC CELLULAR INSULATION

- A. Manufacturer:
 - 1. Armacell LLC; Armaflex: www.armacell.us.
 - 2. Substitutions: Division 1.
- B. Insulation: Preformed flexible elastomeric cellular rubber insulation complying with ASTM C534/C534M Grade 1; use molded tubular material wherever possible.
 - 1. 'K' value: ASTM C 177; 0.27 at 75 degrees F.
 - 2. Minimum Service Temperature: Minus 40 degrees F.
 - 3. Maximum Service Temperature: 180 degrees F.
 - 4. Water Vapor Permeability: 0.17 perm-inches, when tested in accordance with ASTM E 96.
 - 5. Connection: Waterproof vapor barrier adhesive.
- C. Elastomeric Foam Adhesive: Air dried, contact adhesive, compatible with insulation.
 - 1. Manufacturers:
 - a. Armstrong 520 Adhesive.

2.04 JACKETS

- A. PVC Plastic.
 - 1. Manufacturers:
 - a. Johns Manville Corporation: www.jm.com/#sle.
 - b. Substitutions: See Division 1
 - 2. Jacket: One piece molded type fitting covers and sheet material, off-white color.
 - a. Minimum Service Temperature: 0 degrees F.
 - b. Maximum Service Temperature: 150 degrees F.
 - c. Moisture Vapor Permeability: 0.002 perm inch, maximum, when tested in accordance with ASTM E96/E96M.

- b. Jacket to 450°F Silicone Silicone Fiberglass Composite Jacketing, 17 oz/yd², rated to 450°F
 - c. Thread 800°F Kevlar Thread Kevlar, 0.114" diameter, 35lb breakpoint, rated to 800°F
 - d. Insulation Utilicore Needed fiberglass, 5 lb/ft³, rated to 1000°F
 - e. Fasteners Nylon Straps Nylon with D-Rings, Velcro
 - f. Seal Flaps Hybrid 7.0 (rated to 600°F) with Kevlar cord (rated to 700°F)
 - g. All insulation materials shall be non-asbestos. Insulation thickness shall be selected by the manufacturer to meet the R-values as required by the 2019 California Energy Code.
2. Construction:
- a. Sewn with lock stitch at a minimum of 4 to 6 stitches per inch. Jackets shall be sewn using specified thread in section 2.05.C.1.c, above. The thread must be able to withstand the skin temperatures without degradation.
 - b. Hog rings, staples and wire are not acceptable methods of closure.
 - c. No raw cut jacket edges shall be exposed after install.
 - d. Jackets shall be fastened using a combination of hook and loop (Velcro), straps, and D-rings depending on application temperature.
 - e. The insulation shall be designed to minimize the convection current in the space between the hot metal surface and the inner layer of insulation.
 - f. All jacket pieces which match mating seams must include an extended 2" flap constructed from the exterior fabric (or equivalent) and shall be secured using hook & loop closure (i.e. Velcro®) parallel to the seam or straps and/or D-Rings depending on application temperature.
 - g. Insulation shall be sewn as integral part of the jacket to prevent shifting of the insulation. Insulation pins are NOT an allowable method of preventing the insulation from shifting and shall NOT be used.

2.06 THERMAL HANGER SHIELDS

- A. Thermal hanger shields shall be designed for use with pipe rollers or strut framing systems and shall provide structural calcium silicate inserts to provide insulation and pipe supports at all support locations. Piping Technology and Products, Pipe Shields, Inc. or approved equal.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that piping has been tested before applying insulation materials.
- B. Verify that surfaces are clean and dry, with foreign material removed.
- C. Installing contractor and selected removable, re-usable insulation jacket manufacturer shall jointly examine the drawings and specifications and walk the job site as construction progresses and once again when piping systems are complete and ready for insulation. Together, the installer and manufacturer shall inventory all makes and models of valves, pumps, heat exchangers, piping specialties, etc, as listed for removeable blankets and begin database entry and custom fabrications to fit each valve and specialty, for both hot and cold blanket applications. Cold service removable jackets shall be tight fitting and shall not allow condensation inside the jacket.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install in accordance with NAIMA National Insulation Standards.
- C. Exposed Piping: Locate insulation and cover seams in least visible locations.

- D. Insulated pipes conveying fluids below ambient temperature: Insulate entire system including but not necessarily limited to fittings, control valves, valves (including drain and vent valves), unions, flanges, reducers, elbows, tees, branch fittings, strainers, flexible connections, pump bodies, air separators, air scoops, piping to air vents, thermometer wells, instrumentation wells, pressure gage piping and other instrument piping, flow meter bodies, flow conditioners, pipe guides and anchors, pipe supports, expansion joints, expansion loops and expansion fittings/loops (including flexible piping), sample lines, heat exchangers and any other cold surface. Any surface that may condense water vapor shall be insulated and covered with a vapor barrier, and jacketed as required for weather protection. Flow balancing valves shall be insulated with removable insulation covers for access, measurement and adjustment, or field insulated to allow adjustment and measurement without disturbing adjacent insulation. "These 'full insulation' requirements shall apply to all systems, regardless of location: interior, exterior, in manholes, accessible trenches, direct buried or any other location. Fit all removable insulation covers vapor tight to valves, specialties and equipment to eliminate any condensation inside jackets. NO CONDENSATION WILL BE ALLOWED.
- E. Glass fiber insulated pipes conveying fluids below ambient temperature:
1. Provide vapor barrier jackets, factory-applied or field-applied; secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive. Secure with outward clinch expanding staples and vapor barrier mastic.
 2. Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe. Finish with glass cloth and vapor barrier adhesive or PVC fitting covers.
- F. Glass fiber insulated pipes conveying fluids above ambient temperature.
1. Provide standard jackets, with or without vapor barrier, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive. Secure with outward clinch expanding staples.
 2. Insulate all components that have fluid flowing, including, but not necessarily limited to fittings, joints, unions, flanges, reducers, elbows, tees, branch fittings, strainers, flexible connections, pump bodies, air separators, air scoops, piping to air vents, thermometer and instrumentation wells, piping to pressure gages or other instrumentation, flow meter bodies, flow conditioners, expansion joints, expansion loops, expansion fittings, pipe guides and anchors, pipe supports, control valves and valves (including drain and vent valves), sample lines, heat exchangers and any other hot surface with insulation of like material and thickness as adjoining pipe. Finish with glass cloth and adhesive or PVC fitting covers. Any portion of piping or appurtenances conveying fluids over 140 degrees F shall be insulated (with jacket as required for weather protection). "These 'full insulation' requirements shall apply to all systems, regardless of location: interior, exterior, in manholes, accessible trenches, direct buried or any other location.
 3. Flow balancing valves shall be insulated with removable insulation covers for access, measurement and adjustment, or field insulated to allow adjustment and measurement without disturbing adjacent insulation.
- G. Inserts and Shields:
1. Application: Piping 1-1/2 inches diameter or larger.
 2. Shields: Galvanized steel between pipe hangers or pipe hanger rolls and inserts.
 3. Insert location: Between support shield and piping and under the finish jacket.
 4. Insert Configuration: Minimum 6 inches long, of same thickness and contour as adjoining insulation; may be factory fabricated.
 5. Insert Material: Hydrous calcium silicate insulation or other heavy density insulating material suitable for the planned temperature range.
- H. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations. Finish at supports, protrusions, and interruptions.

- I. **Uninsulated** Pipe Exposed in Mechanical Equipment Rooms or Finished Spaces: **Prep, prime and paint uninsulated piping. Refer to section 09 90 00 Painting and Coating for specifications on the preparation, priming, and painting of plumbing piping. (Addendum #3)**
- J. Exterior Applications: Provide vapor barrier jacket. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe. Cover with aluminum jacket with seams located on bottom side of horizontal piping.

3.03 SCHEDULE

- A. Cooling Systems:
 - 1. Chilled Water:
 - a. 40 to 60 degrees F: smaller than 1-1/2" pipe size - 1/2" thickness; 1-1/2" and larger pipe size - 1" thickness.
- B. Heating Systems: Glass fiber insulation with all service jacket:
 - 1. Required glass fiber insulation thickness for all heating system piping listed herein (based on 2019 Title 24):
 - a. 141 to 200 degrees F: Through 1-1/4" pipe size - 1-1/2" thickness; 1-1/2" and larger pipe size - 2" thickness.
- C. Valves, Pumps, Equipment and Specialties:
 - 1. Chilled, Heating Hot Water pumps, heating and cooling suction diffusers, check valves, ball, butterfly, gate, globe valve, strainers, energy valves, control valves, motorized valves, balancing valves, and other specialties, appurtenances and accessories requiring insulation on hot or chilled water lines shall be custom fitted with:
 - a. Removeable, re-usable fabricated insulation jackets, as specified in 2.05, above.
 - 1) Removeable, re-usable fabricated insulation jackets shall be applied to all above ground applications.
- D. Pressure Gauge and Thermometer tappings: insulate cold taps with foam self adhering tape to prevent condensation.

END OF SECTION

SECTION 23 64 16

MAGNETIC BEARING CENTRIFUGAL WATER-COOLED CHILLER

PART 1: GENERAL

1.01 SECTION INCLUDES

- A. Centrifugal compressor water chillers as indicated on the schedules and shown on the drawings.
- B. Water connections (chilled water, condenser water and auxiliary water connections)
- C. Motor starters and variable frequency drives
- D. Electrical Connections
- E. Controls and control accessories
- F. Charge of refrigerant and oil (if applicable)
- G. Refrigerant purge system (if applicable)

1.02 REFERENCES

- A. AHRI 550/590 – Standard for Water Chilling Packages Using the Vapor Compression Cycle
- B. AHRI 575 – Method of Measuring Machinery Sound within an Equipment Space
- C. AHRI 580 – Non-Condensable Gas Purge Equipment for Low Pressure Centrifugal Chillers
- D. AHRI 740 – Refrigerant Recovery / Recycling Equipment
- E. ASHRAE 15 – Safety Standard for Refrigeration Systems
- F. ASHRAE 34 – Designation and Safety Classification of Refrigerants
- G. ASHRAE 90.1 – Energy Standard for Buildings except Low-Rise Residential Buildings
- H. ASME Boiler and Pressure Vessel Code: Section VIII, Division 1
- I. NFPA 70 / NEC – National Electrical Code
- J. OSHA – Occupational Safety and Health Act
- K. UL 465 – Construction of Centrifugal Chillers
- L. UL 508 – Industrial Control Equipment (Short Circuit Current Rating)
- M. UL 1995 – Standard for Safety for Heating and Cooling Equipment
- N. IBC 2009 - International Building Code, 2009 Edition.
- O. AC-156, Acceptance Criteria for Seismic Certification by Shake-Table

1.03 QUALITY ASSURANCE

- A. Manufacturers: Manufacturer shall have a minimum of 30 years of experience in designing, manufacturing, and servicing centrifugal chillers, and a minimum of 15 years of experience designing and manufacturing with lubrication free or magnetic bearing chillers.
- B. Comply with codes and standards in Article 1.02.

1.04 RATINGS AND CERTIFICATIONS

- A. Chiller rating and testing: AHRI 550/590 or AHRI 551/591 – Provide conformance certification statement on ratings
- B. Modular chiller packages must include AHRI certified ratings for the entire chiller package, not the individual module. Ratings shall include all electrical losses associated with VFD and integral harmonic filter.
- C. Chiller energy efficiency requirements: ASHRAE 90.1 – Affix compliance label to chiller
- D. Safety: UL 465 and UL 1995 – Provide UL / CUL label

- E. Motor manufacturing and performance: NEMA MG1
- F. Pressure vessel construction and testing: ASME Boiler and Pressure Vessel Code: Section VIII, Division 1 – Provide ASME 'U' Stamp
- G. Electrical and control wiring: NEC codes & ETL requirements – Affix certification labels to control panel and starter
- H. Refrigeration system design, construction, installation and operation: ASHRAE 15

1.05 SUBMITTAL DOCUMENTATION REQUIRED

- A. Chiller performance ratings conforming to and reported in accordance with AHRI-550/590 [capacity (tons), energy efficiency (kW/ton), water pressure drop (ft of water), Integrated Part Load Value (IPLV) efficiency or Non-Standard Part Load Value (NPLV)].
- B. Include additional power or water sources for auxiliaries (water for oil coolers, etc. if applicable) and field installed harmonic filters (if applicable) in all rating calculations.
- C. NPLV calculated to AHRI Standard 550/590 equation.
- D. Statement of Compliance with ASHRAE 90.1-2016.
- E. Part Load Performance: Efficiencies at 10% load increments at the following entering condenser water temperatures (ECWTs): 85 °F, 80, 75, 70, 65, 60, 55, 50, 45, 40 (29.4 °C, 26.7, 23.9, 21.1, 18.3, 15.6, 12.8, 10.0, 7.2, 4.4) or lowest minimum possible with design condenser water flow at each load. Demonstrate that chiller will provide 100% design capacity at the minimum possible ECWT. Clearly note any points where continuous, stable operation may not be achievable. Hold condenser water flow constant for all points.
- F. Manufacturer's required maintenance schedule.
- G. Manufacturer's recommended driveline teardown inspection intervals and estimated labor costs
- H. List of components not designed for the life of the chiller including expected replacement intervals and replacement part including labor costs (VSD capacitors, oil filters, bearings).
- I. Acoustics:
 - 1. Sound pressure levels are required from measurements performed in accordance with AHRI-575. Include estimates for each octave band and A-Weighted values at each of the four standard AHRI points.
 - 2. Manufacturer sound levels shall not exceed an A-weighted sound pressure of 84 dBA at all load points when measured in accordance with AHRI-575-08. Active sound control devices and attenuation should be supplied if required.
- J. Unit Drawing: Indicate overall unit dimensions, key component locations and dimensions, and field connection details for piping and electrical wiring.
- K. Floor layout drawing: indicate centerlines; indicate locations and dimensions of chiller points of contact with the floor.
- L. Other Diagrams: thermal insulation requirements diagram and vibration isolator diagrams.
- M. Weights: shipping weight, operating weight, weight of each major component, weight load at each vibration isolator.
- N. Capacities and Charges: refrigerant and oil (if applicable).
- O. Wiring Diagram: including main power connections, control wiring connections (contacts and terminations), internal wiring schematic including transformers and other devices.
- P. Electrical data: job full load amperage, minimum circuit ampacity, max fuse size / breaker size.
- Q. Electrical requirements for power supply wiring including wiring diagrams for interlock and control wiring, clearly indicating factory-installed and field-installed wiring.
 - 1. Only single point chiller wiring is acceptable.

- R. Control Panel Details: system operating data points, status messages, safety shutdowns, cycling shutdowns, trending capability, programmable set points, interface capability for data transfer.
- S. Material Safety Data Sheet (MSDS) for any refrigerants used that is NOT classified as 'A1' for flammability and toxicity by ASHRAE 34.
- T. Manufacturer's warranty certificate.
- U. Performance rating noting chiller compliance with the United States Green Building Council's LEED Enhanced Refrigerant Management Credit (EAc4).

1.06 SHIPMENT

- A. Protect, pack and secure loose-shipped items and attach to chiller. Include detailed packing list of loose-shipped items, including illustrations and instructions for application.
- B. Cap and seal water nozzle openings to prevent moisture, foreign materials and other objects from entering heat exchangers.
- C. Provide reinforced shrink-wrap around each component of the chiller. The membrane shall cover the entire top, sides and ends to fully protect the component during shipping and storage. Cover equipment, regardless of size or shape.
- D. Ship units that are not shrink wrapped in an enclosed truck or shipping container. Tarping is not acceptable.
- E. Ship chiller in one major assembly.
- F. Ship refrigerant in the condenser barrel of the chiller.
- G. If refrigerant is shipped separately. Mechanical contractor shall rig refrigerant into equipment room and place adjacent to the chiller. Manufacturer's technician shall charge unit at startup. Mechanical contractor shall remove and return empty refrigerant vessels.

1.07 DELIVERY, STORAGE AND HANDLING (ALSO SEE SPEC ITEM 2.12 AND 2.14, BELOW)

- A. Follow manufacturer's recommendations for storage, handling and unloading.
- B. Do not store equipment in wet or damp areas even when sealed and secured.
- C. Unit to be shipped with Form 7 shipment.

1.08 WARRANTY

- A. Provide manufacturer's warranty for **10 years starting 6 months after shipment or upon completion of start-up**, whichever **occurs** first. **(Addendum #3)** Warranty shall cover parts, refrigerant and labor required to remedy defects in materials or workmanship for the entire chiller. Perform warranty work with manufacturer's factory-trained and factory-employed service technician.

PART 2: PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Basis of Design: YORK YZ, Johnson Controls, Inc.
- B. The design scheduled and shown on the drawing are based upon products manufactured by Johnson Controls. Alternate equipment from the other acceptable manufacturers must meet the scheduled performance and comply with these specifications. If equipment manufactured by another manufacturer is utilized, then the Mechanical Contractor shall be responsible for coordinating with the General Contractor and all affected Subcontractors to insure proper provisions for installation of the furnished unit. This coordination shall include, but is not limited to, the following:
 - 1. Structural supports for units
 - 2. Piping size and connection/header location
 - 3. Electrical power requirements and wire, conduit and overcurrent protection sizes

4. The Mechanical Contractor shall be responsible for all costs incurred by the General Contractor, Subcontractors, and Consultants to modify the building provisions (ductwork, piping, and wiring) to accept the furnished units
 5. Any costs to relocate other items to work to accommodate the substituted equipment.
 6. Any resubmittals required to DSA including any and all structural calculations and back-up documentation for any changes from contract documents
- C. Approved Equal (Prior written approval by engineer of record is required)

2.02 GENERAL DESCRIPTION

- A. Packaged centrifugal chiller including the following: evaporator, motor and compressor, capacity control device, condenser with integral sub cooler, variable refrigerant metering device, motor starter, control panel with user interface, and a refrigerant purge system.
- B. Provide chiller utilizing a refrigerant that has an Ozone Depletion Potential (ODP) of ZERO, and a Global Warming Potential (GWP) of 1 with an assurance from the manufacturer that the refrigerant has no production phase-out date and no phase out date for equipment that uses that refrigerant. Additionally, the refrigerant must be available from local refrigerant suppliers other than the chiller manufacturer.
- C. Provide chiller to meet or exceed the scheduled performance within the limits of the scheduled parameters.
- D. Chillers shall be able to start up with tower water temperatures as low as 40°F (4.4°C) entering condenser water or 30°F (16.7°C) below the design leaving chilled water temperature or they shall include field installed tower bypass lines to increase head pressure to an acceptable temperature. Contractor shall include all necessary piping and BAS modifications to ensure cold tower water start up.
 1. Chiller shall be capable of continuous operation with 40°F (4.4°C) entering condenser water temperature at design condenser water flows. Chillers not capable operating with 40°F (4.4°C) entering condenser water temperature at design condenser water flows shall include field installation of water-to-water heat exchangers sized to provide sufficient cooling capacity for the chilled water system. Contractor is responsible for sizing, purchasing, and installing the heat exchanger including all piping and controls to ensure stable system operation when transitioning from chiller operation to water-to-water heat exchangers. Additional pump HP sizing shall also be calculated and included in the installation (if applicable). Water-to-water heat exchanger submittals shall include additional pumping and tower power consumption costs in addition to the required maintenance schedule and yearly costs to clean and maintain the heat exchanger (if applicable).
- E. Performance Requirements: Must be capable of running at any of the conditions, below for minimum of 24 hours.

Part Load Performance Requirements										
CEFT [°F]	Percent Load									
	100	90	80	70	60	50	40	30	20	10
78.00	0.4244	0.4015	0.3858	0.3804	0.3865	0.4059	0.4332	0.5258	0.7414	1.155
75.00	0.4002	0.3727	0.3631	0.3544	0.3502	0.3679	0.3959	0.4684	0.6496	0.9337
70.00	0.3622	0.3416	0.3286	0.3138	0.3053	0.3080	0.3315	0.3838	0.5292	0.7915
65.00	0.3435	0.3159	0.2963	0.2742	0.2569	0.2481	0.2584	0.2918	0.3705	0.6542
60.00	0.3280	0.2963	0.2643	0.2377	0.2116	0.2085	0.2151	0.2249	0.2490	0.4671
55.00	0.3142	0.2823	0.2448	0.2100	0.1902	0.1766	0.1609	0.1816	0.2188	0.2923
50.00	0.3009	0.2681	0.2268	0.1861	0.1759	0.1473	0.1487	0.1823	0.2230	0.2963
45.00	0.3011	0.2677	0.2260	0.1913	0.1830	0.1517	0.1600	0.1998	0.2526	0.3547
44.00	0.2984	0.2648	0.2232	0.1898	0.1840	0.1580	0.1563	0.1964	0.2495	0.3504
43.00	0.2956	0.2618	0.2204	0.1905	0.1857	0.1649	0.1525	0.1931	0.2464	0.3460
42.00	0.2928	0.2599	0.2284	0.1935	0.1873	0.1727	0.1485	0.1897	0.2432	0.3418
41.00	0.2925	0.2688	0.2366	0.2011	0.1887	0.1796	0.1442	0.1862	0.2400	0.3375
40.00	0.2993	0.2774	0.2448	0.2091	0.1900	0.1817	0.1407	0.1827	0.2367	0.3331

* Values are in kW/Ton.

- F. Provide neoprene isolators.
- G. Provide refrigerant isolation valves: two butterfly valves, one on the compressor discharge line and one on the liquid line.

2.03 HEAT EXCHANGERS

- A. General requirements: evaporator and condenser
 - 1. Heat exchanger type:
 - a. Evaporator: Shell and tube, hybrid falling film design or flooded
 - b. Condenser: Shell and tube, flooded design
 - 2. Construct in accordance with the current ANSI/ASHRAE-15 Safety Code for Mechanical Refrigeration and ASME Pressure Vessels Code and shall bare the ASME stamped nameplate.
 - 3. Shells: Carbon steel with fusion welded seams
 - 4. Tubes: Internally rifled, externally enhanced, individually cleanable and individually replaceable from either chiller end, and roller expanded into tube sheets.
 - 5. Tube supports: Carbon steel, 3/8" (9.5mm) thick minimum, no more than 4 feet (1.22 m) apart, self-supporting and welded to the shell.
 - 6. End sheets: Carbon steel, 1" (25.4 mm) thick minimum.
 - 7. Water boxes: Marine and compact type, steel, bolted to end sheet, with hinged cover plates on any end that allows full opening access to tubesheets and tubes; taps for vent and drain.
 - 8. Pressure Relief: automatically reseating relief valves. Rupture discs are not acceptable.
- B. Evaporator
 - 1. Waterside working pressure: 150 psig (1034 kPa).
 - 2. Water boxes: Marine (side nozzle locations) with grooved connections; compact bolted to end sheet (blind side). Provide hinged cover plates that allows full opening access to tubesheets and tubes.
 - 3. Tubes: Copper, removable from either end, minimum tube wall thickness of 0.035" (0.889 mm) at the plain lands contacting the intermediate tube supports and end sheets.
 - 4. Suction baffle: Installed along the entire length of the evaporator.
 - 5. Sight glass: Located such that the proper refrigerant charge is near the center of the glass when the machine is off.
- C. Condenser
 - 1. Waterside working pressure: 150 psig (1034 kPa).

2. Water boxes: Marine (side nozzle locations) with grooved connections; compact bolted to end sheet (blind side). Provide hinged cover plates that allows full opening access to tubesheets and tubes.
3. Tubes: Copper, removable from either end, minimum tube wall thickness of 0.035" (0.889 mm) at the plain lands contacting the intermediate tube supports and end sheets.

2.04 REFRIGERANT FLOW CONTROL

- A. Variable orifice
- B. Refrigerant level sensing: Monitor refrigerant level in the condenser; report refrigerant level back to unit control panel and control chiller accordingly.
- C. Refrigerant level control: Adjust valve position via control panel to optimize refrigerant level.

2.05 COMPRESSOR

- A. Single stage or multi-stage
- B. Capacity control achieved with variable speed and mechanical flow regulation to provide fully modulating control from maximum to minimum load. The chiller shall be able to adjust capacity from 100% to 15% of design without the use of hot gas bypass (HGBP). Plastic is not an acceptable material for internal compressor components.
- C. Fully accessible housing with vertical circular joints.
- D. Direct driven
- E. Magnetic bearings.
 1. Levitated shaft position shall be actively controlled and monitored by an X-, Y-, and Z-axis digital position sensor.
 2. The compressor shall be capable of coming to a controlled, safe stop in the event of a power failure by utilizing back up power storage to the Magnetic Bearing Control System.
- F. Mechanical linkage system that continuously monitors compressor-discharge gas characteristics and optimizes diffuser spacing to minimize impeller gas-flow disruptions.
- G. The driveline (compressor and motor) and chiller starter shall be individual unit assemblies allowing for independent inspection, service, and repair/replacement. If an integrated driveline and starter package is utilized which is not fully field repairable, the supplier must provide one spare package with the unit.

2.06 MOTOR

- A. Hermetic permanent magnet or high speed induction motor supported by active magnetic bearings.
- B. Electrical connection: Steel terminal box with gasketed front access cover; overload and overcurrent transformers.

2.07 REFRIGERANT PURGE SYSTEM (NEGATIVE PRESSURE MACHINES) (IF APPLICABLE)

- A. Refrigerant purge system is required if negative pressure machines are proposed.
- B. Operates automatically at all load and head pressure conditions, independently of the chiller.
- C. Purge unit is designed to meet ASHRAE Standard 147 where at the most one unit mass of refrigerant is purged per one unit mass of air removed by the unit.
- D. Purge unit is factory assembled, unit mounted, piped and wired and is capable of operating while the chiller is off.
- E. Purge exhaust cycles are monitored, and if excessive, provide warning of a potential system leak through Chiller Control Panel.

2.08 SOURCE QUALITY CONTROL: TESTS AND INSPECTIONS

- A. Heat Exchangers (evaporator and condenser):

1. Design and test in full conformance to the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1.
 2. Hydrostatically test evaporator and condenser refrigerant side at 1.3 times design working pressure AFTER tubing using LIQUID REFRIGERANT.
 3. Alternately to item '2' above, test at 1.1 times design working pressure AFTER tubing, using an approved air/gas mixture, per ASME Code.
- B. Compressor Components:
1. Leak tested at design working pressure using air under water.
 2. Hydrostatic strength test at 1.5 times design working pressure.
 3. To ensure UL label qualification, manufacturer shall perform a hydrostatic strength test at 3 times design working pressure every year on the compressor castings.
 4. Statically and dynamically balance each impeller.
 5. Overspeed test each impeller at 120% of its maximum design RPM.
- C. Motor
1. Balance rotor in accordance with ISO 1940 G2.5 (performed by motor manufacturer).
 2. High-potential test stator for dielectric strength for 60 seconds per UL1995 and 984 and the following formula: $2 * \text{RATED VOLTAGE} + 1000$ (performed by chiller manufacturer).
- D. Chiller air run test:
1. Measure current and voltage across each phase.
 2. Operate control panel, test functionality and log instrument readings.
 3. Operate oil pump motor and search lubrication system for leaks (if applicable).
 4. Check compressor oil pressure (if applicable).
 5. Full spectrum vibration analysis factory performed with baseline report provided with chiller delivery for chillers not equipment with magnetic bearings.
 6. After the test, remove and replace oil filter (if applicable).
- E. Chiller leak integrity testing: Pressurize entire system to design working pressure. Leak test using soap and water. Repair any leaks and repeat test until leak tight.
- F. Vacuum hold testing: Evacuate system to 500 microns and hold for one hour. Ensure that pressure does not rise more than 150 microns during the hour. Repair and repeat until passes.

2.09 CONTROL PANEL

- A. Type: Microprocessor based, stand alone
- B. Scope: Chiller operation, monitoring of chiller sensors, actuators, relays and switches, and display of all operating parameters.
- C. Capability: Stable chiller operation at 40°F (4.4°C) leaving chilled water temperature without warnings or shutdowns; no freezing or slushing of chilled water.
- D. Enclosure: Lockable, NEMA 1
- E. Information Display: 10.4" (264 mm) (minimum) color liquid crystal display (LCD) mounted on control panel enclosure door. All warning and safety faults shall include a text description. Panels with numerical codes requiring reference manuals for fault codes are not acceptable.
- F. User interface: Operating parameters displayed in a user-friendly, color and graphical format.
- G. Keypad: Universal type with soft-keys
- H. Temperature rating: 32 to 104°F (0 to 40°C)
- I. System status information: Displayed on screen at all times, including the following as a minimum:
1. System status
 2. System details
 3. Control source (remote or local)

4. User access level
 5. Date and time
 6. Startup sequence timer
 7. Shutdown sequence timer
- J. Status messages: In color according to importance, indicate the following as a minimum:
1. Ready to start
 2. Cycling shutdown – chiller will automatically restart
 3. Safety shutdown – chiller requires manual restart
 4. Soft shutdown – chiller requires manual restart
 5. System run (with countdown timers)
 6. Systems coast down (with countdown timers)
 7. Start inhibit and inhibit mode (anti-recycle, vane motor switch open (if applicable), excess motor current)
 8. VGD closing before shutdown (if applicable)
- K. System operating information, including the following as a minimum:
1. Return and leaving chilled water and condenser water
 2. Evaporator and condenser refrigerant saturation temperatures
 3. Sub-cooling refrigerant temperature
 4. Evaporator and condenser pressure
 5. Evaporator tube and condenser tube small temperature difference
 6. Compressor discharge temperature
 7. Percent of motor full load current
 8. Input power
 9. Kilowatt hours
 10. Operating hours
 11. Refrigerant level position (condenser)
 12. Motor winding temperature (each phase)
 13. Average motor winding temperature
 14. VSD – Output frequency
 15. VSD – Output voltage (each phase)
 16. VSD – Current (each phase)
 17. VSD – Input current limit setpoint
 18. VSD – Total supply KVA
 19. VSD – Total power factor
 20. VSD - Voltage total harmonic distortion (each phase)
 21. VSD – Current total demand distortion (each phase)
 22. VSD – DC bus voltage
 23. VSD – DC bus current
 24. VSD – Input and output Peak and RMS voltages and currents (each phase)
 25. VSD – Internal ambient temperature
 26. UPS Battery voltage
 27. VGD Position
 28. Discharge Pressure
 29. Motor Housing and Winding Temperatures
 30. MBC – Positions
 31. MBC – Currents
 32. MBC – Temperatures
 33. MBC – Motor Speed
- L. Programmable setpoints including the following, as a minimum:
1. Chilled liquid temperature (setpoint and range)

2. Chilled liquid temperature cycling offset (shutdown and restart)
 3. Motor current limit (%)
 4. Pull-down demand (limit and time)
- M. Schedule function: Programmable six week schedule for starting and stopping the chiller, pumps and cooling tower.
- N. Regional functionality: System language and units selection
- O. Warning messages including the following, as a minimum:
1. Real time clock failure
 2. Condenser or evaporator transducer error
 3. Setpoint override
 4. Condenser high pressure limit
 5. Evaporator low pressure limit
 6. Excess Surge Detection
 7. Motor – High Housing, Rotor, and Winding Temperatures
 8. Motor – High Current Limit
 9. VSD – DC Bus Active
 10. Liquid Level Setpoint Not Achieved
 11. Loss of Subcooler Liquid Seal
 12. Condenser – Freeze Threat From Low Pressure
 13. MBC – Speed Signal Fault
 14. MBC – Low Amplifier Resistance
 15. MBC – High Amplifier Resistance
 16. MBC – Low Amplifier Current
 17. MBC – High Amplifier Current
 18. MBC – Position Sensor Error
 19. UPS – Not Charging
 20. UPS – Line Low Battery Voltage
 21. UPS – Battery Not Connected
 22. UPS – Check Battery Connection
 23. Purge – High Coil Temperature
 24. Purge – High Coil Temperature Inhibit
 25. Purge – High Regen Tank Temperature
 26. Purge – High Level
 27. Purge – Excess Purge
 28. Purge – Equalization Low Suction Temperature
 29. Purge – Possible Air in system
 30. Purge – Operation Inhibited
- P. Safety Shutdowns: Trigger a safety shutdown for any of the following, as a minimum:
1. Evaporator – low pressure
 2. Condenser – high pressure contacts open
 3. Expansion I/O – Serial Communications
 4. Thrust Bearing – Limit Switch Open
 5. Auxiliary safety – contacts closed
 6. Compressor discharge – high or low refrigerant temperature
 7. Roller element bearing excessive vibration/wear (if applicable)
 8. Control panel – power failure
 9. Motor or starter – current imbalance
 10. Motor – high housing, winding, and rotor temperatures
 11. Motor – Low winding Temperature
 12. Watchdog – software reboot

13. Sensor – failure or out of range
 14. Transducer – failure or out of range
 15. Surge Protection – Excess Surge
 16. MBC – internal fault
 17. MBC – Power Supply Fault
 18. MBC – High Heatsink Temperature
 19. MBC – DC Bus Fuse
 20. MBC – high bearing temperature or current
 21. MBC – System startup failure
 22. MBC – speed signal fault
 23. MBC – overspeed fault
 24. MBC – communication
 25. MBC – rotor elongation
 26. MBC – oscillator fault
 27. MBC – rotor contraction
 28. MBC – unauthorized rotation
 29. MBC – high and low voltage
 30. MBC – Ground Fault
 31. MBC – High amplifier Temperature & Voltage
 32. MBC – Radial Positions
 33. MBC – Fault Contacts open
 34. MBC – Initialization Failure
 35. MBC – Serial Communications
 36. VSD – shutdown, requesting fault data
 37. VSD – stop contacts open
 38. VSD – 105% motor current overload
 39. VSD – input current overload
 40. VSD – high phase input and motor baseplate temperatures (each phase)
 41. VSD – precharge lockout
 42. VSD – ground fault
 43. VSD – motor current total harmonic distortion (THD) fault
 44. VSD – inverter or rectifier program fault
 45. VSD – phase motor and input DCCT (each phase)
 46. VSD – high total demand distortion
 47. VSD – high phase input and motor current (each phase)
 48. VSD – line voltage phase rotation
 49. VGD Actuator – Limit Switch Open
 50. VGD Actuator – Stroke Not Calibrated
 51. VGD Actuator – Feedback not Calibrated
 52. VGD Actuator - Positioning Fault
 53. VGD Actuator – Serial Communications
 54. UPS – Inverter Low Battery Voltage
 55. Safety Stop
- Q. Safety Shutdowns: For each safety shutdown, indicate the following, as a minimum:
1. System status and details
 2. Day and time of shutdown
 3. Cause of shutdown with text description
 4. Type of restart required
- R. Cycling Shutdowns: For each cycling shutdown, indicate the following, as a minimum:
1. Multiunit cycling – contacts open

2. System cycling – contacts open
 3. Control panel – power failure
 4. Leaving chilled liquid – low temperature
 5. Leaving chilled liquid – flow switch open
 6. Condenser – flow switch open
 7. Control panel – schedule
 8. VGD Actuator – serial communications
 9. Evaporator – low pressure
 10. Condenser – freeze threat – flow switch open
 11. Control Panel – loss of control voltage
 12. MBC - position
 13. MBC – low frequency displacement
 14. MBC – vibration
 15. MBC – speed signal fault
 16. MBC – startup failure
 17. MBC – serial communications fault
 18. VSD shutdown – requesting fault data
 19. VSD – fault contacts open
 20. VSD – initialization failed
 21. VSD – gate driver (indicate phase)
 22. VSD – single phase input power
 23. VSD – high or low DC bus voltage
 24. VSD – pre charge: low DC bus voltage
 25. VSD – pre charge: DC bus voltage imbalance
 26. VSD – high internal ambient temperature
 27. VSD – logic board power supply
 28. VSD – low phase input and motor baseplate temperatures (each phase)
 29. VSD – logic board processor
 30. VSD – run signal
 31. VSD – high phase input and motor current (each phase)
 32. VSD – DC bus pre-regulation
 33. VSD – input DCCT offset (each phase)
- S. Security Access: Through ID and password recognition defined by a minimum of three different levels of user capability:
1. View: prevent unauthorized changing of setpoints.
 2. Operator: allow local or remote control of chiller.
 3. Service: In the event that advanced diagnostics are necessary for qualified service personnel.
- T. Chiller information screen including on-screen display of the following, as a minimum:
1. Model number
 2. Chiller serial number
 3. Control panel serial number
 4. Manufacturer contract number
 5. Design voltage
 6. Refrigerant type
 7. Starter type
 8. Original factory chiller rating information, including water temperatures, pressure drops and capacity
- U. Data tracking and trend display including on-screen graphical display of the following, as a minimum:

1. Parameters selected from a list of a minimum of 140 possibilities
 2. Data collected once per second up to once per hour for each parameter
 3. Data trend lines displayed for a minimum of 5 parameters at once
- V. History: Store last ten shutdowns with text description and display all system parameters at the time of shutdown.
- W. Memory: Non-volatile type containing operating program and setpoints, capable of retention for 10 years without memory loss, despite AC or backup battery power loss.
- X. Terminal strip has be clearly numbered to accept field interlock wiring.
- Y. Remote communications: Via electrical contacts, control panel capability to indicate the following as a minimum:
1. Ready to start contacts
 2. Safety shutdown contacts
 3. Cycling shutdown contacts
 4. Running contacts
- Z. Remote communications: Via 4-20 mA or 0-10V analog signals, control panel capability to adjust the following as a minimum:
1. Leaving chilled liquid setpoint
 2. Current limit setpoint
 3. Chiller start and stop
- AA. Data logging and printing: Via RS-232 or similar, control panel capability for exporting at user-programmable intervals:
1. All system operating data
 2. Shutdown and cycling messages
 3. Operating details of last 10 cycling or safety shutdowns
 4. 5D Card – Panel Data

2.10 COMPRESSOR MOTOR STARTER: VARIABLE SPEED DRIVE

- A. General: Variable Speed Drive (VSD) compressor motor starter to start motor and control motor speed by controlling the frequency and voltage of the electrical power supplied to the motor.
- B. Drive type: Pulse width modulated (PWM) utilizing insulated gate bipolar transistors (IGBTs)
- C. Control Logic: independently control motor speed and variable geometry diffuser (VGD) position for optimum efficiency and operational stability. Base motor speed and VGD position on a minimum of 4 inputs: leaving chilled water temperature, return chilled water temperature, evaporator refrigerant pressure, condenser refrigerant pressure; Verify motor speed and VGD position and also use as inputs to the control logic.
- D. Power Factor: At all loads and speeds, provide a minimum of a 0.95 power factor. (Addendum #1)
- E. Enclosure: NEMA-1; hinged access door with door interlock; lock and keys; pad lockable.
- F. Packaging: Factory mounted on chiller, piped to cooling circuit; wired to control panel, compressor motor, oil pump and purge; entire package (including active harmonic filter) shall be UL listed
- G. Cooling: cool drive and harmonic attenuation components and internal ambient air via fluid-cooled, closed loop; all starter components accessible for service and replacement without opening the chiller's main refrigerant circuit. Air-cooled VSD's requiring repeated air-filter replacement are not acceptable.
- H. Factory run test: Perform an electrical and mechanical run test of VSD starter prior to shipment to verify proper wiring and phasing. If harmonic filter is not integral to VSD, the factory run test

must be run with the remote, shipped loose harmonic filter installed to verify operation and compatibility.

- I. Factory settings: Set starting design current and current overload settings prior to shipment
- J. Inrush amperage: limited to the design full load amperage of the chiller.
- K. Protective devices: provide the following, as a minimum:
 - 1. Electronic current-sensing overloads (1 per phase) – with indicating message on the control panel and reset button; shut down chiller upon detection of operating current exceeding 105% full load amperage.
 - 2. High instantaneous current overload – with indicating message on the control panel and reset button; shut down chiller upon detection of starting current exceeding 115% of design inrush starting current for 1 second
 - 3. Phase rotation insensitivity
 - 4. Single phase failure protection circuit with indicating light – shut unit down if power loss occurs in any phase at startup.
 - 5. High temperature safety protection system on IGBTs with indicating light and reset button; via thermistors embedded on IGBT heat sinks – shut unit down if IGBT temperature exceeds acceptable limits.
 - 6. Power fault protection for momentary power interruptions – interrupt power to the compressor motor within 4 line cycles upon detection of power interruptions longer than $\frac{3}{4}$ of a line cycle.
 - 7. High and low line voltage protection
- L. Features: factory mount and wire the following as a minimum:
 - 1. Control transformer: 115volt, sized to power control panel and all unit controls
 - 2. Electrical lugs: tin plated, sized to accept the copper power lines required by the chiller
 - 3. Single point power: from electrical lugs at starter, power all powered devices on the chiller including control panel, control devices, line reactor circuitry, active harmonic filter, oil pump and refrigerant purge
 - 4. Circuit-breaker disconnect: door interlocked; ground fault protection; minimum 65,000A short circuit withstand capacity per UL 508.
- M. Control panel readouts: display on the control panel and provide to BAS via communication port the following as a minimum:
 - 1. Output frequency
 - 2. Output voltage
 - 3. Three phase current
 - 4. Input power (kW)
 - 5. Energy consumption (kWh)
 - 6. Elapsed running time
 - 7. Three phase voltage total harmonic distortion (THD).
 - 8. Three phase current total demand distortion (TDD)
 - 9. Total unit power factor

2.11 FINISHES

- A. Dry chiller components for shipment, including inside of water boxes and tubes.
- B. Blast and clean chiller surfaces thoroughly. Apply prime coat for painting.
- C. Paint all exposed surfaces with alkyd-modified, vinyl enamel machinery paint, including all factory-applied insulation for consistent color matching. If not painted in the factory, paint over insulation in the field with manufacturer's standard paint and color.

2.12 OPTIONS

- A. Form 7 Shipment:

1. Prior to shipping, the unit is completely assembled at the factory. Interconnecting piping is assembled and the complete unit is wired and leak-tested.
2. The unit is dismantled and shipped as follows:
 - a. The compressor (motor and stage)
 - b. The evaporator
 - c. The condenser
 - d. The VSD
 - e. Refrigerant charges shipped separately
 - f. Miscellaneous shipped loose items
- A. Insulation package: Unit to be shipped with Form 7 shipment. Provide insulation and field insulate evaporator, end sheets, suction line, liquid line and other cold surfaces with 3/4" (19 mm) closed-cell neoprene foam insulation. Adhere with vapor-proof cement. (Water boxes and nozzles must be field insulated with removable covers over bolts).
- B. Flow Sensors, thermal type: Unit to be shipped with Form 7 shipment. Ship loose and field install in chilled and condenser water nozzles and factory wired to chiller control panel.
- C. Control System Interface: DDC type and shall provide the following, as a minimum:
 1. Export system operating data.
 2. Accept setpoint adjustments for chilled water setpoint and demand limit.
 3. RS-232 communication: BACNet MS/TP is the default communication protocol unless otherwise noted.
 4. Field commissioning assistance by manufacturer's technician.

2.13 SMART EQUIPMENT SUPPORT PACKAGE SPECIFICATIONS

- A. Remote Chiller Monitoring System
 1. The manufacturer shall furnish, install and maintain a remote chiller monitoring system for a period of one year (12 months) after chiller startup on each water-cooled chiller installed on this project.
 2. The system shall function through a secure network without requiring an interface with the control system currently installed at the location or with the project.
 3. The manufacturer shall provide 24x7 monitoring of critical control panel-generated diagnostic codes by monitoring available operation, safety, cycling, and warning codes by the manufacturer's UL-certified central station alarm monitoring and operations center. The center's operators shall have the capability to notify the manufacturer's local branch of these faults during normal working hours, and to dispatch on-call technicians during non-working hours, and to capture these events in the manufacturer's electronic service management system.
 4. The system shall continuously record operating data at 1, 5, or 15 minute intervals and store that operating data for a minimum of 12 months, and allow the manufacturer's local, regional and national personnel to access operating data through a mobile device.
 5. The system shall use advanced algorithm to continuously compare chiller performance against key design specifications and detect potential performance issues.
 6. A daily assessment of critical system functions shall be performed using these algorithms. The system shall allow the manufacturer's local, regional and national personnel to run reports on the operating parameters collected by the system using these algorithms.
 7. A customer of the system shall be accessible by the customer's designated staff through a secure web-based portal on a computer, tablet or mobile phone. No additional software ("apps") shall be required to access the system.
 8. The manufacturer shall perform four (4) remote operational inspections including the following activities:
 - a. Use the remote monitoring system to review control panel for proper operation and recorded fault histories, verify oil heater operation (as applicable), and record and log all operating parameters.

- b. Generate and review appropriate chiller reports remotely through the system.
 - c. Review the remote monitoring system dashboard reports and operating data with appropriate customer representative
9. If the manufacturer is not able to meet the above system requirements, manufacturer must provide twelve (12) monthly onsite operating inspections and quarterly vibration analysis reports. During monthly inspections, check for overall condition of unit, unusual noise and vibration, proper condenser and chilled water flow, system pressures and temperatures, capacity control and linkage, and refrigerant levels. Record and archive all diagnostic codes generated since the last monthly inspection. Additionally, record evaporator and condenser tube approaches (small temperature differences). Provide annual summary report to appropriate customer representative including all diagnostic codes as well as trend graph of monthly tube approach data. Alert appropriate customer representative immediately to unexpected increases or if any tube approach is more than 1.5 degrees above baseline.

2.14 RIGGING AND INSTALLATION

- A. Chiller manufacturer shall factory disassemble the chiller at the factory to fit thru the existing chiller plant doorway. Manufacturer shall ship components from the factory with each item sealed, capped and include a N2 blanket charge with N2 pressure gages to prove there is a positive N2 charge at all times, this is to prevent moisture intrusion during shipping and storage.
- B. Mechanical contractor shall receive, offload, store, then move and rig the chiller components into the chiller room, to locations determined and approved by the chiller manufacturer.
- C. Chiller manufacturer shall move and rig the chiller components within the chiller room to re-assemble, pressure and leakage test per 2.08 E and F after reassembly, then charge with refrigerant and pressure test the chiller.
- D. Manufacturer to reconnect and test all control wiring and sensors on reassembled chiller.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Rig in re-assemble and test the chiller in place per Article 2.14.
- B. General Requirements: Install per industry standards, applicable building codes and manufacturer's written instructions.
- C. Insulation: Field install insulation on evap, suction line, compressor, and water boxes with 3/4" closed cell foam, painted to match factory chiller color.
- D. Painting: Field paint chiller/insulation wherever finish was affected during shipping, rigging, assembly and piping. Use factory provided touch up paint to match chiller color and finish. Restore chiller paint and finish to factory-like condition.
- E. Refrigerant: Rig refrigerant into equipment room and place next to what will be the final location of the chiller. Manufacturer will be responsible for charging the machine.
- F. Temporary use: Use of any chiller for temporary heating, cooling or ventilation is strictly prohibited unless a complete inspection and startup has been performed by manufacturer's factory-trained and factory-employed service personnel.
- G. Level the chiller to within 1/4" (6.35 mm) in both directions (end-to-end and side-to-side).
- H. Access clearance: For regular service and tube pull clearances, install chiller with the following minimum recommended clearances:
 - 1. End of unit: distance equal to the length of the heat exchanger shell
 - 2. Front of unit (control panel side): 3 feet (0.91 m) minimum
 - 3. Rear of unit: 2 feet (0.61 m) minimum
 - 4. Top of unit: 2 feet (0.61 m) minimum

3.02 FIELD QUALITY CONTROL

- A. Storage: Store per chiller manufacturer's written recommendations. Store chiller indoors in a warm, clean, dry place where the chiller will be protected from weather, construction traffic, dirt, dust, water and moisture. If chiller will sit idle for more than 3 months, purchase long-term storage service from the manufacturer to ensure warranty coverage.
- B. Rigging: Follow manufacturer's written instructions for rigging, off-loading, and use of rigging tools such as spreader bars, forklifts, come-a-longs, and shackles.
- C. Manufacturer shall be present and shall direct rigging the knocked down components into position with installing contractor.

3.03 STARTUP SERVICE

- A. Provide two weeks' notice to chiller manufacturer's service department for startup.
- B. Notify chiller manufacturer's service department once chiller has been fully piped and wired for primary power and controls, including flow switches. Confirm that sufficient load will be available for starting the chiller on the desired date.
- C. Manufacturer to provide factory-trained and factory-employed service technician for a minimum of two days to startup, test, check and adjust each chiller.
- D. Technician shall perform the following steps as a minimum:
 - 1. Check chiller installation.
 - 2. Charge the machine with refrigerant.
 - 3. Energize the machine disconnect switch.
 - 4. Confirm purge system is active and chiller is holding required vacuum.
 - 5. Verify correct voltage, phases and cycles.
 - 6. Energize motor briefly and verify correct direction of rotation.
 - 7. Start the chiller.
 - 8. Test machine for performance within design rating parameters.
 - 9. Make adjustments as required.
- E. Submit a startup report summarizing findings and activities performed.

3.04 OWNER INSTRUCTION

- A. Provide training of the owner's personnel. Cover startup, shutdown, general maintenance and troubleshooting. Review operating and maintenance manual and familiarize personnel with control panel, including its special features and capabilities.
- B. Provide a minimum of 4 hours of training for owner's personnel by manufacturer's factory-trained and factory-employed service technician.
- C. Training shall include control panel, motor starter / VSD, lubrication system (if applicable), operation, maintenance requirements and AHU.
- D. Training shall include startup and shutdown procedures as well as regular operation and maintenance requirements.

3.05 CLEANING

- A. Clean exterior prior to transfer to owner.

3.06 MAINTENANCE CONTRACT

- A. Chiller manufacturer shall provide a 3-year maintenance contract to include 3 quarterly inspections and an annual service all performed by JCI Certified Chiller Techs, including CW tube brushing using Solano CC provided water. Cost of the Maintenance Contract shall be included in the price of the chiller.

3.07 DOCUMENTATION

- A. Provide Installation, Operation & Maintenance Manual(s) in each chiller's control panel door.
Provide six additional copies for owner's project system manual.
- B. Provide six copies of Spare Parts Manual for owner's project system manual.

END OF SECTION

THIS DRAWING IS 30" X 42" AT FULL SIZE. 15" X 21" AT HALF SIZE. © 2015 BY SAAS O'BRIEN ENGINEERS, INC.

COOLING TOWER SCHEDULE table with columns: MARK, SERVICE, MAKE, MODEL, GPM, EWT (F), LWT (F), WPD (FT), WET BULB (F), FAN HP, IN/OUT CONN (IN), VOLT/PH/HERTZ, MAX LGTH (IN), MAX WIDTH (IN), MAX HEIGHT (IN), RIG WEIGHT (LBS), OPER. WEIGHT (LBS), ANCHORAGE DETAIL, NOTES

PUMP SCHEDULE table with columns: MARK, SERVICE, MAKE, MODEL, GPM, TDH (FT), HP, RPM, MIN. DUTY P.T. (FT), SIZE, VOLT/PH/HERTZ, OPER. WEIGHT (LBS), SUCT. DIFF., CHECK VALV., ANCHORAGE DETAIL, NOTES

WATER COOLED CHILLER SCHEDULE table with columns: MARK, SERVICE, MAKE, MODEL, TONS, GPM, EWT (F), LWT (F), WPD (FT), IN/OUT CONN (IN), INPUT (MBH), OUTPUT (MBH), EFF. (%), FLUE DIA. (IN), GAS TRASN. SIZE (IN), MIN. GAS. PRESS. (IN. WG.), MAKE, MODEL, MOTOR HP, FLA (AMPS), VOLT/PH/HERTZ, RIG WEIGHT (LBS), OPER. WEIGHT (LBS), ANCHORAGE DETAIL, NOTES

GAS BOILER SCHEDULE table with columns: MARK, SERVICE, MAKE, MODEL, GPM, HEATING HOT WATER (EWT (F), LWT (F), WPD (FT)), NATURAL GAS (INPUT (MBH), OUTPUT (MBH), EFF. (%), FLUE DIA. (IN), GAS TRASN. SIZE (IN), MIN. GAS. PRESS. (IN. WG.)), BURNER ASSEMBLY - ELECTRICAL (MAKE, MODEL, MOTOR HP, FLA (AMPS), VOLT/PH/HERTZ), RIG WEIGHT (LBS), OPER. WEIGHT (LBS), ANCHORAGE DETAIL, NOTES

ELECTRIC BOILER SCHEDULE table with columns: MARK, SERVICE, MANUFACTURER, MODEL, GPM, HEATING HOT WATER (EWT (F), LWT (F), WPD (FT)), ELECTRIC (INPUT (KW), OUTPUT (MBH), EFF. (%), VOLT/PH/HERTZ, RIG WT. (LBS)), OPER. WT. (LBS), ANCHORAGE DETAIL, NOTES

WATER TREATMENT SYSTEM SCHEDULE table with columns: MARK, CONDUCTIVITY CONTROLLER (MAKE, MODEL, PWR REQUIREMENTS), CHEMICAL PUMP (MAKE, MODEL, QUANTITY, MAX OUTPUT (ml/min), RATED PRESSURE (PSI), PWR REQUIREMENTS), CHEMICAL STORAGE TANK (MAKE, MODEL, SIZE (GAL), QUANTITY, DIMENSIONS (DIA X H) (IN), FILLED WEIGHT (LBS)), ANCHORAGE DETAIL, NOTES

FAN SCHEDULE table with columns: MARK, BLDG /RM NO., ROOM FUNCTION, MAKE, MODEL, CFM, RPM, ESP, HP, LENGTH (IN), WIDTH (IN), HEIGHT (IN), VOLT/PH/HERTZ, FLA (AMPS), OPER. WEIGHT (LBS), ANCHORAGE DETAIL, NOTES

EXPANSION TANK SCHEDULE table with columns: MARK, SERVICE, MAKE, MODEL, VOLUME (GAL), PRECHARGE PRESSURE (PSI), DIA. (IN), HT. (IN), MOUNTING PROVISIONS, RIG. WEIGHT (LBS), FLOODED WEIGHT (LBS), ANCHORAGE DETAIL, NOTES

CENTRIFUGAL SEPARATOR table with columns: MARK, SERVICE, MODEL, GPM, INLET, OUTLET, PURGE OUTLET, HP, VOLTS PH & HZ, WEIGHT (LBS), ANCHORAGE DETAIL, NOTES

BACKDRAFT DAMPER SCHEDULE table with columns: MARK, BLDG /RM NO., ROOM FUNCTION, MAKE, MODEL, WIDTH (IN), HEIGHT (IN), THICKNESS (IN), FRAME DEPTH (IN), BLADE THICKNESS (IN), RATING PRESSURE (IN. WG), RATED VELOCITY (FPM), RATED TEMP (F), NOTES

VFD SCHEDULE table with columns: MARK, MOTOR DATA (HP, FLA, Volts), DRIVE DATA (Product ID, HP, FLA, Volts), VOLTAGE/PHASE/FREQ, BYPASS, WEIGHT (LBS), ANCHORAGE DETAIL, NOTES

AIR SEPARATOR SCHEDULE table with columns: MARK, SERVICE, MAKE, MODEL, FLOW (GPM), WPD (FT), CONN (IN), DIA. (IN), HT. (IN), MOUNTING PROVISIONS, RIG WEIGHT (LBS), FLOODED WEIGHT (LBS), ANCHORAGE DETAIL, NOTES

FLOW METER SCHEDULE table with columns: MARK, SERVICE, LOCATION, VAC, MANUFACTURER, MODEL, METER TYPE, PIPE SIZE, NOTES

CONTROL VALVE SCHEDULE table with columns: TAG, SERVICE, VAC, PIPE SIZE, VALVE BODY SIZE, PATTERN, 2-POSITION VS. MODULATING, DEFAULT POSITION (OPEN / CLOSED), STYLE, MANUFACTURER, VALVE PART #, ACTUATOR PART #, CV, GPM, NOTES

SALAS O'BRIEN logo and contact information: 305 South 11th Street, San Jose, California 95112-2218, 877.725.2755 | 877.925.1477 (f), WWW.SALASO'BRIEN.COM

SOLANO COMMUNITY COLLEGE DISTRICT logo and address: 4000 SUISUN VALLEY RD, FAIRFIELD, CA 94534

CENTRAL PLANT MODERNIZATION DSA APPL #02-120584

ISSUE table with columns: MARK, DATE, DESCRIPTION

SOBE PROJECT NO: 2200689 DATE: 04/05/23 DRAWN BY: CHECKED BY: APPROVED BY: EES

SHEET TITLE MECHANICAL SCHEDULES

SCALE: AS NOTED THIS DRAWING IS 30" X 42" AT FULL SIZE

M-6.1 SHEET OF

PRE-BID RFI'S & RESPONSES: SOLANO CENTRAL PLANT MODERNIZATION

#	PRE-BID RFI: QUESTION	PRE-BID RFI: DESIGN TEAM RESPONSE
1	<p>What are the weights of the following equipment to be removed?</p> <ul style="list-style-type: none"> - <E> Cooling Towers - <E> Gas Boiler B-1 & B-2 - - What is the height of these boilers? 	<p>- Per 1995 Cooling Tower Replacement Drawings and Submittal Data Form from BAC: <E> Cooling Towers = 35,000 lbs (original dry weight, may be more with scaling) or 98,000 lbs (operating wt.)</p> <p>-Per Bryan Boilers Forms 2174 & 6310 Submittal Data: <E> Gas Boiler B-1 & B-2 both have an overall height of 110"(in) <E> Gas Boiler B-1 & B-2 = 28,800 lbs (shipping wt.) or 36,770 lbs (operating wt.)</p>
2	<p>The east-most louvers above the doors of the boiler room appear to have been removed before. We understand that removal of any louvers will be cause for structural rehabilitation of the whole building. But, in light of apparent prior removal of these louvers, can you confirm that, indeed, we cannot remove these?</p>	<p>Means and methods to be determined by contractor.</p> <p>The boilers can be disassembled and/or torn down into sections for removal without disturbing the existing louvers.</p> <p>The removal of the <E> louvers at the east-most double doors will not trigger the requirement for structural rehabilitation (i.e. it is a feasible option). However, any further demolition or cutting of the precast concrete walls - at this opening - WILL trigger structural rehabilitation. If this option is pursued, the contractor shall be responsible for reinstalling the doors and louvers to the same condition that was existing. Damage during the removal may result in the contractor replacing the louvers at their own expense.</p>
3	<p>Specification states that uninsulated piping exposed in Mechanical Rooms up to 10' above finished floor has an all-service jacket finish if not insulated. Please confirm uninsulated piping exposed 10' and below in mechanical rooms has an all service (paper) jacket installed in the field. (Refer to "RFI 001 Farwest Insulation")</p>	<p>Refer to specification 09 90 00 - Painting and Coating - for details regarding interior/exterior painting of exposed piping. See Addendum #3 for added spec section 09 90 00 and revised spec section 23 07 19.</p>
4	<p>Please provide Screenshots of the Delta BMS server (Network and graphics for the CHW, HHW and CW systems)</p>	<p>See attached document "Solano CC_Central Plant_BMS Screens"</p>
5	<p>Please provide the As-Built control drawings for the Delta Control System.</p>	<p>District does not have as-built control drawings on record. Please refer to the attached "BAS Retrofit Project Phase 2 RFQ/ RFP" document as reference to the last campus-wide controls project that was completed.</p>
6	<p>What is the Electrical Conduit spec for the indoor and outdoor conduit?</p>	<p>Refer to the Project Manual, Section 26 05 12, Article 3.01 - Conduit and Raceway Applications.</p>
7	<p>What is the existing license size on the Delta server?</p>	<p>The license is for 30,000 I/O and currently 18,000 I/O are in use.</p>
8	<p>What is the current Delta Controls supervisor software edition?</p>	<p>Per remote access to the Delta BMS, the following details were obtained from Solano_eWEB_Server (DEV4127143) - Model Name: enteliWEB eWeb Application Version: 4.21.0.237 Firmware Version: 7.4.0.PC.1.213</p>
9	<p>Does the TAB functional testing need to occur prior to commissioning and then tested a 2nd time during Cx FPT or can this testing occur in parallel to reduce the support needed by the MC, CC and facilities (control of existing load)? This impacts multiple trades. (Spec 230593, part 3.09, section I, part a, b & c)</p>	<p>Testing, Adjusting, and Balancing shall occur prior to commissioning and should be one of the last items completed prior to the commissioning process.</p> <p>If commissioning observations vary significantly from the reviewed TAB report, the contractor shall be responsible for re-balancing the system.</p>
10	<p>Contract time of completion date before LD's are assessed is 7-31-2024. Cx is schedule to take place post install so will the TOC date be adjusted to reflect including Cx time?</p>	<p>See revised Div 0 and Div 1 specifications for sections 00 01 20, 00 52 13, and 01 32 13.</p>

11	Accurate lead times on equipment cannot be guaranteed until PO is issued with approved submittal. Will the schedule and contract TOC be extended to reflect equipment leads post approval and PO issuance?	Time for completion has been extended to February 28th, 2025. Refer to section 00 52 13, Article 6 for liquidated damages related project milestones.
12	Are similar manufacturers allowed for the boiler flue vent (ex. Jeremias, Metal-fab, Enervev, etc.) in lieu of Security Chimneys as specified?	If an approved equal, yes.
13	VFD schedule requests 2 year warranty. Specification 230930 1.03 asks for 3 year warranty after shipment. Please advise on VFD warranty duration.	Provide a 3 year warranty for the VFD's. Note #3 of the VFD Schedule on M-6.1 has been revised to state a 3 year warranty. See Addendum #3.
14	Delta Controls by ESI is specified per 230923 1.03. Are other BAS subcontractors allowed to quote Delta Controls?	Yes, so long as they comply with specification 23 09 23. As specified, the BAS contractor must be trained in Delta Control Systems, have past experience with Delta Control System installations, and use products manufactured by, approved by, or compatible with Delta Control Systems.
15	Water Cooled Chiller schedule note 11 requests for a 10 year parts and labor warranty. Specification 236416 requests for 18 months from date of shipment from the factory or 12 months from commissioning. Please advise on Chiller warranty duration	Provide a 10 year warranty for part, refrigerant, and labor. Specification section 23 64 16-1.08 has been revised to state the follow: <i>Provide manufacturer's warranty for 10 years starting 6 months after shipment or upon completion of start-up, whichever occurs first.</i> See Addendum #3.
16	Specification section 016400 states all owner furnished materials and equipment are indicated or scheduled on contract documents, please provide or confirm scheduled product list	This is a general specification section. There are no Owner Furnished items.
17	Are there any concrete strength or mix design requirements	Concrete strength specifications are provided on S-1.0, Structural Concrete.
18	In the event rebar must be cut for trenching with regards to plumbing scope, can the re-bar splice and dowelling details as provided be acceptable for use in this condition>?	The intent is to NOT cut existing rebar to conduct this work as stated on the Plumbing Summary of Work, Note #5, on sheet G-0.0. Detail 1/P-5.1 provides reinforcing requirements for the concrete patching.
19	Is subgrade waterproofing required at pourback for plumbing trench at EB pad extension? If so please provide detail.	V.I.F. and match existing condition.

20	A conduit & wire schedule for the P&IDs and electrical drawings will be required to install the correct number of conduits and wire for each listed device. Will one be provided?	Valves are shown on electrical and mechanical sheets. Electrical calls out panel and circuit numbers on floor plans and on panel schedules. Minimum conductor and conduit sizes are #10 and 3/4"C. Contractor may combine circuits in conduit but is responsible for maintaining NEC derating requirements.
21	No new electric boilers are shown on load calcs or line diagrams. Is power to fused disconnects as shown being supplied under the concurrent Substation #3 & #4 project.	Refer to E-7.1, note #1. Connection for boilers is at switchboard 'S3-L'. As part of this project contractor to install disconnects and connections from boilers to disconnects. Refer to commissioning specs for other requirements for powering electric boilers for testing and start-up.
22	Please confirm the SCCR rating of the distribution Bus Bar on the Electric Boilers as specified	Provide 65k minimum SCCR rating.
23	Has hazardous and or lead based materials testing been performed in any areas impacted by construction ? If not will it be done by the district prior to commencement of work?	No Hazardous Material Testing has been completed for this project. District to test for ACM's. Results will not be available by the bid due date. At minimum, assume sheet rock joint compound contains ACM and will require abatement (to be confirmed by Hazmat test from District).
24	Will a soils investigation report be provided prior to the bid date as shown	No, Geotechnical Soils surveys and/or investigation work is NOT required for this project.
25	Please clearly define Civil Engineering scope and or Survey work as applies to this project	No, Civil Engineering scope and/or survey work is NOT required for this project.
26	Will the awarded GC be able to close the service road directly to the north of the Central Plant during demo/ construction activities	The service road directly to the north of the Central Plant will be a shared space with the Substation #3 & #4 Project, and the District.
27	Please provide count and location BTU Meters as applies to Project Drawings	Refer to Flow Meter Schedule on M-6.1 for specified BTU Meters and total quantity. Refer to the hydronic schematics on M-7.1 and M-7.2 for location of install.

Solano CC_Central Plant_BMS Screens



Solano Community College - Building 2000 Chilled Water Plant

Outside Air Temp: 44.7 °F

Main Menu

Previous

Settings and Setpoints

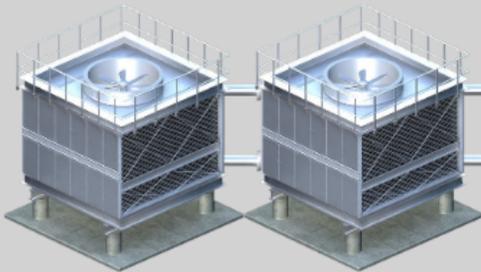
Hot Water System

CT-1

CT-2

CWR Temp
59.8 °F

CHW Plant Request: OFF



Cooling Tower VFD's				
VFD	Enable	Control	Feedback	Runtime
CT-1	Stop	100 %	60 Hz	5889.5 Hours
CT-2	Stop	100 %	60 Hz	5884.6 Hours

CWS Temp
60.9 °F

CWP-1

CWP-2

CWP-3

CWP-4

CH1 Iso Vlv
Command:
Closed
Status:
Closed

CH2 Iso Vlv
Command:
Closed
Status:
Closed

CH3 Iso Vlv
Command:
Closed
Status:
Closed

CH-1 Diff.
Pressure
0.0 psi

CH-2 Diff.
Pressure
0.0 psi

CH-3 Diff.
Pressure
0.1 psi

CH1 Iso Vlv
Command:
Closed
Status:
Closed

CH2 Iso Vlv
Command:
Closed
Status:
Closed

CH3 Iso Vlv
Command:
Closed
Status:
Closed

Chilled Water Pumps VFD'S			
Pump	Start/Stop	Status	Control
CHWP-1	Stop	Off	0 %
CHWP-2	Stop	Off	90.34 %
CHWP-3	Stop	Off	90.34 %

CHWP-1

CHWP-2

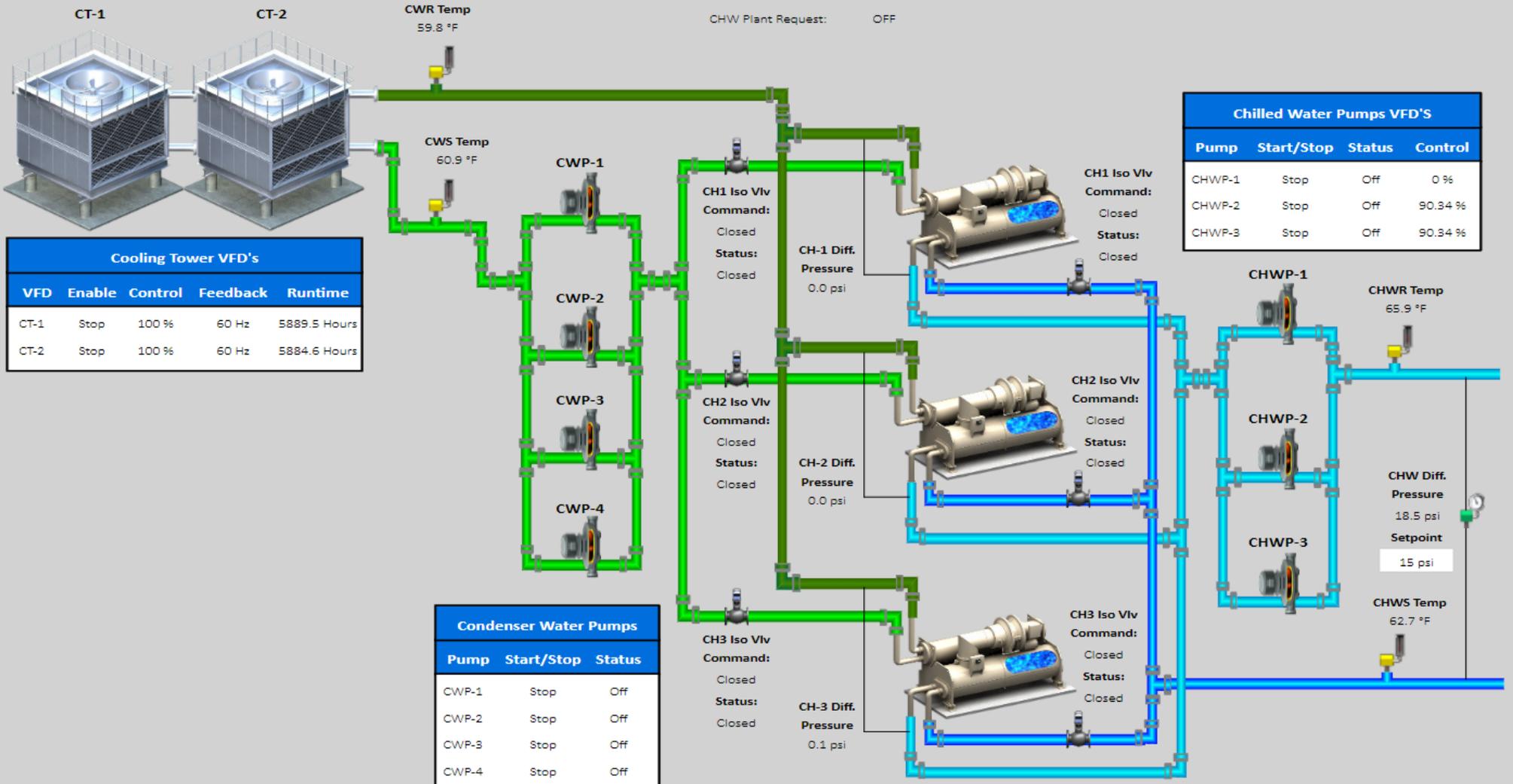
CHWP-3

CHWR Temp
65.9 °F

CHW Diff.
Pressure
18.5 psi
Setpoint
15 psi

CHWS Temp
62.7 °F

Condenser Water Pumps		
Pump	Start/Stop	Status
CWP-1	Stop	Off
CWP-2	Stop	Off
CWP-3	Stop	Off
CWP-4	Stop	Off





Main Menu

Previous

Chilled Water Plant

CHW Plant Settings and Setpoints

Boiler 1 Schedule

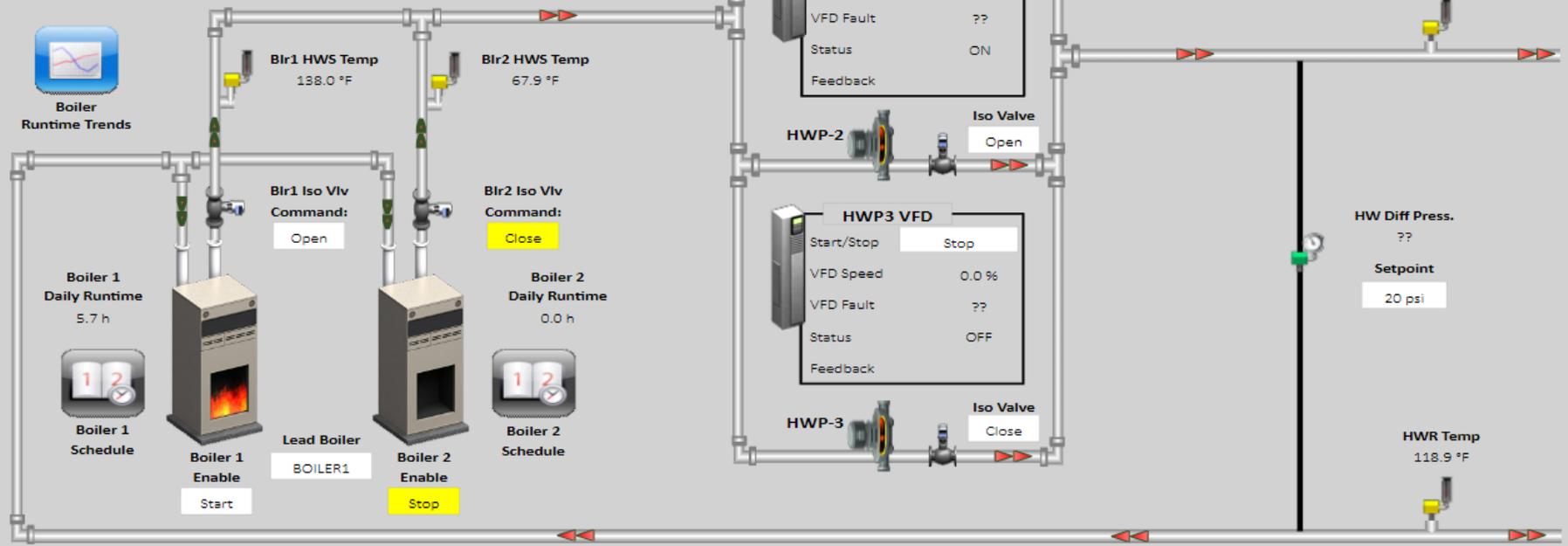
Boiler 2 Schedule

Mode/Request	
HW System Schedule	Enable
HW System Request	On
Boiler Selection	BOILER1
OAT LOCKOUT SP	68 °F
HWS Temp SP	185 °F
HWS Temp	133.7 °F
HWR Temp	118.9 °F

Boiler Lead/Lag	
Lead Boiler S/S	Start
Lag Boiler S/S	Start

HWP1 VFD	
Start/Stop	Start
VFD Speed	52.9 %
VFD Fault	??
Status	ON
Feedback	

Hot Water Pumps Lead/Lag	
HWP Request	On
HWP Selection	Unknown object
Lead HWP S/S	??
Lag HWP S/S	??
HWP Lag On SP	??
HWP Lag Off Sp	??



Boiler 1 Daily Runtime 5.7 h



Boiler 1 Enable
Start

Lead Boiler BOILER1

Boiler 2 Enable
Stop

Boiler 2 Daily Runtime 0.0 h



Blr1 Iso Viv Command: Open

Blr2 Iso Viv Command: Close

HWP-1 Iso Valve Open

HWP-2 Iso Valve Open

HWP-3 Iso Valve Close

HWS Temp 133.7 °F

HW Diff Press. ??

Setpoint 20 psi

HWR Temp 118.9 °F



Building 2000

Outside Air Temp: 48.0 °F

Date/Time: 3-28-2023, 3:30 PM

Campus Main

Building Main

Hot Water System

Chilled Water System

Support

Campus Chilled Water Plant Details

Mode/Request

CHW Plant Request

Calculated Load 0.0 tons

123

OAT Lockout SP

CHWS Temp 64.4 °F

CHWR Temp 66.5 °F

Chiller Lead/Lag

Chiller 1 Order

Chiller 2 Order

Chiller 3 Order

Chiller 1 Amps

Chiller 2 Amps

Chiller 3 Amps

Lead S/S

Lag 1 S/S

Lag 2 S/S

Lead Amps

Lag 1 Amps

Lag 2 Amps

Lag On SP

Lag Off SP

Chiller-1

Request

Enable

CHW ISO VLV CMD

CHW ISO VLV STS

CW ISO VLV CMD

CW ISO VLV STS

Diff. Pressure

CHWS Temp SP

Chiller-2

Request

Enable

CHW ISO VLV CMD

CHW ISO VLV STS

CW ISO VLV CMD

CW ISO VLV STS

Diff. Pressure

CHWS Temp SP

Chiller-3

Request

Enable

CHW ISO VLV CMD

CHW ISO VLV STS

CW ISO VLV CMD

CW ISO VLV STS

Diff. Pressure

CHWS Temp SP

Cooling Towers

CWS Temp SP

CWS Temp

CWR Temp

CT-1

VFD S/S

VFD Cntrl

VFD FDBK

CT-2

VFD S/S

VFD Cntrl

VFD FDBK

Condenser Water Pumps

Lead Condenser Water Pump

CW Pumps Requested

CWP-1

Start/Stop

Status

CWP-2

Start/Stop

Status

CWP-3

Start/Stop

Status

CWP-4

Start/Stop

Status

CHWP1700

Start/Stop

Control

CHW Diff. Pressure

CHW Diff. Pressure SP

Chilled Water Pumps

Prim/Sec CHW DP

Sec CHW DP SP

CHWP-1

Start/Stop

Control

Status

CHWP-2

Start/Stop

Control

Status

CHWP-3

Start/Stop

Control

Status

TCP 2000 CHW System (20000) - Site: SolanoCC - 401 Objects

Object Reference	  	Name	Value	Status
//SolanoCC/20000.AI83		CPU Board Temperature	38.3 °C	
//SolanoCC/20000.AI1051		eBX 1 24V Power	26.8 V	
//SolanoCC/20000.AI1052		eBX 1 14V Power	16.7 V	
//SolanoCC/20000.AI1101		CW_Return_Temp	59.8 °F	
//SolanoCC/20000.AI1102		CW_Supply_Temp	60.9 °F	
//SolanoCC/20000.AI1103		CHW_Supply_Temp	62.7 °F	
//SolanoCC/20000.AI1104		CHW_Return_Temp	65.9 °F	
//SolanoCC/20000.AI1302		OA_Temp	44.4 °F	
//SolanoCC/20000.AI1401		CH1_Diff_Press	0.0 psi	
//SolanoCC/20000.AI1402		CH2_Diff_Press	0.0 psi	Fault
//SolanoCC/20000.AI1403		CH3_Diff_Press	0.1 psi	
//SolanoCC/20000.AI1404		SECCHW_System_Diff_Press	18.5 psi	
//SolanoCC/20000.AI2101		Comp_Air_Press	0.4 psi	
//SolanoCC/20000.AI2102		B1700_CHW_Diff_Press	0.7 psi	
//SolanoCC/20000.AI2103		B1700_Sec_CHWP_VFD_Fdbk	59.9 Hz	
//SolanoCC/20000.AI3103		CT1_VFD_Fdbk	1 Hz	
//SolanoCC/20000.AI3104		CT2_VFD_Fdbk	0 Hz	
//SolanoCC/20000.AI3302		Tank_Lvl_1	0.0 in	Fault
//SolanoCC/20000.AI3303		Tank_Lvl_2	0.0 in	Fault
//SolanoCC/20000.AIC1		Battery AIC		
//SolanoCC/20000.AIC2		Belimo Position Feedback 0-100% AIC		
//SolanoCC/20000.AIC3		CO 4-20mA 0-200 ppm AIC		
//SolanoCC/20000.AIC4		CO2 4-20mA 0-2000 ppm AIC		
//SolanoCC/20000.AIC5		Current 0-5V 0-10 A AIC		
//SolanoCC/20000.AIC6		Current 0-5V 0-120 A AIC		
//SolanoCC/20000.AIC7		Current 0-5V 0-30 A AIC		
//SolanoCC/20000.AIC8		Current 0-5V 0-50 A AIC		
//SolanoCC/20000.AIC9		Current 0-5V 0-60 A AIC		
//SolanoCC/20000.AIC10		Humidity 4-20mA 0-100 %RH AIC		
//SolanoCC/20000.AIC11		Pressure 4-20mA -0.1-0.1 inH2O AIC		
//SolanoCC/20000.AIC12		Pressure 4-20mA -0.5-0.5 inH2O AIC		

TCP 2000 CHW System (20000) - Site: SolanoCC - 401 Objects

Object Reference	  	Name	Value	Status
//SolanoCC/20000.AIC13		Pressure 4-20mA 0-1.0 inH2O AIC		
//SolanoCC/20000.AIC14		Pressure 4-20mA 0-100 psi AIC		
//SolanoCC/20000.AIC15		Pressure 4-20mA 0-1250 Pa AIC		
//SolanoCC/20000.AIC16		Pressure 4-20mA 0-2.0 inH2O AIC		
//SolanoCC/20000.AIC17		Pressure 4-20mA 0-250 Pa AIC		
//SolanoCC/20000.AIC18		Pressure 4-20mA 0-5.0 inH2O AIC		
//SolanoCC/20000.AIC19		Pressure 4-20mA 0-500 Pa AIC		
//SolanoCC/20000.AIC20		Pressure 4-20mA -1.0-1.0 inH2O AIC		
//SolanoCC/20000.AIC21		Pressure 4-20mA -250-250 Pa AIC		
//SolanoCC/20000.AIC22		Temperature 10K -35-240 degF AIC		
//SolanoCC/20000.AIC23		Temperature 10K -40-150 degC AIC		
//SolanoCC/20000.AIC24		DNS-H24L Humidity AIC		
//SolanoCC/20000.AIC25		eBUS 24VAC Power AIC		
//SolanoCC/20000.AIC26		eBUS 24VDC Power AIC		
//SolanoCC/20000.AIC27		eBUS eBM Power Monitoring AIC		
//SolanoCC/20000.AIC28		eBUS DCE Temp AIC		
//SolanoCC/20000.AIC29		Air Pressure 0-10V 0-100 PSI AIC		
//SolanoCC/20000.AIC30		Pressure 0-10V 0-100 PSI AIC		
//SolanoCC/20000.AIC31		VFD Feedback 4-20mA 0-60hz AIC		
//SolanoCC/20000.AIC32		Hertz 4-20mA 0-60 Hz AIC		
//SolanoCC/20000.AIC33		Level 4-20mA 0-100 in AIC		
//SolanoCC/20000.AIC34		Pressure 4-20mA 0-50 psi AIC		
//SolanoCC/20000.AO1101		CHWP1_VFD_Cntrl	0 %	
//SolanoCC/20000.AO1102		CHWP2_VFD_Cntrl	0 %	
//SolanoCC/20000.AO1103		CHWP3_VFD_Cntrl	0 %	
//SolanoCC/20000.AO1104		B1700_Sec_CHWP_VFD_Cntrl	0 %	
//SolanoCC/20000.AO3101		CT1_VFD_Cntrl	0 %	
//SolanoCC/20000.AO3102		CT2_VFD_Cntrl	0 %	
//SolanoCC/20000.AOC1		Actuator 2-10V AOC		
//SolanoCC/20000.AS1		Access Control Setup		
//SolanoCC/20000.AV1		CHWP1_HZ	0.0 Hz	

TCP 2000 CHW System (20000) - Site: SolanoCC - 401 Objects

Object Reference	  	Name	Value	Status
//SolanoCC/20000.AV2		CHWP2_HZ	0.0 Hz	
//SolanoCC/20000.AV3		CHWP3_HZ	0.0 Hz	
//SolanoCC/20000.AV4		Chiller1_AMP	0.0 A	
//SolanoCC/20000.AV5		Chiller2_AMP	0.0 A	
//SolanoCC/20000.AV6		Chiller3_AMP	0.0 A	
//SolanoCC/20000.AV10		CHWRT_SP	56.0 °F	
//SolanoCC/20000.AV11		CWST_SP	68.0 °F	
//SolanoCC/20000.AV12		CHW_DEM	0.0 tons	
//SolanoCC/20000.AV13		CHW_DP_SP	25.0 psi	
//SolanoCC/20000.AV14		CHWP1_AMP	0.0 A	
//SolanoCC/20000.AV15		CHWP2_AMP	0.0 A	
//SolanoCC/20000.AV16		CHWP3_AMP	0.0 A	
//SolanoCC/20000.AV17		B1700_CHW_DP_SP	10.0 psi	
//SolanoCC/20000.AV36		CT_COMMON_SPD_CTRL	0.0 %	
//SolanoCC/20000.AV37		CHWP_COMMON_SPD_CTRL	100.0 %	
//SolanoCC/20000.AV64		CH1_CW_IsoVlv_OpenTimer	0.0 s	
//SolanoCC/20000.AV68		CH1_OffTimer	0.0 min	
//SolanoCC/20000.AV69		CHWSysOSA_Lockout_SP	75.0 °F	Out Of Service
//SolanoCC/20000.AV70		Photocell_SP	30.0 ft-c	Out Of Service
//SolanoCC/20000.AV71		Photocell	133.7 ft-c	
//SolanoCC/20000.AV72		CHWP1700_COMMON_SPD_CTRL	100.0 %	
//SolanoCC/20000.AV73		CH2_OffTimer	0.0 min	
//SolanoCC/20000.AV74		CH3_OffTimer	0.0 min	
//SolanoCC/20000.AV75		LEADCHLR_AMPS	0.0 A	
//SolanoCC/20000.AV76		LEADLAG1CHLR_AMPS	0.0 A	
//SolanoCC/20000.AV77		LEADLAG2CHLR_AMPS	0.0 A	
//SolanoCC/20000.AV78		LEADLAG1LAG2CHLR_AMPS	316.4 A	
//SolanoCC/20000.AV79		LAG1_CHLR_ONTimer	20.0 min	
//SolanoCC/20000.AV80		LAG2_CHLR_ONTimer	5.0 min	
//SolanoCC/20000.AV81		LAG1_CHLR_OFFTimer	15.0 min	
//SolanoCC/20000.AV82		LAG2_CHLR_OFFTimer	5.0 min	

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Object Reference	  	Name	Value	Status
//SolanoCC/20000.AV83		LAG1CHLR_ON_SP	480.0 A	
//SolanoCC/20000.AV84		LAG1CHLR_OFF_SP	460.0 A	
//SolanoCC/20000.AV85		Global_Avg_OAT	45.4 °F	
//SolanoCC/20000.AV86		Chiller1_CHWS_SP_AV	48.0 °F	
//SolanoCC/20000.AV87		Chiller2_CHWS_SP_AV	48.0 °F	
//SolanoCC/20000.AV88		Chiller3_CHWS_SP_AV	48.0 °F	
//SolanoCC/20000.AV250		CW Pump Lead	3	Out Of Service
//SolanoCC/20000.AV251		CWPs Requested	0	
//SolanoCC/20000.AV270		Current Time	944 H	
//SolanoCC/20000.AV271		CWP Rotation Time	200 H	
//SolanoCC/20000.BDC1		Unlock/Lock BDC		
//SolanoCC/20000.BDC2		Trouble/Normal BDC		
//SolanoCC/20000.BDC3		Open/Closed BDC		
//SolanoCC/20000.BDC4		Request To Exit/Normal BDC		
//SolanoCC/20000.BDC5		On/Off BDC		
//SolanoCC/20000.BDC6		Closed/Open BDC		
//SolanoCC/20000.BDC7		Enabled/Disabled BDC		
//SolanoCC/20000.BDC8		Fire/Off BDC		
//SolanoCC/20000.BDC9		Heating/Cooling BDC		
//SolanoCC/20000.BDC10		Lead/Lag BDC		
//SolanoCC/20000.BDC11		On/Standby BDC		
//SolanoCC/20000.BDC12		Stop/Start BDC		
//SolanoCC/20000.BDC13		Start/Stop BDC		
//SolanoCC/20000.BDC14		Summer/Winter BDC		
//SolanoCC/20000.BDC15		Tripped/OK BDC		
//SolanoCC/20000.BDC16		Open/Close BDC		
//SolanoCC/20000.BDC17		Alarm/Normal BDC		
//SolanoCC/20000.BI80		Run Clear Button	OFF	
//SolanoCC/20000.BI81		Unused Button	OFF	
//SolanoCC/20000.BI1201		CHWP1_Status	Off	
//SolanoCC/20000.BI1202		CHWP2_Status	Off	

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Object Reference	  	Name	Value	Status
//SolanoCC/20000.BI1203		CHWP3_Status	Off	
//SolanoCC/20000.BI1204		CH3_CW_ISO_Vlv_Status	Closed	
//SolanoCC/20000.BI1303		Air_Compressor1_Status	Off	
//SolanoCC/20000.BI1304		Air_Compressor2_Status	Off	
//SolanoCC/20000.BI2104		CH3_CHW_ISO_Vlv_Status	Closed	
//SolanoCC/20000.BI2201		CH1_CHW_ISO_Vlv_Status	Closed	
//SolanoCC/20000.BI2202		CH2_CHW_ISO_Vlv_Status	Closed	
//SolanoCC/20000.BI2203		CH1_CW_ISO_Vlv_Status	Closed	
//SolanoCC/20000.BI2204		CH2_CW_ISO_Vlv_Status	Closed	
//SolanoCC/20000.BI3201		CWP1_Status	Off	
//SolanoCC/20000.BI3202		CWP2_Status	Off	
//SolanoCC/20000.BI3203		CWP3_Status	Off	
//SolanoCC/20000.BI3204		CWP4_Status	Off	
//SolanoCC/20000.BI3301		CT_Bleed_Valve	Closed	
//SolanoCC/20000.BI3304		Chem_Pump_Status	Off	
//SolanoCC/20000.BI3401		Chem_Cntrlr_Bleed_Valve	Closed	
//SolanoCC/20000.BMD1		BBMD List1 20000		
//SolanoCC/20000.BO1301		CHWP1_SS	Stop	
//SolanoCC/20000.BO1302		CHWP2_SS	Stop	
//SolanoCC/20000.BO1303		CHWP3_SS	Stop	
//SolanoCC/20000.BO1304		B1700_Sec_CHWP_SS	Stop	
//SolanoCC/20000.BO1401		CWP1_SS	Stop	
//SolanoCC/20000.BO1402		CWP2_SS	Stop	
//SolanoCC/20000.BO1403		CWP3_SS	Stop	
//SolanoCC/20000.BO2101		Tennis Courts Roadway Lights	OFF	
//SolanoCC/20000.BO2102		Bldg 2000 Lights	OFF	
//SolanoCC/20000.BO2103		CH3_CHW_ISO_Vlv_Cmd	Closed	
//SolanoCC/20000.BO2104		CH3_CW_ISO_Vlv_Cmd	Closed	
//SolanoCC/20000.BO2201		CH1_CHW_ISO_Vlv_Cmd	Closed	
//SolanoCC/20000.BO2202		CH2_CHW_ISO_Vlv_Cmd	Closed	
//SolanoCC/20000.BO2203		CH1_CW_ISO_Vlv_Cmd	Closed	

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Object Reference	  	Name	Value	Status
//SolanoCC/20000.BO2204		CH2_CW_ISO_Vlv_Cmd	Closed	
//SolanoCC/20000.BO3201		CT1_VFD_Enable	Stop	
//SolanoCC/20000.BO3202		CT2_VFD_Enable	Stop	
//SolanoCC/20000.BO3204		CWP4_SS	Stop	
//SolanoCC/20000.BT1		CHWP1_RT	812.7 Hours	
//SolanoCC/20000.BT2		CHWP2_RT	5088.1 Hours	
//SolanoCC/20000.BT3		CHWP3_RT	514.4 Hours	
//SolanoCC/20000.BT4		CWP1_RT	193.7 Hours	
//SolanoCC/20000.BT5		CWP2_RT	4119.8 Hours	
//SolanoCC/20000.BT6		CHLP3_RT	602.8 Hours	
//SolanoCC/20000.BT7		CH1_RT	853.5 Hours	
//SolanoCC/20000.BT8		CH2_RT	5143.3 Hours	
//SolanoCC/20000.BT9		CH3_RT	647.2 Hours	
//SolanoCC/20000.BT10		CT1_RT	5889.5 Hours	
//SolanoCC/20000.BT11		CT2_RT	5884.6 Hours	
//SolanoCC/20000.BV1		Chiller1_Enable_BV	Disabled	
//SolanoCC/20000.BV2		Chiller2_Enable_BV	Disabled	
//SolanoCC/20000.BV3		Chiller3_Enable_BV	Disabled	
//SolanoCC/20000.BV4		CHW_PLANT_Request	OFF	
//SolanoCC/20000.BV5		CHWP1_Status_BV	OFF	
//SolanoCC/20000.BV6		CHWP2_Status_BV	OFF	
//SolanoCC/20000.BV7		CHWP3_Status_BV	OFF	
//SolanoCC/20000.BV8		CWP1_Status_BV	OFF	
//SolanoCC/20000.BV9		CWP2_Status_BV	OFF	
//SolanoCC/20000.BV10		CWP3_Status_BV	OFF	
//SolanoCC/20000.BV11		LEADCWP_SS_BV	OFF	
//SolanoCC/20000.BV12		LAG1CWP_SS_BV	ON	
//SolanoCC/20000.BV13		LAG2CWP_SS_BV	OFF	Out Of Service
//SolanoCC/20000.BV14		CHWP1_Alarm_BV	Normal	
//SolanoCC/20000.BV15		CHWP2_Alarm_BV	Normal	
//SolanoCC/20000.BV16		CHWP3_Alarm_BV	Normal	

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Object Reference	  	Name	Value	Status
//SolanoCC/20000.BV17		CWP1_Alarm_BV	Normal	
//SolanoCC/20000.BV18		CWP2_Alarm_BV	Normal	
//SolanoCC/20000.BV19		CWP3_Alarm_BV	Normal	
//SolanoCC/20000.BV20		CWP4_Alarm_BV	Normal	
//SolanoCC/20000.BV21		Hot_Water_Pump_Req_BV	ON	
//SolanoCC/20000.BV22		Any_CWP_On_BV	OFF	
//SolanoCC/20000.BV23		Any_CHWP_On_BV	OFF	
//SolanoCC/20000.BV24		Any_CHWISO_Open_BV	Closed	
//SolanoCC/20000.BV25		Chiller1_Request	OFF	
//SolanoCC/20000.BV26		Chiller2_Request	OFF	
//SolanoCC/20000.BV27		Chiller3_Request	OFF	
//SolanoCC/20000.BV28		Any_CWISO_Open_BV	Closed	
//SolanoCC/20000.BV29		LEADCHLR_SS_BV	OFF	
//SolanoCC/20000.BV30		LAG1CHLR_SS_BV	OFF	
//SolanoCC/20000.BV31		LAG2CHLR_SS_BV	OFF	
//SolanoCC/20000.BV32		Any_Chiller_Request	Off	
//SolanoCC/20000.BV33		Bldg_1900_ExtLights_Flag	Off	
//SolanoCC/20000.BV201		CHW Pump Status Transfer	OFF	
//SolanoCC/20000.BV250		CWP Lead/Lag Toggle	OFF	
//SolanoCC/20000.BV1001		CHW Plant Comm Heartbeat	OFF	
//SolanoCC/20000.CEL1		Access Control Event Log		
//SolanoCC/20000.CO1		CHWRT_CO	100 %	
//SolanoCC/20000.CO2		CWST_CO	0 %	
//SolanoCC/20000.CO3		CHWDP_CO	100 %	
//SolanoCC/20000.CO4		B1700_CHWDP_CO	100 %	
//SolanoCC/20000.DBI20000		Database Information 20000		
//SolanoCC/20000.DEL1		DEL1__BV23_85	0	
//SolanoCC/20000.DEL2		DEL2__BV201_85	0	
//SolanoCC/20000.DEL3		DEL3__BV1001_85	0	
//SolanoCC/20000.DEL4		DEL4__AV69_85	75	
//SolanoCC/20000.DEL5		DEL5__BI1203_85	0	

TCP 2000 CHW System (20000) - Site: SolanoCC - 401 Objects

Object Reference	  	Name	Value	Status
//SolanoCC/20000.DEL6		DEL6__BV1_85	0	
//SolanoCC/20000.DEL7		DEL7__BV2_85	0	
//SolanoCC/20000.DEL8		DEL8__BV3_85	0	
//SolanoCC/20000.DEL9		DEL9__AV86_85	48	
//SolanoCC/20000.DEL10		DEL10__AV87_85	48	
//SolanoCC/20000.DEL11		DEL11__AV88_85	48	
//SolanoCC/20000.DEL12		DEL12__BI1202_85	0	
//SolanoCC/20000.DEL13		DEL13__BI1201_85	0	
//SolanoCC/20000.DEL14		DEL14__AI1404_85	18.5348	
//SolanoCC/20000.DEL15		DEL15__AI1103_85	62.6027	
//SolanoCC/20000.DEL16		DEL16__BV23_85	0	
//SolanoCC/20000.DEL17		DEL17__AV85_85	45.3968	
//SolanoCC/20000.DER21		DER21__219100_BV4_85_R	0	
//SolanoCC/20000.DER23		DER23__20001_AV69_85_W	44.371	
//SolanoCC/20000.DER24		DER24__20001_AV69_85_R	44.4011	
//SolanoCC/20000.DER25		DER25__23010_AV12_85_R	0	
//SolanoCC/20000.DER26		DER26__23009_AV12_85_R	0	
//SolanoCC/20000.DER27		DER27__23008_AV12_85_R	0	
//SolanoCC/20000.DER28		DER28__20001_BV12_85_R	1	
//SolanoCC/20000.DER29		DER29__10632_AI11_85_R	47.4717	
//SolanoCC/20000.DER30		DER30__11500_AI6_85_R	44.3334	
//SolanoCC/20000.DER31		DER31__20100_AI1_85_R	133.712	
//SolanoCC/20000.DES1		Data Exchange Settings 20000		
//SolanoCC/20000.DEV20000		TCP 2000 CHW System	Operational	
//SolanoCC/20000.EV1		Device Reset EV	Normal	
//SolanoCC/20000.EV2		CHWP1_Alarm_EV	Normal	
//SolanoCC/20000.EV3		CHWP2_Alarm_EV	Normal	
//SolanoCC/20000.EV4		CHWP3_Alarm_EV	Normal	
//SolanoCC/20000.EV5		CWP1_Alarm_EV	Normal	
//SolanoCC/20000.EV6		CWP2_Alarm_EV	Normal	
//SolanoCC/20000.EV7		CWP3_Alarm_EV	Normal	

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Object Reference	  	Name	Value	Status
//SolanoCC/20000.EV8		CWP4_Alarm_EV	Normal	
//SolanoCC/20000.EVC1		Maintenance	Sending	
//SolanoCC/20000.EVC2		Network	Sending	
//SolanoCC/20000.EVC3		Security	Sending	
//SolanoCC/20000.EVC4		Critical	Sending	
//SolanoCC/20000.EVC5		Notification	Sending	
//SolanoCC/20000.EVC6		Fire	Sending	
//SolanoCC/20000.EVC7		Access Control Event	Sending	
//SolanoCC/20000.EVC8		Access Control Alarm	Sending	
//SolanoCC/20000.EVC9		Archival	Sending	
//SolanoCC/20000.EVC10		Diagnostics	Sending	
//SolanoCC/20000.EVL1		Access Control Alarm Log	Logging	
//SolanoCC/20000.EVS1		Event and Alarm Settings 20000		
//SolanoCC/20000.FIL1		Database Transfer File		
//SolanoCC/20000.FIL2		DC.Diagnostics.txt		
//SolanoCC/20000.IOM1		IO Mapping		
//SolanoCC/20000.IPS1		Internet Protocol Settings		
//SolanoCC/20000.MIC1		LoadingMIC		
//SolanoCC/20000.MIC2		OrderMIC		
//SolanoCC/20000.MIC3		PumpsMIC		
//SolanoCC/20000.MIC4		PumpOrderMIC		
//SolanoCC/20000.MIC13		Boiler Lead MIC		
//SolanoCC/20000.MIC14		Controller Mode MIC		
//SolanoCC/20000.MIC15		Controller Status MIC		
//SolanoCC/20000.MIC16		Fan Speed MIC		
//SolanoCC/20000.MIC17		Staged Control Mode MIC		
//SolanoCC/20000.MIC18		Tri-state Position MIC		
//SolanoCC/20000.MIC19		Order1MIC		
//SolanoCC/20000.MIC20		Order2MIC		
//SolanoCC/20000.MIC21		HWP_Orders		
//SolanoCC/20000.MIC22		CH_Orders		

TCP 2000 CHW System (20000) - Site: SolanoCC - 401 Objects

Object Reference	  	Name	Value	Status
//SolanoCC/20000.MIC31		Weekday MIC		
//SolanoCC/20000.MT1		LeadChiller_Amps MT		
//SolanoCC/20000.MT2		Building600_AHU_MT		
//SolanoCC/20000.MT3		Chiller Trends		
//SolanoCC/20000.MT4		CHW Pumps Trends		
//SolanoCC/20000.MT5		CW System Trends		
//SolanoCC/20000.MT11		CHW_Trends_03122018		
//SolanoCC/20000.MV1		CHW_Load_Request	One Chiller	
//SolanoCC/20000.MV2		Chiller1_Pump_Order	Lag2	
//SolanoCC/20000.MV3		Chiller2_Pump_Order	Lag1	
//SolanoCC/20000.MV4		Chiller3_Pump_Order	Lead	
//SolanoCC/20000.MV5		Chiller1_Order	Lead	
//SolanoCC/20000.MV6		Chiller2_Order	Lag1	
//SolanoCC/20000.MV7		Chiller3_Order	Lag2	
//SolanoCC/20000.MV8		CWP1_Order	Lag1	
//SolanoCC/20000.MV9		CWP2_Order	Lag2	
//SolanoCC/20000.MV10		CWP3_Order	Standby	
//SolanoCC/20000.MV15		CHWP1_Order	Standby	
//SolanoCC/20000.MV16		CHWP2_Order	Lag1	
//SolanoCC/20000.MV17		CHWP3_Order	Lead	
//SolanoCC/20000.MV18		CWP4_Order	Lead	
//SolanoCC/20000.MV19		CWP_Selection	321	
//SolanoCC/20000.MV20		CHLR_Selection	123	Out Of Service
//SolanoCC/20000.MV30		Current Weekday	Wednesday	
//SolanoCC/20000.MV230		CW Pump Rotation Day	Monday	
//SolanoCC/20000.NET1		BACnet Settings 20000		
//SolanoCC/20000.PAN1		Priority Names 20000		
//SolanoCC/20000.PG1		Main_PG	Running	
//SolanoCC/20000.PG2		Chlr_Plant_Ctrl_PG	Running	
//SolanoCC/20000.PG3		CHWP_Failure_PG	Running	
//SolanoCC/20000.PG4		CWP_Control1_PG	Running	

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Object Reference	  	Name	Value	Status
//SolanoCC/20000.PG5		CHLR1_Control_PG	Running	
//SolanoCC/20000.PG6		CWP_Control2_PG	Waiting	
//SolanoCC/20000.PG8		Transfers_Calcs_PG	Running	
//SolanoCC/20000.PG9		Alarms_PG	Running	
//SolanoCC/20000.PG10		Pump_Transfers	Waiting	
//SolanoCC/20000.PG11		CT_1_2_Control	Running	
//SolanoCC/20000.PG12		CHWP1_2_3_Control	Running	
//SolanoCC/20000.PG13		Exterior Lights	Running	
//SolanoCC/20000.PG15		CHWP_B1700_CNTRL	Running	
//SolanoCC/20000.PG16		CHLR3_Control_PG	Running	
//SolanoCC/20000.PG17		CHLR2_Control_PG	Running	
//SolanoCC/20000.PG20		Condenser Water Pump Program	Running	
//SolanoCC/20000.PG30		Transfer Program	Running	
//SolanoCC/20000.SCH1		Chill Water System Schedule	On	
//SolanoCC/20000.SCH2		Outdoor_Lighting_Schedule	Off	
//SolanoCC/20000.SDL1		Slave Device List 20000		
//SolanoCC/20000.SUA1		DELTA	Logged out	
//SolanoCC/20000.SUG1		Administrator		
//SolanoCC/20000.TL1		LEAD_CH_AMPS_TL	Trending	
//SolanoCC/20000.TL2		LEADLAG1_CH_AMPS_TL	Trending	
//SolanoCC/20000.TL3		Global_OAT_TL	Trending	
//SolanoCC/20000.TL6		CHWRT_SP_TL	Trending	
//SolanoCC/20000.TL7		CHWP1_VFD_Cntrl_TL	Trending	
//SolanoCC/20000.TL8		CHWP2_VFD_Cntrl_TL	Trending	
//SolanoCC/20000.TL9		CHWP3_VFD_Cntrl_TL	Trending	
//SolanoCC/20000.TL10		B1700_Sec_CHWP_VFD_Cntrl_TL	Trending	
//SolanoCC/20000.TL11		CT1_VFD_Cntrl_TL	Trending	
//SolanoCC/20000.TL12		CT2_VFD_Cntrl_TL	Trending	
//SolanoCC/20000.TL13		CHWP1_SS_TL	Trending	
//SolanoCC/20000.TL14		CHWP2_SS_TL	Trending	
//SolanoCC/20000.TL15		CHWP3_SS_TL	Trending	

TCP 2000 CHW System (20000) - Site: SolanoCC - 401 Objects

Object Reference	  	Name	Value	Status
//SolanoCC/20000.TL16		B1700_Sec_CHWP_SS_TL	Trending	
//SolanoCC/20000.TL17		CWP1_SS_TL	Trending	
//SolanoCC/20000.TL18		CWP2_SS_TL	Trending	
//SolanoCC/20000.TL19		CWP3_SS_TL	Trending	
//SolanoCC/20000.TL20		Tennis_Crts_Rdwy_Lts_TL	Trending	
//SolanoCC/20000.TL21		Bldg2000_Lts_TL	Trending	
//SolanoCC/20000.TL22		CH3_CHW_ISO_Vlv_Cmd_TL	Trending	
//SolanoCC/20000.TL23		CH3_CW_ISO_Vlv_Cmd_TL	Trending	
//SolanoCC/20000.TL24		CH1_CHW_ISO_Vlv_Cmd_TL	Trending	
//SolanoCC/20000.TL25		CH2_CHW_ISO_Vlv_Cmd_TL	Trending	
//SolanoCC/20000.TL26		CH1_CW_ISO_Vlv_Cmd_TL	Trending	
//SolanoCC/20000.TL27		CH2_CW_ISO_Vlv_Cmd_TL	Trending	
//SolanoCC/20000.TL28		CT1_VFD_Enable_TL	Trending	
//SolanoCC/20000.TL29		CT2_VFD_Enable_TL	Trending	
//SolanoCC/20000.TL30		CWP4_SS_TL	Trending	
//SolanoCC/20000.TL31		CW_Return_Temp_TL	Trending	
//SolanoCC/20000.TL32		CW_Supply_Temp_TL	Trending	
//SolanoCC/20000.TL33		CHW_Return_Temp_TL	Trending	
//SolanoCC/20000.TL34		CHW_Supply_Temp_TL	Trending	
//SolanoCC/20000.TL35		OA_Temp_TL	Trending	
//SolanoCC/20000.TL36		CH1_Diff_Press_TL	Trending	
//SolanoCC/20000.TL37		CH2_Diff_Press_TL	Trending	
//SolanoCC/20000.TL38		CH3_Diff_Press_TL	Trending	
//SolanoCC/20000.TL39		SECCHW_System_Diff_Press_TL	Trending	
//SolanoCC/20000.TL40		Comp_Air_Press_TL	Trending	
//SolanoCC/20000.TL41		B1700_CHW_Diff_Press_TL	Trending	
//SolanoCC/20000.TL42		B1700_Sec_CHWP_VFD_Fdbk_TL	Trending	
//SolanoCC/20000.TL43		CT1_VFD_Fdbk_TL	Trending	
//SolanoCC/20000.TL44		CT2_VFD_Fdbk_TL	Trending	
//SolanoCC/20000.TL45		Tank_Lvl_1_TL	Trending	
//SolanoCC/20000.TL46		Tank_Lvl_2_TL	Trending	

TCP 2000 CHW System (20000) - Site: SolanoCC - 401 Objects

Object Reference	  	Name	Value	Status
//SolanoCC/20000.TL47		CHWP1_Status_TL	Trending	
//SolanoCC/20000.TL48		CHWP2_Status_TL	Trending	
//SolanoCC/20000.TL49		CHWP3_Status_TL	Trending	
//SolanoCC/20000.TL50		CH3_CW_ISO_Vlv_Status_TL	Trending	
//SolanoCC/20000.TL51		Air_Compressor1_Status_TL	Trending	
//SolanoCC/20000.TL52		Air_Compressor2_Status_TL	Trending	
//SolanoCC/20000.TL53		CH3_CHW_ISO_Vlv_Status_TL	Trending	
//SolanoCC/20000.TL54		CH1_CHW_ISO_Vlv_Status_TL	Trending	
//SolanoCC/20000.TL55		CH2_CHW_ISO_Vlv_Status_TL	Trending	
//SolanoCC/20000.TL56		CH1_CW_ISO_Vlv_Status_TL	Trending	
//SolanoCC/20000.TL57		CH2_CW_ISO_Vlv_Status_TL	Trending	
//SolanoCC/20000.TL58		CWP1_Status_TL	Trending	
//SolanoCC/20000.TL59		CWP2_Status_TL	Trending	
//SolanoCC/20000.TL60		CWP3_Status_TL	Trending	
//SolanoCC/20000.TL61		CWP4_Status_TL	Trending	
//SolanoCC/20000.TL62		CT_Bleed_Valve_TL	Trending	
//SolanoCC/20000.TL63		Chem_Pump_Status_TL	Trending	
//SolanoCC/20000.TL64		Chem_Cntrlr_Bleed_Valve_TL	Trending	
//SolanoCC/20000.TL65		Chiller1_AMP_TL	Trending	
//SolanoCC/20000.TL66		Chiller2_AMP_TL	Trending	
//SolanoCC/20000.TL67		Chiller3_AMP_TL	Trending	
//SolanoCC/20000.TL68		CHW_DEM_TL	Trending	
//SolanoCC/20000.TL69		CHW_DP_SP_TL	Trending	
//SolanoCC/20000.TL70		B1700_CHW_DP_SP_TL	Trending	
//SolanoCC/20000.TL71		CHW_PLANT_Request_TL	Trending	
//SolanoCC/20000.TL72		CHW_Load_Request_TL	Trending	
//SolanoCC/20000.TL73		CWP_Selection_TL	Trending	
//SolanoCC/20000.TL74		CHLR_Selection_TL	Trending	
//SolanoCC/20000.TL1001		CHW Plant Comm Heartbeat TL	Trending	

TCP 2000 HW SYSTEM (20001) - Site: SolanoCC - 262 Objects

Object Reference	  	Name	Value	Status
//SolanoCC/20001.AI1		HWR_Temp	119.6 °F	
//SolanoCC/20001.AI2		HWS_Temp	134.4 °F	
//SolanoCC/20001.AI7		Boiler1_HWS_Temp	138.5 °F	
//SolanoCC/20001.AI8		Boiler2_HWS_Temp	67.8 °F	
//SolanoCC/20001.AI103		HW Supply Pressure	27.2 psi	
//SolanoCC/20001.AI104		HW Return Pressure	19.0 psi	
//SolanoCC/20001.AIC2		Diff_Pressure_H2O_AIC		
//SolanoCC/20001.AIC3		Temperature 10K -35-240 degF AIC2nd		
//SolanoCC/20001.AIC4		DNS-C24 CO2 0-2000 PPM AIC		
//SolanoCC/20001.AIC8		Current 0-5V 0-60 Hz AIC		
//SolanoCC/20001.AIC9		Humidity 4-20mA 0-100 %RH AIC		
//SolanoCC/20001.AIC10		CO2 4-20mA 0-2000 ppm AIC		
//SolanoCC/20001.AIC21		Temperature 10K -35-240 degF AIC		
//SolanoCC/20001.AIC22		HW_FlowMeter_AIC		
//SolanoCC/20001.AIC24		CO2 0-10V 0-2000PPM		
//SolanoCC/20001.AIC26		Damper Feedback 2-10V 0-100%		
//SolanoCC/20001.AIC27		Pressure 0-10V 0-2.5inH2O		
//SolanoCC/20001.AIC28		Flow 0-10VDC 0-265 GPM		
//SolanoCC/20001.AIC29		Flow 0-10VDC 0-215 GPM		
//SolanoCC/20001.AIC30		Flow 0-10VDC 0-38 GPM		
//SolanoCC/20001.AIC31		Flow 0-10VDC 0-625 GPM		
//SolanoCC/20001.AIC32		H2O_Pressure_AIC		
//SolanoCC/20001.AIC33		VFD_Feedback_AIC		
//SolanoCC/20001.AIC34		HW_CHW_DP_AIC		
//SolanoCC/20001.AIC35		Flow 0-10VDC 0-115 GPM		
//SolanoCC/20001.AIC36		RefMonitor 4-20mA 0-1000ppm AIC		
//SolanoCC/20001.AIC37		Speed Reference 4-20mA 0-100 %HZ AIC		
//SolanoCC/20001.AIC38		Analog Input DegF 10k Thermistor		
//SolanoCC/20001.AIC50		Senva 0-5vdc = 0-100PSI		
//SolanoCC/20001.AO7		HWP1_Speed_Cmd	52.5943 %	

TCP 2000 HW SYSTEM (20001) - Site: SolanoCC - 262 Objects

Object Reference	  	Name	Value	Status
//SolanoCC/20001.AO8		HWP2_Speed_Cmd	52.5943 %	
//SolanoCC/20001.AO9		HWP3_Speed_Cmd	0 %	
//SolanoCC/20001.AOC1		Actuator 2-10V AOC		
//SolanoCC/20001.AV1		HW Differential Pressure Setpoint	8.0 psi	Out Of Service
//SolanoCC/20001.AV2		HW Differential Pressure	8.2 psi	
//SolanoCC/20001.AV3		HW Differential Pressure Error	0.2 psi	
//SolanoCC/20001.AV5		HWSysOSA_Lockout_SP	68.0 °F	
//SolanoCC/20001.AV14		LagBoilerOn_Offset_SP	15.0 °F	Out Of Service
//SolanoCC/20001.AV15		LagBoilerOff_Offset_SP	5.0 °F	Out Of Service
//SolanoCC/20001.AV16		LagBoilerOn_Time_SP	10.0 min	Out Of Service
//SolanoCC/20001.AV17		LagBoilerOff_Time_SP	5.0 min	Out Of Service
//SolanoCC/20001.AV18		HWS_SP	185.0 °F	
//SolanoCC/20001.AV19		LeadBoilerOff_Offset_SP	2.0 °F	Out Of Service
//SolanoCC/20001.AV20		LeadBoilerOff_Time_SP	5.0 min	Out Of Service
//SolanoCC/20001.AV21		Boiler1_Runtime_Daily_AV	5.8 h	
//SolanoCC/20001.AV22		Boiler2_Runtime_Daily_AV	0.0 h	
//SolanoCC/20001.AV46		BLR_LAGON_TIMER	0.0 min	Out Of Service
//SolanoCC/20001.AV47		BLR_LAGOFF_TIMER	0.0 min	Out Of Service
//SolanoCC/20001.AV52		BLR_LDOFF_TIMER	0.0 min	
//SolanoCC/20001.AV54		LeadBoilerOn_Offset_SP	15.0 °F	Out Of Service
//SolanoCC/20001.AV55		BLR_LDON_TIMER	10.0 min	
//SolanoCC/20001.AV56		LeadBoilerOn_Time_SP	10.0 min	Out Of Service
//SolanoCC/20001.AV67		Boiler1_IsoVlv_OpenTimer	0.0 s	Out Of Service
//SolanoCC/20001.AV68		Boiler2_IsoVlv_OpenTimer	0.0 s	
//SolanoCC/20001.AV69		OAT_AV	45.6 °F	
//SolanoCC/20001.AV70		Chiller1_AMP	0.0 A	
//SolanoCC/20001.AV71		Chiller2_AMP	0.0 A	
//SolanoCC/20001.AV72		Chiller3_AMP	0.0 A	
//SolanoCC/20001.AV83		Chiller1_CHWS_SP	48.0 °F	
//SolanoCC/20001.AV84		Chiller2_CHWS_SP	48.0 °F	
//SolanoCC/20001.AV85		Chiller3_CHWS_SP	48.0 °F	

TCP 2000 HW SYSTEM (20001) - Site: SolanoCC - 262 Objects

Object Reference	  	Name	Value	Status
//SolanoCC/20001.AV201		HWP Speed Demand	52.6 %	
//SolanoCC/20001.AV202		HWP Min Speed	30.0 %	
//SolanoCC/20001.AV203		HWP Max Speed	90.0 %	
//SolanoCC/20001.AV221		HW DP Error Calculated	0.0 %	
//SolanoCC/20001.AV222		HW DP Error Divider	10.0	
//SolanoCC/20001.AV250		HW Pump Lead	1	
//SolanoCC/20001.AV251		HWPs Requested	2	Out Of Service
//SolanoCC/20001.AV255		HWP Lag On Setpoint	80 %	
//SolanoCC/20001.AV256		HWP Lag Off Setpoint	60 %	
//SolanoCC/20001.AV270		Current Time	949 H	
//SolanoCC/20001.AV271		HWP Rotation Time	200 H	
//SolanoCC/20001.BDC1		Start_Stop		
//SolanoCC/20001.BDC2		On_Off		
//SolanoCC/20001.BDC3		Yes/No		
//SolanoCC/20001.BDC4		Start_Stop_BDC		
//SolanoCC/20001.BDC5		Closed_Open_BDC		
//SolanoCC/20001.BDC8		Open_Close BDC		
//SolanoCC/20001.BDC9		Stop_Start BDC		
//SolanoCC/20001.BDC10		Open_Off		
//SolanoCC/20001.BDC11		Close_Off		
//SolanoCC/20001.BDC12		Alarm_Normal		
//SolanoCC/20001.BDC13		Lead_Lag_BDC		
//SolanoCC/20001.BDC14		Lead_Boiler_BDC		
//SolanoCC/20001.BDC15		Fault_Normal		
//SolanoCC/20001.BDC16		Enable_Disable		
//SolanoCC/20001.BDC17		HWP_LeadLag		
//SolanoCC/20001.BDC18		Close_Open BDC		
//SolanoCC/20001.BDC19		CWP_LeadLag		
//SolanoCC/20001.BDC20		CHWP_LeadLag		
//SolanoCC/20001.BDC21		Normal_Alarm		
//SolanoCC/20001.BDC22		Fail_Ok		

TCP 2000 HW SYSTEM (20001) - Site: SolanoCC - 262 Objects

Object Reference	  	Name	Value	Status
//SolanoCC/20001.BDC23		True_False_BDC		
//SolanoCC/20001.BDC24		Close_Open_BDC		
//SolanoCC/20001.BDC30		HWP Lead/Lag Toggle BDC		
//SolanoCC/20001.BI4		HWP1_VFD_STS	ON	
//SolanoCC/20001.BI5		HWP2_VFD_STS	ON	
//SolanoCC/20001.BI6		HWP3_VFD_STS	OFF	
//SolanoCC/20001.BI9		Boiler1_Iso_Valve_Open	Open	
//SolanoCC/20001.BI10		Boiler1_Iso_Valve_Closed	Off	
//SolanoCC/20001.BI101		Boiler2_Iso_Valve_Open	Off	
//SolanoCC/20001.BI102		Boiler2_Iso_Valve_Closed	Close	
//SolanoCC/20001.BO1		HWP1_Start/Stop	Start	
//SolanoCC/20001.BO2		HWP2_Start/Stop	Start	
//SolanoCC/20001.BO3		HWP3_Start/Stop	Stop	
//SolanoCC/20001.BO4		Boiler1_Start/Stop	Start	
//SolanoCC/20001.BO5		Boiler2_Start/Stop	Stop	
//SolanoCC/20001.BO6		Boiler1_Iso_Valve_Cmd	Open	
//SolanoCC/20001.BO101		HWP1_Iso_Valve_Cmd	Open	
//SolanoCC/20001.BO102		HWP2_Iso_Valve_Cmd	Open	
//SolanoCC/20001.BO103		HWP3_Iso_Valve_Cmd	Close	
//SolanoCC/20001.BO104		Boiler2_Iso_Valve_Cmd	Close	
//SolanoCC/20001.BT1		Boiler1_Runtime_Total	6282.1 Hours	
//SolanoCC/20001.BT2		Boiler2_Runtime_Total	6513.7 Hours	
//SolanoCC/20001.BT3		Boiler1_Runtime_Daily	5.8 Hours	
//SolanoCC/20001.BT4		Boiler2_Runtime_Daily	0.0 Hours	
//SolanoCC/20001.BV1		HWSYS_Request	On	
//SolanoCC/20001.BV4		HWSYS_Schedule_Enable	Enable	
//SolanoCC/20001.BV5		HW_Coil_Request	ON	Out Of Service
//SolanoCC/20001.BV12		HWP_Request	On	
//SolanoCC/20001.BV17		LEADBLR_SS	Start	
//SolanoCC/20001.BV18		LAGBLR_SS	Start	
//SolanoCC/20001.BV20		B1_Failure	OK	

TCP 2000 HW SYSTEM (20001) - Site: SolanoCC - 262 Objects

Object Reference	  	Name	Value	Status
//SolanoCC/20001.BV21		B2_Failure	OK	
//SolanoCC/20001.BV29		BLR1_2_LDLG	BOILER1	
//SolanoCC/20001.BV30		ANY_HWP	On	
//SolanoCC/20001.BV33		Chiller1_Enable_BV	OFF	
//SolanoCC/20001.BV34		Chiller2_Enable_BV	OFF	
//SolanoCC/20001.BV35		Chiller3_Enable_BV	OFF	
//SolanoCC/20001.BV37		HW_System_OA_LockoutFlag	Off	
//SolanoCC/20001.BV111		Boiler 1 Isolation Valve Status	Open	
//SolanoCC/20001.BV121		Boiler 2 Isolation Valve Status	Close	
//SolanoCC/20001.BV200		HW Pump Status Transfer	ON	Out Of Service
//SolanoCC/20001.BV210		HW Pump 1 Call	ON	
//SolanoCC/20001.BV211		HW Pump 1 Enable	ON	
//SolanoCC/20001.BV215		HW Pump 1 Iso Valve Status	Open	
//SolanoCC/20001.BV220		HW Pump 2 Call	ON	
//SolanoCC/20001.BV221		HW Pump 2 Enable	ON	
//SolanoCC/20001.BV225		HW Pump 2 Iso Valve Status	Open	
//SolanoCC/20001.BV230		HW Pump 3 Call	OFF	
//SolanoCC/20001.BV231		HW Pump 3 Enable	ON	
//SolanoCC/20001.BV235		HW Pump 3 Iso Valve Status	Close	
//SolanoCC/20001.BV250		HWP Lead/Lag Toggle	OFF	
//SolanoCC/20001.BV260		HWP Alarm Reset	OFF	
//SolanoCC/20001.BV1000		HW Plant Comm Heartbeat	OFF	
//SolanoCC/20001.DBI20001		Database Information 20001		
//SolanoCC/20001.DEL1		DEL1__BV12_85	1	
//SolanoCC/20001.DEL3		DEL3__BV1000_85	0	
//SolanoCC/20001.DEL4		DEL4__DEV20001_112	0	
//SolanoCC/20001.DEL5		DEL5__AV69_85	45.6068	
//SolanoCC/20001.DEL6		DEL6__AV5_85	68	
//SolanoCC/20001.DER5		DER5__23008_BV1_85_R	0	
//SolanoCC/20001.DER6		DER6__20000_BV3_85_R	0	
//SolanoCC/20001.DER7		DER7__23009_BV1_85_R	0	

TCP 2000 HW SYSTEM (20001) - Site: SolanoCC - 262 Objects

Object Reference	  	Name	Value	Status
//SolanoCC/20001.DER8		DER8__20000_BV2_85_R	0	
//SolanoCC/20001.DER9		DER9__23010_BV1_85_R	0	
//SolanoCC/20001.DER10		DER10__20000_BV1_85_R	0	
//SolanoCC/20001.DER11		DER11__23008_BV1_85_W	0	
//SolanoCC/20001.DER12		DER12__23009_BV1_85_W	0	
//SolanoCC/20001.DER13		DER13__23010_BV1_85_W	0	
//SolanoCC/20001.DER19		DER19__23008_AV12_85_R	0	
//SolanoCC/20001.DER20		DER20__23009_AV12_85_R	0	
//SolanoCC/20001.DER21		DER21__23010_AV12_85_R	0	
//SolanoCC/20001.DER22		DER22__20000_AV86_85_R	48	
//SolanoCC/20001.DER23		DER23__20000_AV87_85_R	48	
//SolanoCC/20001.DER24		DER24__20000_AV88_85_R	48	
//SolanoCC/20001.DER25		DER25__23008_AV1_85_R	48	
//SolanoCC/20001.DER26		DER26__23008_AV1_85_W	48	
//SolanoCC/20001.DER27		DER27__23009_AV1_85_R	48	
//SolanoCC/20001.DER28		DER28__23009_AV1_85_W	48	
//SolanoCC/20001.DER29		DER29__23010_AV1_85_R	48	
//SolanoCC/20001.DER30		DER30__23010_AV1_85_W	48	
//SolanoCC/20001.DES1		Data Exchange Settings 20001		
//SolanoCC/20001.DEV20001		TCP 2000 HW SYSTEM	Operational	
//SolanoCC/20001.EV11		Boiler 1 Isolation Valve Alarm	Normal	
//SolanoCC/20001.EV21		Boiler 2 Isolation Valve Alarm	Normal	
//SolanoCC/20001.EV31		Hot Water Pump 1 Alarm	Normal	
//SolanoCC/20001.EV41		Hot Water Pump 2 Alarm	Normal	
//SolanoCC/20001.EV51		Hot Water Pump 3 Alarm	Normal	
//SolanoCC/20001.EVC1		Maintenance	Sending	
//SolanoCC/20001.EVC2		Network	Sending	
//SolanoCC/20001.EVC3		Security	Sending	
//SolanoCC/20001.EVC4		Critical	Sending	
//SolanoCC/20001.EVC5		Notification	Sending	
//SolanoCC/20001.EVC6		Fire	Sending	

TCP 2000 HW SYSTEM (20001) - Site: SolanoCC - 262 Objects

Object Reference	  	Name	Value	Status
//SolanoCC/20001.EVC7		Access Control Event	Sending	
//SolanoCC/20001.EVC8		Access Control Alarm	Sending	
//SolanoCC/20001.EVC9		Archival	Sending	
//SolanoCC/20001.EVS1		Event and Alarm Settings 20001		
//SolanoCC/20001.FIL1		Database Transfer File		
//SolanoCC/20001.LNK101		LINKnet Device 1	Online	
//SolanoCC/20001.MIC1		LoadingMIC		
//SolanoCC/20001.MIC2		OrderMIC		
//SolanoCC/20001.MIC3		PumpsMIC		
//SolanoCC/20001.MIC4		PumpOrderMIC		
//SolanoCC/20001.MIC19		Order1MIC		
//SolanoCC/20001.MIC20		Order2MIC		
//SolanoCC/20001.MIC21		HWP_Orders		
//SolanoCC/20001.MIC30		Weekday MIC		
//SolanoCC/20001.MT1		HW_SystemRuntime_Trends		
//SolanoCC/20001.MT2		Boiler Trends		
//SolanoCC/20001.MT3		HW Pumps Trends		
//SolanoCC/20001.MV10		Boiler Rotation Day	Monday	
//SolanoCC/20001.MV20		HW Pump Rotation Day	Monday	
//SolanoCC/20001.MV30		Current Weekday	Wednesday	
//SolanoCC/20001.NET1		BACnet Settings 20001		
//SolanoCC/20001.PAN1		Priority Names 20001		
//SolanoCC/20001.PG1		Main_PG	Running	
//SolanoCC/20001.PG2		HW_SYS_MODE_PG	Running	
//SolanoCC/20001.PG5		BOILER_LL	Running	
//SolanoCC/20001.PG6		Hot Water Pump Status Program	Running	
//SolanoCC/20001.PG7		Chiller_Priority_PG	Running	
//SolanoCC/20001.PG8		Chiller_Transfers_PG	Running	
//SolanoCC/20001.PG10		Hot Water Pump Program	Running	
//SolanoCC/20001.SCH1		HHWS_Schedule	On	
//SolanoCC/20001.SCH2		BLR1_SCHEDULE	On	

TCP 2000 HW SYSTEM (20001) - Site: SolanoCC - 262 Objects

Object Reference	  	Name	Value	Status
//SolanoCC/20001.SCH3		BLR2_SCHEDULE	Off	
//SolanoCC/20001.SDL1		Slave Device List 20001		
//SolanoCC/20001.SUA1		DELTA	Logged out	
//SolanoCC/20001.SUG1		Administrator		
//SolanoCC/20001.TL1		Boiler1_Runtime_Total_TL	Trending	
//SolanoCC/20001.TL2		Boiler2_Runtime_Total_TL	Trending	
//SolanoCC/20001.TL3		Boiler1_Runtime_Daily_TL	Trending	
//SolanoCC/20001.TL4		Boiler2_Runtime_Daily_TL	Trending	
//SolanoCC/20001.TL5		HWP1_Speed_Cmd_TL	Trending	
//SolanoCC/20001.TL6		HWP2_Speed_Cmd_TL	Trending	
//SolanoCC/20001.TL7		HWP3_Speed_Cmd_TL	Trending	
//SolanoCC/20001.TL8		HWP1_Start/Stop_TL	Trending	
//SolanoCC/20001.TL9		HWP2_Start/Stop_TL	Trending	
//SolanoCC/20001.TL10		HWP3_Start/Stop_TL	Trending	
//SolanoCC/20001.TL11		Boiler1_Start/Stop_TL	Trending	
//SolanoCC/20001.TL12		Boiler2_Start/Stop_TL	Trending	
//SolanoCC/20001.TL13		Boiler1_Iso_Valve_Cmd_TL	Trending	
//SolanoCC/20001.TL14		HWP1_Iso_Valve_Cmd_TL	Trending	
//SolanoCC/20001.TL15		HWP2_Iso_Valve_Cmd_TL	Trending	
//SolanoCC/20001.TL16		HWP3_Iso_Valve_Cmd_TL	Trending	
//SolanoCC/20001.TL17		Boiler2_Iso_Valve_Cmd_TL	Trending	
//SolanoCC/20001.TL18		HWR_Temp_TL	Trending	
//SolanoCC/20001.TL19		HWS_Temp_TL	Trending	
//SolanoCC/20001.TL20		HW Differential Pressure TL	Trending	
//SolanoCC/20001.TL21		Boiler1_HWS_Temp_TL	Trending	
//SolanoCC/20001.TL22		Boiler2_HWS_Temp_TL	Trending	
//SolanoCC/20001.TL23		HWP1_VFD_STS_TL	Trending	
//SolanoCC/20001.TL24		HWP2_VFD_STS_TL	Trending	
//SolanoCC/20001.TL25		HWP3_VFD_STS_TL	Trending	
//SolanoCC/20001.TL26		Boiler1_Iso_Valve_Open_TL	Trending	
//SolanoCC/20001.TL27		Boiler1_Iso_Valve_Closed_TL	Trending	

TCP 2000 HW SYSTEM (20001) - Site: SolanoCC - 262 Objects

Object Reference	  	Name	Value	Status
//SolanoCC/20001.TL28		Boiler2_Iso_Valve_Open_TL	Trending	
//SolanoCC/20001.TL29		Boiler2_Iso_Valve_Closed_TL	Trending	
//SolanoCC/20001.TL30		HW_DPT_SP_TL	Trending	
//SolanoCC/20001.TL31		HWSysOSA_Lockout_SP_TL	Trending	
//SolanoCC/20001.TL32		HWS_SP_TL	Trending	
//SolanoCC/20001.TL33		HWSYS_Request_TL	Trending	
//SolanoCC/20001.TL34		HWSYS_Schedule_Enable_TL	Trending	
//SolanoCC/20001.TL35		BLR1_2_LDLG_TL	Trending	
//SolanoCC/20001.TL36		HWP Lead TL	Trending	
//SolanoCC/20001.TL37		HW_System_OA_LockoutFlag_TL	Trending	
//SolanoCC/20001.TL38		BLR1_SCHEDULE_TL	Trending	
//SolanoCC/20001.TL39		BLR2_SCHEDULE_TL	Trending	
//SolanoCC/20001.TL103		HW Supply Pressure TL	Trending	
//SolanoCC/20001.TL104		HW Return Pressure TL	Trending	
//SolanoCC/20001.TL1000		HW Plant Comm Heartbeat TL	Trending	



SOLANO COMMUNITY COLLEGE DISTRICT

**Request for Qualifications/Request for Proposal
Project #19-000**

**Building Automation System (BAS)
Retrofit Project Phase 2**

October 24, 2018

FOR REFERENCE ONLY

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I. NOTICES

A. Qualifications/Proposals

NOTICE IS HEREBY GIVEN that Solano Community College District of Solano County, California, hereinafter referred to as the District, will receive up to, but no later than **12:00pm on November 20th 2018, Qualifications/Proposals** from qualified Contractors for **“Building Automation System (BAS) Retrofit Project Phase 2”**, proposing their firm as best qualified to provide services mentioned herein.

Contractor (hereafter referred to as VENDOR) shall submit their Qualifications/Proposal in writing three (3) bound copies and an electronic flash drive copy of the completed document in a sealed envelope or box identified as **“RFQ/RFP SOLANO COMMUNITY COLLEGE DISTRICT, BUILDING AUTOMATION SYSTEM (BAS) RETROFIT PROJECT PHASE 2”** with the Respondent's name and address clearly indicated.

Refer to District web site <http://www.solano.edu/purchasing/> for RFQ/RFP documents and requirements. **Please submit Qualifications/Proposal to (see Exhibit I for map of submittal location on campus):**

Solano Community College District
Attn: Jason Yi, Facilities Department
4000 Suisun Valley Road (Building 1102)
Fairfield, CA 94534

Mandatory Bidders Conference: A mandatory pre-proposal conference, including buildings walk through, will be held on November 2nd, 2018 beginning at 10:00am to 12:00pm, located on the Fairfield Campus, 4000 Suisun Valley Road, Building 1900, Fairfield, CA 94534 (see Exhibit I for map of location on campus). This conference will provide an opportunity to discuss and clarify this RFQ/RFP, submission requirements and will include a tour of the site and each building mentioned in this RFQ/RFP. Additional information may be provided at the District's website (<http://www.solano.edu/purchasing/>). However, nothing said or represented during this conference shall be deemed to modify the requirements of this RFQ/RFP unless followed by a written addendum. Individuals attending the mandatory pre-proposal meeting must be employees of the firm with identified business cards.

VENDORS may submit written questions until 10:00am on November 13th, 2018. All communications must be in writing only, submitted by email, directed to the address and contact person listed below. No oral questions or inquiries of any kind or contact with board members or District staff will be allowed. **Written questions received by 10:00am on November 13th, 2018 will be answered formally in addenda and posted to the District's website (<http://www.solano.edu/purchasing/>), as well as forwarded to all teams who attended to pre-proposal meeting by 2:00pm on November 16th, 2018.**

Anonymity of the source of specific questions will be maintained in the written answers. **Written questions received after 10:00am on November 13th, 2018 will**

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not be answered. Questions must be submitted in writing via email to: Jason Yi, District Project Manager, jason.yi@solano.edu. **No telephone calls please.**

B. Additional Site/Building Investigation

For VENDORS needing further site/building investigation prior to submission of their Qualifications/Proposals, the District has scheduled Friday, 9:00am, November 9th, 2018 for additional building access. Attending the additional site/building investigation is not mandatory; not attending will not disqualify a VENDOR for consideration and submission of Qualifications/Proposal.

C. Contractor License Classification

Pursuant to California Public Contract Code, Section 3300, the District requires that VENDOR possess a class **B and/or C-10** California Contractors License(s) at the time that the Contract for the Work is awarded. Respondents are asked to include copies of their **B and/or C-10** license(s) with their submitted Qualifications/Proposal.

D. Addenda

Written addenda will be e-mailed to each prospective VENDOR that attends the mandatory pre-proposal meeting and posted to the District's website (<http://www.solano.edu/purchasing/rfp.php>) by **2:00pm on November 16th, 2018.** The District will not be bound by any oral representations, clarifications, or changes made to this RFQ/RFP unless provided to all VENDORS in written addenda form.

E. Technical Review

After receipt of the Qualifications/Proposal, the District's Evaluation Team shall conduct a review of the submissions. During the Qualifications/Proposal evaluation, it may become necessary for the Evaluation Team to issue Requests for Clarification to the VENDORS. These requests may be necessary to enable the evaluators to best understand the VENDORS response(s). Requests for Clarification may be in the form of a written request issued by the Evaluation Team.

F. Proposal Interviews

It may also be necessary at the discretion of the District to conduct individual interviews with one or more of the VENDORS who submitted proposals.

The purpose of this interview is to confirm information provided in the Qualifications/Proposals submitted by the VENDORS. This will also be another opportunity for the Evaluation Team to request additional clarifications. In these interviews, the Vendor may expand on the information provided in their Qualifications/Proposal, and will respond to questions from the Evaluation Team. Each VENDOR shall have their proposed project manager and lead field personnel assigned to the project present as the primary representatives during this process.

G. Restrictions on Lobbying and Contacts

For the period beginning on the date of the issuance of this RFQ/RFP and ending on the date of the award of the contract(s), no person or entity submitting in response to this RFQ/RFP, nor any officer, employee, representative, agent, or consultant representing such a person or entity, shall contact through any means or engage in any discussion regarding this RFQ/RFP, the evaluation or selection process/or the award of the contract(s) with any member of the District's Governing Board, selection members, or any member of the Citizens' Oversight Committee, or with any employee of the District except for clarifications and questions as described herein. Any such contact shall be grounds for the disqualification of the VENDOR submitting a Qualifications/Proposal.

H. Limitations

The District reserves the right to contract with any entity responding to this RFQ/RFP. The District makes no representation that participation in the RFQ/RFP process will lead to an award of contract or any consideration whatsoever. The District shall in no event be responsible for the cost of preparing any proposal in response to this RFQ/RFP. The awarding of the contract, if at all, is at the sole discretion of the District.

The District reserves the right to reject any or all Qualifications/Proposals, to waive any irregularities or informalities not affected by law, to evaluate the Qualifications/Proposals submitted, and to award a contract, if any, according to the Qualifications/Proposal which best serves the interests of the District at a reasonable cost to the District.

I. No Discrimination

The District hereby notifies all VENDORS that it will affirmatively insure that, in any contract entered into pursuant to this solicitation, minority business enterprises will be afforded full opportunity to submit its response to this RFQ/RFP and no respondent will be discriminated against on the grounds of race, color, sex, age, ancestry, religion, marital status, national origin, medical condition or physical disability on consideration for the award.

II. PROJECT OVERVIEW

A. Project Description

As part of the goals of reducing energy consumption, controlling energy costs and creating clean energy jobs, the Solano Community College District is utilizing Proposition 39 funding to implement an energy efficiency and improved demand response project for the campus building automation system (BAS). The District's Fairfield campus has had the BAS for some of its buildings replaced with a Delta Controls BAS and the District's desire is to complete migration of the remaining buildings, currently on an Alerton BAS, for a single system to control HVAC for all buildings on campus. Successful respondent to this RFQ/RFP will be tasked to

design, construct and document the replacement of the existing Alerton BAS for nine (9) buildings on the Fairfield campus, including programming required for integration into the campus wide Delta Controls BAS. Buildings to have their BAS replaced, include monitoring and controls for rooftop packaged AC units, exhaust fans, hot and chilled water pumps, and VAV's (see Exhibit A for building existing equipment lists). The District's expectation at the completion of this project is to have a turnkey BAS to monitor and control all buildings on campus residing on a single system.

B. Scope of Services

Nine (9) buildings require replacement of their monitoring and control system: Buildings 200, 300, 400, 900, 1700A, 1700B, 1800A, 1800B and 2600. The list of services below shall be included in all submitted proposals for each building. Successful respondent to this RFQ/RFP will have included all scope necessary to provide a turnkey campus wide BAS system at the completion of the project (scope clarifications must be requested in writing, per the instructions described above).

- a. Attend project kick-off meeting to discuss and identify District needs and goals for buildings to be converted and campus wide overall system.
- b. Site and building investigations for the purpose of design development. Site and building investigations shall be coordinated and scheduled with the District and must not interrupt class instruction. Generally, though other days may be available, classes are not in session on Fridays and buildings are more accessible for investigation.
- c. Attend design coordination meeting to discuss findings and provide design recommendations for District approval. Design shall take cost savings into consideration and develop a design that can reuse existing infrastructure (i.e. junction boxes, pathways, wiring, enclosures, etc.).
- d. Remove existing Alerton BAS for nine (9) buildings listed above, including all devices, modules, controllers, thermostats, equipment and programming, as necessary for the conversion and integration into campus wide Delta Controls BAS.
- e. Install new Delta Controls BAS for nine (9) buildings listed above, including devices, modules, controllers and thermostats for all building equipment to be monitored and controlled via campus wide system. See Exhibit A for building existing equipment list.
- f. Installation of new network temperature, CO2 and motion sensors for buildings with rooftop air handling units.
- g. All necessary programming for converted nine (9) buildings to be monitored and controlled onsite and remotely, including integration of converted buildings into campus wide Delta Controls BAS.
- h. Develop and provide point-to-point wiring diagrams to serve as record of as-built condition.
- i. Graphical user interface development and programming. Graphics must be consistent and similar to current graphics on BAS. See Exhibit B for graphic expectations.
- j. Include three (3) individual days, eight (8) hours each day, for a total of twenty four (24) hours, of training for District personnel. Training days may or may not be consecutive days and will need to be scheduled according to District availability.

C. Project Budget

It is anticipated the budget for this project will be approximately \$220,000.

D. Schedule

The Building Automation System (BAS) Retrofit Project Phase 2 final completion date shall be no later than April 30, 2019. All work must be scheduled such that class instruction is not interrupted (see Exhibit C for academic calendar). To support this scheduled completion date, the following schedule is established for the VENDORS. The District reserves the right to modify this schedule at any time.

- a. Issue RFQ/RFP Documents: 10/24/2018
- b. Mandatory Pre-Proposal Conference/Site Walk: 11/2/2018 from 9:00am to 12:00pm (see Exhibit I for map of meeting location on campus)
- c. Optional Additional Building Investigation: 11/9/2018 at 9:00am
- d. Last Day to Submit Pre-Proposal Questions: 11/13/2018 by 2:00pm
- e. Qualifications/Proposals Due: 11/20/2018 by 2:00pm (see Exhibit I for map of submittal location on campus)
- f. Notice of Intent to Award: 11/21/2018
- g. Notice To Proceed: 11/28/2018
- h. Project Kick-Off Meeting: 11/30/2018
- i. Building Investigation and Design Development: 12/3/2018 to 12/7/2018
- j. Design Review Meeting: 12/7/2018
- k. Start Construction: 12/10/2018
- l. Final Completion: 4/30/2019

E. Roles and Responsibilities

The roles and responsibilities of the District and the VENDOR are summarized below and set forth in detail in this RFQ/RFP.

1. VENDORS Responsibility:
 - a. The VENDOR, including VENDOR'S designees, selected for contracting services shall be responsible for the design, procurement, implementation and documentation of specified energy efficiency and capital improvement projects at Solano Community College District facilities.
 - b. The VENDOR shall be responsible for developing a schedule to achieve **project final completion by April 30th, 2019. By submitting a Qualifications/Proposal VENDOR understands class instruction will not be interrupted and work may need to be performed off-hours and weekends in order to meet the project completion date.** All work to be performed off-hours or weekends shall be scheduled and coordinated with the District at least 72 hours prior. Any additional costs associated with work off-hours and weekends are to be included in VENDOR'S price

proposal and shall be completed at no additional cost to the District.

- c. VENDOR shall be responsible for the generation of all bid documents and the bid management process for any subcontractors hired by VENDOR for this project.
- d. VENDOR understands they are proposing a complete turnkey project, inclusive of all trades and components necessary to provide a quality installation to District standards. VENDOR also understands VENDOR'S proposed costs represent the total cost for all services provided including materials, labor, taxes, delivery, Payment & Performance Bond, insurance and any other ancillary charges that may be incurred, including removal and disposal of all replaced components.
- e. VENDOR shall be responsible for maintaining a safe work environment for their employees and subcontract employees to OSHA standards at all times. VENDOR shall maintain a clean and orderly jobsite and shall stage all components in order to minimize disruption of College operations.
- f. VENDOR shall maintain a sufficient work force and equipment to adequately service the requirements of the District and to remain within approved construction schedules. A qualified supervisor or designated lead person with the ability to communicate with District staff in English shall be at the work site during all periods in which VENDOR or its designees are providing services.
- g. VENDOR shall indemnify and hold harmless the District against all liability and property damage for actions connected to the VENDOR's work for the District.
- h. After award of a contract, VENDOR shall provide District with a 100 percent project value bond for its faithful performance. VENDOR shall provide a Performance Bond and Payment Bond on the forms provided (see Exhibit G for bond forms). The successful VENDOR shall not commence Work nor shall it allow any Subcontractor to commence Work under this Contract, until VENDOR has delivered both a Performance Bond and Payment Bond.
- i. The successful VENDOR shall not commence Work nor shall it allow any Subcontractor to commence Work under this Contract, until VENDOR and its Subcontractor(s) have procured all required insurance and VENDOR has delivered in duplicate to the District complete endorsements (or entire insurance policies) and certificates indicating the required coverages have been obtained, and the District has approved these documents.

1. Endorsements, certificates, and insurance policies shall include the following clause stating:

“This policy shall not be amended, canceled or modified and the coverage amounts shall not be reduced until notice has been mailed to District, Architect, and Construction Manager stating date of amendment, modification, cancellation or reduction. Date of amendment, modification, cancellation or reduction may not be less than thirty (30) days after date of mailing notice.”
2. Evidence of required bonds and insurance shall be presented prior to commencing work. Insurance policies to be carried under the agreement shall not be changed or canceled without prior written notification to the District throughout the duration of the Project.
3. All endorsements, certificates and insurance policies shall state that District, its trustees, employees and agents, the State of California, Construction Manager(s), Project Manager(s), Inspector(s) and Architect(s) are named additional insureds under all policies except Workers' Compensation Insurance and Employers' Liability Insurance.
4. Insurance written on a “claims made” basis is to be renewed by the VENDOR and all Subcontractors for a period of five (5) years following completion of the Work or termination of this Agreement. Such insurance must have the same coverage and limits as the policy that was in effect during the term of this Agreement, and will cover the VENDOR and all Subcontractors for all claims made.
5. VENDOR'S and Subcontractors' insurance policy(s) shall be primary and non-contributory to any insurance or self-insurance maintained by District, its trustees, employees and/or agents, the State of California, Construction Manager(s), Project Manager(s), Inspector(s), and/or Architect(s).
6. All endorsements shall waive any right to subrogation against any of the named additional insureds.
7. Unless otherwise stated, all of VENDOR'S insurance shall be with insurance companies with an A.M. Best rating of no less than **A:**
VII.
8. The insurance requirements set forth herein shall in no way limit the VENDOR'S liability arising out of or relating to the performance of the Work or related activities.

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- 9. The insurance requirements set forth herein shall in no way limit the VENDOR'S liability arising out of or relating to the performance of the Work or related activities.
- 10. Failure of VENDOR and/or its Subcontractor(s) to comply with the insurance requirements herein shall be deemed a material breach of the Agreement.
- 11. The limits of insurance shall not be less than the following amounts:

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

- j. Time is of the essence for all Work under the contract. It is hereby understood and agreed that it is and will be difficult and/or impossible to ascertain and determine the actual damage that the District will sustain in the event of and by reason of VENDOR'S delay; therefore, VENDOR agrees that it shall pay to the District the sum of Five Hundred Dollars (\$500) per day as liquidated damages for each and every day's delay beyond the Final Completion Date that Final Completion is not achieved. It is hereby understood and agreed that this amount is not a penalty
- k. In the event that VENDOR fails to correct a performance deficiency within 48 hours of District notification, excluding weekends, District may, without prejudice to any other remedy, (1) withhold payment, in whole, or in part, to such extent as may be necessary to protect the District from loss or (2) make good such deficiencies and adjust the total Contract Price by reducing the amount thereof by the cost of making good such deficiencies.
- l. VENDOR shall be responsible for scheduling work such that class instruction is not interrupted. By submitting a proposal, VENDOR understands Work may have to occur during off-hours or weekends. No additional cost will be incurred by the District due

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to work done outside normal work hours. VENDOR shall also be responsible for coordinating scheduling with the District. VENDOR shall provide a construction schedule to the District for review and approval prior to the commencement of any work.

- m. It is understood and agreed that the VENDOR and its subcontractors shall pay its employees and/or subcontract workers in accordance with the provisions of Section 1770 *et seq.* of the California Labor Code.
 - n. At the completion of the project, VENDOR shall complete the 'Proposition 39 Job Creation Tracking Report' (see Exhibit H for report form) and submit to the District as part of the closeout documents and as a condition for receiving final payment.
2. SCCD will provide:
- a. VENDOR access to all facilities covered by the contract.
 - b. VENDOR access to all required work areas to perform the task.
 - c. SCCD staff shall be available to VENDOR during normal work hours for consultation and clarification of task assignments.
 - d. A review of design documents, submittals and construction progress by the District for adherence to contract terms.
 - e. Building Department, DSA IOR and any Fire Department Inspection.
 - f. Progress payments for design and construction.
 - g. Payment of permit and inspection fees.
 - h. Access to record drawings of existing buildings. Note, the District cannot attest to the accuracy of record drawings and shall be considered as reference material only. It shall be the VENDOR'S responsibility to compare information provided in record drawings with as-built condition.

F. Contract Type

This contract will be covered by California Government Code section 4217.10 *et seq.* VENDORS must thoroughly review the contract included herewith (see Exhibit D for copy of Agreement) and must indicate acceptance of all terms and conditions of the Agreement, without conditions, qualifications or reservations. **Any Respondent who's RFQ/RFP Response does not include a statement agreeing to all terms and conditions will be deemed non-responsive.**

G. Substitutions

The District completed an initial phase of converting half of its buildings to a new standardized Delta Controls BAS in 2015. This RFQ/RFP is in response to the project's last phase, completing the conversion of the remaining buildings and integration into the existing Delta Controls BAS. Pursuant to Public Contract Code, Section 3400, VENDORS are asked to provide a proposal based on the Delta Controls BAS and substitutions for alternate building automation systems will not be accepted.

H. Reservation of Rights

This solicitation does not commit the District to enter into an agreement, to pay any costs incurred in preparation of any response to this RFQ/RFP, or to procure or contract for services or supplies. The District reserves the right to accept or reject any or all Qualifications/Proposals, to enter into a contractual agreement with any qualified VENDOR or agent thereof, and to cancel in part or in its entirety this solicitation if it is most advantageous and in the best interest of the District to do so. The District reserves the right to require any VENDOR to submit additional design and construction information, technical information or revisions to its Qualifications/Proposal as may be needed to ensure the project conforms to all design, program and performance criteria included in this RFQ/RFP.

Any Qualifications/Proposals submitted by a VENDOR who has not attended the mandatory pre-proposal meeting and subsequent walk through shall be rejected.

The District reserves the right to reject Qualifications/Proposals if they are not in full and complete compliance with the requirements and formats specified in this RFQ/RFP, to reject Qualifications/Proposals which omits or fails to complete any portion of the required documents, to reject Qualifications/Proposals which is in any way incomplete or irregular, or to reject a submittal upon evidence of the VENDOR having engaged in any communication, contact, or other activity prohibited by this RFQ/RFP.

The District reserves the right to waive any informality or irregularity in any Qualifications/Proposal received, to reject any or all Qualifications/Proposals, to re-solicit for Qualifications/Proposals, and to accept the Qualifications/Proposal which, in its sole judgment, is most advantageous to the District and in the District's best interest.

The District reserves the right to publicly display any information, proposal or other materials submitted by any VENDOR in response to this RFQ/RFP. Any language purporting to render all or portions of any proposal confidential or proprietary shall not be binding on the District.

III. QUALIFICATIONS/PROPOSAL SUBMITTAL REQUIREMENTS

A. Submission of Qualifications/Proposals

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1. **The latest date/time for submission of Qualifications/Proposals is November 20th, 2018 by 12:00pm.**
2. Qualifications/Proposals shall be submitted to the District on the Fairfield campus. The address is as follows (see Exhibit I for map of submittal location on campus):

Solano Community College District
4000 Suisun Valley Road (Building 1102)
Fairfield, CA 94534
Attention: Jason Yi

Qualifications/Proposals which are not received at the above-stated location at or prior to the latest date/time for submission of Qualifications/Proposals may be rejected by the District for non-responsiveness. Late responses may be returned to the Respondent unopened and noted that the Response was received late. Respondents are solely responsible for the timely submission of Qualifications/Proposals. Please take notice that no electronic e-mail or faxed responses will be permitted or accepted. Respondents are advised that the District utilizes a central mailroom for the receipt of items transmitted by U.S. Post Office and private courier services, including FedEx, On-Trac, DHL, UPS, etc. Items received in the District's central mailroom will be distributed to the addressee(s) only as part of the mailroom's regular routine delivery service. Qualifications/Proposals which are received in the District's central mailroom will not be considered a formal submission until the delivery of such item is effectuated to the Project Manager by the District's mailroom services. Accordingly, Respondents are encouraged to personally deliver Qualifications/Proposals directly to the District or to retain a private courier service to personally deliver RFQ/RFP responses.

3. Qualifications/Proposals will be submitted in three (3) bound copies and one electronic copy (PDF Format on Flash Drive).
4. Respondents are not prohibited from submitting extra information not specifically requested in this RFQ/RFP.

B. Qualifications/Proposal Format and Organization

Each Qualifications/Proposal must conform to the following described organizational format and must include the contents described below. Failure of a Respondent to submit its Qualifications/Proposal in a format and with contents conforming to the following requirements may be a basis for the District's rejection of such RFQ/RFP Response for non-responsiveness.

1. Cover Sheet. Identify the submittal as the Qualifications/Proposal to this RFQ/RFP and an identification of the firm submitting the response along with the firm's address, telephone/fax numbers and e-mail addresses of the firm's principal contacts in connection with their Qualifications/Proposal submittal.

2. Letter of Interest. Include a brief letter expressing the interest of the VENDOR for the project and a brief statement of the qualifications of the VENDOR to design, procure, and install a project of this type. Provide contact information, including the telephone number, fax number, and e-mail address(es) for all personnel of the VENDOR who will be receiving notices and other communications from the District regarding the RFQ/RFP.
3. Complete the Statement of Qualifications Questionnaire (see Exhibit E for questionnaire) and include with their Qualifications/Proposal submittal.
4. Provide additional details of the projects identified in the Statement of Qualifications Questionnaire which reflect the skills, experience and other qualifications of the Respondent to successfully complete this project.
5. Provide a description of the methodology and approach for design and construction to stay within the project budget and schedule. Please include:
 - a. Strategies your firm would employ to ensure no interruption of class instruction will occur during the project duration.
 - b. Proposed preliminary project sequencing, project schedule and/or milestone dates.
 - c. Strategies for cost savings through design and construction to maximize and efficiently use project funds.
 - d. Description of added value items, above and beyond base scope. Additional scope items are not required, but will be considered during evaluation.
 - e. Other information you feel is relevant.
6. Provide copies of Certificates of Insurance for the Respondent; required Certificates of Insurance and minimum coverage amounts for each policy of insurance are as set forth above.
7. Respondents must indicate acceptance of all terms and conditions of the Agreement (see Exhibit D for copy of Agreement), without conditions, qualifications or reservations. Any Respondent who's Qualifications/Proposal does not include a statement agreeing to all terms and conditions will be deemed non-responsive.
8. Provide a price proposal on the form provided (see Exhibit F for Price Proposal Form) to this RFQ/RFP. PLEASE NOTE a previous phase of this project was completed to convert approximately half of the buildings to the Delta Controls BAS, and this project is to complete the last phase for the remaining buildings needing conversion and integration. Pursuant to Public Contract Code, Section 3400, substitution requests for alternate building automation systems will not be accepted.

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All pricing shall include all scope necessary for a turnkey overall campus wide BAS, with existing buildings and newly converted buildings residing on a single system. Ongoing class instruction is not to be interrupted during this project, and all price proposals shall include costs for performing the Work off-hours or during weekends (see Exhibit C for academic calendar). Please provide us with a summary of and proposed work plan for work that you feel may need to be performed outside of these hours.

Pricing should be complete and include all labor, hardware, applicable taxes, and any other costs and fees.

All price proposals shall include a ten percent (10%) allowance for unforeseen items relating to the Work. VENDOR shall not bill for or be due any portion of this allowance unless the District has identified specific work, VENDOR has submitted a price for that work or the District has proposed a price for that work, the District has accepted the cost for that work, and the District has prepared a change order incorporating that work. VENDOR hereby authorizes the District to execute a unilateral deductive change order at or near the end of the Project for all or any portion of the allowance not allocated.

9. Complete the Designated Subcontractors List (see Exhibit J for form) and include with their Qualifications/Proposal submittal.
10. Complete the Non-Collusion Declaration (see Exhibit K for form) and include with their Qualifications/Proposal submittal.
11. If the District issued addenda to the RFQ/RFP, Respondent must acknowledge receipt on the Price Proposal Form (see Exhibit F for form), as well as including the following statement within the official response to the RFQ/RFP:

“The Respondent submitting this Qualifications/Proposal acknowledges receipt of Addenda Numbers: ____, ____ and _____. The Respondent confirms that requirements noted in the foregoing Addenda are incorporated into the Qualifications/Proposals.”

If the District does not issue addenda to the RFQ/RFP, please indicate

“No Addenda Issued.”

IV. EVALUATION AND AWARD

A. Evaluation Team

An Evaluation Team composed of at least 3 members will be appointed with responsibility to review submittals and make recommendations to the District's Governing Board on the VENDOR to be awarded the contract.

B. Basis for Selection

The Evaluation Team will rank/score each response based upon the criteria established in these RFQ/RFP documents. VENDOR responses will be scored and ranked based on a total maximum score of 200 points. Responses will be evaluated by three (3) categories, each weighted according to the District's. The following three (3) **primary categories of evaluation will be considered:**

1. Qualifications and Past Experience (60 Total Points in Category)

The Statement of Qualifications Questionnaire (see Exhibit E for form) and the ability of the VENDOR to represent its ability to successfully complete similar projects will be scored in this category. Respondents are encouraged to list and briefly describe past projects with similar scope, preferably for K-12 School Districts or Community College Districts. Please include projects with similar schedule and budget constraints and describe how these experiences make your firm best suited for this project. Please include references with contact information for each project. The breakdown of this category's scoring is shown in table below:

Qualifications and Past Experience Scoring	Max Points Possible
Submitted Statement of Qualifications and provided responses to the satisfaction of the District.	15
Provided project history of similar projects, including brief description, with references.	15
Demonstrated ability to successfully complete a project with similar schedule and budget constraints.	30

Total Points for Category 60

2. Methodology and Approach to Schedule (70 Total Points in Category)

The VENDOR'S ability to successfully describe its methodology and approach to meet the project's schedule will be scored in this category. VENDORS shall include a statement to confirm it understands class instruction will not be interrupted and meeting the schedule is achievable. VENDORS shall include a preliminary project schedule, or milestone dates, which takes into consideration the District's 2018-2019 Academic Calendar (see Exhibit C for academic calendar). The breakdown of this category's scoring is shown in table below:

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Methodology and Approach to Schedule Scoring	Max Points Possible
Statement confirming class instruction will not be interrupted during the project.	20
Statement confirming project schedule can be achieved.	20
Demonstrated ability to successfully meet project schedule. Preliminary project schedule, or milestone dates, included.	30

Total Points for Category 70

3. Cost Consideration and Price Proposal (70 Total Points in Category)

The VENDOR’S ability to demonstrate its attention to cost savings during design and construction and price proposal will be scored in this category. VENDORS are encouraged to provide strategies for how the District can maximize and efficiently use project funds for both design and construction. This category will also take into consideration added value items that are not required, but VENDOR has elected to include if awarded. The breakdown of this category’s scoring is shown below:

Cost Consideration and Price Proposal Scoring	Max Points Possible
Demonstrated ability to maximize and efficiently use project funds, including strategies for design and construction.	20
Added value items above and beyond base scope (not required, but will be taken into consideration during evaluation).	10
Price Proposal	40

Total Points for Category 70

The District will total the scores for **Qualifications and Past Experience, Methodology and Approach to Schedule, and Cost Consideration and Price Proposal** as noted above, and rank them sequentially in order of highest to least points. The District may interview one or more proposers to clarify the written proposals. The award of the contract shall be made to the VENDOR whose proposal is determined to possess the best value for the District.

It is not necessarily the District’s intent to obtain the lowest possible cost, but rather the best possible value. The District will make its selection after assessing the quality of the proposed products, services and lifecycle savings as well as the cost of the

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products and services. The District reserves the right to utilize California Government Code Section 4217.10-4217.18.

The results of the District's evaluation and ranking of the VENDOR Qualifications/Proposals will be final.

V. CONTRACT NEGOTIATIONS

A. Contract Execution

Immediately following selection of the highest ranked VENDOR, representatives of the District and the VENDOR will meet to review and finalize contract terms and conditions.

The VENDOR contract will be executed within a thirty (30) day period following award of the contract. In the event the District is unable for any reason to enter into a contract with the selected VENDOR within this period, the District reserves the right to terminate discussions with the otherwise successful VENDOR and, at the District's sole option, to enter into an agreement with the next best qualified VENDOR as determined by the Evaluation Team.

All required insurance certificates, endorsements, and payment and performance bonds, and any other requirements of the Public Contract Code must be submitted to and approved by the District before the District will execute the contract.

B. Submittal Review

These RFQ/RFP documents and Addenda will become part of the contract executed with the successful VENDOR and will take priority over anything to the contrary included, whether directly or indirectly, in the Qualifications/Proposal of the VENDOR. The basis for contract award and the District's review of subsequent design and construction activities for conformity will be this RFQ/RFP.

C. Compensation Schedule

After award of the Contract, a detailed milestone construction schedule shall be developed by the VENDOR and submitted to the District for review. Once accepted by the District the milestone schedule shall be the basis of compensation to the VENDOR. Invoices shall be submitted monthly based upon % complete of each milestone.

VI. EXHIBITS

EXHIBIT A – BUILDING EXISTING EQUIPMENT LISTS

EXHIBIT B – BAS GRAPHIC USER INTERFACE

EXHIBIT C – 2018-2019 ACADEMIC CALENDAR

EXHIBIT D – AGREEMENT

EXHIBIT E – STATEMENT OF QUALIFICATIONS QUESTIONNAIRE

EXHIBIT F – PRICE PROPOSAL FORM

EXHIBIT G – PERFORMANCE AND PAYMENT BOND FORMS

EXHIBIT H – PROPOSITION 39 JOB CREATION TRACKING REPORT

**EXHIBIT I – CAMPUS MAP (MANDATORY PRE-BID MEETING LOCATION,
RFQ/RFP SUBMITTAL LOCATION)**

EXHIBIT J – DESIGNATED SUBCONTRACTORS LIST

EXHIBIT K – NON-COLLUSION DECLARATION

EXHIBIT B

I. Graphical User Interface (GUI) Expectations

Graphic examples included in Exhibit B are to be used as a guide, but in general will look very similar to those shown.

- A. The opening screen shall be a map of the campus with building numbers shown. Clicking on a building will open up a second screen with a list of HVAC systems within that building. Clicking on the HVAC system initiates graphics for the system.
- B. The opening graphic for each HVAC system will be similar to the Annex Bldg., Bldg. 500 and Bldg. 1700A (see graphics included in Exhibit B).
- C. The second graphic will be similar to Bldg. 400 and Bldg. 800 (see graphics included in Exhibit B).
- D. The third graphic will be similar to Bldg. 900 (see graphics included in Exhibit B).
- E. Real-time data will be displayed on the graphics.
- F. Graphical User Interface (GUI) controls shall be point-and-click.

EXHIBIT B

900 Annex Bldg. - VAV-14

Application AZ60 V 4.02A

Tuesday, 2/4/2014 11:10:15AM

Box Mode: Occupier Warmup Cooldown Afterhour

Space Temp: 69.5 °F Low

Box Heat: 100%

Current Airflow: 159 CFM

Size: 12.0

Cal Factor: 1.0

1.0

0.4

10.0

Properties

Graphic

Previous

	Occupied	Current	Inoccupied
Heating	71.0 °F	71.0 °F	55.0 °F
Cooling	73.0 °F	73.0 °F	85.0 °F

Zone Setpoint

Microset Zone Sensor: 72.0 Occupied

72.0 Occupied Stpt Hi

68.0 Occupied Stpt Lo

0.0 °F Current Microtouch Bias

0.0 Microtouch Bias Limit

Disabled Microset OFF Button

1.0 Heating Offset

1.0 Cooling Offset

55.0 Unoccupied Htg

85.0 Unoccupied Cla

Demand Control

0.0 °F Demand

Cooling

Heating

Operating Status

Zone Mode Control

Occupied Command

0.0 Afterhours Timer

9.5 Afterhours Limit

Temperatures

69.5 °F Space

156.9 °F Discharge Temp

54.2 °F Outside Air Temp

Warm Air In

159cfm Current Airflow

100% Heating Signal

0% Cooling Signal

Enabled Field Service

Damper Control

Check Corresponding Box To

300 Maximum Airfl

150 Minimum Airf

150 Reheat Airflc

150cfm Desired Airflow

159cfm Current Airflow

0% Need More

0% Est Damper

Force Damper Op

Force Damper Cl

Lock Damper Mo

Bldg 900-AHU-1 VAV Boxes

AHU			
AHU-1	AHU-1 SA	66.2 °F	AHU-1 Return Temp 71.0 °F

Location	Unit	Status	Setpoint	Space Temp.	Current CFM	Desired CFM	SA Temp.	Htg Valve
Office A916	26101	VAV-1	70	61 °F	214	200	144 °F	100.0 % Open
Office A935	26102	VAV-2	70	63 °F	225	200	130 °F	100.0 % Open
Office A938	26103	VAV-3	71	72 °F	349	340	67 °F	10.1 % Open
Office A932	26104	VAV-4	70	70 °F	231	225	68 °F	0.0 % Open
Office A903	26105	VAV-5	68	71 °F	801	821	67 °F	0.0 % Open
Office A911	26106	VAV-6	72	66 °F	344	325	137 °F	100.0 % Open
Corridor A945C	26107	VAV-7	67	72 °F	301	300	113 °F	0.0 % Open
I.T. A930	26108	VAV-8	68	72 °F	395	390	67 °F	0.0 % Open
Office A906	26109	VAV-9	70	71 °F	622	625	102 °F	64.4 % Open
Office A943	26110	VAV-10	68	69 °F	305	300	67 °F	0.0 % Open
Office A928	26111	VAV-11	70	71 °F	260	250	67 °F	0.0 % Open
Office A910	26112	VAV-12	68	68 °F	246	250	67 °F	0.0 % Open
Office A907	26113	VAV-13	68	67 °F	311	300	102 °F	100.0 % Open
Office A922	26114	VAV-14	72	70 °F	157	150	157 °F	100.0 % Open
Conference A902	26115	FPB-1	72	71 °F	303	150	68 °F	20.9 % Open

EXHIBIT B

Occupied

Warmup

Cooldown

Afterhours

Occupied

Afterhours Timer: 0.0

70.0 ° Supply Air

65.4 ° Return Air

48.0 ° Mix Air Temperature

Disable UI

Supply Temperature Setpoint

Manual Setpoint Control

66.0 ° Current

66.0 Manual/Startup

65.0 Auto-Reset Setpoint

55.0 Auto-Reset Setpoint

90.0 Warmup Supply

100% Highest Cooling

Previous

Text

Chilled Water

Hot Water Request

OSA Temp: 50.0 °F

MA Temp: 65.8 °F

Return Temp: 70.0 °F

Supply Temp: 65.4 °F

Cooling: 0 %

Heating: 0 %

start

Device 25141 (...)

10:08 AM

Bldg 500-AHU2

Device 5002

Model: VLC-1188

Tuesday, 2/4/2014 10:19:01AM

Command Mode	Controlling	SF Fan	RF Fan	Cooling Status	OSA Temp	Supply Air	Mixed Air	Economizer Status
<input checked="" type="checkbox"/> Occupied <input checked="" type="checkbox"/> Warmup <input checked="" type="checkbox"/> Cooldown <input checked="" type="checkbox"/> Afterhours	69.5 °F			Allowed 0 %	52.0 °F	63 °F	58 °F	Allowed 74 %

	Cooling
Occupied	69.0 °F
Unoccupied	85.0 °F
Current	69.0 °F

Zone Setpoint

RA Zone Sensor

68.0 Occupied Setpoint

74.0 Occupied Stpt Hi Limit

66.0 Occupied Stpt Lo Limit

1.0 Heating Offset

1.0 Cooling Offset

60.0 Unoccupied Htg

85.0 Unoccupied Clg

55.0 Supply Temp Lo Limit

35 % Cooling Signal

Operating Status

Occupied Command Mode

0.0 Afterhours Timer

9.5 Afterhours Duration

69.5 °F Space Temp

63.1 °F Supply Temp

69.5 °F Return Temp

52.0 °F Outside Air Temp

0 % Heating Signal

0 % Cooling Signal

Runtimes

44495 Fan Runtime

10124 Filter Runtime

3000 Filter Runtime Alarm Setpoint

Filter Runtime Alarm

Miscellaneous

Fan Mode

1 Operating Mode

1 - Continuous

2 - Cycle Heating Only

3 - Cycle Heating and Cooling

Economizer

73 Economizer Lockout

10 Econ Min Position %

Bldg CHW Pump

Bldg CHW Pump

Auto

Bldg HW System

Bldg HW Pump

Auto

Bldg HW Valve

Auto

Temperatures

Bldg HW Supply Temp

Coil HW Supply Water Temp. 174 °F

CHW Coil

Coil CHW Supply Water Temp. 61 °F

Coil CHW Return Water Temp. 60 °F

start

Device 5002

10:19 AM

Operating Mode

- Occupier Occupied
- Warmup
- Cooldown Afterhours
- Afterhour 0.0

Bldg Pressure

-0.0" WC

Supply Pressure Control

Manual SP Control

0.00" Current

50.0 Manual/Startup

0.0 Auto-Reset SP Hi

0.0 Auto-Reset SP Lo

0.0 Warmup Pressure

0% High Need More

Previous

Supply Temperature

Supply Temperature Setpoint

Manual SP Control

70.0°F Current

70 Manual Setpoint

50 OA @ Hi SA Limit

65 Auto-Reset

80 OA @ LO SA Limit

50 Auto-Reset

50.0 Low Supply Temp.

Return Air Temp
69.9°F

Supply Air Temp
70.5°F

OSA **53.0°F**

20 % Econ.
20 Econ.
72 Econ.
Economizer Allowed

Heating
24 %

Cooling
0 %

Command Mode	Space Temp	Unit Fan	Cooling Status	Heating Status	Economize Status
<input checked="" type="radio"/> Occupier	68.5 °F		Allowed	Allowed	Allowed
<input type="radio"/> Smoke			0 %	0 %	100 %
<input type="radio"/> Afterhour			0 %	0 %	100 %

	Heating	Cooling
Occupied	66.0 °F	68.0 °F
Inoccupier	55.0 °F	85.0 °F
Current	66.0 °F	68.0 °F

Previous

Zone Setpoint

Microset Zone Sensor

67.0 Occupied

74.0 Occupied Stpt Hi

65.0 Occupied Stpt Lo

0.0 °F Current Microtouch Bias

0.0 Microtouch Bias Limit

Disabled Microset OFF Button

1.0 Heating Offset

1.0 Cooling Offset

55.0 Unoccupied Htg

85.0 Unoccupied Cla

Demand Control

0.0 °F Demand

Cooling

Heating

Operating Status

Occupied Command

0.0 Afterhours Timer

2.0 Afterhours Limit

68.5 °F Space

58.8 °F Supply

56.0 °F Outside Air Temp

56.6 °F Mixed Air Temp

0 % Heating Signal

100 % Cooling Signal

Runtimes

26446 Fan Runtime

8236 Filter

3000 Filter Runtime Set

SF Status RF Status

Miscellaneous

Fan Mode

1 Operating

1 - Continuous

2 - Cycle Heating Only

3 - Cycle Heating and

Economizer

75.0 Economizer

20.0 Econ Min

140.0 Supply Temp Hi

50.0 Supply Temp Lo

Enabled Field Service

90 Econ Damper Time

90 Heating Valve Time

90 Cooling Valve Time

EXHIBIT B

Command Mode	Space Temp	Unit Fan	Cooling Status	Heating Status	Supply Air	Return Air	Economizer Status
<input checked="" type="radio"/> Occupied <input type="radio"/> Warmup <input type="radio"/> Cooldown <input type="radio"/> Afterhours	69.0 °F	 Auto	Allowed 0 %	Allowed 0 %	68 NF	67 NF	Allowed 10%

	Heating	Cooling
Occupied	69.0 °F	71.0 °F
Unoccupied	45.0 °F	95.0 °F
Current	69.0 °F	71.0 °F

- Previous
- Graphic
- Properties

Zone Setpoint

Microset Zone Sensor

70.0 Occupied Setpoint

80.0 Occupied Stpt Hi

65.0 Occupied Stpt Lo

0.0 °F Current Microtouch Bias

0.0 Microtouch Bias Limit

Disabled Microset OFF Button

1.0 Heating Offset

1.0 Cooling Offset

45.0 Unoccupied Htg

95.0 Unoccupied Clg

140.0 Supply Temp Hi Limit

50.0 Supply Temp Lo Limit

Enabled Field Service Mode

Operating Status

Occupied Command Mode

0.0 Afterhours Timer

9.5 Afterhours Limit

69.0 °F Space Temp

67.0 °F Supply Temp

67.9 °F Return Temp

54.0 °F Outside Air Temp

0 % Heating Signal

0 % Cooling Signal

Runtimes

50074 Fan Runtime

8637 Filter Runtime

3000 Filter Runtime Alarm Setpoint

Filter Runtime Alarm

Miscellaneous

Fan Mode

1 Operating Mode

- Continuous
- Cycle Heating Only
- Cycle Heating and Cooling

Economizer

75.0 Economizer Lockout

10.0 Econ Min Position %

Bldg HW System

200 HW Pump Auto

200 HW Valve 100%

Force OPEN

Bldg CHW Pump

200 CHW Pump Auto

200 CHW Valve

Force OPEN

Temperatures

HW Coil

Coil HW Supply Water Temp. 104 NF

Coil HW Return Water Temp. 91 NF

CHW Coil

Coil CHW Supply Water Temp. 68 NF

Coil CHW Return Water Temp. 69 NF

Force OPEN

Force CLOSE

EXHIBIT C

Solano Community College District 2018-19 Academic Calendar

SUMMER 2018

JUNE 2018						
S	M	T	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

JULY 2018						
S	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

AUGUST 2018						
S	M	T	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

FALL 2018

AUGUST 2018						
S	M	T	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

SEPTEMBER 2018						
S	M	T	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

OCTOBER 2018						
S	M	T	W	Th	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

NOVEMBER 2018						
S	M	T	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

DECEMBER 2018						
S	M	T	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

SPRING 2019

JANUARY 2019						
S	M	T	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

FEBRUARY 2019						
S	M	T	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

MARCH 2019						
S	M	T	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

APRIL 2019						
S	M	T	W	Th	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

MAY 2019						
S	M	T	W	Th	F	S
		1	2	3	4	
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

LEGEND

SUMMER 2018	
June 4 – August 2	
Six-week Session -- June 11 – July 19	
Eight-week Session -- June 11 – August 2	
Nine-week Classes -- June 4 – August 2	
FALL 2018	
August 13 – December 16	
Flex Day (Optional)	August 9
Flex Day (Required)	August 10
Flex Day (Optional)	October 9
Finals Week	December 10-16
SPRING 2019	
January 14 – May 23	
Flex Day (Optional)	January 10
Flex Day (Required)	January 11
Flex Days (Optional)	March 12-13
Evening Class Finals Begin	May 16
Finals Week	May 17-23
Commencement  May 23, 2019	
Flex Day (Optional)	
Flex Day (Required)	
No Classes	
State Mandated Holiday	
District Holiday	

NUMBER OF INSTRUCTIONAL DAYS (M-F)

	M	T	W	Th	F	Total
Fall 2018	15	16	16	16	16	79
Spring 2019	15	16	16	17	15	79

FINAL EXAMINATION DAYS (M-F)

	M	T	W	Th	F	Total
Fall 2018	1	1	1	1	1	5
Spring 2019	1	1	1	1	1	5

FLEX DAYS

Fall 2018	3
Spring 2019	4
TOTAL	7

WEEKEND CLASS DAYS INCLUDING FINALS

	Sat	Sun
Fall 2018	16	16
Spring 2019	16	16

HOLIDAYS

	State Mandated	Declared by SCCD
Independence Day	July 4 (W)	
Labor Day	September 3 (M)	September 1-2 (S-Su)
Veterans Day (observance)	November 12 (M)	
Thanksgiving Day	November 22 (Th)	November 23-25 (F-Su)
Winter Break		December 20 – January 2 (Th-W)
Martin Luther King, Jr. Day	January 21 (M)	
Lincoln Day	February 15 (F)	February 16-17 (S-Su)
Washington Day	February 18 (M)	
Spring Break		April 15 (M) – 21 (Su)
Memorial Day	May 27 (M)	

EXHIBIT D

AGREEMENT

THIS AGREEMENT IS MADE AND ENTERED INTO THIS ____ DAY OF _____, 2018, by and between the Solano Community College District ("District") and _____ ("VENDOR") ("Agreement").

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

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

PROJECT: **Building Automation System (BAS) Retrofit Project Phase 2**

It is understood and agreed that the Work shall be performed and completed as required in the Contract Documents including, without limitation, the Request for Qualifications/Request for Proposal and submission of all documents required to secure Proposition 39 funding for close-out of the Project, under the direction and supervision of, and subject to the approval of, the District or its authorized representative.

2. **The Contract Documents:** The complete Contract consists of all Contract Documents, including the Request for Qualifications/Request for Proposals and incorporated herein by this reference. Any and all obligations of the District and Contractor are fully set forth and described in the Contract Documents. All Contract Documents are intended to cooperate so that any Work called for in one and not mentioned in the other or vice versa is to be executed the same as if mentioned in all Contract Documents.
3. **Interpretation of Contract Documents:** Should any question arise concerning the intent or meaning of Contract Documents, including the Request for Qualifications/Request for Proposal, the question shall be submitted to the District for interpretation. If a conflict exists in the Contract Documents, modifications, beginning with the most recent, shall control over this Agreement (if any). In no case shall a document calling for lower quality and/or quantity material or workmanship control. The decision of the District in the matter shall be final.
4. **Time for Completion:** It is hereby understood and agreed that the work under this contract shall be completed within ONE HUNDRED FIFTY THREE (153) consecutive calendar days ("Contract Time") from the date of the Notice to Proceed. VENDOR affirms by submitting their SOQ/P, class instruction will not be interrupted during this project. Included in the amount are any fees or additional costs for the VENDOR to perform the Work off-hours or on weekends, to ensure project completion by April 30, 2018. IN NO CIRCUMSTANCE SHALL THE PROJECT BE COMPLETE PAST APRIL 30, 2018.
5. **Completion-Extension of Time:** Should the VENDOR fail to complete this Contract, and the Work provided herein, within the time fixed for completion, the

EXHIBIT D

VENDOR shall become liable to the District for all loss and damage that the District may suffer on account thereof. The Contractor shall coordinate its work with the District in a manner that does not interrupt class instruction.

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

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

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

The time during which the Contract is delayed for cause as hereinafter specified may extend the time of completion for a reasonable time as the District may grant. This provision does not exclude the recovery of damages for delay by either party under other provisions in the Contract Documents.

- 7. Loss Or Damage:** The District and its authorized representatives shall not in any way or manner be answerable or suffer loss, damage, expense, or liability for any loss or damage that may happen to the Work, or any part thereof, or in or about the same during its construction and before acceptance, and the VENDOR shall assume all liabilities of every kind or nature arising from the Work, either by accident, negligence, theft, vandalism, or any cause whatever; and shall hold the District and its authorized representatives harmless from all liability of every kind and nature arising from accident, negligence, or any cause whatever.
- 8. Insurance and Bonds:** Before commencing the Work, VENDOR shall provide all required certificates of insurance, and payment and performance bonds as evidence thereof.
- 9. Prosecution of Work:** If the VENDOR should neglect to prosecute the Work properly or fail to perform any provisions of this contract, the District, may, pursuant to the Contract Documents and without prejudice to any other remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the VENDOR.
- 10. Laws, Code & Regulations:** VENDOR hereby acknowledges all work performed shall comply with the requirements of the Contract Documents, Title 24 of the California Code of Regulations, and all applicable laws.
- 11. Assignment of Contract:** Neither the Contract, nor any part thereof, nor any moneys due or to become due thereunder, may be assigned by the VENDOR without the written approval of the District, nor without the written consent of the Surety on

EXHIBIT D

the Contractor's Performance Bond (the "Surety"), unless the Surety has waived in writing its right to notice of assignment.

12. **Classification of Contractor's License:** VENDOR hereby acknowledges that it currently holds valid Type **B and/or C-10** Contractor's license(s) issued by the State of California, Contractor's State Licensing Board, in accordance with division 3, chapter 9, of the Business and Professions Code and in the classification called for in the Contract Documents.
13. **Registration as Public Works Contractor:** The VENDOR and all Subcontractors currently are registered as public works contractors with the Department of Industrial Relations, State of California, in accordance with Labor Code section 1771.4.
14. **Payment of Prevailing Wages:** The VENDOR and all Subcontractors shall pay all workers on all Work performed pursuant to this Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to sections 1770 et seq. of the California Labor Code.
15. This Project is subject to labor compliance monitoring and enforcement by the Department of Industrial Relations pursuant to Labor Code section 1771.4 and Title 8 of the California Code of Regulations. VENDOR specifically acknowledges and understands that it shall perform the Work of this Agreement while complying with all the applicable provisions of Division 2, Part 7, Chapter 1, of the Labor Code, including, without limitation, the requirement that the VENDOR and all of its Subcontractors shall timely submit complete and accurate electronic certified payroll records as required by the Contract Documents, or the District may not issue payment.
16. **Contract Price:** In consideration of the foregoing covenants, promises, and agreements on the part of the VENDOR, and the strict and literal fulfillment of each and every covenant, promise, and agreement, and as compensation agreed upon for the Work, including design, construction, execution, and completion as aforesaid, the District covenants, promises, and agrees that it will well and truly pay and cause to be paid to the VENDOR in full, and as the full Contract Price and compensation for construction, erection, and completion of the Work hereinabove agreed to be performed by the VENDOR, the following price:

Dollars

_____)

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

EXHIBIT D

17. Severability: If any term, covenant, condition, or provision in any of the Contract Documents is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the provisions in the Contract Documents shall remain in full force and effect and shall in no way be affected, impaired, or invalidated thereby.

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

VENDOR

DISTRICT

SOLANO COMMUNITY COLLEGE DISTRICT

By: _____

By: _____

Title: _____

Title: _____

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

END OF DOCUMENT

**EXHIBIT E – STATEMENT OF QUALIFICATIONS
QUESTIONNAIRE**

DECLARATION

**IMPORTANT – READ AND COMPLETE EXHIBIT E – STATEMENT
OF QUALIFICATIONS QUESTIONNAIRE BEFORE SIGNING.**

VENDOR must sign declaration below that the information provided in EXHIBIT E – STATEMENT OF QUALIFICATIONS QUESTIONNAIRE is true and correct.

I, _____ (name), authorized agent of the company, _____ (company name), hereby declare, under penalty of perjury under the laws of the State of California that the information provided in EXHIBIT E – STATEMENT OF QUALIFICATIONS QUESTIONNAIRE is true and correct.

Signed: _____ Dated: _____

EXHIBIT E – STATEMENT OF QUALIFICATIONS QUESTIONNAIRE

1. VENDOR INFORMATION

Name of Vendor: _____

Primary Contact (Name, Phone, Email): _____

Address: _____

- A. VENDOR must possess a valid and active class **B or C-10** California Contractors License(s) at the time of contract award and registered as a Public Works Contractor with the Department of Industrial Relations. Provide the following information.

VENDOR'S State of California **B or C-10** Classification License Number, name under which license is held, and expiration date:

License No. _____ Name: _____ Exp. Date: _____

1. Has this license ever been revoked? Yes _____ No _____
If yes, please explain each incident below or on a separate attachment:

2. Has a complaint ever been filed with the Contractor's State License Board against your company that required a formal hearing or inquiry?
Yes _____ No _____ If yes, please explain each incident below or on a separate attachment:

3. Has the VENDOR ever been debarred by any public agency in the State of California? Yes _____ No _____ If yes, please explain each incident below or on a separate attachment:

EXHIBIT E – STATEMENT OF QUALIFICATIONS QUESTIONNAIRE

4. Has the VENDOR ever been sued in the State of California by a public agency for violation of the Federal or California False Claims Act, regardless of disposition of the action? Yes _____ No _____
If yes, please explain each incident below or on a separate attachment.

2. PREVAILING WAGE COMPLIANCE

- A. Has there been more than one occasion during the last five years in which your company was required to pay either back wages or penalties for your own firm's failure to comply with the **State of California's** prevailing wage laws?

NOTE: This question refers only to your own firm's violation of prevailing wage laws, not to violations of the prevailing wage laws by a subcontractor.

Yes No

If yes, attach a separate signed page or pages, describing the nature of each violation, identifying the name of the project, the date of its completion, the public agency for which it was constructed; the number of employees who were initially underpaid and the amount of back wages and penalties that you were required to pay.

- B. During the last five years, has there been more than one occasion in which your company has been penalized or required to pay back wages for failure to comply with the **Federal Davis-Bacon** prevailing wage requirements?

Yes No

If yes, attach a separate signed page or pages describing the nature of the violation, identifying the name of the project, the date of its completion, the public agency for which it was constructed; the number of employees who were initially underpaid, the amount of back wages you were required to pay along with the amount of any penalty paid.

3. RELEVANT PROJECT EXPERIENCE

Submit four (4) examples of relevant projects completed within the last ten (10) years or under current contract. Relevant projects include those with similar scope, including schedule and budget constraints (preferably for K-12 and/or Community College Districts). Briefly identify the relevance of each project below, and use narrative portion of the Response to provide additional details which reflect the skills, experience and other qualifications of the Respondent to successfully complete this project.

EXHIBIT E – STATEMENT OF QUALIFICATIONS QUESTIONNAIRE

Include the following information for each project. Photos and other graphic materials may be included (*Attach additional sheets as required*):

A. Project Team Members: _____

Project Name, Location, Description, and Relevance: _____

Owner: _____ Representative: _____ Telephone: _____
Architect: _____ Construction Manager: _____

Project Type: _____ Gross Square Footage: _____
Scheduled Completion Date: _____ Actual Completion Date: _____
Explain Difference, if any: _____
Original Contract Amount: _____ Final Contract Amount: _____
Explain Difference, if any: _____

Delivery Method: [] Design Build [] Design/Bid/Build Other: _____

B. Project Team Members: _____

Project Name, Location, Description, and Relevance: _____

Owner: _____ Representative: _____ Telephone: _____
Architect: _____ Construction Manager: _____

Project Type: _____ Gross Square Footage: _____
Scheduled Completion Date: _____ Actual Completion Date: _____
Explain Difference, if any: _____
Original Contract Amount: _____ Final Contract Amount: _____
Explain Difference, if any: _____

Delivery Method: [] Design Build [] Design/Bid/Build Other: _____

EXHIBIT E – STATEMENT OF QUALIFICATIONS QUESTIONNAIRE

C. Project Team Members: _____

Project Name, Location, Description, and Relevance: _____

Owner: _____ Representative: _____ Telephone: _____
Architect: _____ Construction Manager: _____

Project Type: _____ Gross Square Footage: _____
Scheduled Completion Date: _____ Actual Completion Date: _____
Explain Difference, if any: _____
Original Contract Amount: _____ Final Contract Amount: _____
Explain Difference, if any: _____

Delivery Method: Design Build Design/Bid/Build Other: _____

D. Project Team Members: _____

Project Name, Location, Description, and Relevance: _____

Owner: _____ Representative: _____ Telephone: _____
Architect: _____ Construction Manager: _____

Project Type: _____ Gross Square Footage: _____
Scheduled Completion Date: _____ Actual Completion Date: _____
Explain Difference, if any: _____
Original Contract Amount: _____ Final Contract Amount: _____
Explain Difference, if any: _____

Delivery Method: Design Build Design/Bid/Build Other: _____

4. PROPOSED PROJECT PERSONNEL

EXHIBIT E – STATEMENT OF QUALIFICATIONS QUESTIONNAIRE

Present the proposed key personnel that would **be assigned to or be responsible for work on this project.**

A. PROJECT MANAGER

Name: _____

Project Assignments/Responsibilities: _____

Years with this firm: _____ Years with other firms: _____

Education: _____

Active Registration and/or Credentials as applicable: _____

Positions/responsibilities on previous **relevant projects** (list project size, scope and building type): _____

Design/Build experience: _____

Design/Assist or Teaming experience: _____

Other experience, training, education, and qualifications relevant to the proposed project: _____

Experience with Public agency projects (preferably in California): _____

Experience with Community Colleges or other school projects and/or features: _____

[ATTACH ADDITIONAL SHEETS AS REQUIRED]

EXHIBIT E – STATEMENT OF QUALIFICATIONS QUESTIONNAIRE

B. LEAD FIELD PERSONNEL

Name: _____

Project Assignments/Responsibilities: _____

Years with this firm: _____ Years with other firms: _____

Education: _____

Active Registration and/or Credentials as applicable: _____

Positions/responsibilities on previous **relevant projects** (list project size, scope and building type): _____

Design/Build experience: _____

Design/Assist or Teaming experience: _____

Other experience, training, education, and qualifications relevant to the proposed project: _____

Experience with Public agency projects (preferably in California): _____

Experience with Community Colleges or other school projects and/or features: _____

[ATTACH ADDITIONAL SHEETS AS REQUIRED]

5. SAFETY RECORD

- A. List your company's Experience Modification Rate (EMR) (California Workers' Compensation insurance) for each of the past three premium years:

SOLANO COMMUNITY COLLEGE DISTRICT

EXHIBIT E – STATEMENT OF QUALIFICATIONS
QUESTIONNAIRE

Building Automation System (BAS) Retrofit
Project Phase 2

EXHIBIT E – STATEMENT OF QUALIFICATIONS QUESTIONNAIRE

NOTE: your workers' compensation insurance carrier issues an Experience Modification Rate to your firm annually.

Current year: _____

Previous year: _____

Year prior to previous year: _____

If your EMR for any of these three years is or was 1.00 or higher you may, if you wish, attach a letter of explanation.

6. TERMINATION/FAILURE TO COMPLETE; VIOLATIONS; CLAIMS, ARBITRATION AND LITIGATION

PURSUANT TO EDUCATION CODE SECTION 17250.25 PLEASE PROVIDE THE FOLLOWING INFORMATION:

- A. Provide a declaration certifying that VENDOR has not had a surety company finish work on any project within the last five (5) years:

Declaration:

I, _____, authorized agent of the company, hereby certifies and declares under penalty of perjury under the laws of the State of California that _____ (company name), has not had a surety company finish work on any project within the last five (5) years.

Signed: _____

Dated: _____

- B. Provide information and details below for any construction or design claim or litigation totaling more than fifty thousand dollars (\$50,000) settled against the VENDOR within the last five (5) years.

1. PROJECT: _____

Location: _____

Amount of Claim: \$_____ Resolution Yes [] No []

EXHIBIT E – STATEMENT OF QUALIFICATIONS QUESTIONNAIRE

Date: _____ Nature of Claim: _____

Final Status: _____

2. PROJECT: _____

Location: _____

Amount of Claim: \$_____ Resolution Yes [] No []

Date: _____ Nature of Claim: _____

Final Status: _____

3. PROJECT: _____

Location: _____

Amount of Claim: \$_____ Resolution Yes [] No []

Date: _____ Nature of Claim: _____

Final Status: _____

C. Provide information and details below for any serious violations of the Occupational Safety and Health Act, as provided in Part 1 (commencing with Section 6300) of Division 5 of the Labor Code, settled against the VENDOR.

EXHIBIT E – STATEMENT OF QUALIFICATIONS QUESTIONNAIRE

- D. Provide information and details of any violations of federal or state law, including, but not limited to, those laws governing the payment of wages, benefits, or personal income tax withholding, or of Federal Insurance Contributions Act (FICA) withholding requirements, state disability insurance withholding, or unemployment insurance payment requirements, settled against the VENDOR over the last five years.
- E. Provide information and details, under penalty of perjury, that any officer of the VENDOR, or any employee of such bidder who has a propriety interest in such bidder, has ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation, and if so explain the circumstances.

Declaration:

I, _____(name), authorized agent of the company, _____(company name), hereby declare under penalty of perjury that the above information is true and correct.

Signed: _____ Dated: _____

- F. Provide information and details of any violations by the VENDOR of the Contractor's State License Law (Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code), excluding alleged violations or complaints.
- G. Provide information and details of any conviction of the VENDOR for submitting a false or fraudulent claim to a public agency over the last five (5) years.

EXHIBIT F

PRICE PROPOSAL FORM

To: Governing Board of Solano Community College District ("District" or "Owner")

From: _____
(Proper Name of VENDOR)

The undersigned declares that the Contract Documents including, without limitation, the Request for Qualifications/Request for Proposal have been read and agrees and proposes to furnish all necessary labor, materials, and equipment to perform and furnish all work in accordance with the terms and conditions of the Contract Documents.

PROJECT: **Building Automation System (BAS) Retrofit Project Phase 2**

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

_____ dollars	\$ _____
<i>BASE PRICE PROPOSAL AMOUNT</i>	
_____ dollars	\$ _____
<i>10% OWNER'S ALLOWANCE</i>	
_____ dollars	\$ _____
<i>TOTAL PROPOSAL AMOUNT (CUMULATIVE TOTAL OF BASE PRICE PROPOSAL AMOUNT AND 10% OWNER'S ALLOWANCE)</i>	

1. **Allowance.** The VENDOR'S Base Price Proposal shall include a ten percent (10%) allowance for unforeseen items.

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

2. The undersigned has reviewed the Work outlined in the Contract Documents and fully understands the scope of Work required in this Proposal, understands the construction and project management function(s) is described in the Contract Documents, and VENDOR who is awarded a contract shall be in fact a prime contractor, not a subcontractor, to the District, and agrees that its Proposal, if

EXHIBIT F

accepted by the District, will be the basis for the VENDOR to enter into a contract with the District in accordance with the intent of the Contract Documents.

3. The undersigned has notified the District in writing of any discrepancies or omissions or of any doubt, questions, or ambiguities about the meaning of any of the Contract Documents, and has contacted the Project Manager before the Response due date to verify the issuance of any clarifying Addenda.
4. The undersigned agrees to commence work under this Contract on the date established in the Contract Documents and to complete all work within the time specified in the Contract Documents.
5. The liquidated damages clause of the Contract Documents is hereby acknowledged.
6. It is understood that the District reserves the right to reject this bid and that the bid shall remain open to acceptance and is irrevocable for a period of ninety (90) days.
7. The following documents are attached hereto:
 - Designated Subcontractors List (see Exhibit J for form)
 - Noncollusion Declaration (see Exhibit K for form)
8. Receipt and acceptance of the following addenda is hereby acknowledged:

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

9. VENDOR acknowledges that the license required for performance of the Work is a **B and/or C-10** license.
10. The undersigned hereby certifies that VENDOR is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the Work.
11. VENDOR specifically acknowledges and understands that if it is awarded the Contract, that it shall perform the Work of the Project while complying with all requirements of the Department of Industrial Relations [and with all requirements of the Project Labor Agreement].
12. The VENDOR represents that it is competent, knowledgeable, and has special skills with respect to the nature, extent, and inherent conditions of the Work to be performed. VENDOR further acknowledges that there are certain peculiar and inherent conditions existent in the construction of the Work that may create, during the Work, unusual or peculiar unsafe conditions hazardous to persons and property.

EXHIBIT F

13. VENDOR expressly acknowledges that it is aware of such peculiar risks and that it has the skill and experience to foresee and to adopt protective measures to adequately and safely perform the Work with respect to such hazards.
14. VENDOR expressly acknowledges that it is aware that if a false claim is knowingly submitted (as the terms "claim" and "knowingly" are defined in the California False Claims Act, Cal. Gov. Code, §12650 et seq.), the District will be entitled to civil remedies set forth in the California False Claim Act. It may also be considered fraud and the Contractor may be subject to criminal prosecution.
15. The undersigned VENDOR certifies that it is, at the time of bidding, and shall be throughout the period of the contract, licensed by the State of California to do the type of work required under the terms of the Contract Documents and registered as a public works contractor with the Department of Industrial Relations. VENDOR further certifies that it is regularly engaged in the general class and type of work called for in the Contract Documents.

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

Dated this _____ day of _____ 20 ____

Name of VENDOR _____

Type of Organization _____

Signed by _____

Title of Signer _____

Address of VENDOR _____

Taxpayer's Identification No. of VENDOR _____

Telephone Number _____

Fax Number _____

E-mail _____ Web page _____

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

No.: _____ Class: _____ Expiration Date: _____

No.: _____ Class: _____ Expiration Date: _____

EXHIBIT F

Public Works Contractor Registration No.: _____

If VENDOR is a corporation, affix corporate seal.

Name of Corporation: _____

President: _____

Secretary: _____

Treasurer: _____

Manager: _____

END OF DOCUMENT

EXHIBIT G

PERFORMANCE BOND (100% of Contract Price)

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

KNOW ALL PERSONS BY THESE PRESENTS:

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

_____ (Project Name)

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

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

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

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

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

The condition of the obligation is such that, if the above bounden Principal, his or its heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions, and agreements in the Contract and any alteration thereof made as therein provided, on his or its part to be kept and performed at the time and in the intent and meaning, including all contractual guarantees and warranties of materials and workmanship, and shall indemnify and save harmless the District, its trustees, officers and agents, as therein stipulated, then this obligation shall become null and void, otherwise it shall be and remain in full force and virtue.

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

EXHIBIT G

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

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

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

(Affix Corporate Seal)

Principal

By

Surety

By

Name of California Agent of Surety

Address of California Agent of Surety

Telephone No. of California Agent of Surety

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

END OF DOCUMENT

EXHIBIT G

DOCUMENT 00 61 13.16

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

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

KNOW ALL PERSONS BY THESE PRESENTS:

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

_____ (Project Name)

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

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

NOW, THEREFORE, the Principal and _____
("Surety")

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

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

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

EXHIBIT G

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

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

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

(Affix Corporate Seal)

Principal

By

Surety

By

Name of California Agent of Surety

Address of California Agent of Surety

Telephone No. of California Agent of Surety

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

END OF DOCUMENT

EXHIBIT H

PROPOSITION 39 JOB CREATION TRACKING REPORT

Contract Completion Report

Instructions: California Community College Districts are required to report, at the completion of each project utilizing Proposition 39 funds, the Full Time Equivalent (FTE) Direct Jobs that have been created in performing the work. The contractor is required to complete this Job Creation Tracking Report as a condition of the contract with the District and submit it to the District as a part of the closeout documents and as a condition for receiving final payment.

Please fill in blue shaded areas below with the required information.

District Name:

Campus Name:

Project Name:

Company Name:

Under Contract With:

Contract:

Contract Duration:

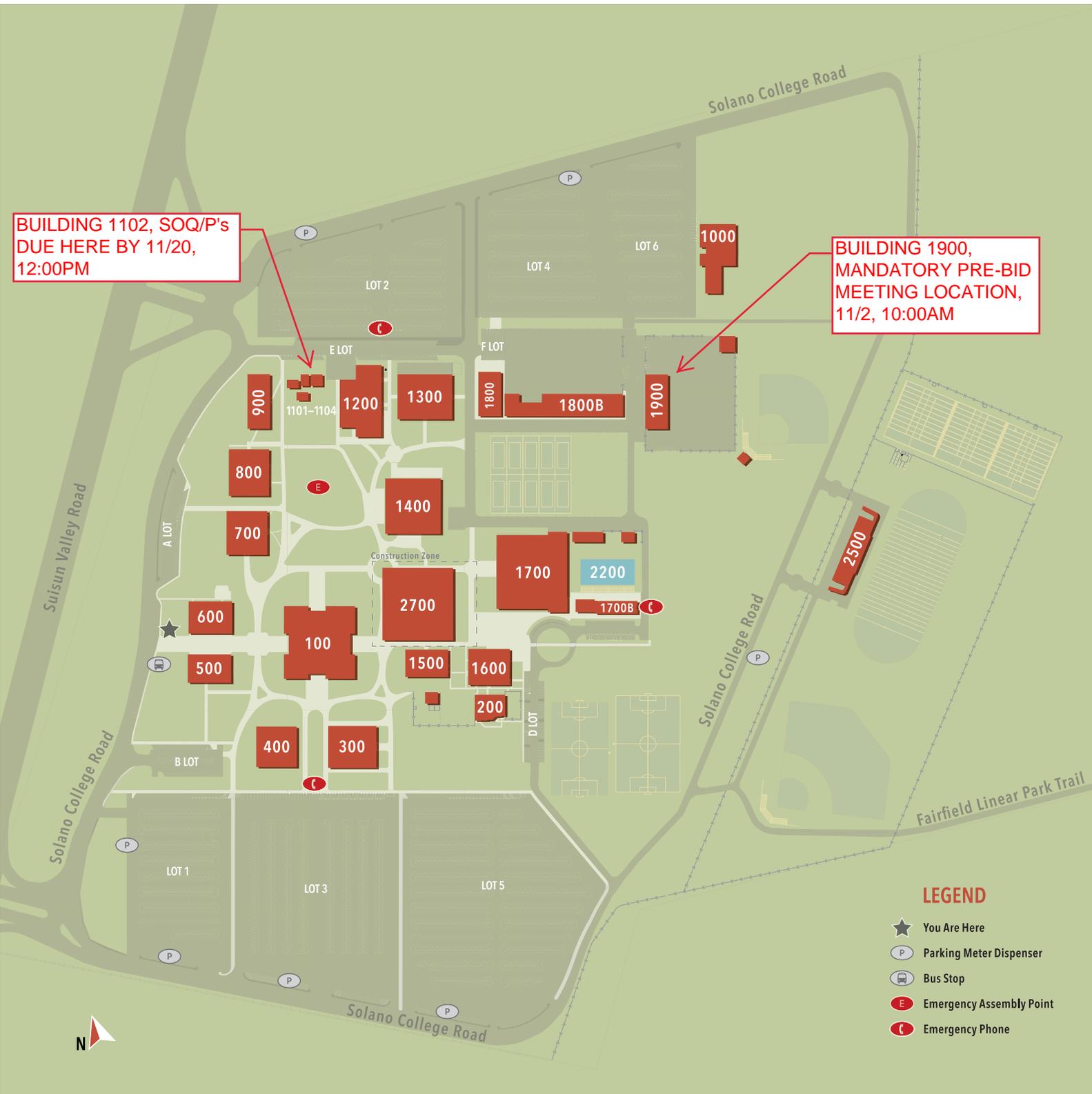
TRAINEES AND APPRENTICES		
Description	On-Site Hours	Full Time Equivalent (FTE)
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
TOTAL		<input type="text"/>

FULL-TIME EQUIVALENT EMPLOYEES		
Description	On-Site Hours	Full Time Equivalent (FTE)
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
TOTAL		<input type="text"/>

I CERTIFY THAT THE INFORMATION REPORTED ABOVE IS TRUE AND ACCURATE.

Signature: Title:

Print Name: Date:



BUILDING 1102, SOQ/P's DUE HERE BY 11/20, 12:00PM

BUILDING 1900, MANDATORY PRE-BID MEETING LOCATION, 11/2, 10:00AM

LEGEND

- ★ You Are Here
- P Parking Meter Dispenser
- Bus Stop
- E Emergency Assembly Point
- Emergency Phone

600 Administration	1800 Career Technical Education	900 Faculty Offices	1900 Maintenance	400 Student Services
400 Admission & Records	400 Career & Employment Services	600 Finance	400 MESA Program	2200 Swimming Pool
400 Assessment Center	200 Children's Programs Center	400 Financial Aid	800 Nursing	400 Transfer Center
1700 Athletics/Gym	1500 Computer Science	1300 Fine Arts	1200 Performing Arts/Theatre	100 Tutoring Center
600 Boardroom	100 Contract Education	100 Foundation	600 President's Office	400 Veterans Affairs
1400 Bookstore	1600 Cosmetology	1000 Horticulture	300 Science	2700 Veterans Center
500 Business	400 Counseling	700 Humanities	2700 Science	100 Workforce Development
1400 Cafeteria	1900 Deliveries/Warehouse	600 Human Resources	700 Social Science	
400 CalWORKS	400 Disability Services Program	400 Information	2500 Stadium	
1800B Campus Police	1500 Engineering	100 Library	1400 Student Center	
400 CARE Program	400 EOPS	1500 Math	1400 Student Health Services	

EXHIBIT J

DESIGNATED SUBCONTRACTORS LIST

(TO BE EXECUTED BY VENDOR AND SUBMITTED WITH SOQ/P)

PROJECT: _____

VENDOR acknowledges and agrees that under Public Contract Code section 4100, et seq., it must clearly set forth below the name, location and California contractor license number of each subcontractor who will perform work or labor or render service to the VENDOR in or about the construction of the Work or who will specially fabricate and install a portion of the Work according to detailed drawings contained in the plans and specifications in an amount in excess of one-half of one percent (0.5%) of VENDOR'S total Bid and the kind of Work that each will perform. Vendors or suppliers of materials only do not need to be listed.

VENDOR acknowledges and agrees that under Public Contract Code section 4100, et seq., if VENDOR fails to list as to any portion of Work, or if VENDOR lists more than one subcontractor to perform the same portion of Work, VENDOR must perform that portion itself or be subjected to penalty under applicable law. In case more than one subcontractor is named for the same kind of Work, state the portion of the kind of Work that each subcontractor will perform.

If alternate bids are called for and VENDOR intends to use subcontractors different from or in addition to those subcontractors listed for work under the Total Proposal Amount, VENDOR must list subcontractors that will perform Work in an amount in excess of one half of one percent (0.5%) of VENDOR'S Total Proposal Amount, including alternates.

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

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

DIR Reg. #: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

DIR Reg. #: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

DIR Reg. #: _____

EXHIBIT J

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

DIR Reg. #: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

DIR Reg. #: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

DIR Reg. #: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

DIR Reg. #: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

DIR Reg. #: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

DIR Reg. #: _____

Portion of Work: _____

EXHIBIT J

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

DIR Reg. #: _____

Portion of Work: _____

Date: _____

Proper Name of Bidder: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

EXHIBIT K

NON-COLLUSION DECLARATION TO BE EXECUTED BY VENDOR AND SUBMITTED WITH SOQ/P Public Contract Code Section 7106

The undersigned declares:

I am the _____ of _____, the party making the foregoing price proposal.

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

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

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

Date: _____

Proper Name of VENDOR: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT