

ADDENDUM TO THE CONTRACT DOCUMENTS

	ADDENDUM NO. 001
	Project: Solano Community College District Building 1600 Mechanical Room Upgrade Project Project Number: 25-027
	Date: March 16 th , 2026

Addendum No. 001 – The following clarifications are provided and must be added/considered when completing your bid: Acknowledgement of receipt of this **Addendum No. 001**, is required on the Bid Form. Please clearly note the addendum date and number.

ITEM NO. 1 – GENERAL INFORMATION

1.1. *None*

ITEM NO. 2 – SPECIFICATIONS

2.01 SECTION 09 90 00 - PAINTING AND COATING

A. Add new section in it's entirety. See attached.

2.02 SECTION 23 05 23 - GENERAL DUTY VALVES FOR HVAC PIPING

A. Deleted Paragraph 2.01.E.2.c.

B. Revised Paragraph 2.01.F.2.c as follows: Swing Check: 2-1/2 inch (65 mm, DN) to 12 inch (300 mm, DN), lever.

C. Deleted Paragraph 2.05 in it's entirety.

2.03 SECTION 23 07 19 - HVAC PIPING INSULATION

A. Deleted Paragraph 2.02.C.

B. Deleted Paragraph 2.05 in it's entirety.

C. Revised Paragraph 2.06.A as follows: PVC Plastic (Interior Only).

D. Revised Paragraph 2.06.A.2.b as follows: Maximum Service Temperature: 200 degrees F (94 degrees C).

E. Revised Paragraph 2.06.B as follows: Aluminum Jacket (Exterior Only).

2.04 SECTION 23 25 00 - HVAC WATER TREATMENT

A. Added Paragraph 1.01.B as follows: Cleaning of piping systems.

B. Added Paragraph 1.04 in it's entirety. See attached.

C. Added Paragraph 3.02 in it's entirety. See attached.

ITEM NO. 3 – DRAWINGS

3.01 DRAWING G-0.0

A. Replace Sheet G-4.1 in it's entirety.

1. General revisions were added for clarity.
2. Sheet M-4.2 was added to the Drawing Index.
3. Added Note #2 to Summary of Work for the pre-purchase of the hydronic pumps. Note numbering was revised.
4. Added Note #5 to Summary of Work for flushing the existing system.
5. Added Bid Alternative #1(Deduct) for retaining CHW crossover bridge piping in lieu of installing new piping.
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7. Added Note #5 to Summary of work.

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A. Mechanical Schedule was revised for clarity.

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- A. General revisions were added for clarity.
- B. General Sheet Note E. was added for isolating and draining sections of work.
- C. HHW and CHW Upgrades schematics have been revised.
- D. Revisions to CHW and HHW BOM were added for clarity.

3.04 DRAWING M-4.2

A. Sheet M-4.2 was added in it's entirety for Bid Alternates #1 and #2 and reflected on G-0.0.

3.05 DRAWING M-5.1

A. Additional notes were added for clarity.

ITEM NO. 4 – RESPONSES TO QUESTIONS SUBMITTED

4.01 BIDDER'S QUESTION: WILL THE COLLEGE BE PROVIDING THE PROJECT WITH OFFICE SPACE?

A. District's Response: No, office space will not be provided for the Contractor.

4.02 BIDDER'S QUESTION: WILL THE CONSTRUCTION TEAM HAVE ACCESS TO COLLEGE RESTROOM FACILITIES?

A. District's Response: Yes, restroom facilities at B-1600 or B-1700A are acceptable for contractor use.

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4.18 BIDDER'S QUESTION: WHAT IS THE ACCEPTABLE DOWNTIME FOR PIECE OF EQUIPMENT?

A. District's Response: Systems must be brought back online by no later than June 5th, to ensure final pressure test, pump start-up, water treatment, etc. is complete prior to required project completion on June 12th.

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A. District's Response: No.

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A. District's Response: Welded or flanged joints are acceptable for use on HHW system. Welded, flanged, or mechanical couplings, are acceptable joints for the CHW system. Threaded piping is acceptable for pipe sizes 2" and below, however, threaded unions must be provided upstream and downstream of equipment, valves, and hydronic specialties to facilitate service/replacement.

4.25 BIDDER'S QUESTION: WILL THERE BE A LOCATION WITH 50FT OF THE MECHANICAL ROOM TO PARK TRUCKS FOR WELDING EQUIPMENT?

A. District's Response: Refer to response(s) above related to welding trucks and laydown areas.

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A. District's Response: The building will not be occupied during this project. Standard working hours will be considered to be between 6:00am to 6:00pm, but in order to meet the schedule and avoid liquidated damages, contractor may have the ability to work weekends and off-hours with prior approval from the District. Approval for weekend and off-hour work would only be denied if the work disrupts normal campus activities.

4.27 BIDDER'S QUESTION: WILL ALL OF THE PUMP TRIM PACKAGES (THERMOMETERS, GAUGES, AS SHOWN ON THE PLANS) BE PROVIDED BY THE CUSTOMER ALONG WITH THE PUMPS ?

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A. District's Response: The CHW pump replacement has a 3 HP motor which is less than the existing CHW pump power requirement, existing electrical infrastructure is sufficient. The HHW pump replacement has a 1 HP motor which is less than the existing HHW pump power requirement, existing electrical infrastructure is sufficient. Contractor shall assume that the motor starters are single phase (0) or larger. Prior to commencement of work, contractor to verify that existing starter size and heaters are adequate for 3hp. Notify District if further modifications are required.

4.29 BIDDER'S QUESTION: WILL THE ALL NEW HHW AND CW PIPING IN THE MECHANICAL ROOM BE REQUIRED TO BE FLUSHED WITH CLEAN WATER PRIOR TO SYSTEM CONNECTIONS?

A. District's Response: Yes. See Addendum #1.

4.30 BIDDER'S QUESTION: WILL ANY OF THE INTERIOR BUILDING PIPING SYSTEM BE REQUIRED TO BE FLUSHED?

A. District's Response: Yes. See Addendum #1.

4.31 BIDDER'S QUESTION: WILL ANY TEMP HHW AND CW SYSTEMS BE REQUIRED FOR THE PROJECT?

A. District's Response: Temporary services are not required for the project duration described in the contract documents. However, if Contractor determines a project extension is necessary, Contractor shall notify Owner and Engineer immediately as relates to temporary heating and cooling needs.

4.32 BIDDER'S QUESTION: PLEASE CONFIRM THERE IS NO SLDBE PARTICIPATION REQUIREMENT FOR THIS PROJECT.

A. District's Response: Provide SLDBE form indicating 20% participation, or provide letter of "good faith effort" as is indicated in the front end specs - section 00 45 20.

4.33 BIDDERS QUESTION: PLEASE VERIFY THAT ALL NEW HHW AND CH PIPING IN THE MECHANICAL ROOM WILL NEED TO ONLY INSULATED WITH FIBERGLASS INSULATION AND NO PVC JACKETING IS REQUIRED?

A. District's Response: PVC jacketing is required as indicated in the contract documents.

4.34 BIDDERS QUESTION: ARE WE TO ASSUME THE EXTERIOR ALUMINUM JACKETING IS TO BE REPLACED FOR ALL FOUR PIPES CHW & HHW?

A. District's Response: Provide new insulation and aluminum jacketing at the exterior HHW risers as indicated in contract documents. The CHW risers are excluded (work, by others).

List of Attachments:

- DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS
- 00 91 11 ADDENDUM NUMBER 1 (ADDENDUM #1)
- DIVISION 09 - FINISHES
- 09 90 00 PAINTING AND COATING (ADDENDUM #1)
- DIVISION 23 - HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)
- 23 05 19 METERS AND GAUGES FOR HVAC PIPING
- 23 05 23 GENERAL-DUTY VALVES FOR HVAC PIPING (ADDENDUM #1)
- 23 05 93 TESTING, ADJUSTING, AND BALANCING FOR HVAC
- 23 07 19 HVAC PIPING INSULATION (ADDENDUM #1)
- 23 21 13 HYDRONIC PIPING
- 23 21 14 HYDRONIC SPECIALTIES
- 23 21 23 HYDRONIC PUMPS
- 23 25 00 HVAC WATER TREATMENT (ADDENDUM #1)
- END OF DOCUMENT

**SECTION 00 91 11
ADDENDUM NUMBER 1**

PARTICULARS**1.01 DATE: 03/16/26****1.02 PROJECT: 2510-00648-00 B-1600 MECHANICAL ROOM HYDRONIC UPGRADES****1.03 OWNER'S PROJECT NUMBER: 25-027****1.04 OWNER: SOLANO COMMUNITY COLLEGE DISTRICT****1.05 ARCHITECT: SALAS O'BRIEN****TO: PROSPECTIVE BIDDERS:****2.01 THIS ADDENDUM FORMS A PART OF THE CONTRACT DOCUMENTS AND MODIFIES THE ORIGINAL DOCUMENTS DATED 02/25/26, 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 25 PAGE(S) AND THE FOLLOWING DRAWINGS:
CHANGES TO THE PROJECT MANUAL - SPECIFICATIONS:****3.01 SECTION 09 90 00 - PAINTING AND COATING**

A. Add new section in it's entirety. See attached.

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A. Deleted Paragraph 2.01.E.2.c.

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2510-00648-00 B-1600

Mechanical Room Hydronic
Upgrades

00 91 11 - 3

Addendum Number 1

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A. District's Response: Provide new insulation and aluminum jacketing at the exterior HHW risers as indicated in contract documents. The CHW risers are excluded (work, by others).

END OF SECTION

TABLE OF CONTENTS (ADDENDUM #1)**DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS****00 91 11 *ADDENDUM NUMBER 1 (ADDENDUM #1)*****DIVISION 09 - FINISHES****09 90 00 *PAINTING AND COATING (ADDENDUM #1)*****DIVISION 23 - HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)****23 05 19 METERS AND GAUGES FOR HVAC PIPING****23 05 23 GENERAL-DUTY VALVES FOR HVAC PIPING (*ADDENDUM #1*)****23 05 93 TESTING, ADJUSTING, AND BALANCING FOR HVAC****23 07 19 HVAC PIPING INSULATION (*ADDENDUM #1*)****23 21 13 HYDRONIC PIPING****23 21 14 HYDRONIC SPECIALTIES****23 21 23 HYDRONIC PUMPS****23 25 00 HVAC WATER TREATMENT (*ADDENDUM #1*)**

SECTION 09 90 00
PAINTING AND COATING (ADDENDUM #1)

AFPART 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., chilled water and heating hot water)
 - b. Structural supports for piping and other structural components exposed, interior or exterior.
 - 2. Refer to section 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; 2024.
- D. SSPC-SP 3 - Power Tool Cleaning; 2024.
- E. SSPC-SP 6 - Commercial Blast Cleaning; 2007.

1.03 SUBMITTALS

- A. 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.
- B. 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. Sherwin-Williams, <https://www.sherwin-williams.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: Sherwin-Williams Pro-Cryl Universal Primer "B66-1300 Series," Pro Industrial, or equal rust-resistant metal primer. 1 coat minimum.
 - 2. Finish Coat: Sherwin-Williams DTM Acrylic Coating "B66-1050, 1150 & 1250 Series," Pro Industrial, or equal. 2 coats minimum.
- B. Copper, Bronze, or Galvanized Steel:
 - 1. Primer and Activator:
 - a. Primer: Sherwin-Williams Pro-Cryl Universal Primer "B66-1300 Series", or equal rust-resistant metal primer. 1 coat minimum.
 - b. Finish Coat: Sherwin-Williams DTM Acrylic Coating "B66-1050, 1150 & 1250 Series," Pro Industrial, or equal. 2 coats minimum.
- 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. Bare hydronic piping (i.e., chilled and heating hot water): Provide white paint color.
 - 2. Drain piping: Flat black paint for all drain piping
 - 3. Structural supports for 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 23 05 23
GENERAL-DUTY VALVES FOR HVAC PIPING**

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Ball valves.
- B. Butterfly valves.
- C. Check valves.
- D. Chainwheels.

1.02 ABBREVIATIONS AND ACRONYMS

- A. CWP: Cold working pressure.
- B. EPDM: Ethylene propylene copolymer rubber.
- C. NBR: Acrylonitrile-butadiene, Buna-N, or nitrile rubber.
- D. NRS: Nonrising stem.
- E. OS&Y: Outside screw and yoke.
- F. PTFE: Polytetrafluoroethylene.
- G. RS: Rising stem.
- H. TFE: Tetrafluoroethylene.
- I. WOG: Water, oil, and gas.

1.03 REFERENCE STANDARDS

- A. ASME B1.20.1 - Pipe Threads, General Purpose, Inch; 2013 (Reaffirmed 2018).
- B. ASME B16.1 - Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250; 2020.
- C. ASME B16.10 - Face-to-Face and End-to-End Dimensions of Valves; 2022, with Errata (2023).
- D. ASME B16.34 - Valves — Flanged, Threaded, and Welding End; 2025.
- E. ASME B31.9 - Building Services Piping; 2025.
- F. ASTM A126 - Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings; 2004 (Reapproved 2023).
- G. ASTM A216/A216M - Standard Specification for Steel Castings, Carbon, Suitable for Fusion Welding, for High-Temperature Service; 2021.
- H. ASTM A536 - Standard Specification for Ductile Iron Castings; 2024.
- I. MSS SP-67 - Butterfly Valves; 2022.
- J. MSS SP-71 - Gray Iron Swing Check Valves, Flanged and Threaded Ends; 2018.
- K. MSS SP-110 - Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends; 2010, with Errata .

1.04 SUBMITTALS

- A. See Division 1 for submittal procedures.
- B. Product Data: Provide data on valves including manufacturers catalog information. Submit performance ratings, rough-in details, weights, support requirements, and piping connections.
- C. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
- D. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, maintenance and repair data, and parts listings.

1.05 QUALITY ASSURANCE

2510-00648-00 B-1600

Mechanical Room Hydronic
Upgrades

23 05 23 - 1

General-Duty Valves for HVAC
Piping

- A. Manufacturer:
 1. Obtain valves for each valve type from single manufacturer.
 2. Company must specialize in manufacturing products specified in this section, with not less than three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Prepare valves for shipping as follows:
 1. Protect valve parts exposed to piped medium against rust and corrosion.
 2. Protect valve piping connections such as grooves, weld ends, threads, and flange faces.
 3. Adjust globe, gate, and angle valves to the closed position to avoid clattering.
- B. Use the following precautions during storage:
 1. Maintain valve end protection and protect flanges and specialties from dirt.
 - a. Provide temporary inlet and outlet caps.
 - b. Maintain caps in place until installation.
 2. Store valves in shipping containers and maintain in place until installation.
 - a. Store valves off the ground in watertight enclosures when indoor storage is not an option.
- C. Exercise the following precautions for handling:
 1. Handle large valves with sling, modified to avoid damage to exposed parts.
 2. Avoid the use of operating handles or stems as rigging or lifting points.

PART 2 PRODUCTS

2.01 APPLICATIONS

- A. See drawings for specific valve locations.
- B. Listed pipe sizes shown using nominal pipe sizes (NPS) and nominal diameter (DN).
- C. Provide the following valves for the applications if not indicated on drawings:
 1. Throttling (Hydronic): Butterfly and Ball.
 2. Isolation (Shutoff): Butterfly and Ball.
 3. Swing Check (Pump Outlet):
 - a. Size 2-1/2 inch (65 mm, DN) and Larger: Iron with lever and spring, center-guided metal, or center-guided with resilient seat.
- D. Required Valve End Connections for Non-Wafer Types:
 1. Steel Pipe:
 - a. Size 2 inch (50 mm, DN) and Smaller: Threaded ends.
 - b. Size 2-1/2 inch (65 mm, DN) and Larger: Flanged ends..
- E. Chilled Water Valves:
 1. Size 2 inch (50 mm, DN) and Smaller, Bronze Valves:
 - a. Threaded ends.
 - b. Ball: Full port, two piece, bronze trim, Class 150.
 2. Size 2-1/2 inch (65 mm, DN) and Larger, Iron Valves:
 - a. 2-1/2 inch (65 mm, DN) to 6 inch (150 mm, DN): Flanged ends.
 - b. Single-Flange Butterfly: 2-1/2 inch (65 mm, DN) to 12 inch (300 mm, DN), aluminum-bronze disc, Chloramine resistant EPDM seat, 200 CWP.
 - c. ~~Swing Check with Closure Control: 2-1/2 inch (65 mm, DN) to 12 inch (300 mm, DN), lever and spring, Class 125.~~ **(Addendum #1)**
- F. Heating Hot Water Valves:
 1. Size 2 inch (50 mm, DN) and Smaller, Bronze Valves:
 - a. Threaded ends.
 - b. Ball: Full port, one piece, bronze trim, Class 1.
 2. Size 2-1/2 inch (65 mm, DN) and Larger, Iron Valves:
 - a. 2-1/2 inch (65 mm, DN) to 6 inch (150 mm, DN): Flanged ends.

- b. Single-Flange Butterfly: 2-1/2 inch (65 mm, DN) to 12 inch (300 mm, DN), aluminum-bronze disc, Chloramine resistant EPDM seat, 200 CWP. Lug pattern.
- c. Swing Check: 2-1/2 inch (65 mm, DN) to 12 inch (300 mm, DN), lever and spring closure control, Class 150. **(Addendum #1)**

2.02 GENERAL REQUIREMENTS

- A. Valve Pressure and Temperature Ratings: No less than rating indicated; as required for system pressures and temperatures.
- B. Valve Sizes: Match upstream piping unless otherwise indicated.
- C. Valve Actuator Types:
 - 1. Gear Actuator: Quarter-turn valves 6 inch (-) and larger.
 - 2. Hand Lever: Quarter-turn valves 4 inch (-) and smaller.
 - 3. Chainwheel: Device for attachment to valve handwheel, stem, or other actuator, of size and with chain for mounting height, as indicated in the "Valve Installation" Article.
- D. Valves in Insulated Piping: Provide 2 inch (50 mm, DN) stem extensions and the following features:
 - 1. Ball Valves: Extended operating handle of non-thermal-conductive material, and protective sleeve that allows operation of valve without breaking the vapor seal or disturbing insulation.
 - 2. Butterfly Valves: Extended neck.
 - 3. Memory Stops: Fully adjustable after insulation is installed.
- E. Valve-End Connections:
 - 1. Threaded End Valves: ASME B1.20.1.
 - 2. Flanges on Iron Valves: ASME B16.1 for flanges on iron valves.
- F. General ASME Compliance:
 - 1. Ferrous Valve Dimensions and Design Criteria: ASME B16.10 and ASME B16.34.
 - 2. Building Services Piping Valves: ASME B31.9.
- G. Bronze Valves:
 - 1. Fabricate from dezincification resistant material.
 - 2. Copper alloys containing more than 15 percent zinc are not permitted.

2.03 BRONZE, BALL VALVES

- A. General:
 - 1. Fabricate from dezincification resistant material.
 - 2. Copper alloys containing more than 15 percent zinc are not permitted.
- B. Two Piece, Full Port with Bronze or Brass Trim:
 - 1. Comply with MSS SP-110.
 - 2. WSP Rating: 150 psi (1,035 kPa).
 - 3. WOG Rating: 400 psi (2,758 kPa).
 - 4. Body: Forged bronze or dezincified-brass alloy.
 - 5. End Connections: Pipe thread or solder.
 - 6. Seats: PTFE.
 - 7. Stem: Stainless steel.
 - 8. Ball: Stainless steel, vented.
 - 9. Operator: Provide lockable handle and stem extension.
 - 10. Manufacturers:
 - a. Apollo Valves: www.apollovalves.com/#sle.
 - b. NIBCO INC; T-580-70-66: www.nibco.com/#sle.
 - c. Substitutions: See Division 1.

2.04 IRON, SINGLE FLANGE BUTTERFLY VALVES

- A. Lug Style:

2510-00648-00 B-1600

Mechanical Room Hydronic
Upgrades

23 05 23 - 3

General-Duty Valves for HVAC
Piping

1. Comply with MSS SP-67, Type I.
2. Lug Style, CWP Ratings:
 - a. Sizes 2 to 12 inches (50 to 300 mm, DN): 250 psi (1725 kPa).
3. Body Material: ASTM A126 cast iron or ASTM A536 ductile iron.
4. Stem: One or two-piece stainless steel.
5. Seat: Chloramine resistant EPDM/.
6. Disc: Aluminum-bronze.
7. Removable Manual Actuator: Lockable lever handle with open/close position indication. 4" pipe size and smaller
8. Service Temperature Range: Minus 30 to 250 degrees F (Minus 34.4 to 121.1 degrees C).
9. Operator: Gear operator with handwheel over direct-mount actuator base for sizes 6" and over.
10. Manufacturers:
 - a. NIBCO INC; LD-2000: www.nibco.com/#sle.
 - b. Substitutions: See Division 1.

2.05 IRON, SWING CHECK VALVES WITH CLOSURE CONTROL(ADDENDUM #1)

- A. Class 150:
1. Comply with MSS SP-71, Type I.
 2. Sizes 2 1/2 to 12 inch (65 to 300 mm, DN): CWP Rating; 200 psi (1,380 kPa).
 3. Body Design: Clear or full waterway.
 4. Body Material: ASTM A126, gray iron with bolted bonnet.
 5. Ends: Flanged.
 6. Trim: Bronze.
 7. Gasket: Asbestos free.
 8. Closer Control: Factory installed, exterior lever, and spring or weight.
 9. Manufacturers:
 - a. Apollo Valves: www.apollovalves.com/#sle.
 - b. Nibco; www.nibco.com.

2.06 CARBON STEEL, SWING CHECK VALCLOSUREEVES

- A. Class 150:
1. Design: T-pattern, horizontal or vertical flow.
 2. Body and Disc: ASTM A216/A216M.
 3. CWP Rating: 150 psi (1,034 kPa).
 4. End Connections: Flanged.
 5. Pressure and Temperature Rating: ASME B16.34.

2.07 CHAINWHEELS

- A. Description: Valve actuation assembly with sprocket rim, brackets, and chain.
1. Brackets: Type, number, size, and fasteners required to mount actuator on valve.
 2. Attachment: For connection to ball, butterfly, and plug valve stems.
 3. Sprocket Rim with Chain Guides: Ductile iron include zinc coating.
 4. Chain: Hot-dip galvanized steel. Sized to fit sprocket rim.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Properly recycle or dispose of all packing materials and verify that valve interior, including threads and flanges, are completely clean without signs of damage or degradation that could result in leakage.
- B. Verify valve parts to be fully operational in all positions from closed to fully open.

- C. Confirm gasket material to be suitable for the service, to be of correct size, and without defects that could compromise effectiveness.
- D. Should valve be determined defective, replace with new valve.

3.02 INSTALLATION

- A. Provide unions or flanges with valves to facilitate equipment removal and maintenance while maintaining system operation and full accessibility for servicing.
- B. Provide separate valve support as required and locate valve with stem at or above center of piping, maintaining unimpeded stem movement.
- C. Install check valves where necessary to maintain direction of flow as follows:
 - 1. Swing Check: Install in accordance to manufacturer's installation instructions.
- D. Provide chainwheels on operators for valves 4 NPS (100 DN) and larger where located 96 inches (2.4 m) or more above finished floor, terminating 60 inches (1.5 m) above finished floor.
- E. Provide touch up paint for any material with damaged factory paint. Touch up paint shall be equivalent to factory paint, or approved by manufacturer.
- F. Provide brass valve tags and corresponding valve chart printed and stored inside the mechanical room space.

END OF SECTION

**SECTION 23 07 19
HVAC PIPING INSULATION**

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Piping insulation.
- B. Weather barrier coatings.
- C. Jacketing and accessories.

1.02 REFERENCE STANDARDS

- A. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a.
- B. ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus; 2019, with Editorial Revision (2023).
- C. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2021.
- D. ASTM C533 - Standard Specification for Calcium Silicate Block and Pipe Thermal Insulation; 2017 (Reapproved 2023).
- E. ASTM C534/C534M - Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form; 2025.
- F. ASTM C547 - Standard Specification for Mineral Fiber Pipe Insulation; 2022a.
- G. ASTM C795 - Standard Specification for Thermal Insulation for Use in Contact with Austenitic Stainless Steel; 2008 (Reapproved 2023).
- H. ASTM C1775 - Standard Specification for Laminate Protective Jacket and Tape for Use Over Thermal Insulation for Outdoor Applications; 2022.
- I. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2024.
- J. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2024a.
- K. 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. 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 three years of documented experience.
- B. Applicator Qualifications: Company specializing in performing the type of work specified in this section with minimum three years of experience.

1.05 DELIVERY, STORAGE, AND HANDLING

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

1.06 FIELD CONDITIONS

2510-00648-00 B-1600

Mechanical Room Hydronic
Upgrades

23 07 19 - 1

HVAC Piping Insulation

- 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. Johns Manville Corporation: www.jm.com/#sle.
 - 2. Owens Corning Corporation; Fiberglas Pipe Insulation ASJ: www.owenscorning.com/en-us/#sle.
- B. Insulation: ASTM C547 and ASTM C795; rigid molded, noncombustible.
 - 1. K (Ksi) Value: ASTM C177, 0.24 at 75 degrees F (0.035 at 24 degrees C).
 - 2. Maximum Service Temperature: 850 degrees F (454 degrees C).
 - 3. Maximum Moisture Absorption: 0.2 percent by volume.
- C. ~~Aluminum Foil Laminate Jacket: (Addendum #1)~~
 - 1. ~~Factory applied, pressure sensitive adhesive jacketing to comply with ASTM C1775.~~
- D. 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 (0.029 ng/(Pa s m)).

2.03 HYDROUS CALCIUM SILICATE

- A. Manufacturers:
 - 1. Johns Manville Corporation: www.jm.com/#sle.
- B. Insulation: ASTM C533 and ASTM C795; rigid molded, asbestos free, whitcolor.
 - 1. K (Ksi) Value: 0.40 at 300 degrees F (0.057 at 149 degrees C), when tested in accordance with ASTM C177 or ASTM C518.
 - 2. Maximum Service Temperature: 1200 degrees F (649 degrees C).
 - 3. Density: 15 pcf (240 kg/cu m).
- C. Tie Wire: 0.048 inch (1.22 mm) stainless steel with twisted ends on maximum 12 inch (300 mm) centers.

2.04 FLEXIBLE ELASTOMERIC CELLULAR INSULATION

- A. Manufacturers:
 - 1. Armacell LLC; AP ArmaFlex: www.armacell.us/#sle.
- B. Insulation: Preformed flexible elastomeric cellular rubber insulation complying with ASTM C534/C534M Grade 1; use molded tubular material wherever possible.
 - 1. Minimum Service Temperature: Minus 40 degrees F (Minus 40 degrees C).
 - 2. Maximum Service Temperature: 180 degrees F (82 degrees C).
 - 3. Connection: Waterproof vapor barrier adhesive.
- C. Elastomeric Foam Adhesive: Air dried, contact adhesive, compatible with insulation.
- D. Weather Barrier Coating: Air dried, contact adhesive, compatible with insulation and ASTM E84 compliant.

2.05 WEATHER BARRIER COATINGS (ADDENDUM #1)

- A. ~~Weather Resistive Barrier Coating: Fire resistive, UV resistant, water based mastic for use over closed cell polyethylene and polyurethane foam insulation; applied with glass fiber or synthetic reinforcing mesh.~~
 - 1. ~~Surface Burning Characteristics: Flame spread index of 25 or less, smoke developed index of 450 or less, Class A, when tested in accordance with ASTM E84.~~

2. ~~Water Vapor Permeance: Greater than 1.0 perm (57 ng/(Pa s m)) in accordance with ASTM E96/E96M.~~

2.06 JACKETING AND ACCESSORIES

- A. PVC Plastic (*Interior Only*): (**Addendum #1**)
 1. Manufacturers:
 - a. Johns Manville Corporation: www.jm.com/#sle.
 2. Jacket: One piece molded type fitting covers and sheet material, off-white color.
 - a. Minimum Service Temperature: 0 degrees F (minus 18 degrees C).
 - b. Maximum Service Temperature: **200 degrees F (94 degrees C)**. (**Addendum #1**)
 - c. Moisture Vapor Permeability: 0.002 perm inch (0.0029 ng/(Pa s m)), maximum, when tested in accordance with ASTM E96/E96M.
 - d. Thickness: 10 mil, 0.010 inch (0.25 mm).
 - e. Connections: Brush on welding adhesive.
 3. Covering Adhesive Mastic: Compatible with insulation.
- B. Aluminum Jacket (*Exterior Only*): (**Addendum #1**)
 1. Comply with ASTM B209/B209M, Temper H14, minimum thickness of 0.016 inch (0.41 mm) with factory-applied polyethylene and kraft paper moisture barrier on the inside surface.
 2. Thickness: 0.016 inch (0.40 mm) sheet.
 3. Type: Factory-applied, self-adhesive jacketing.
 4. Finish: Smooth.
 5. Joining: Longitudinal slip joints and 2 inch (50 mm) laps.
 6. Fittings: 0.016 inch (0.40 mm) thick die-shaped fitting covers with factory-attached protective liner.
 7. Metal Jacket Bands: 3/8 inch (10 mm) wide; 0.010 inch (0.25 mm) thick stainless steel.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Test piping for design pressure, liquid tightness, and continuity prior to applying insulation materials.
- B. Verify that surfaces are clean and dry, with foreign material removed.

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:
 1. Insulate entire system, including fittings, valves, unions, flanges, strainers, flexible connections, pump bodies, and expansion joints.
- 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. For hot piping conveying fluids over 140 degrees F (60 degrees C), insulate flanges and unions at equipment.
- G. 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 fittings, joints, and valves with insulation of like material and thickness as adjoining pipe. Finish with glass cloth and adhesive or PVC fitting covers.
- H. Inserts and Shields:
1. Application: Piping 1-1/2 inches (40 mm) 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 (150 mm) 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.
- I. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations. Finish at supports, protrusions, and interruptions. At firestop detail on plans .
- J. Exterior Applications: Provide vapor barrier jacket. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe, and finish with glass mesh reinforced vapor barrier cement. Cover with aluminum jacket with seams located on bottom side of horizontal piping. Provide two coats of UV-resistant finish for flexible elastomeric cellular insulation without jacketing.

3.03 SCHEDULE

- A. Heating Systems: Refer to Table 120.3-A-1 of the 2025 CA Energy Code for minimum pipe insulation requirements.
1. Heating Water Supply and Return.
- B. Cooling Systems: Refer to Table 120.3-A2 of the 2025 CA Energy Code for minimum pipe insulation requirements.
1. Chilled Water Supply and Return.

END OF SECTION

**SECTION 23 25 00
HVAC WATER TREATMENT**

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Materials.
 - 1. Materials as required to replenish or re-concentrate affected systems during construction progress.
- B. ***Cleaning of piping systems. (Addendum #1)***

1.02 SUBMITTALS

- A. See Division 1 for submittal procedures.
- B. Product Data: Provide chemical treatment materials, chemicals, and equipment including electrical characteristics and connection requirements.
- C. Manufacturer's Field Reports: Indicate start-up of treatment systems when completed and operating properly. Indicate analysis of system water after cleaning and after treatment.

1.03 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience. Company shall have local representatives with water analysis laboratories and full time service personnel.
- B. Installer Qualifications: Company specializing in performing the type of work specified in this section, with minimum three years of experience and approved by manufacturer.

1.04 COORDINATION (ADDENDUM #1)

- A. ***Coordinate with District for scheduling flushing and cleaning hydronic systems.***

PART 2 PRODUCTS**2.01 MANUFACTURERS**

- A. Utilize Treatment company regularly employed by District to maintain temporary systems protected under the contract.

2.02 REGULATORY REQUIREMENTS

- A. Comply with applicable codes for addition of non-potable chemicals to building mechanical systems and to public sewage systems.
- B. Perform work in accordance with local health department regulations.

2.03 MATERIALS

- A. Compatible with existing water treatment program.
- B. Provide rental/temporary water treatment equipment such as feeders, test points, injection ports, containment systems for all temporary heating and cooling plants used for the project.

PART 3 EXECUTION**3.01 PREPARATION**

- A. Systems shall be operational, filled, started, and vented prior to cleaning. Use water meter to record capacity in each system.
- B. Place terminal control valves in open position during cleaning.
- C. Verify that electric power is available and of the correct characteristics.

3.02 EXISTING BUILDING FLUSHING SEQUENCE (ADDENDUM #1)

- A. ***Flush the existing Heating Hot Water (HHW) and Chilled Water (CHW) systems at Building 1600.***
- B. ***Flushing Fluid:***

1. ***Clean city water shall be used as the flushing fluid.***
 2. ***No chemicals shall be used when flushing the existing HHW and CHW systems.***
- C. *Temporary Materials:***
1. ***Piping Systems:***
 - a. ***To provide circulation necessary for flushing operations, the contractor shall provide temporary materials and components (i.e. pipe, valves, fittings, hoses, etc.) as required to complete piping loops.***
 - b. ***The contractor shall provide necessary temporary piping and hoses to drain systems to sanitary sewer.***
 2. ***Strainers: Provide temporary strainers with a 1/16" opening size to filter out loose particulates within the existing HHW and CHW loops during the flush. The temporary strainers shall be installed to the temporary pipe.***
 3. ***Pumps: Provide temporary pumps to circulate the flushing fluid through the existing HHW and CHW systems. Pumps shall be of the size and capacity to maintain a fluid velocity of not less than 3 feet per second and not above 5 feet per second.***
 4. ***Power: Provide necessary power connections and safety devices to operate temporary pumps.***
- D. *Draining:***
1. ***All system draining shall be to sanitary sewer.***
- E. *Heating hot Water and Chiller Water System:***
1. ***Flushing shall occur after the HHW and CHW systems have been removed from the existing service.***
 2. ***All existing coils and fittings shall remain in place during the flushing process.***
 3. ***Provide temporary pipe bypasses, nozzles, valve, strainers, and crossover to allow circulation through the existing systems.***
 4. ***Force all control valves to full open and fill the system with clean city water, then circulate for a minimum of 4 hours to remove large debris (coordinate with College for control valve manipulation).***
 5. ***Drain system, air separators, and clean all temporary and existing strainers. Repeat (fill system with clean water, circulate for 4 hours, and drain the system) the flushing cycle until clean water is drained from the system post-flush.***
 6. ***Once the flush has been completed, fill hydronic systems with clean city water only. The existing loops will be fed with chemical water treatment via the Central Plant.***
- F. *Damage to the Heating Hot Water and/or Chiller Water pipe:***
1. ***As old debris is knocked loose, holes and leaks can appear during the flushing process. If a leak is found during the flushing process, identify the location of the leak and drain the system immediately. The owner shall be notified immediately.***
 2. ***Provide the owner with options to patch, bypass, or replace the pipe where the leak occurs in the system. Once the leak has been addressed, then resume with the flushing process.***
 3. ***The flushing process shall resume upon the repair of the leak and approval of the owner.***

3.03 INSTALLATION

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

3.04 CLOSED SYSTEM TREATMENT

- A. Replenish and continue chemical treatment of hydronic heating and cooling systems affected by this project.

END OF SECTION

SOLANO COMMUNITY COLLEGE DISTRICT



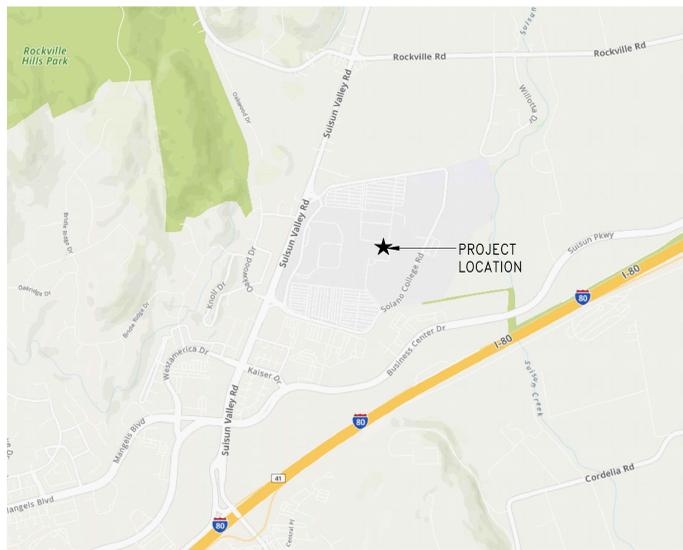
4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

B-1600 MECHANICAL ROOM HYDRONIC UPGRADES

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

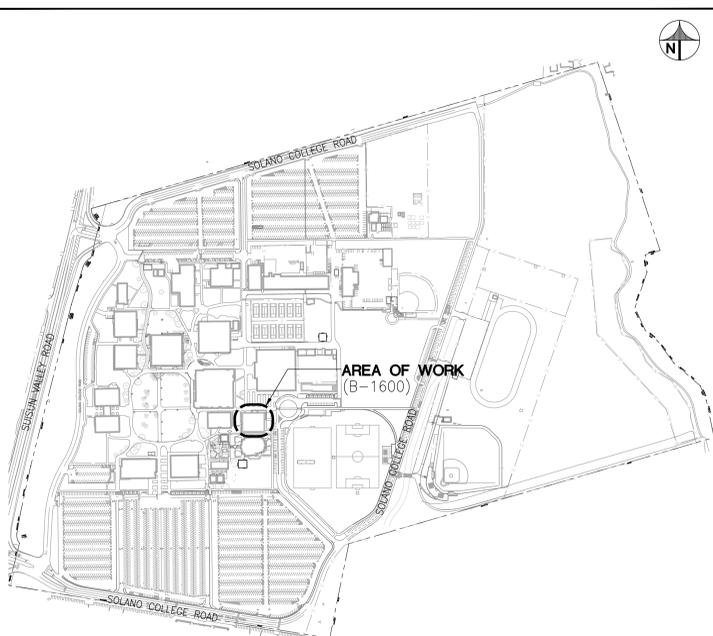
VICINITY MAP

SCALE: N.T.S.



SITE PLAN

SCALE: N.T.S.



GENERAL NOTES

- ALL WORK, MATERIALS, AND METHODS TO BE USED FOR SEISMIC RESTRAINTS SHALL BE AS DETAILED ON THE APPROVED DRAWINGS.
- ALL WORK SHALL CONFORM WITH ALL APPLICABLE LOCAL, STATE, AND NATIONAL CODES.
- PIPE HANGERS AND SUPPORTS SHALL BE SUPERSTRUT OR EQUAL INCLUDING CHANNEL, HANGERS, STRAPS, ISOLATORS, INSULATION, SHAW PIPE SHIELDS, INC., PORTABLE PIPE HANGERS, INC.
- ALL DIMENSIONS ARE APPROXIMATE. THE DRAWINGS ARE DIAGRAMMATIC TO THE EXTENT THAT ALL FITTINGS, OFFSETS, ETC. ARE NOT SHOWN. THESE DRAWINGS ARE FOR THE GUIDANCE OF THE CONTRACTOR. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD FOR FABRICATION OF THE PIPING, PENETRATIONS, CONDUIT, WIRING, AND ALL COMPONENTS INTO A COMPLETE AND OPERABLE SYSTEM.
- WHERE DISCREPANCIES OCCUR BETWEEN THE PLANS AND SPECIFICATIONS CONTRACTOR SHALL NOTIFY OWNER OF ANY DISCREPANCIES IN WRITING. ANY ADJUSTMENT OF THE CONTRACT DOCUMENTS WITHOUT A DETERMINATION BY THE OWNER SHALL BE AT THE CONTRACTOR'S OWN RISK AND EXPENSE. THE MOST STRINGENT REQUIREMENTS SHALL APPLY AS DETERMINED BY THE OWNER.
- CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
- PRIOR TO SUBMITTING PROPOSAL, BIDDER SHALL EXAMINE ALL GENERAL CONSTRUCTION DRAWINGS AND SHALL HAVE VISITED THE CONSTRUCTION SITE. BIDDER SHALL BE FAMILIAR WITH THE EXISTING CONDITIONS UNDER WHICH THEY WILL HAVE TO OPERATE AND WHICH WILL IN ANY WAY AFFECT THE WORK UNDER THIS CONTRACT. NO SUBSEQUENT ALLOWANCE WILL BE MADE IN THIS CONNECTION IN BEHALF OF THE CONTRACTOR FOR ANY ERROR OR NEGLIGENCE ON THEIR PART.
- THE CONTRACTOR SHALL BE HELD FULLY RESPONSIBLE FOR THE PROPER RESTORATION OF ALL EXISTING SURFACES REQUIRING PATCHING, PLASTERING, PAINTING AND/OR OTHER REPAIR DUE TO THE INSTALLATION OF WORK UNDER THE TERMS OF THIS SPECIFICATION. CLOSE ALL OPENINGS, REPAIR ALL SURFACES, ETC., AS REQUIRED.
- THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING BUILDING CONDITIONS AND NOTIFY THE OWNER'S REPRESENTATIVE IN WRITING OF ANY DISCREPANCIES BETWEEN THE CONTRACT DOCUMENT AND EXISTING CONDITIONS.
- THE CONTRACTOR SHALL, DURING THE COURSE OF CONSTRUCTION, PROTECT ADJACENT AREAS FROM DAMAGE, NOISE, CONSTRUCTION, AIRBORNE DUST AND FUMES AS A RESULT OF THE WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL SUB-CONTRACTORS AND SHALL BE SOLELY RESPONSIBLE FOR AND HAVE CONTROL OVER CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES IN ACCORDANCE WITH THE GENERAL CONDITIONS OF THE CONTRACT.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE OWNER WITH A COMPLETE SET OF RECORD DRAWING, INCLUDING THE WORK OF ALL SUBCONTRACTORS.
- ALL PRODUCTS AND MATERIALS USED ON THIS PROJECT SHALL BE FREE OF ASBESTOS.
- NO PRODUCT WILL BE ACCEPTED ON THE JOB SITE WITHOUT PRIOR REVIEW BY THE OWNER. THE CONTRACTOR SHALL SUBMIT CATALOG SHEETS OF ALL FIXTURES, PIPING, VALVES AND ETC., FOR REVIEW.
- ALL PRODUCT SUBSTITUTIONS SHALL HAVE PRIOR REVIEW BEFORE INSTALLATION. THE CONTRACTOR SHALL PAY ALL COSTS INCURRED FOR REVIEW, DESIGN AND INSTALLATION OF SUBSTITUTIONS. ACCEPTANCE OF SUBSTITUTIONS BY THE OWNER'S REPRESENTATIVE DOES NOT ALTER THE REVIEW REQUIREMENT.
- THE INSTALLATION OF PIPING AND EQUIPMENT SHALL BE MADE IN A MANNER TO CLEAR BEAMS AND OBSTRUCTIONS. DO NOT CUT INTO OR REDUCE THE SIZE OF PLATES OR ANY LOAD CARRYING MEMBERS WITHOUT APPROVAL OF THE ARCHITECT AND ENGINEER OF RECORD. COORDINATE WITH WORK OF OTHERS TO PREVENT INTERFERENCE.
- SUPPORT AND RESTRAIN PIPING PER CALIFORNIA MECHANICAL CODE AND ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. ALL SUPPORTING RODS, STRUT AND OTHER HARDWARE SHALL BE HOT DIPPED GALVANIZED UNLESS OTHERWISE SPECIFIED.
- ALL SOLDER AND PLUMBING FIXTURES SHALL CONFORM TO NON LEAD STANDARDS.
- ALL PIPING IN THIS CONTRACT SHALL BE LABELED ACCORDING TO ANSI A13.1, CHAPTER 13, CPC AND NFPA 99. FURNISH FLOW ARROWS INDICATING DIRECTION OF FLOW FOR LIQUID PHASE MATERIALS. PIPE LABELS SHALL BE VISIBLE FROM FLOOR LEVEL. ALL VALVES IN THIS CONTRACT OTHER THAN MEDICAL VACUUM SHALL BE LABELED WITH BRASS TAGS. ALL MEDICAL VACUUM VALVES SHALL BE LABELED PER CHAPTER 13, CPC AND NFPA 99.
- ALL TEMPORARY AND REMODELING WORK SHALL BE CONSIDERED A PART OF THIS CONTRACT AND NO EXTRA CHARGES WILL BE ALLOWED. THIS SHALL INCLUDE MINOR ITEMS OF MATERIAL OR EQUIPMENT NECESSARY TO MEET THE REQUIREMENTS AND INTENT OF THE PROJECT.
- CONTRACTOR TO LEGALLY DISPOSE OF OR RECYCLE PROJECT DEBRIS.
- ALL DEVICES & EQUIPMENT ARE NEW, UNLESS OTHERWISE NOTED.
- SALVAGED EQUIPMENT SHALL BE TURNED OVER TO OWNER. COORDINATE WITH OWNER FOR STORAGE LOCATION.
- MAINTAIN FIRE RATING OF ALL ASSEMBLIES PENETRATED.
- SEAL ALL EXTERIOR PENETRATIONS WATER-TIGHT.
- UNLESS OTHERWISE NOTED, ARRANGE, PAY FOR, COORDINATE AND PROVIDE ALL PERMITS NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM.
- ALL CONSTRUCTION AND DEMOLITION SHALL BE IN ACCORDANCE WITH CHAPTER 33 OF THE CBC AND CFC, AND THE WRITTEN SITE SAFETY PLAN.

INTENT:

"THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS. SHOULD ANY EXISTING CONDITION SUCH AS DETERIORATION OR NONCOMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHERE THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS, A C.O.D. OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED AND APPROVED BY OWNER AND ENGINEER BEFORE PROCEEDING WITH THE WORK."

APPLICABLE CODES

- UNLESS OTHERWISE INDICATED OR SPECIFIED, PERFORM THE WORK IN CONFORMANCE WITH THE LATEST EDITIONS OF ALL APPLICABLE REGULATORY REQUIREMENTS, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:
- CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE (PART 1, TITLE 24); 2025
 - CALIFORNIA BUILDING CODE VOL. 1 AND 2 (PART 2, TITLE 24); 2024 IBC WITH 2025 CA AMENDMENTS
 - CALIFORNIA ELECTRICAL CODE (PART 3, TITLE 24); 2023 NEC WITH 2025 CA AMENDMENTS
 - CALIFORNIA MECHANICAL CODE (PART 4, TITLE 24); 2024 UMC WITH 2025 CA AMENDMENTS
 - CALIFORNIA PLUMBING CODE (PART 5, TITLE 24) 2024 UPC WITH 2025 CA AMENDMENTS
 - CALIFORNIA ENERGY CODE (PART 6, TITLE 24); 2025
 - CALIFORNIA HISTORICAL BUILDING CODE, (PART 8, TITLE 24); 2025
 - CALIFORNIA FIRE CODE (PART 9, TITLE 24); 2024 IFC WITH 2025 CA AMENDMENTS
 - CALIFORNIA EXISTING BUILDING CODE (PART 10, TITLE 24); 2024 INTERNATIONAL EXISTING BUILDING CODE WITH 2025 CA AMENDMENTS
 - CALIFORNIA GREEN BUILDING STANDARDS CODE OR CAL GREEN (PART 11, TITLE 24); 2025
 - CALIFORNIA REFERENCED STANDARDS CODE (PART 12, TITLE 24); 2025
 - PUBLIC SAFETY (CCR TITLE 19), STATE FIRE MARSHAL; CURRENT REVISION
 - NFPA 72, NATIONAL FIRE ALARM AND SIGNALING CODE, 2025 EDITION
- * ALL PARTS OF THE 2025 CALIFORNIA BUILDING CODE BECOME EFFECTIVE JANUARY 1, 2026
- ACI 318-14, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
- AISC MANUAL OF STEEL CONSTRUCTION
- ASCE/SEI 7-16, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES WITH SUPPLEMENT NO. 1
- NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION

SUMMARY OF WORK

- THE INTENT OF THIS PROJECT IS TO REPLACE DEFICIENT HYDRONIC HEATING/COOLING EQUIPMENT AND PIPING SECTIONS IN THE MECHANICAL ROOM OF BUILDING 1600. UPGRADES TO THE HYDRONIC SYSTEM CONSIST OF REPLACEMENT OF MAJORITY OF THE PIPING, FITTINGS, VALVES, THE CHW PUMP, AND THE HHW PUMP. THE HHW PUMP AND CHW PUMP HAVE BEEN RESIZED TO MATCH BUILDING NEEDS. IN EACH CASE, THE PUMP POWER REQUIREMENTS DECREASED FROM EXISTING.
- OWNER SHALL PROVIDE (2) PRE-PURCHASED HYDRONIC PUMPS FOR THE REPLACEMENT OF THE EXISTING CHW AND HHW HYDRONIC PUMPS. OWNER AND CONTRACTOR SHALL INSPECT AND ACCEPT THE EXCHANGE OF MATERIAL; AT THIS TIME THE CONTRACTOR TAKES OWNERSHIP OF THE EQUIPMENT (I.E. HYDRONIC PUMPS) FOR THE USE OF THE PROJECT.
- PER COLLEGE REQUIREMENTS, CONSTRUCTION COMPLETION INCLUDING AS-BUILT DOCUMENTATION, PROJECT CLOSEOUTS, ETC. SHALL BE COMPLETED NO LATER THAN JUNE 12TH, 2026 (I.E. PRIOR TO SOLANO CC SUMMER SESSION).
- PER THE COLLEGE, BUILDING 1600 IS TO BE UNOCCUPIED FOR THE ENTIRETY OF CONSTRUCTION PHASE. PARTIAL OCCUPANCY IS EXPECTED STARTING ON JUNE 15TH, 2026.
- PROVIDE FLUSHING OF EXISTING HHW AND CHW SYSTEMS WITH CLEAN CITY WATER (I.E., NO CHEMICALS) AT 3 - 5 FEET PER SECOND FLUID VELOCITY ONCE SYSTEMS HAVE BEEN REMOVED FROM EXISTING SERVICE. ALL EXISTING COILS, FITTINGS AND VALVES SHALL REMAIN IN PLACE. FORCE EXISTING AND NEW VALVES TO FULL OPEN POSITION DURING THE FLUSHING PROCESS (COORDINATE WITH COLLEGE FOR BMS CONTROL OF EXISTING CONTROL VALVES). CONTRACTOR SHALL PROVIDE TEMPORARY PIPE BYPASSES, NOZZLES, VALVES, STRAINERS, AND CROSOVERS TO ALLOW CIRCULATION OF THE EXISTING SYSTEM. BLOWDOWN TEMPORARY AND EXISTING STRAINERS AT COILS (PROTECT FROM WATER DAMAGE). FLUSH FOR 4-HOUR PERIOD AND DRAIN TO NEAREST SANITARY SEWER (200 LF FROM MECH. RM. WEST OF B-1600). MIN. OF (2) FLUSHES REQUIRED PER SYSTEM. REPEAT IF WATER QUALITY TO DRAIN IS NOT TRANSPARENT. IF ANY LEAKS OCCUR, IDENTIFY LEAK IMMEDIATELY, STOP FLUSH, DRAIN SYSTEM, AND REPORT TO OWNER IMMEDIATELY. PROVIDE OWNER OPTIONS TO PATCH OR REPLACE PIPE. ONCE LEAK HAS BEEN REPAIRED, RESUME FLUSHING PROCESS.

BID ALTERNATE

BID ALTERNATIVE #1 (DEDUCT):

IF ACCEPTED, RETAIN THE <E> CHW CROSSOVER BRIDGE PIPING AND MAINTAIN THE <E> ABANDONED RISERS IN LIEU OF THE FULL REPLACEMENT DEPICTED ON 1/M-4.1. REMOVAL AND REPLACEMENT OF THESE ELEMENTS AND THE PIPE STANCHIONS INDICATED IN THE DRAWINGS SHALL BE OMITTED. ALL NEW AND RETAINED EXISTING PIPING SHALL BE PREPPED, WIRE BRUSH CLEANED, PRIMED AND PAINTED WITH A MINIMUM OF TWO COATS; PROVIDE NEW BALANCING VALVE, DRAINS, GAUGES AND TEST PORTS AS INDICATED; REFER TO DETAIL 1 & 3/M-4.2.

BID ALTERNATIVE #2 (DEDUCT):

IF ACCEPTED, RETAIN THE <E> HHW CROSSOVER BRIDGE PIPING AND MAINTAIN THE <E> ABANDONED RISERS IN LIEU OF THE FULL REPLACEMENT DEPICTED ON 2/M-4.1. REMOVAL AND REPLACEMENT OF THESE ELEMENTS AND THE PIPE STANCHIONS INDICATED IN THE DRAWINGS SHALL BE OMITTED. ALL NEW AND RETAINED EXISTING PIPING SHALL BE PREPPED, WIRE BRUSH CLEANED, PRIMED AND PAINTED WITH A MINIMUM OF TWO COATS; PROVIDE NEW BALANCING VALVE, DRAINS, GAUGES AND TEST PORTS AS INDICATED; REFER TO DETAIL 2 & 4/M-4.2.

STATEMENT OF GENERAL CONFORMANCE

THESE DRAWINGS AND/OR SPECIFICATIONS AND/OR CALCULATIONS FOR THE ITEMS LISTED BELOW HAVE BEEN PREPARED BY OTHER DESIGN PROFESSIONALS OR CONSULTANTS WHO ARE LICENSED AND/OR AUTHORIZED TO PREPARE SUCH DRAWINGS IN THIS STATE. THESE DOCUMENTS HAVE BEEN EXAMINED BY ME FOR DESIGN INTENT AND HAVE BEEN FOUND TO MEET THE APPROPRIATE REQUIREMENTS OF TITLE-24, CALIFORNIA CODE OF REGULATIONS AND THE PROJECT SPECIFICATIONS PREPARED BY ME.

THE LIST DRAWING INDEX HAVE BEEN COORDINATED WITH MY PLANS AND SPECIFICATIONS AND ARE ACCEPTABLE FOR INCORPORATION INTO THE CONSTRUCTION OF THIS PROJECT FOR WHICH I AM THE INDIVIDUAL DESIGNATED TO BE IN GENERAL RESPONSIBLE CHARGE (OR FOR WHICH I HAVE BEEN DELEGATED RESPONSIBILITY FOR THIS PORTION OF THE WORK)

Evan Sarver 03/16/2026
Signature of the Architect/Engineer Date
EVAN EVERETT SARVER
Print Name
M40066 09/30/2026
License Number Expiration Date

DSA ADMINISTRATIVE REQUIREMENT

THIS PROJECT IS EXEMPT FROM DSA REVIEW BASED ON DSA IR A-22, SECTION 4.1.1, RELATED TO "EXEMPT SCOPE".

*ALTERATION OR RECONSTRUCTION PROJECTS TO EXISTING SCHOOL BUILDINGS CONTRACTED IN 2025 WITH CONSTRUCTION COST LESS THAN OR EQUAL TO \$134,000 ARE EXEMPT FROM SS, FLS, AND ACS PLAN REVIEW, APPROVAL, AND CONSTRUCTION OVERSIGHT IN ACCORDANCE WITH CAC SECTION 4-308".

DUE TO THE DEFERRED MAINTENANCE NATURE OF THE PROJECT (I.E. IN-KIND REPLACEMENT OF MECHANICAL PIPING, HYDRONIC SPECIALTIES, AND CHW PUMP) SPECIFIC TO THE B-1600 MECHANICAL ROOM, THE OVERALL CONSTRUCTION COST IS EXPECTED TO BE LESS THAN \$134,000.

PHOTOGRAPHIC CONSTRUCTION RECORDS

THE CONTRACTOR SHALL PROVIDE PRECONSTRUCTION DIGITAL PHOTOGRAPHS AND VIDEO RECORDINGS PRIOR TO COMMENCEMENT OF WORK ON THE SITE. BEFORE CONSTRUCTION MAY START, CONTRACTOR SHALL DOCUMENT ANY EXISTING CONDITIONS THAT ARE NOT COVERED BY THE CONTRACT DOCUMENTS (DAMAGED CONCRETE, WALLS, LANDSCAPE, ETC.). FAILURE TO DOCUMENT EXISTING DAMAGE WILL RESULT IN CONTRACTOR REPAIRS TO SURFACE TO MATCH ADJACENT AFTER CONSTRUCTION ACTIVITIES. ADDITIONAL PRECONSTRUCTION PHOTOGRAPHS/VIDEOS SHALL BE TAKEN AT LOCATIONS TO BE DESIGNATED BY THE OWNER'S REPRESENTATIVE.

CONTRACTOR SHALL MAKE A VIDEO RECORDING OF ALL PROPOSED ROUTINGS FOR INFRASTRUCTURE WORK, NOTING CONDITIONS OF EXISTING SURFACES AND ADJACENT IMPROVEMENTS. ONE COPY OF COMPLETE VIDEO SHALL BE TRANSMITTED TO THE OWNER'S REPRESENTATIVE.

CONSTRUCTION PHOTOGRAPHS

THE CONTRACTOR SHALL PROVIDE CONSTRUCTION PHOTOGRAPHS SHOWING THE PROGRESS OF THE WORK AND AS MAY BE DIRECTED BY THE OWNER'S REPRESENTATIVE. PHOTOGRAPHS/VIDEOS SHALL BE FORMATTED, IDENTIFIED, AND DELIVERED AS DESCRIBED ABOVE FOR DIGITAL PHOTOS AND VIDEOS. STARTING ONE MONTH AFTER THE DATE OF THE PRECONSTRUCTION PHOTOGRAPHS AND CONTINUING AS LONG AS THE WORK IS IN PROGRESS, APPROXIMATELY 40 MONTHLY PHOTOGRAPHS SHALL BE TAKEN, CATALOGED AND CROSS REFERENCED TO DRAWINGS/PLANS.

ANY WORK TO BE CONCEALED (BURIED, BEHIND WALLS, ABOVE CEILING, BELOW SLAB, ETC.) SHALL BE PHOTO DOCUMENTED AFTER ANY TESTING AND INSPECTION AND PRIOR TO CONCEALING TO CLEARLY INDICATE THE WORK. DOCUMENT ON PLANS THE LOCATION AND ORIENTATION FOR EACH PHOTO DOCUMENTING CONCEALED WORK.

FOR FINAL COMPLETION, DOCUMENT ALL PUNCH LIST ITEM COMPLETION BY PHOTOGRAPH OR VIDEO. DELIVER CONSTRUCTION PHOTOGRAPHS AND VIDEOS WITHIN 10 DAYS OF CREATION. ALL PHOTOS AND VIDEOS SHALL BE OF SUFFICIENT QUALITY TO CLEARLY DEPICT WORK.

DRAWING INDEX

SHEET NO.	DESCRIPTION
G-0.0	COVER SHEET
M-0.1	MECHANICAL SYMBOLS & ABBREVIATIONS
M-4.1	B-1600 MECHANICAL ROOM UPGRADES
M-4.2	B-1600 MECHANICAL ROOM UPGRADES (BID ALTERNATE DEDUCTS #1 & #2)
M-5.1	MECHANICAL DETAILS

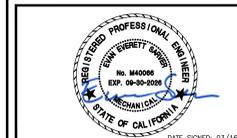


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Local Action.



SOLANO COMMUNITY COLLEGE DISTRICT



4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

B-1600
MECHANICAL ROOM
HYDRONIC UPGRADES

ISSUE	MARK	DATE	DESCRIPTION
		12/10/25	50% CD
		02/24/26	100% CD
	A	03/16/26	ADDENDUM #1

SOBE PROJECT NO:	2510-00648
DATE:	03/16/26
DRAWN BY:	
CHECKED BY:	EES
APPROVED BY:	EES

SHEET TITLE
COVER SHEET

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

G-0.0
SHEET OF

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

SYMBOLS

<p>GENERAL</p> <ul style="list-style-type: none"> EXTENT OF DEMOLITION NEW TO EXISTING CONNECTION REVISION NUMBER WORK ITEM (MECHANICAL) DETAIL DESIGNATION EQUIPMENT DESIGNATION SECTION DESIGNATION TO BE DEMOLISHED TO BE DEMOLISHED <p>PIPING</p> <ul style="list-style-type: none"> ARROW INDICATES DIRECTION OF FLOW EXISTING PIPING (ABOVE GRADE OR FLOOR) EXISTING PIPING (BELOW GRADE OR FLOOR) NEW PIPING (ABOVE GRADE OR FLOOR) NEW PIPING (BELOW GRADE OR FLOOR) PIPE TO BE REMOVED (ABOVE GRADE OR FLOOR) PIPE TO BE REMOVED (BELOW GRADE OR FLOOR) <p>PIPING SPECIALTIES</p> <ul style="list-style-type: none"> AUTOMATIC AIR VENT MANUAL AIR VENT AIR SEPARATOR ALIGNMENT GUIDE ANCHOR BACK FLOW PREVENTER BALL JOINT DIRT POCKET EXPANSION JOINT EXPANSION LOOP FLEXIBLE CONNECTOR FILTER DRYER FLOWMETER HOSE CONNECTOR HOSE BIBB METER POT FEEDER PRESSURE GAUGE AND COCK PUMP STRAINER STRAINER, W/BLOW OFF TEST PORT (PETE'S PLUG) THERMOMETER THERMOMETER, WELL STEAM TRAP SUCTION DIFFUSER 	<p>VALVES</p> <ul style="list-style-type: none"> BALL BUTTERFLY GATE GATE, ANGLE GLOBE GLOBE, ANGLE THREE WAY CONTROL IN PIT <p>VALVES, SPECIAL DUTY</p> <ul style="list-style-type: none"> CHECK, SWING GATE CIRCUIT SETTER NEEDLE PRESSURE REDUCING (NUMBER & SPECIFY) PRESSURE REGULATOR RELIEF (R) OR SAFETY (S) SEISMIC VALVE MAKE UP WATER ASSEMBLY BACK PRESSURE PLUG VALVE TRIPLE DUTY VALVE (STOP CHECK & BALANCE W/PRESSURE TAPS) REDUCED PRESSURE BACKFLOW PREVENTER FLOW CONTROL ORIFICE PLATE 	<p>AIR CONDITIONING</p> <ul style="list-style-type: none"> CW(R)(S) CONDENSER WATER (RETURN)(SUPPLY) CHW(R)(S) CHILLED WATER (RETURN)(SUPPLY) D DRAIN HC(R)(S) HOT/CHILLED WATER (RETURN)(SUPPLY) PCHW(R)(S) PRIMARY CHILLED WATER (RETURN)(SUPPLY) SCHW(R)(S) SECONDARY CHILLED WATER (RETURN)(SUPPLY) TCHW(R)(S) TERTIARY CHILLED WATER (RETURN)(SUPPLY) <p>CONTROLS</p> <ul style="list-style-type: none"> AI ANALOG INPUT AO ANALOG OUTPUT BT BYPASS TIMER C CONTROLLER DP DIFFERENTIAL PRESSURE TRANSMITTER DI DIGITAL (ON/OFF) INPUT DO DIGITAL (ON/OFF) OUTPUT FE FLOW ELEMENT FT FLOW TRANSMITTER FS FLOW SWITCH FM FLOWMETER FM-O FLOWMETER, ORIFICE H HUMIDITY CONTROLLER HT HUMIDITY TRANSMITTER M MOTOR/ACTUATOR MS MOTOR STARTER PI PRESSURE INDICATOR PID PID CONTROL LOOP (REPRESENTATION) PS PRESSURE SWITCH PT PRESSURE TRANSMITTER RHC REHEAT COIL R RELAY COIL S SENSOR T TEMPERATURE SENSOR TE TEMPERATURE ELEMENT TI TEMPERATURE INDICATOR TT TEMPERATURE TRANSMITTER TH THERMOSTAT OR TEMPERATURE SENSOR (DDC) (36" TO 48" AFF.) HCO HEATING COIL COOLING COIL DX DIRECT EXPANSION COIL GFHX GAS FIRED HEAT EXCHANGER VFD VARIABLE FREQUENCY DRIVE
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MECHANICAL SCHEDULE

HYDRONIC PUMP SCHEDULE

BUILDING	MARK	MAKE	MODEL	SIZE	IMPELLER DIA. (INCH)	SUC. & DIS. CONN.	GPM	TDH (FT.)	HP	RPM	VOLT/PH/ HERTZ	OPER. WEIGHT (LBS)	SUCTION DIFFUSER		CHECK VALVE	NOTES
													DIMENSION (Sys.s Pump)	MAKE/MODEL		
B-1600	<E> CHWP	BELL & GOSSETT	E-1510	2BD	-	2-1/2" x 2"	170	50	5	1800	460/3/60	-	-	-	-	4
	<E> HHWP	BELL & GOSSETT	E-1510	1.25BC	-	1-1/2" x 1-1/4"	30	60	2	1800	460/3/60	-	-	-	-	4
	HHWP-1600	BELL & GOSSETT	E-1532	2AD	5.375	2-1/2" x 2"	70	25	1	1800	460/3/60	160	3" x 2-1/2"	B&G DC-3X	3"	1-3, 5-10
	CHWP-1600	BELL & GOSSETT	E-1510	2BD	7.125	2-1/2" x 2"	170	33	3	1800	460/3/60	200	4" x 2-1/2"	B&G EC-3X	4"	1-3, 5-8, 10

NOTES:

- 1) TUNGSTEN CARBIDE SEALS
- 2) ODP INVERTER DUTY MOTOR
- 3) PROVIDE SUCTION DIFFUSER AS INDICATED. VIF SYSTEM AND PUMP NPS. SUCTION DIFFUSER SHALL INCLUDE STRAIGHTENING VANES, 3/16" PERFORATED STRAINER, PRESSURE/TEMPERATURE PORTS, AND AN ADJUSTABLE SUPPORT FOOT.
- 4) EXISTING PUMP TO BE DEMOLISHED. RETAIN EXISTING DISCONNECT SWITCH, ELECTRICAL FEEDERS, BMS/COMM. WIRING, CONDUITS AND HOUSEKEEPING PAD
- 5) PROVIDE FLEXIBLE PIPE CONNECTORS AT PUMP SUCTION AND DISCHARGE.
- 6) PROVIDE LINE SIZE SWING CHECK VALVE
- 7) VERIFY EXISTING DISCONNECT SWITCH, ELECTRICAL FEEDERS, MOTOR STARTER, BREAKER AND OVERLOAD PROTECTION ARE SIZED ADEQUATELY FOR THE NEW ELECTRIC MOTOR
- 8) REPLACE EQUIPMENT AS NECESSARY TO MATCH NEW ELECTRIC MOTOR, RECONNECT AND RE-INTEGRATE CONTROLS TO BUILDING MANAGEMENT SYSTEM.
- 9) PROVIDE PUMP BASE OPTION WITH THE SPECIFIED E-1532 HHWP PUMP
- 10) PUMPS PRE-PURCHASED BY THE OWNER. OWNER AND CONTRACTOR SHALL INSPECT AND ACCEPT THE EXCHANGE OF MATERIAL. CONTRACTOR SHALL INSTALL PER PLANS AT <E> HOUSEKEEPING PAD

ABBREVIATIONS

<p>ABV AUTOMATIC AIR VENT</p> <p>ABD ABANDONED</p> <p>AC AIR CONDITIONING UNIT DESIGNATION</p> <p>ACC AIR COOLED CONDENSER</p> <p>ACM ASBESTOS CONTAINING MATERIAL</p> <p>ACP ASBESTOS CEMENT PIPE</p> <p>AD ACCESS DOOR</p> <p>AFF ABOVE FINISHED FLOOR</p> <p>AH AIR HANDLER</p> <p>AHU AIR HANDLING UNIT</p> <p>AHUC AIR HANDLING UNIT CONTROLLER</p> <p>AI ANALOG INPUT</p> <p>ALM ALARM</p> <p>ANSI AMERICAN NATIONAL STANDARDS INSTITUTE</p> <p>AO ANALOG OUTPUT</p> <p>APD AIR PRESSURE DROP (N.W.G.)</p> <p>ARCH ARCHITECTURAL</p> <p>AS AIR SEPARATOR</p> <p>ASJ ALL SERVICE JACKET</p> <p>ASME AMERICAN SOCIETY OF MECHANICAL ENGINEERS</p> <p>ASSY ASSEMBLY</p> <p>ASTM AMERICAN SOCIETY FOR TESTING & MATERIALS</p> <p>ATR ALL-THREADED ROD</p> <p>B BOILER</p> <p>BAS BUILDING AUTOMATION SYSTEM</p> <p>BAV BALANCING VALVE</p> <p>BDD BACKDRAFT DAMPERS</p> <p>BFP BACKFLOW PREVENTER</p> <p>BFV BUTTERFLY VALVE</p> <p>BHP BRAKE HORSEPOWER</p> <p>BLDG BUILDING</p> <p>BOD BOTTOM OF DUCT</p> <p>BOP BOTTOM OF PIPE</p> <p>BTU BRITISH THERMAL UNIT</p> <p>BTUH BRITISH THERMAL UNIT PER HOUR</p> <p>BUR BUILT-UP ROOFING</p> <p>BV BALL VALVE</p> <p>CL CENTERLINE</p> <p>CA COMPRESSED AIR</p> <p>CC, C/C COOLING COIL</p> <p>CD CONDENSATE DRAIN</p> <p>CFF CAP FOR FUTURE</p> <p>CFM or f CUBIC FEET PER MINUTE</p> <p>CFT CHEMICAL FEED TANK</p> <p>CHCP CHILLER CONTROL PANEL</p> <p>CHW(R)(S)(T) CHILLED WATER (RETURN)(SUPPLY)(TEMP)</p> <p>CL CENTER LINE</p> <p>IRL IRRIGATION LINE</p> <p>KLW KILOWATT</p> <p>LAT LEAVING AIR TEMPERATURE</p> <p>LBS POUNDS</p> <p>LPS LOW PRESSURE STEAM</p> <p>LWCO LOW WATER CUT OFF</p> <p>LWT LEAVING WATER TEMPERATURE</p> <p>MA(T) MIXED AIR (TEMPERATURE)</p> <p>MAV MANUAL AIR VENT</p> <p>MAX MAXIMUM</p> <p>MBH 1,000 BTU PER HOUR</p> <p>MCA MINIMUM CIRCUIT AMPACITY</p> <p>MCC MOTOR CONTROL CENTER</p> <p>MD MANUAL VOLUME DAMPER</p> <p>MECH MECHANICAL</p> <p>MFR MANUFACTURER</p> <p>MH MANHOLE</p> <p>MIN MINIMUM</p> <p>MMBTUH MILLIONS BTU PER HOUR</p> <p>MOCPP MAXIMUM OVER CURRENT PROTECTION</p> <p>MOT MOTORIZED</p> <p>MPG MEDIUM PRESSURE GAS</p> <p>MR MECHANICAL ROOM</p> <p>MT, MTJ, MTG MOUNT, MOUNTED, MOUNTING</p> <p>MU MAKE-UP</p> <p><N> NEW</p> <p>N.C. NORMALLY CLOSED</p> <p>NFPA NATIONAL FIRE PROTECTION ASSOCIATION</p> <p>NIC NOT IN CONTRACT</p> <p>NOX NITROGEN OXIDE</p> <p>N.O. NORMALLY OPEN</p> <p>NPSH(R) NET POSITIVE SUCTION HEAD (REQUIRED)</p> <p>N.T.S. NOT TO SCALE</p> <p>OA(G) OUTSIDE AIR (GRILLE)</p> <p>OA(T) OUTSIDE AIR (TEMPERATURE)</p> <p>OAD OUTSIDE AIR DAMPER</p> <p>OAI OUTSIDE AIR INTAKE</p> <p>OBD OPPOSED BLADE DAMPER</p> <p>O.C. ON CENTER</p> <p>OD OUTSIDE DIMENSION or OUTSIDE DIAMETER</p> <p>OEY OUTSIDE STEM & YOKE GATE VALVE</p> <p>OSV EXHAUST FAN</p> <p>OY OUTLET VELOCITY</p> <p>OX OXYGEN</p> <p>OWS OPERATOR'S WORK STATION</p> <p>PL PLATE</p> <p>P PUMP</p> <p>PCHW(R)(S)(T) PRIMARY CHILLED WATER (RETURN)(SUPPLY)(TEMPERATURE)</p> <p>PCHWP PRIMARY CHILLED WATER PUMP</p> <p>PCR PUMPED CONDENSATE RETURN</p> <p>PD PRESSURE DROP</p> <p>PE PNEUMATIC TO ELECTRIC RELAY</p> <p>PG PIPE GUIDE</p> <p>PHW(R)(S) PRIMARY HOT WATER (RETURN)(SUPPLY)</p> <p>PAID PROCESS & INSTRUMENTATION DIAGRAM</p> <p>PIV POST INDICATING VALVE</p> <p>PLY or PLYWD PLYWOOD</p> <p>PM POWER METER</p> <p>POC POINT OF CONNECTION</p> <p>PRS PRESSURE REDUCING STATION</p> <p>PRV PRESSURE REDUCING VALVE</p>	<p>PS PRESSURE SWITCH</p> <p>PSI(G) POUNDS PER SQUARE INCH (GAUGE)</p> <p>PS-N PIPE SUPPORT DESIGNATION</p> <p>PTDF PRESSURE TREATED DOUGLAS FIR</p> <p>PVC POLYVINYL CHLORIDE</p> <p>PW POOL WATER</p> <p>R RELAY</p> <p><RE> REMOVE EXISTING</p> <p><RR> REMOVE/RELOCATE</p> <p><RRR> REMOVE & REPLACE WITH <N></p> <p>RA RETURN AIR</p> <p>RAD RETURN AIR DUCT</p> <p>RAG RETURN AIR GRILLE</p> <p>RA(T) RETURN AIR (TEMPERATURE)</p> <p>RD ROOF DRAIN</p> <p>REQ'D REQUIRED</p> <p>RF RETURN AIR FAN</p> <p>RFG REFRIGERANT</p> <p>RH RELATIVE HUMIDITY</p> <p>RHC REHEAT COIL</p> <p>RIM RIM ELEVATION</p> <p>RIP RETIRED-IN-PLACE</p> <p>RLA RATED LOAD AMPS</p> <p>RO REVERSE OSMOSIS</p> <p>RFM REVOLUTIONS PER MINUTE</p> <p>RV RELIEF VALVE</p> <p>RW RECLAIMED WATER</p> <p>RWL RAIN WATER LEADER</p> <p>SAD SUPPLY AIR DUCT</p> <p>S.A.D. SEE ARCHITECTURAL DRAWINGS</p> <p>SAG SUPPLY AIR GRILLE</p> <p>SA(T) SUPPLY AIR (TEMPERATURE)</p> <p>SCBA SELF-CONTAINED BREATHING APPARATUS</p> <p>S.C.D. SEE CIVIL DRAWINGS</p> <p>SCHW(R)(S)(T) SECONDARY CHW (RETURN)(SUPPLY)(TEMPERATURE)</p> <p>SCHWP SECONDARY CHW PUMP</p> <p>SD STORM DRAIN</p> <p>SDCO STORM DRAIN CLEAN-OUT</p> <p>S.E.D. SEE ELECTRICAL DRAWINGS</p> <p>SEER SEASONAL ENERGY EFFICIENCY RATIO</p> <p>SENS SENSIBLE</p> <p>SF SUPPLY FAN</p> <p>SHHW(R)(S)(T) SECONDARY HEATING HOT WATER (RETURN)(SUPPLY)(TEMPERATURE)</p> <p>SIM SIMILAR</p> <p>S.L.D. SEE LANDSCAPE DRAWINGS</p> <p>SM SHEET METAL</p> <p>SMD SMOKE DAMPER</p> <p>SMH STEAM MANHOLE</p> <p>SOVL SOLENOID VALVE</p> <p>SP STATIC PRESSURE</p> <p>SPD SUMP PUMP DISCHARGE</p> <p>S.P.D. SEE PLUMBING DRAWINGS</p> <p>SPECS SPECIFICATIONS</p> <p>SRV SAFETY RELIEF VALVE</p> <p>SS SANITARY SEWER</p> <p>S/S START/STOP</p> <p>S.S.D. SEE STRUCTURAL DRAWINGS</p> <p>SST STAINLESS STEEL</p> <p>ST SOUND TRAP</p> <p>STD STANDARD</p> <p>STM STEAM</p> <p>STRUCT STRUCTURAL</p> <p>STS STATUS</p> <p>SW SWITCH</p> <p>SXR SQUARE TO ROUND TRANSITION</p> <p>T THERMOSTAT OR TEMPERATURE SENSOR (DDC)</p> <p>TBA TO BE ABANDONED</p> <p>TBR TO BE REMOVED</p> <p>TCHW(R)(S)(T) TERTIARY CHW (RETURN)(SUPPLY)(TEMPERATURE)</p> <p>TCHWP TERTIARY CHW PUMP</p> <p>TCP TEMPERATURE CONTROL PANEL</p> <p>TDH TOTAL DYNAMIC HEAD</p> <p>TDV TRIPLE DUTY VALVE</p> <p>TEMP TEMPERATURE</p> <p>TG TRANSFER AIR GRILLE</p> <p>T&G TONGUE & GROOVE</p> <p>TH THERMOMETER</p> <p>TI TEMPERATURE INDICATOR</p> <p>TOI TOP OF DUCT</p> <p>TP TEST PLUG (PETE'S PLUG)</p> <p>TR THROUGH ROOF</p> <p>TRANS TRANSITION</p> <p>TS TEMPERATURE SENSOR</p> <p>TSP TOTAL STATIC PRESSURE (N.W.G.)</p> <p>TYP TYPICAL</p> <p>UH UNIT HEATER</p> <p>U.O.N. UNLESS OTHERWISE NOTED</p> <p>V VENT</p> <p>VAC VACUUM</p> <p>VAV VARIABLE AIR VOLUME</p> <p>VB VACUUM BREAKER</p> <p>VFD VARIABLE FREQUENCY DRIVE</p> <p>VSD VARIABLE SPEED DRIVE</p> <p>VI VIBRATION ISOLATOR</p> <p>V.I.F. VERIFY IN FIELD</p> <p>VR VENT RISER</p> <p>VT VENT</p> <p>VTR VENT THROUGH ROOF</p> <p>W WASTE</p> <p>W WITH</p> <p>WB WET BUIL</p> <p>WC WATER COLUMN</p> <p>WP WEATHER PROOF</p> <p>WPD WATER PRESSURE DROP (FT WATER)</p> <p>WT WEIGHT</p> <p>XFMR TRANSFORMER</p> <p>XMTR TRANSMITTER</p>
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Salas O'Brien

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National Strength. Local Action.



SOLANO COMMUNITY COLLEGE DISTRICT

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

B-1600 MECHANICAL ROOM HYDRONIC UPGRADES

MARK	DATE	DESCRIPTION
	12/10/25	50% CD
	02/24/26	100% CD
▲	03/16/26	ADDENDUM #1

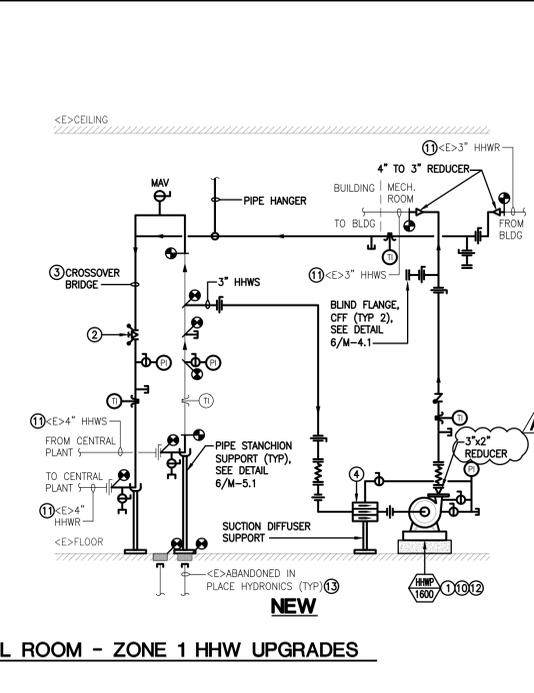
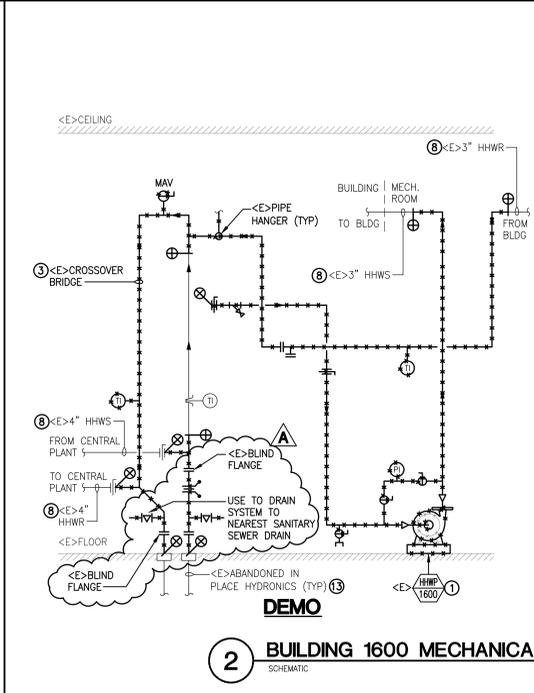
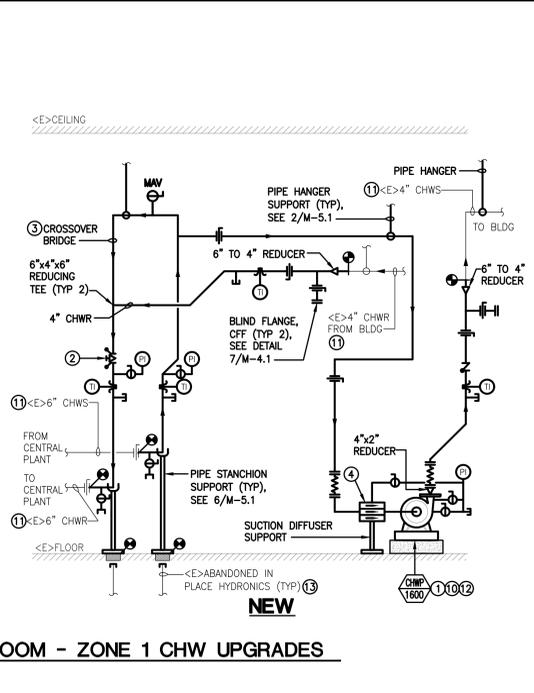
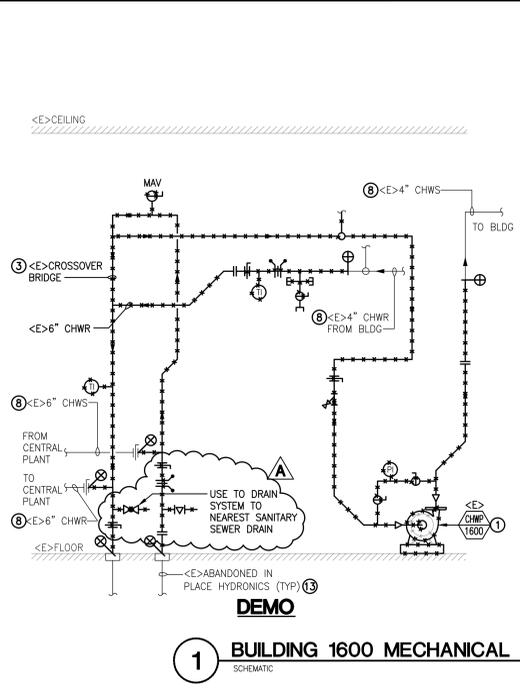
SOBE PROJECT NO: 2510-00648
DATE: 03/16/26
DRAWN BY: EES
CHECKED BY: EES
APPROVED BY: EES

SHEET TITLE

MECHANICAL SYMBOLS & ABBREVIATIONS

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

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



- ### GENERAL SHEET NOTES
- NO DISSIMILAR METAL CONNECTIONS WITHIN THE MECHANICAL ROOM ARE ACCEPTABLE, WHETHER EXISTING OR NEW. CONTRACTOR SHALL IDENTIFY DISSIMILAR METAL CONNECTIONS, THEN DEMO AND REPLACE USING LIKE MATERIALS OR DIELECTRIC FITTINGS TO INSULATE AND PROTECT FROM GALVANIC CORROSION.
 - PROVIDE AIR VENTING PROVISIONS AT HIGH POINT OF HYDRONIC SUPPLY AND RETURN PIPING (HHW & CHW) WITHIN THE MECHANICAL ROOM.
 - PROVIDE 3/4" DRAIN PORTS AT LOW POINTS IN THE PIPING SYSTEM, INCLUDE A BALL VALVE AND TERMINATE WITH HOSE FITTING ADAPTER.
 - CLEAN, PREP, PRIME AND PAINT ALL <E> AND <N> HYDRONIC PIPING WITHIN THE MECHANICAL ROOM. PROVIDE INSULATION, VAPOR BARRIERS (CHW), PVC JACKETING, AND PIPE ID MARKERS WITH FLOW ARROWS.
 - PRIOR TO CONSTRUCTION ISOLATED SECTIONS ASSOCIATED WITH THE AREAS OF WORK SHALL BE DRAINED TO THE NEAREST SANITARY SEWER.
- ### REFERENCE SHEET NOTES
- DEMO AND REPLACE HYDRONIC PUMP. RETAIN AND REINSTALL <E> DISCONNECT SWITCH, ELECTRICAL FEEDERS, BMS/COMM. WIRING, CONDUITS AND HOUSEKEEPING PAD. POWER AND CONTROLS CONDUIT AND WIRING SHALL BE INTERCEPTED AND EXTENDED FOR CONNECTION AND REINTEGRATION OF NEW PUMP(S). REFER TO HYDRONIC PUMP SCHEDULE ON M-0.1.
 - DEMO SECTION OF PIPING AND PROVIDE NEW BALANCING VALVE AT THE HYDRONIC PUMP. REFER TO DETAIL 5/M-5.1 FOR HHW SERVICE. BALANCE BUILDING PRIMARY LOOPS WITH CHILLER AND BOILER PLANTS OPERATING AT FULL LOAD RESPECTIVELY.
 - DEMO SECTION OF SUPPLY AND RETURN PIPING FOR THE INSTALL OF PRIMARY/SECONDARY CROSSOVER BRIDGE. PROVIDE LINE SIZE TEES AND PIPING TO COMPLETE THE CROSSOVER BRIDGE. REFER TO DETAIL 7/M-5.1.
 - PROVIDE SUCTION DIFFUSER AT PUMP, REFER TO M-0.1 FOR SIZING.
 - AT BUILDING EXTERIOR RISERS, DEMOLISH EXISTING ISOLATION VALVE AND PROVIDE LINE SIZED TEE WITH ISOLATION VALVES AT THE CAMPUS HYDRONIC LOOP SIDE AND THE BRANCH PORT OF THE TEE. PROVIDE BLIND FLANGE AT BRANCH PORT (FOR FUTURE). SEE DETAIL 5/M-4.1.
 - NOT USED.
 - NOT USED.
 - REPLACE EXISTING RUSTED/DEGRADED HYDRONIC PIPING WITHIN MECHANICAL ROOM. PIPING TO BE RETAINED SHALL BE WIRE BRUSHED CLEAN FROM ANY MINOR SURFACE RUST.
 - NOT USED.
 - PROVIDE POST-CONSTRUCTION TAB OF HYDRONIC PUMP(S) AND EXISTING BUILDING HHW/CHW COILS. REFER TO HYDRONIC PUMP SCHEDULE ON M-0.1 FOR PUMP FLOW (GPM) AND PRESSURE (TDH) DESIGN PARAMETERS.
 - CAULK AND SEAL ALL PENETRATIONS THROUGH WALLS AND CEILINGS. FIRE-RATED ASSEMBLIES SHALL BE CAULKED AND SEALED WITH FIRE STOP CAULK. REFER TO DETAIL 5/M-5.1. PROVIDE ESCUTCHEON PLATES AT ALL PENETRATIONS. REFER TO DETAIL 8/M-5.1.
 - INTERCEPT AND EXTEND EXISTING CONDUIT AND WIRES AS NECESSARY TO FEED NEW MOTOR. SIZES OF CONDUIT AND WIRES TO MATCH EXISTING. VERIFY EXISTING MOTOR STARTER, BREAKER, OVERLOAD PROTECTION ARE SIZED ADEQUATELY FOR THE NEW ELECTRIC MOTOR. REPLACE EQUIPMENT AS NECESSARY TO MATCH NEW ELECTRIC MOTOR REQUIREMENTS.
 - DEMO <E> ABANDONED IN PLACE PIPING 1" MIN. BELOW <E> FINISHED FLOOR. INSERT PLUG INTO <E> ABANDONED PIPE DOWN TO NEAREST CHANGE OF DIRECTION. FILL WITH GROUT AND ABANDON IN PLACE. FINISH GROUT FLUSH TO ADJACENT FINISHED FLOOR.

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B-1600 MECHANICAL ROOM HYDRONIC UPGRADES

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SOBE PROJECT NO:	2510-00648
DATE:	03/16/26
DRAWN BY:	EES
CHECKED BY:	EES
APPROVED BY:	EES

SHEET TITLE

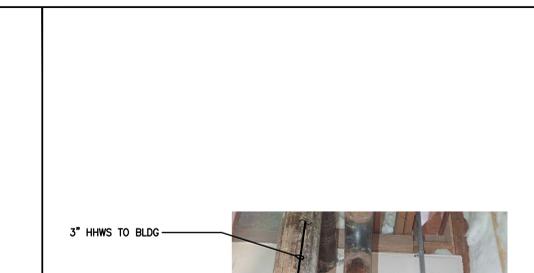
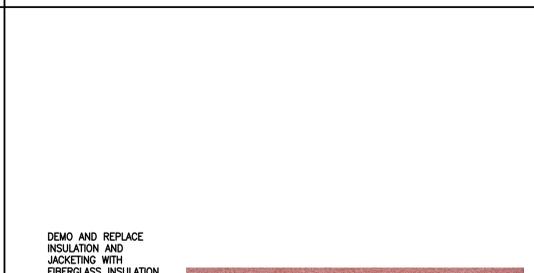
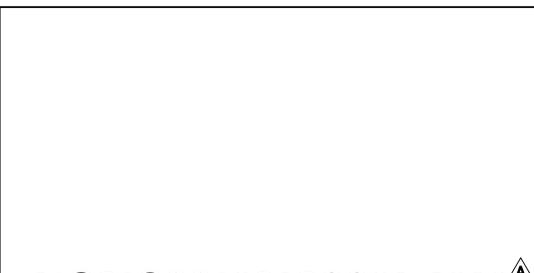
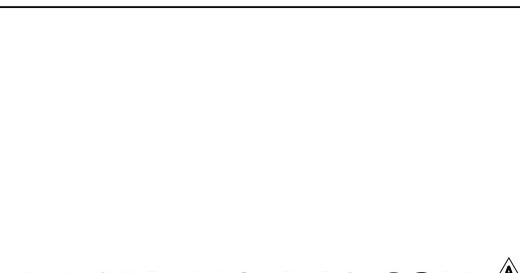
BUILDING 1600 MECHANICAL ROOM UPGRADES

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

M-4.1

SHEET OF

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BUILDING 1600 CHW BILL OF MATERIAL				
Quantity	Unit	NPS	Component Description	Detail
6	EA	4"	Butterfly Valves	
1	EA	6"	Balancing Valve	
1	EA	4"	Check Valve	
1	EA	1/4"	Manual Air Vent	
3	EA	1/4"	Ball Valve	
4	EA	1/2"	Ball Valve	
2	EA	4"	Blind Flange	
3	EA	1/4"	Test ports	
4	EA	1/4"	Temperature Indicator	Include Thermowell
3	EA	1/4"	Pressure Indicator	
20	LF	6"	Insulation	Rigid glass fiber, includes valves, fittings, & specialties
20	LF	6"	Jacketing	PVC plastic, 10 mil, includes valves, fittings, & specialties
20	LF	6"	Sch. 40 Steel Piping	ASTM A53, Grade B/ See GSN D
4	EA	6"	Sch. 40 Steel 90° elbow	ASTM A234 Wrought Steel
2	EA	6"	Sch. 40 Steel 45° elbow	ASTM A234 Wrought Steel
2	EA	6" to 4"	Concentric Reducer	Sch. 40, ASTM A234 Wrought Steel
1	EA	4" to 2"	Concentric Reducer	Sch. 40, ASTM A234 Wrought Steel
60	LF	4"	Insulation	Rigid glass fiber, includes valves, fittings, & specialties
60	LF	4"	Jacketing	PVC plastic, 10 mil, includes valves, fittings, & specialties
60	LF	4"	Sch. 40 Steel Piping	ASTM A53, Grade B/ See GSN D
4	EA	4"	Sch. 40 Steel 90° elbow	ASTM A234 Wrought Steel
2	EA	4"	Sch. 40 Steel 45° elbow	ASTM A234 Wrought Steel
1	EA	4"	Suction Diffuser	Flanged union, 4" to 2-1/2"
2	EA	4"	Flexible connections	Flanged
3	LF	1/4"	Sch. 40 Steel Piping	ASTM A53, Grade B/ See GSN D
1	EA	1/4"	Sch. 40 90° elbow	ASTM B16.3 Malleable iron screwed
3	EA	1/4"	Sch. 40 Steel Tee	ASTM B16.3 Malleable iron screwed
28	EA	4"	Flanges	ANSI 150
6	EA	4"	Flanges	ANSI 150
28	EA	4"	Bolts & Gaskets Kit	
6	EA	6"	Bolts & Gaskets Kit	
2	EA	4"x4"x4"	Sch. 40 Steel Line Size Tee	ASTM A234 Wrought Steel
2	EA	6"x4"x6"	Sch. 40 Steel reducing Tee	ASTM A234 Wrought Steel
5	EA	4"	Cal-Silicate Inserts	
1	EA	4"	Pipe Hanger Support	
1	EA	6"	Pipe Hanger Support	
1	EA	4"	Pipe Stanchion Support	
2	EA	6"	Pipe Stanchion Support	

BUILDING 1600 HHW BILL OF MATERIAL				
Quantity	Unit	NPS	Component Description	Detail
6	EA	3"	Butterfly Valves	
4	EA	4"	Butterfly Valves	
1	EA	4"	Balancing Valve	
1	EA	3"	Check Valve	Swingtype
3	EA	1/4"	Ball Valve	
4	EA	1/2"	Ball Valve	
5	EA	1/4"	Test ports	
1	EA	1/4"	Manual Air Vent	
2	EA	4"	Blind Flange	
2	EA	4"	Pressure Indicator	
3	EA	1/4"	Temperature Indicator	Include thermowell
4	EA	1/4"	Temperature Indicator	
20	LF	4"	Insulation	Rigid glass fiber, includes valves, fittings, & specialties
20	LF	4"	Jacketing	PVC plastic, 10 mil, includes valves, fittings, & specialties
20	LF	4"	Sch. 40 Steel Piping	ASTM A53, Grade B
4	EA	4"	Sch. 40 Steel 90° elbow	ASTM A234 Wrought Steel
2	EA	4" to 3"	Concentric Reducer	Sch. 40, ASTM A234 Wrought Steel
1	EA	3" to 2"	Concentric Reducer	Sch. 40, ASTM A234 Wrought Steel
60	LF	3"	Insulation	Rigid glass fiber, includes valves, fittings, & specialties
60	LF	3"	Jacketing	PVC plastic, 10 mil, includes valves, fittings, & specialties
60	LF	3"	Sch. 40 Steel Piping	ASTM A53, Grade B
4	EA	3"	Sch. 40 Steel 90° elbow	ASTM A234 Wrought Steel
1	EA	3"	Suction Diffuser	Threaded union, 3" to 1-1/2"
2	EA	3"	Flexible connections	Flanged
26	EA	3"	Flanges	ANSI 150
18	EA	4"	Flanges	ANSI 150
26	EA	3"	Bolts & Gaskets Kit	
18	EA	4"	Bolts & Gaskets Kit	
3	LF	1/4"	Sch. 40 Steel Piping	ASTM A53, Grade B
2	EA	1/4"	Sch. 40 Steel Tee	ASTM B16.3 Malleable iron screwed
2	EA	4"x3"x4"	Sch. 40 Steel reducing Tee	ASTM A234 Wrought Steel
2	EA	3"	Sch. 40 Steel Line Size Tee	ASTM A234 Wrought Steel
2	EA	4"	Sch. 40 Steel Line Size Tee	ASTM A234 Wrought Steel
4	EA	3"	Cal-Silicate Inserts	
1	EA	3"	Pipe hanger	
1	EA	3"	Pipe Hanger support	
2	EA	4"	Pipe Stanchion support	

NOTES:

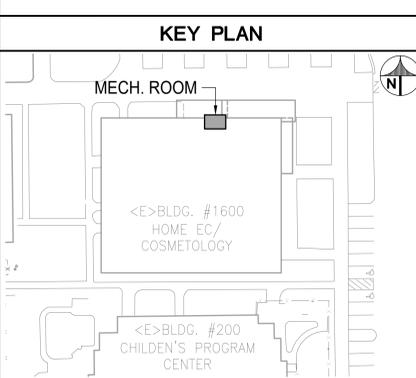
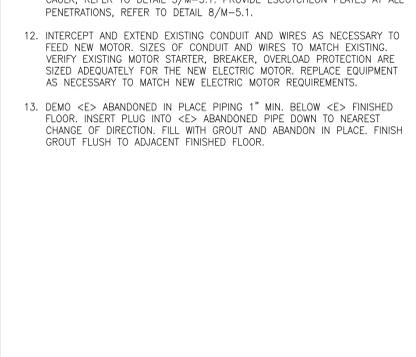
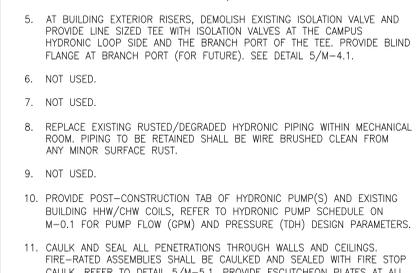
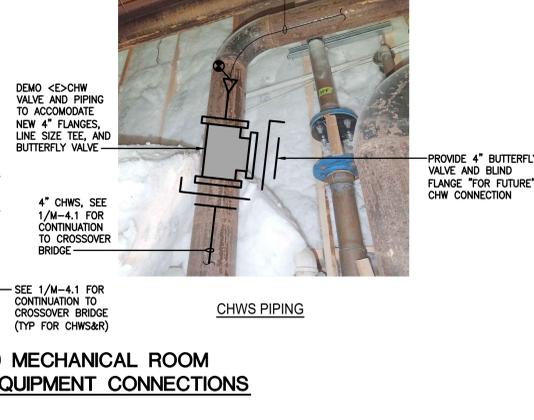
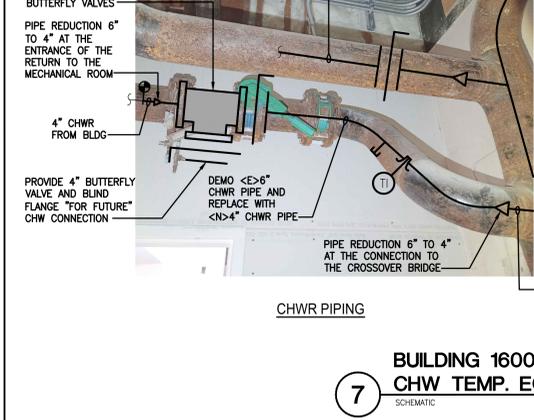
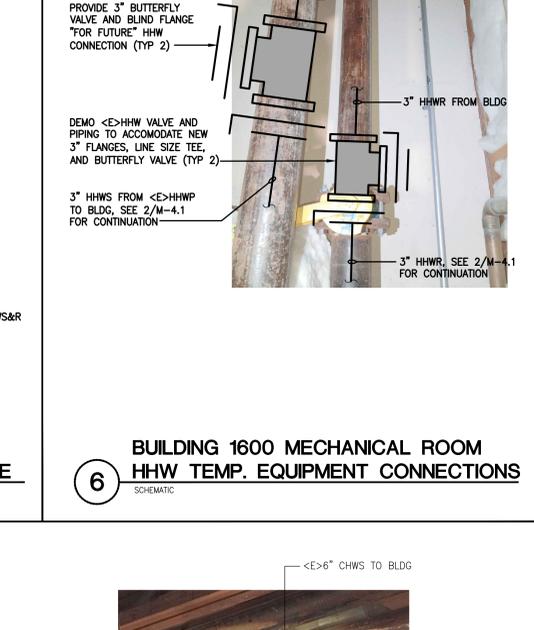
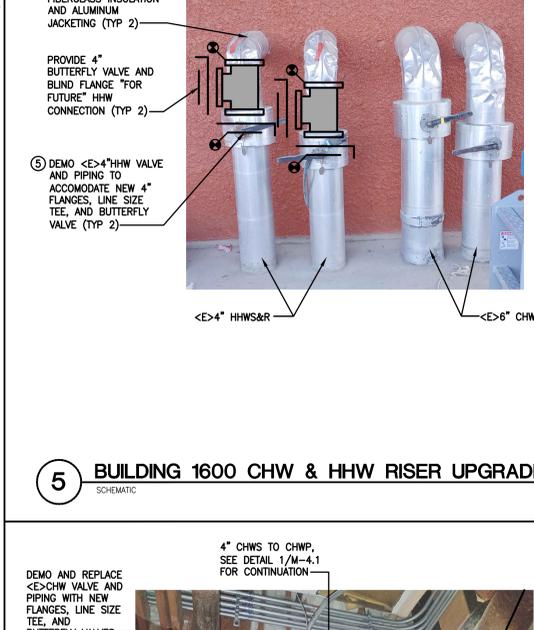
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- BASE BID SHALL INCLUDE THE QUANTITIES, AS WELL AS LABOR, OVERHEAD AND PROFIT RELATING TO THIS BILL OF MATERIALS, AND ANY MATERIAL NOT IDENTIFIED ON THE BOM ABOVE THAT ARE DEEMED NECESSARY FOR A COMPLETE AND CODE COMPLIANT INSTALLATION.
- REFER TO PROJECT MANUAL FOR EQUIPMENT AND MATERIAL SPECIFICATIONS.

3 BUILDING 1600 MECHANICAL ROOM CHW UPGRADE BILL OF MATERIAL

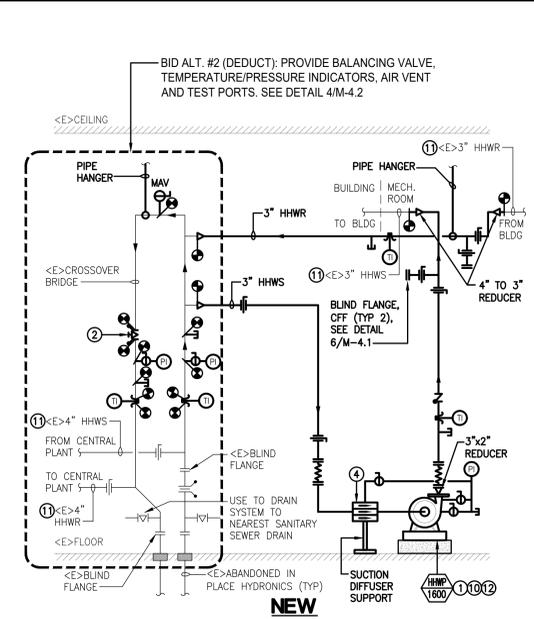
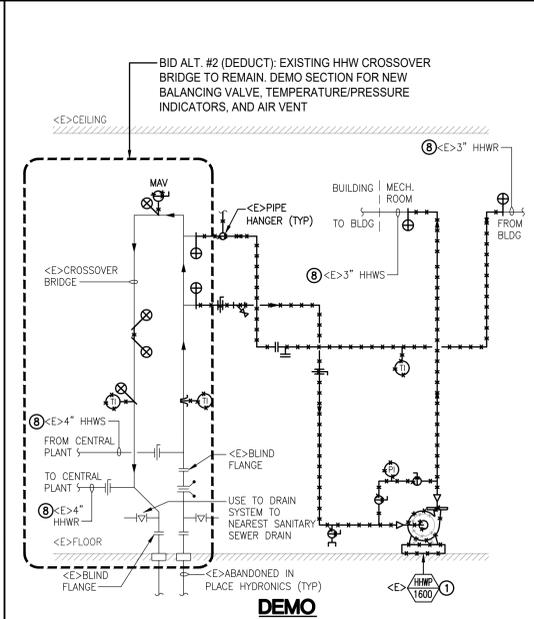
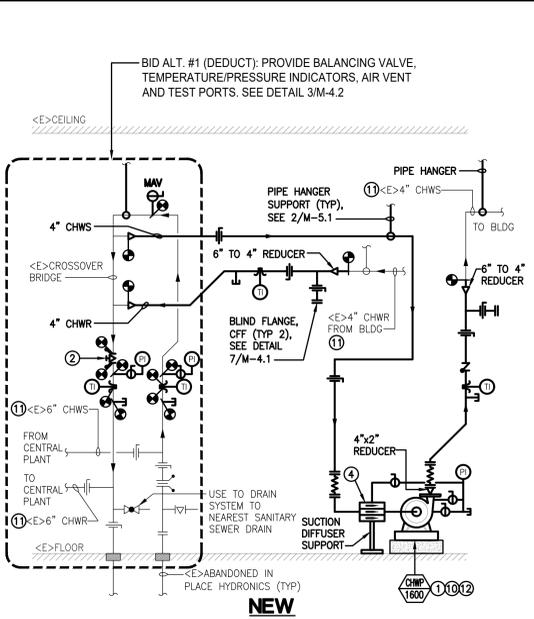
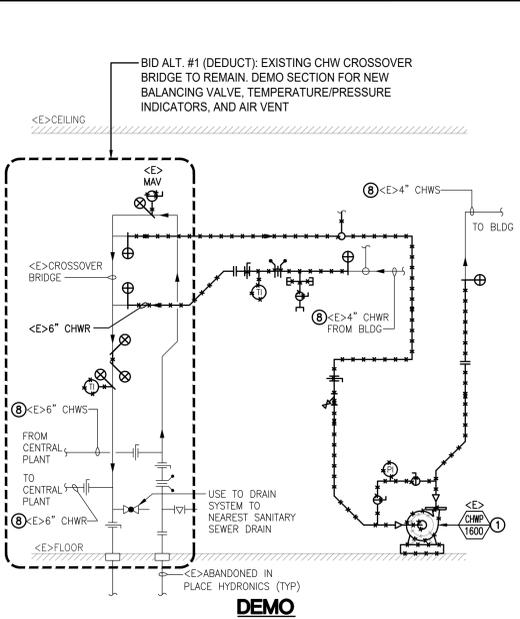
NOTES:

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- BASE BID SHALL INCLUDE THE QUANTITIES, AS WELL AS LABOR, OVERHEAD AND PROFIT RELATING TO THIS BILL OF MATERIALS, AND ANY MATERIAL NOT IDENTIFIED ON THE BOM ABOVE THAT ARE DEEMED NECESSARY FOR A COMPLETE AND CODE COMPLIANT INSTALLATION.
- REFER TO PROJECT MANUAL FOR EQUIPMENT AND MATERIAL SPECIFICATIONS.

4 BUILDING 1600 MECHANICAL ROOM HHW UPGRADE BILL OF MATERIAL



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



GENERAL SHEET NOTES

- A. NO DISSIMILAR METAL CONNECTIONS WITHIN THE MECHANICAL ROOM ARE ACCEPTABLE. WHETHER EXISTING OR NEW, CONTRACTOR SHALL IDENTIFY DISSIMILAR METAL CONNECTIONS, THEN DEMO AND REPLACE USING LIKE MATERIALS OR DIELECTRIC FITTINGS TO INSULATE AND PROTECT FROM GALVANIC CORROSION.
- B. PROVIDE AIR VENTING PROVISIONS AT HIGH POINT OF HYDRONIC SUPPLY AND RETURN PIPING (HHW & CHW) WITHIN THE MECHANICAL ROOM.
- C. PROVIDE 3/4" DRAIN PORTS AT LOW POINTS IN THE PIPING SYSTEM, INCLUDE A BALL VALVE AND TERMINATE WITH HOSE FITTING ADAPTER.
- D. CLEAN, PREP, PRIME AND PAINT ALL <E> AND <N> HYDRONIC PIPING WITHIN THE MECHANICAL ROOM. PROVIDE INSULATION, VAPOR BARRIERS (CHW), PVC JACKETING, AND PIPE ID MARKERS WITH FLOW ARROWS.
- E. PRIOR TO CONSTRUCTION, ISOLATED SECTIONS ASSOCIATED WITH THE AREAS OF WORK SHALL BE DRAINED TO THE NEAREST SANITARY SEWER.

REFERENCE SHEET NOTES

1. DEMO AND REPLACE HYDRONIC PUMP. RETAIN AND REINSTALL <E> DISCONNECT SWITCH, ELECTRICAL FEEDERS, BMS/COMM. WIRING, CONDUITS AND HOUSEKEEPING PAD. POWER AND CONTROLS CONDUIT AND WIRING SHALL BE INTERCEPTED AND EXTENDED FOR CONNECTION AND REINTEGRATION OF NEW PUMP(S). REFER TO HYDRONIC PUMP SCHEDULE ON M-0.1.
2. DEMO SECTION OF PIPING AND PROVIDE NEW BALANCING VALVE AT THE HYDRONIC RETURN PIPING OF THE PRIMARY LOOP. B-1600 REQUIRES 170 GPM OF CHW SERVICE AND 70 GPM OF HHW SERVICE. BALANCE BUILDING PRIMARY LOOPS WITH CHILLER AND BOILER PLANTS OPERATING AT FULL LOAD RESPECTIVELY.
3. NOT USED.
4. PROVIDE SUCTION DIFFUSER AT PUMP, REFER TO M-0.1 FOR SIZING.
5. AT BUILDING EXTERIOR RISERS, DEMOLISH EXISTING ISOLATION VALVE AND PROVIDE LINE SIZED TEE WITH ISOLATION VALVES AT THE CAMPUS HYDRONIC LOOP SIDE AND THE BRANCH PORT OF THE TEE. PROVIDE BLIND FLANGE AT BRANCH PORT (FOR FUTURE). SEE DETAIL 5/M-4.1.
6. NOT USED.
7. NOT USED.
8. REPLACE EXISTING RUSTED/DEGRADED HYDRONIC PIPING WITHIN MECHANICAL ROOM. PIPING TO BE RETAINED SHALL BE WIRE BRUSHED CLEAN FROM ANY MINOR SURFACE RUST.
9. NOT USED.
10. PROVIDE POST-CONSTRUCTION TAB OF HYDRONIC PUMP(S) AND EXISTING BUILDING HHW/CHW COILS, REFER TO HYDRONIC PUMP SCHEDULE ON M-0.1 FOR PUMP FLOW (GPM) AND PRESSURE (TDH) DESIGN PARAMETERS.
11. CAULK AND SEAL ALL PENETRATIONS THROUGH WALLS AND CEILINGS. FIRE-RATED ASSEMBLIES SHALL BE CAULKED AND SEALED WITH FIRE STOP CAULK, REFER TO DETAIL 5/M-5.1. PROVIDE ESCUTCHEON PLATES AT ALL PENETRATIONS, REFER TO DETAIL 8/M-5.1.
12. INTERCEPT AND EXTEND EXISTING CONDUIT AND WIRES AS NECESSARY TO FEED NEW MOTOR. SIZES OF CONDUIT AND WIRES TO MATCH EXISTING. VERIFY EXISTING MOTOR STARTER, BREAKER, OVERLOAD PROTECTION ARE SIZED ADEQUATELY FOR THE NEW ELECTRIC MOTOR. REPLACE EQUIPMENT AS NECESSARY TO MATCH NEW ELECTRIC MOTOR REQUIREMENTS.

Salas O'Brien
Engineered for Impact
 305 South 11th Street
 San Jose, California 95112-2218
 877.725.2755 | 877.925.1477 (f)
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National Strength. Local Action.



SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE
 4000 SUISUN VALLEY RD
 FAIRFIELD, CA 94534
B-1600 MECHANICAL ROOM HYDRONIC UPGRADES

MARK	DATE	DESCRIPTION
	12/10/25	50% CD
	02/24/26	100% CD
▲	03/16/26	ADDENDUM #1

SOBE PROJECT NO: 2510-00648
 DATE: 03/16/26
 DRAWN BY: EES
 CHECKED BY: EES
 APPROVED BY: EES

SHEET TITLE
BUILDING 1600 MECHANICAL ROOM UPGRADES (BID ALTERNATE - DEDUCTS #1 & #2)

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

M-4.2
 SHEET OF

1 BUILDING 1600 MECHANICAL ROOM - ZONE 1 CHW UPGRADES

2 BUILDING 1600 MECHANICAL ROOM - ZONE 1 HHW UPGRADES

BUILDING 1600 CHW BILL OF MATERIAL (BID ALTERNATE #1)

Quantity	Unit	NPS	Component Description	Detail
6	EA	4"	Butterfly Valves	
1	EA	6"	Balancing Valve	
1	EA	4"	Check Valve	
1	EA	1/4"	Manual Air Vent	
3	EA	1/4"	Ball valve	
4	EA	1/2"	Ball valve	
2	EA	4"	Blind Flange	
3	EA	1/4"	Test ports	
4	EA	1/4"	Temperature Indicator	Include Thermowell
3	EA	1/4"	Pressure Indicator	
20	LF	6"	Insulation	Rigid glass fiber, includes valves, fittings, & specialties
20	LF	6"	Jacketing	PVC plastic, 10 mil, includes valves, fittings, & specialties
5"	LF	6"	Sch. 40 Steel Piping	ASTM A53, Grade B/ See GSN D
0"	EA	6"	Sch. 40 Steel 90° elbow	ASTM A234 Wrought Steel
0"	EA	6"	Sch. 40 Steel 45° elbow	ASTM A234 Wrought Steel
4"	EA	6" to 4"	Concentric Reducer	Sch. 40, ASTM A234 Wrought Steel
1	EA	4" to 2"	Concentric Reducer	Sch. 40, ASTM A234 Wrought Steel
40	LF	4"	Insulation	Rigid glass fiber, includes valves, fittings, & specialties
40	LF	4"	Jacketing	PVC plastic, 10 mil, includes valves, fittings, & specialties
40	LF	4"	Sch. 40 Steel Piping	ASTM A53, Grade B/ See GSN D
4	EA	4"	Sch. 40 Steel 90° elbow	ASTM A234 Wrought Steel
2	EA	4"	Sch. 40 Steel 45° elbow	ASTM A234 Wrought Steel
1	EA	4"	Suction Diffuser	Flanged union, 4" to 2-1/2"
2	EA	4"	Flexible connections	Flanged
3	LF	1/4"	Sch. 40 Steel Piping	ASTM A53, Grade B/ See GSN D
1	EA	1/4"	Sch. 40 90° elbow	ASTM B16.3 Malleable iron screwed
3	EA	1/4"	Sch. 40 Steel Tee	ASTM B16.3 Malleable iron screwed
26	EA	4"	Flanges	ANSI 150
2	EA	6"	Flanges	ANSI 150
26	EA	4"	Bolts & Gaskets Kit	ANSI 150
2	EA	6"	Bolts & Gaskets Kit	ANSI 150
2	EA	4"	Sch. 40 Steel Line Size Tee	ASTM A234 Wrought Steel
0"	EA	6"x4"x6"	Sch. 40 Steel reducing Tee	ASTM A234 Wrought Steel
3	EA	4"	Cal-Silicate Inserts	
1	EA	4"	Pipe Hanger Support	
1	EA	6"	Pipe Hanger Support	
1	EA	4"	Pipe Stanchion Support	
0"	EA	6"	Pipe Stanchion Support	

BUILDING 1600 HHW BILL OF MATERIAL (BID ALTERNATE #2)

Quantity	Unit	NPS	Component Description	Detail
4	EA	4"	Butterfly Valves	
1	EA	4"	Balancing Valve	
1	EA	3"	Check Valve	Swingtype
3	EA	1/4"	Ball Valve	
4	EA	1/2"	Ball Valve	
5	EA	1/4"	Test ports	
1	EA	1/4"	Manual Air Vent	
2	EA	3"	Blind Flange	
3	EA	1/4"	Pressure Indicator	
4	EA	1/4"	Temperature Indicator	Include thermowell
20	LF	4"	Insulation	Rigid glass fiber, includes valves, fittings, & specialties
20	LF	4"	Jacketing	PVC plastic, 10 mil, includes valves, fittings, & specialties
5"	LF	4"	Sch. 40 Steel Piping	ASTM A53, Grade B
0"	EA	4"	Sch. 40 Steel 90° elbow	ASTM A234 Wrought Steel
4"	EA	4" to 3"	Concentric Reducer	Sch. 40, ASTM A234 Wrought Steel
1	EA	3" to 2"	Concentric Reducer	Sch. 40, ASTM A234 Wrought Steel
40	LF	3"	Insulation	Rigid glass fiber, includes valves, fittings, & specialties
40	LF	3"	Jacketing	PVC plastic, 10 mil, includes valves, fittings, & specialties
40	LF	3"	Sch. 40 Steel Piping	ASTM A53, Grade B
4	EA	3"	Sch. 40 Steel 90° elbow	ASTM A234 Wrought Steel
1	EA	3"	Suction Diffuser	Threaded union, 3" to 1-1/2"
2	EA	3"	Flexible connections	Flanged
24	EA	3"	Flanges	ANSI 150
14	EA	4"	Flanges	ANSI 150
24	EA	3"	Bolts & Gaskets Kit	ANSI 150
14	EA	4"	Bolts & Gaskets Kit	ANSI 150
3	LF	1/4"	Sch. 40 Steel Piping	ASTM A53, Grade B
2	EA	1/4"	Sch. 40 Steel Tee	ASTM B16.3 Malleable iron screwed
0"	EA	4"x3"x4"	Sch. 40 Steel reducing Tee	ASTM A234 Wrought Steel
2	EA	3"	Sch. 40 Steel Line Size Tee	ASTM A234 Wrought Steel
2	EA	4"	Sch. 40 Steel Line Size Tee	ASTM A234 Wrought Steel
2	EA	3"	Cal-Silicate Inserts	
1	EA	3"	Pipe hanger	
1	EA	3"	Pipe Stanchion support	
0"	EA	4"	Pipe Stanchion support	

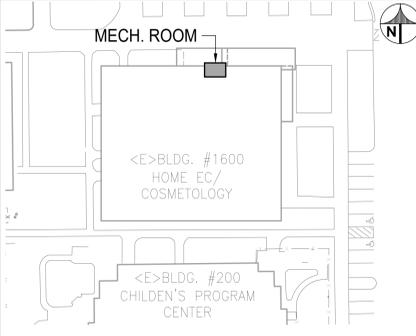
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 3. REFER TO PROJECT MANUAL FOR EQUIPMENT AND MATERIAL SPECIFICATIONS.

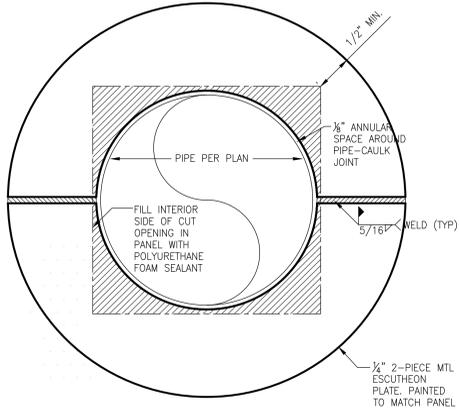
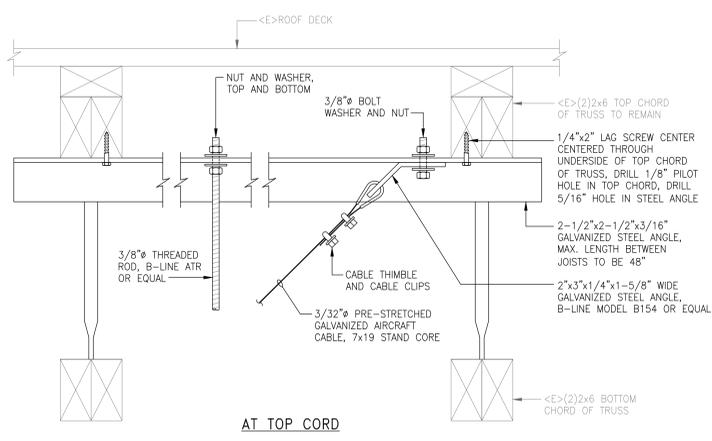
3 BUILDING 1600 MECHANICAL ROOM CHW UPGRADE BILL OF MATERIAL

4 BUILDING 1600 MECHANICAL ROOM HHW UPGRADE BILL OF MATERIAL

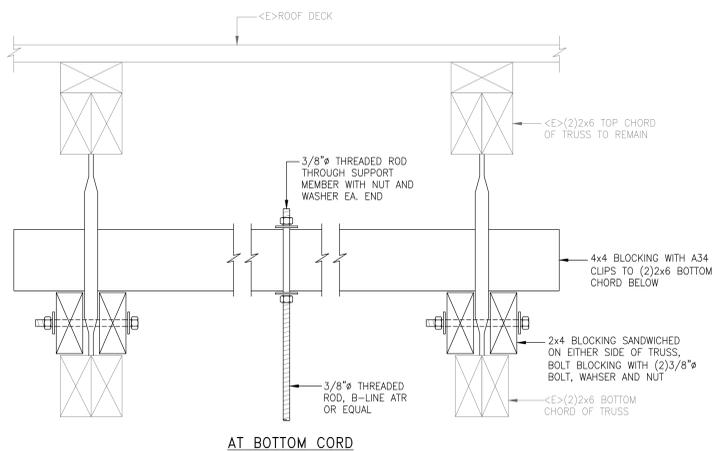
KEY PLAN



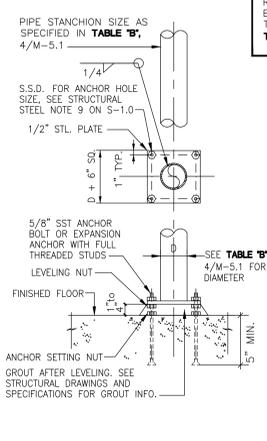
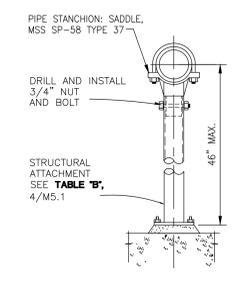
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8 ESCUTCHEON PLATE
SCALE: N.T.S.

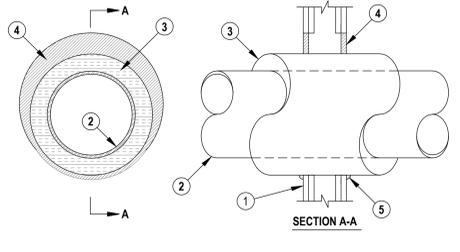


9 PIPE HANGER/BRACING ANCHORAGE
SCALE: N.T.S.



NOTE:
SPACING SHALL BE AS REQUIRED, OR AS SHOWN, BUT SHALL NOT EXCEED THOSE SPANS SHOWN IN TABLE 'A', 3/M-5.1

6 PIPE SUPPORT STANCHION
SCALE: N.T.S.



1. Wall Assembly — The 1, 2 or 3 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide for 1 and 2 hr F and FH rating and 3-1/2 in. (89 mm) wide for 3 hr F and FH rating and spaced max 24 in. (610 mm) OC.
B. Gypsum Board — Min 5/8 in. (16 mm) thick with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening is 18-5/8 in. (473 mm).
 The hourly F and FH Ratings of the freestop system are equal to the hourly fire rating of the wall assembly in which it is installed.
2. Through Penetrants — One metallic pipe or tubing to be installed within the freestop system. Pipe or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes or tubing may be used:
A. Steel Pipe — Nom 12 in. (305 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
B. Iron Pipe — Nom 12 in. (305 mm) diam (or smaller) cast or ductile iron pipe.
C. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing. When the hourly F or FH Rating of the freestop system is 3 hr, the nom diam of copper tube shall not exceed 4 in. (102 mm).
D. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe. When the hourly F or FH Rating of the freestop system is 3 hr, the nom diam of copper pipe shall not exceed 4 in. (102 mm).
3. Pipe Covering — Nom 1, 1-1/2 or 2 in. (25, 38 or 51 mm) thick hollow cylindrical heavy density (min 3.5 pcf or 56 kg/m³) glass fiber units jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied self-sealing top tape. Transverse joints secured with metal fasteners or with but tape supplied with the product. For 1 and 2 hr F and FH Ratings, the annular space between insulated penetrant and periphery of opening shall be min 0 in. (point contact) to max 1-7/8 in. (48 mm). For 3 hr F and FH Ratings, the annular space shall be min 0 in. (point contact) to max 1-1/4 in. (32 mm).
 See Pipe and Equipment Covering — Materials (BRGU) category in the Building Materials Directory for the names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.
 The hourly T, FT, FTH Ratings of the freestop system are 1/2 hr for 1 hr rated walls and 1 hr for 2 hr rated walls. For 3 hr rated walls, the hourly T, FT and FTH Ratings when steel and iron pipes are used are 1 hr. For 3 hr rated walls, the hourly T, FT and FTH Ratings when copper penetrants are used are 1-1/4 hr for 2 in. (51 mm) thick pipe covering and 0 hr for pipe covering thickness less than 2 in. (51 mm).
3A. Pipe Covering — (Not Shown) — As an alternate to item 3, max 2 in. (51 mm) thick cylindrical calcium silicate (min 14 pcf) units sized to the outside diam of the pipe or tube may be used. Pipe insulation secured with stainless steel bands or min 18 AWG stainless steel wire spaced max 12 in. (305 mm) OC. When the alternate pipe covering is used, the T and FT Rating shall be as specified in item 3 above.
 See Pipe and Equipment Covering — Materials (BRGU) category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.
4. Fill Void or Cavity Material — Sealant — For 1 and 2 hr F and FH Rating, min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. For 3 hr F and FH Rating, min 1 in. (25 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point contact location between pipe covering and gypsum board, a min 1/2 in. (13 mm) diam bead of fill material shall be applied at the pipe covering/gypsum board interface on both surfaces of wall.
 HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-0 Neo Sealant or FS-0 Neo MAX Intumescent Sealant
 * Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

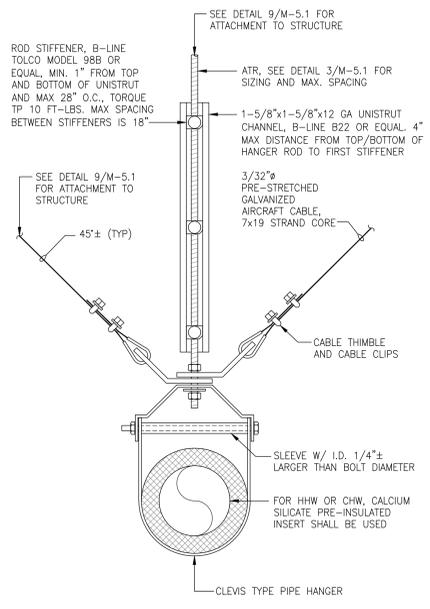
5 FIRE STOP/ PIPE PENETRATION
SCALE: N.T.S.

TABLE A

NOMINAL PIPE SIZE (INCHES)	SUPPORT ROD SIZE AND MAXIMUM LOAD PER ROD		MAXIMUM PIPE SPAN (FEET)
	ROD SIZE (INCHES)	MAX LOAD (POUNDS)	
3/8 to 3/4	3/8	610	5
1	3/8	610	5
1 1/4	3/8	610	5
1 1/2	3/8	610	5
2	3/8	610	10
2 1/2	1/2	1130	10
3	1/2	1130	10
4	5/8	1430	10
6	3/4	1940	10

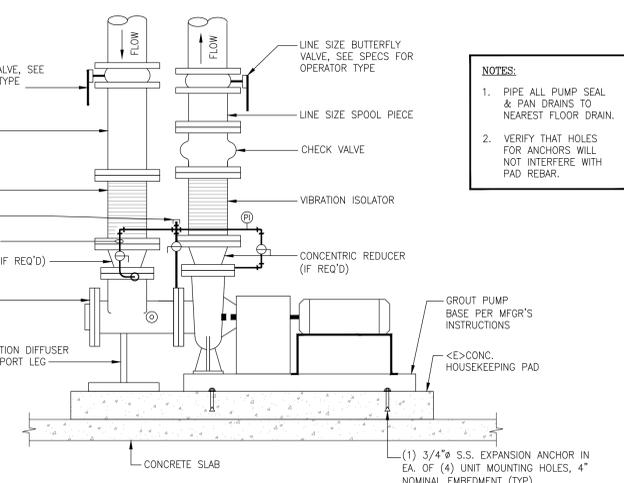
NOTES:
 1. PIPE SHALL NOT HAVE POCKETS FORMED IN THE SPAN DUE TO SAGGING OF THE PIPE BETWEEN SUPPORTS CAUSED BY THE WEIGHT OF THE PIPE, MEDIUM IN THE PIPE, INSULATION, VALVES, AND FITTINGS.
 2. PROVIDE A MINIMUM OF ONE PIPE HANGER PER PIPE LENGTH.

3 TABLE "A" PIPE HANGER ROD SIZE & MAX LOAD/ROD
SCALE: N.T.S.



NOTES:
 1. PROVIDE ROD STIFFENERS ONLY WHERE ROD LENGTH FROM SEISMIC BRACING TO UPPER ATTACHMENT EXCEEDS 18\"/>

2 CLEVIS HANGER
SCALE: N.T.S.



NOTES:
 1. PIPE ALL PUMP SEAL & PAN DRAINS TO NEAREST FLOOR DRAIN.
 2. VERIFY THAT HOLES FOR ANCHORS WILL NOT INTERFERE WITH PAD REBAR.

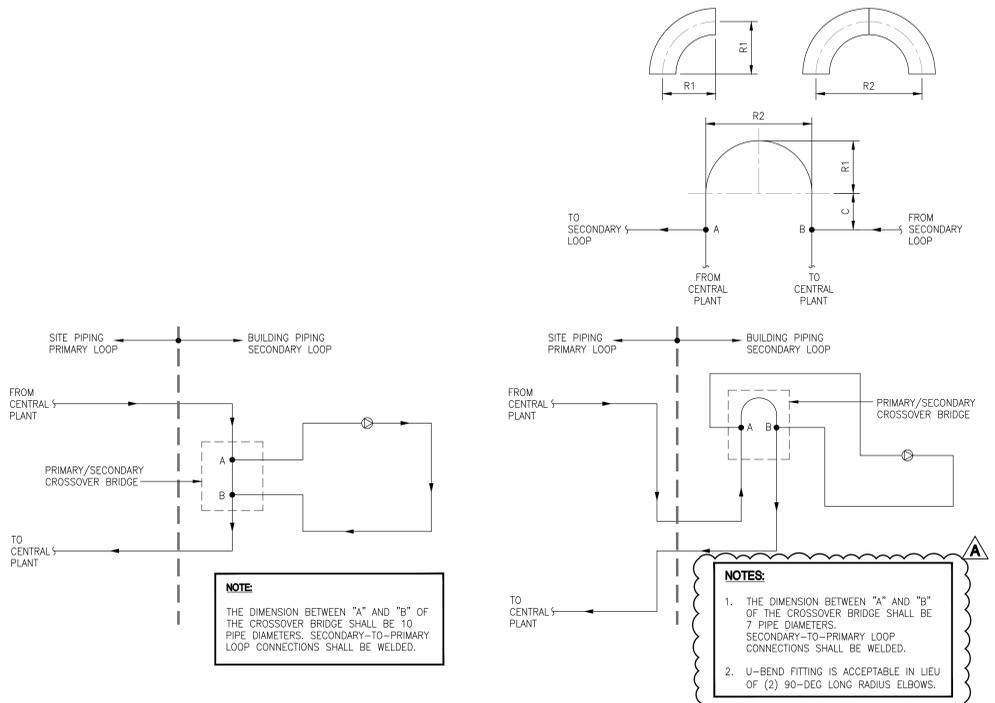
1 TYPICAL PUMP ELEVATION
SCALE: N.T.S.

TABLE B
PIPE STANCHION DIAMETER

PIPE SIZE (INCHES) (OR INSULATION SHIELD SIZE)	NOMINAL PIPE STANCHION DIAMETER (D) (SCHEDULE 40 - INCHES)
4	3
6	3
8	3
10	3
12	3
14	4
16	4
18	6
20	6
24	6

NOTES:
 1. PIPE SHALL NOT HAVE POCKETS FORMED IN THE SPAN DUE TO THE PIPE, MEDIUM IN THE PIPE, INSULATION, VALVES, AND FITTINGS.
 2. PROVIDE A MINIMUM OF ONE PIPE HANGER PER PIPE LENGTH.

4 TABLE "B" PIPE STANCHION DIAMETER
SCALE: N.T.S.



NOTE:
 THE DIMENSION BETWEEN "A" AND "B" OF THE CROSSOVER BRIDGE SHALL BE 10 PIPE DIAMETERS. SECONDARY-TO-PRIMARY LOOP CONNECTIONS SHALL BE WELDED.

NOTES:
 1. THE DIMENSION BETWEEN "A" AND "B" OF THE CROSSOVER BRIDGE SHALL BE 7 PIPE DIAMETERS. SECONDARY-TO-PRIMARY LOOP CONNECTIONS SHALL BE WELDED.
 2. U-BEND FITTING IS ACCEPTABLE IN LIEU OF (2) 90-DEG LONG RADIUS ELBOWS.

PRIMARY LOOP NPS (IN)	CROSSOVER BRIDGE LENGTH (A TO B) (IN)
2.5	25
3	30
4	40
6	60
8	80
10	100

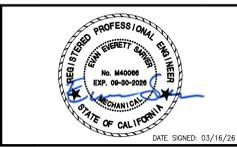
PRIMARY LOOP NPS (IN)	90° LONG RADIUS ELBOW CENTER TO END DIMENSION (IN) (R1)	DUAL WELDED 90° LONG RADIUS ELBOW DIMENSION (IN) (R2)	DISTANCE FROM ELBOW TO LINE SIZE TEELING (C)	DISTANCE FROM A TO B (IN)
2.5	3.75	2.5	2.5	16.8
3	4.5	9	3	20.1
4	6	12	4	26.8
6	9	18	6	40.3
8	12	24	8	53.7
10	15	30	10	67.1

7A - CROSSOVER BRIDGE AT STRAIGHT PIPING

7B - CROSSOVER BRIDGE WITH 180° LONG RADIUS FITTING

7 CROSSOVER BRIDGE DETAIL
SCALE: N.T.S.

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 National Strength. Local Action.



SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE
 4000 SUISUN VALLEY RD
 FAIRFIELD, CA 94534
B-1600 MECHANICAL ROOM HYDRONIC UPGRADES

ISSUE

MARK	DATE	DESCRIPTION
	12/10/25	50% CD
	02/24/26	100% CD
▲	03/16/26	ADDENDUM #1

SOBE PROJECT NO: 2510-00648
 DATE: 03/16/26
 DRAWN BY:
 CHECKED BY: EES
 APPROVED BY: EES

MECHANICAL DETAILS

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