ADDENDUM TO THE CONTRACT DOCUMENTS

SOLANO COMMUNITY COLLEGE	ADDENDUM NO. 003
	Project: Solano Community College District **Hydronic System Modernization – Phase 1 Project** Project Number: 25-026
	Date: March 11th, 2026

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

ITEM NO. 1 – MODIFICATION TO REQUEST FOR PREQUALIFICATION DOCUMENT

1.1. Replace Specification Section 00 01 20 – List of Schedules with version attached to this addendum.

- Revisions include changes for:
  - Construction Schedule and Project Milestone Dates
- All changes are noted in highlighted font.

1.2. Replace Specification Section 00 41 13 – Bid Form and Proposal with version attached to this addendum.

- Revisions include changes for:
  - Owner's Allowance
  - Bid Alternates
- All changes are noted in highlighted font.

1.3. Replace Specification Section 00 52 13 – Agreement (Stipulated Sum) with version attached to this addendum.

- Revisions include changes for:
  - Owner's Allowance
  - Bid Alternates
  - Time for Completion Date change
- All changes are noted in highlighted font.

1.4. Replace Specification Section 00 72 13 – General Conditions with version attached to this addendum.

- Revisions include changes for:
  - Section 6.15 Working Evenings and Weekends
- All changes are noted in highlighted font.

1.5. Replace Specification Section 00 73 13 – Special Conditions with version attached to this addendum.

- Revisions include changes for:
  - Section 19.1 Schedule of Operation
- All changes are noted in highlighted font.

1.6. Replace Specification Section 01 22 00 – Alternates and Unit Pricing with version attached to this addendum.

- Revisions include date changes for Construction Milestone Schedule
- All changes are noted in highlighted font.

ITEM NO. 2 – SPECIFICATIONS

2.1 Section Table of Contents

- Added new Section 09 90 00 - Painting and Coating.

2.2 Section 09 90 00-Painting and Coating

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

2.3 Section 23 05 23 – General-Duty Valves for HVAC Piping

- Deleted Paragraph 2.01.E.2.e.
- Deleted Paragraph 2.01.E.2.f.
- Revise Paragraph 2.01.F.2.c as follows: Swing Check: 2-1/2 inch (65 mm, DN) to 12 inch (300 mm, DN), lever.
- Deleted Paragraph 2.01.F.2.d.
- Deleted Paragraph 2.06 in it's entirety.

2.4 Section 23 05 93 – Testing, Adjusting and Balancing

- Revise Paragraph 1.01.A as follows: Testing, adjustment, and balancing of hydronic systems at each building.
- Add Paragraph 1.01.B as follows: Testing, adjustment, and balancing for temporary hydronic systems.

- Revised Paragraph 3.06 in it's entirety. See attached.
- Added Paragraph 3.07.G. See attached.

2.5 Section 23 21 14 – Hydronic Specialties

- Delete Paragraph 1.01.D.
- Deleted Paragraph 2.05 in it's entirety.

2.6 Section 23 21 23 – Hydronic Pumps

- Deleted Paragraph 2.03 in it's entirety. See attached.

2.7 Section 33 61 13 – Underground Thermal Energy Distribution

- Deleted Paragraph 1.01.B.2.
- Deleted Paragraph 2.07 in it's entirety. See attached.

ITEM NO. 3 – DRAWINGS

3.1 Drawing G-0.0

A. Revisions added to "Summary of Work", reflecting the following modifications:
   1. General revisions and additional notes were added for clarity.
   2. Revised timelines of temporary cooling systems, temporary heating systems, and Construction Milestones by Zone.

B. Revisions added to "Bid Alternates", reflecting the following modification:
   1. General revisions additional notes were added for clarity.
   2. Bid Alternate #1 was revised to hydronic repairs for Zone #4 in lieu of providing temporary heating services to Zone #1.
   3. Bid Alternate #5 was revised to CHW repairs at Vault #1 in lieu of providing temporary heating services to Zone #2.
   4. Removed Bid Alternate #7 and language was revised to "NOT USED".

C. Revisions added to "Deferred Approval", reflecting the following modification:
   1. Removed language referring to hydronic vaults.

D. Revisions added to "Drawing Index", reflecting the following modification:
   1. General revisions were added to reflect Bid Alternate #1 revisions made on G-0.0

3.2 Drawing G-0.1

A. Inspections by manufacturer of pre-fabricated piping systems was added.
B. General revisions were added for clarity.
C. "Controls Contractor Responsibilities" notes was added.

3.3 Drawing G-1.1

A. Zone #4 has been redefined as Bid Alternate #1.

3.4 Drawing G-1.3

A. Zone #4 has been redefined as Bid Alternate #1.

3.5 Drawing G-1.4

A. General revisions and clarifications made to "Surface Type Legend" and "Reference Sheet Notes".

B. General Sheet Note "F" was added to identify fill cover over existing or new piping.

C. Revisions added to the site plan, reflecting the following modifications:

1. Revised temporary bypass piping and fencing at Vault #13.
2. Landscape repairs after removal of temporary equipment at temporary equipment enclosures was added to site plan.
3. Revision to surface repair at Vault #1 was added.

3.6 Drawing G-4.1

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

1. General Sheet Notes were revised for clarity.
2. Reference Sheet Note #3 was added for demolishing existing tee located inside of the temporary equipment enclosure.
3. Reference Sheet Note #4 was added to utilize a temporary equipment pad at temporary equipment enclosures.
4. Revised temporary piping, piping supports, and fencing enclosure configuration at B-1600 to maintain sufficient clearance for fire department access and clearance from building.

3.7 Drawing G-4.2

A. General Sheet Notes were revised for clarity.

B. Reference Sheet Note #5 was added to utilize a temporary equipment pad at temporary equipment enclosures.

3.8 Drawing G-4.4

A. General Sheet Notes were revised for clarity.

B. Reference Sheet Note #2 was added for utilizing a temporary equipment pad at temporary equipment enclosures.

3.9 Drawing G-4.5

A. General Sheet Notes were revised for clarity.

B. General revisions and clarification made for restroom exit closure, signage, and exit route.

3.10 Drawing M-0.1

A. Two abbreviations were added.

3.11 Drawing MD-1.1

A. Replace Sheet MD-1.1 in it's entirety.

1. General and Reference Sheet Notes were revised for clarity.
2. General Sheet Note "M" was added to refer to G-Sheets.
3. Reference Sheet Note #12 language was revised to installing temporary thrust blocks at CHW bypass piping points of connection.
4. Temporary piping, piping supports, and fencing enclosure were revised to reflect the revisions on G-4.1.
5. Sheet Title revised for coisiveness to match language on G-0.0.
6. Bid Alternate #1 language removed for temporary heating to match G-0.0

3.12 Drawing M-1.1

A. Replace Sheet M-1.1 in it's entirety.

1. General and Reference Sheet Notes were revised for clarity.
2. Reference Sheet Note #3 was revised to match language on G-0.0.
3. Temporary piping, piping supports, and fencing enclosure were revised to reflect the revisions on G-4.1.
4. Bid Alternate #1 language removed for temporary heating to match G-0.0

3.13 Drawing MD-1.2

A. Replace Sheet MD-1.2 in it's entirety.

1. General and Reference Sheet Notes were revised for clarity.
2. Reference Sheet Note #13 language was revised to installing temporary thrust blocks at CHW bypass piping points of connection.
3. Sheet Title revised for cohesiveness to match language on G-0.0.
4. Bid Alternate #5 work was added to site plan to match language on G-0.0.
5. Bid Alternate #1 language removed for temporary heating to match G-0.0.

3.14 Drawing M-1.2

A. Replace Sheet M-1.2 in it's entirety.

1. General and Reference Sheet Notes were revised for clarity.
2. Concrete-encased HHW anchor was added onto site plan, north of Vault #4.
3. Bid Alternate #5 work was added to site plan to match language on G-0.0.
4. Bid Alternate #1 language removed for temporary heating to match G-0.0.

3.15 Drawing MD-1.4

A. Replace Sheet MD-1.4 in it's entirety.

1. General and Reference Sheet Notes were revised for clarity.
2. Reference Sheet Note #12 language was revised to installing temporary thrust blocks at CHW bypass piping points of connection.
3. Reference Sheet Notes #13 was added for identifying underground points of connections for bypass piping.
4. Temporary piping and fencing enclosure were revised to reflect the revisions on G-4.1.

5. Bid Alternate #1 language removed for temporary heating to match G-0.0.

3.16 Drawing M-1.4

A. Replace Sheet M-1.4 in it's entirety.

1. General and Reference Sheet Notes were revised for clarity.
2. Temporary piping and fencing enclosure were revised to reflect the revisions on G-4.1.
3. Bid Alternate #1 language removed for temporary heating to match G-0.0.

3.17 Drawing MD-1.5

A. Sheet notes updated to reflect updated Bid Alternates.

3.18 Drawing M-1.5

A. General sheet note K added.

3.19 Drawing M-4.1

A. General revisions and additional notes were added for clarity.
B. HHW and CHW Upgrades schematics have been revised.
C. HHW and CHW Bill of Materials and additional notes have been revised for clarity.

3.20 Drawing M-4.2

A. General revisions and additional notes were added for clarity.
B. HHW and CHW Upgrades schematics have been revised.
C. HHW and CHW Bill of Materials and additional notes have been revised for clarity.

3.21 Drawing M-4.3

A. General revisions and additional notes were added for clarity.
B. HHW and CHW Upgrades schematics have been revised.
C. HHW and CHW Bill of Materials and additional notes have been revised for clarity.

3.22 Drawing M-4.4

A. General revisions and additional notes were added for clarity.
B. HHW and CHW Upgrades schematics have been revised.
C. HHW and CHW Bill of Materials and additional notes have been revised for clarity.

3.23 Drawing M-4.5

A. General revisions and additional notes were added for clarity.
B. HHW and CHW Upgrades schematics have been revised. HHW and CHW Bill of Materials and additional notes have been revised for clarity.
C. HHW and CHW Bill of Materials and additional notes have been revised for clarity.

3.24 Drawing M-4.9

A. General revisions and additional notes were added for clarity.

B. HHW and CHW Upgrades schematics have been revised.
C. HHW and CHW Bill of Materials and additional notes have been revised for clarity.

3.25 Drawing M-4.10

A. General revisions and additional notes were added for clarity.
B. HHW and CHW Upgrades schematics have been revised.
C. HHW and CHW Bill of Materials and additional notes have been revised for clarity.
D. Pipe stachion added to Detail #5 for piping support.

3.26 Drawing M-5.1

A. General revisions and additional notes were added for clarity.
B. Detail #12 was added for Sidewalk Connection, referenced on G-1.4.

3.27 Drawing M-5.2

A. General revisions and additional notes were added for clarity.
B. Detail #8 has been revised for clarity and additional notes have been added.
C. Detail #9 was added for temporary CHW Thrust Block & Bypass, referenced on M-sheets.

3.28 Drawing M-5.3

A. General revisions were added for clarity.

3.29 Drawing M-5.5

A. General revisions were added for clarity.

3.30 Drawing M-5.6

A. General revisions and additional notes were added for clarity.
B. Detail #7 has been revised for clarity and additional notes have been added.
C. Detail 10 was added for pump elevation, referenced on M-sheets.

3.31 Drawing M-5.7

A. Pipe routing revised on Detail #1 to reflect the site plan revisions on G-4.1.

3.32 Drawing M-6.1

A. All equipment schedules have been updated for additional clarity and to reflect updated Bid Alternates.

3.33 Drawing MD-7.1

A. Update to "Demo" schematic to reflect updates to site plans.

3.34 Drawing M-7.1

A. Update to "New" schematic to reflect updates to site plans.

3.35 Drawing E-0.1

A. Added NIU - Not In Use to abbreviations.

3.36 Drawing E-1.1

A. Removed pump replacement scope.

3.37 Drawing ED-1.2

A. Added and revised names of substation switchgear.
B. Revised reference sheet notes to reference specific switchgear.

3.38 Drawing E-1.2

A. Updated reference sheet note to include replacement of VFDs.

3.39 Drawing ED-1.4

A. Revised physical dimensions of temporary generators on site plan.
B. Updated reference sheet note #2 with revised generator kVA rating.
C. Removed "adequately" from reference sheet note #1.

3.40 Drawing E-1.4

A. Updated to reflect Bid Alternate #1.

3.41 Drawing E-7.1

A. Removed pump replacement scope of work.

3.42 Drawing E-7.2

A. Added VFD replacement scope.

3.43 Drawing E-7.4

A. Updated to reflect Bid Alternate #1.

3.44 Drawing S-5.1

A. Replace Sheet S-5.1 in it's entirety. See attached.

3.45 Drawing S-5.2

A. Replace Sheet S-5.2 in it's entirety. See attached.

ITEM NO. 4 – RESPONSES TO QUESTIONS SUBMITTED

4.1. Are BIM coordinated shop drawings required?

A. District's Response: No.

4.2. Will temporary cords be acceptable for all temporary electrical services?

A. District's Response: Providing that it is secure and protected, appropriately sized, and meets the requirements stated in the drawings, temporary cords are acceptable.

4.3. Would temporary hoses rated for the appropriate system pressure, temperature, gpm for the temporary bypass piping be acceptable?

A. District's Response: Temporary hoses would be acceptable; however, the contractor shall account for pressure drop/losses and maintain/coordinate fire department access roads, paths of travel and wayfinding signage.

4.4. Will temporary stainless steel gas hose(s) be acceptable for the temporary boilers?

A. District's Response: No, natural gas piping shall be Sch. 40 steel pipe, black or galvanized, with threaded connections. Refer to Section 01 50 00 “Temporary Facilities and Controls”, Article 1.09.

4.5. Per Sheet MD-1.1 ‘Reference Sheet Notes’ #13 what are the locations of the4 electrical heating units & how are they being powered?

A. District's Response: Reference sheet notes 12 & 13 on MD-1.1 have been modified. Portable coolers and heaters have been deleted. B-1600 shall use temporary chiller/boiler equipment as is indicated in Addendum #3. A temporary equipment enclosure is now shown East of B-1600.

4.6. Please verify the quantity of ‘Move and Cool’ units needed.

A. District's Response: All ‘Move and Cool” portables have been deleted from the contract documents and contract requirements. All references have been removed from the drawings in Addendum #3. See also response above.

4.7. Please verify the power source for the ‘Move and Cool’ 208/230V single phase.

A. District's Response: All ‘Move and Cool” portables have been deleted from the contract documents and contract requirements. All references have been removed from the drawings in Addendum #3. See also response(s) above.

4.8. Per Sheet MD-1.1 ‘Reference Sheet Notes’ #13 what are the locations of the 4 electrical heating units & how are they being powered?

A. District's Response: Reference sheet notes 12 & 13 have been modified. Portable coolers and heaters have been deleted. B-1600 shall use temporary chiller/boiler equipment as is indicated in Addendum #3. See also response(s) above.

4.9. In Zone 1 are we to assume that a class 2 compact aggregate pad(s) are required for the temporary equipment locations?

A. District's Response: No, refer to Addendum #3, only B-1500 temporary equipment area will require a temporary pad at Zone #1. The other Zone #1 temporary equipment enclosures are located on landscapes/hardscapes that have negligible slopes. Contractor shall be responsible for returning landscape areas back to their original condition upon removal of temporary equipment. Temporary pads are indicated on plans, refer to Contract Documents, drawings G-4.1– G-4.4.

4.10. Per Sheet M-5.6 Detail #1 'Decomposed Granite Paving', what locations are the decomposed granite paving required for?

A. District's Response: Decomposed Granite Paving occurs in Zone #1 at the B-2700 temporary equipment enclosure. Refer to Addendum #3, G-1.4. Contractor responsible for returning area to original condition upon removal of temporary equipment.

4.11. Per Sheet MD-1.2 'Reference Sheet Notes' #13 – Does this note apply to all temporary equipment areas?

A. District's Response: No. RSN-13 on MD-1.2 has been revised in Addendum #3. Refer to sheets G-4.1 – G-4.4 for temporary pad requirements and G-1.4 for landscape/hardscape restoration requirements.

4.12. Please provide a concrete pad spec for rebar and mix design. This will be for all temporary pads.

A. District's Response: Ground support for the temporary equipment does not require a concrete pad. However: (a) if temporary equipment is anchored to existing concrete slab, refer to detail 11 on drawing S-5.3, (b) if temporary equipment is anchored to existing grade/A.C./decomposed granite, refer to detail 9 on drawing S-5.3, and (c) refer to sheets G-4.1– G-4.4 for temporary pad requirements.

4.13. What are the work hours & work hours per day?

A. District's Response: Contractor recognizes that time is of the essence. For this reason, construction may be performed 24 hours per day, 7 days per week, providing that between the hours of 5pm and 7am, no work shall be performed without prior written authorization from the District /Project Manager.

4.14. If native does not pass compaction will import soil be brought in?

A. District's Response: It is the Contractor's responsibility to pass the compaction test.

4.15. What is the spec after backfilling? Does the concrete pour back need be identical to existing? Also, the asphalt. Would be need it to be thicker or pave the same existing thickness?

A. District's Response: Refer to sheet M-5.3, detail 8/M-5.6 and detail 3/M-5.1.

4.16. Would we install and backfill immediately or wait till the system has been tested and assured its working prior to back fill?

A. District's Response: Wait until system has passed the hydro test and the system has passed inspections.

4.17. Please clarify the material and type of temporary piping to be used for this project.

A. District's Response: Refer to Section 01 50 00 "Temporary Facilities and Controls", Article 1.09.G.

4.18. Does the District have a designated location for disposal or stockpiling excavated spoils?

A. District's Response: No. Spoils shall be hauled offsite. Reusable fill can be stored at the designated laydown areas shown on G-1.2.

4.19. The specifications allow for C900 for underground chilled water piping with diameters of 14 inches and larger. At the contractor's option, may C900 PVC also be used for smaller diameters in lieu of schedule 40PVC?

A. District's Response: No**.**

4.20. The Project Specifications and Plans indicate that certain activities (such as sawcutting and commissioning) may be required during off-hours and/or weekends. Will the contractor be responsible for any overtime inspection or support fees charged by the owner for work performed during these periods?

A. District's Response: For the work specified in the contract documents, the Owner shall be responsible for costs associated with the project inspector, geotechnical (and other) engineering, and DSA costs. Work not currently identified in the contract documents (i.e., changes issued via construction change document or field instruction),

shall be negotiated on a case-by-case basis. Refer also to “Controls Contractor Responsibilities” on G-0.0 of Addendum #3.

4.21. The Drawings include a kiosk sign detail (Sheet G-5.1, Detail 3). Please clarify the intended location of this sign, as no location appears to be identified on the plans.

A. District's Response: The kiosk sign details are provided in order to have a movable wayfinding system that can be placed in strategic locations as the project progresses. See G-4.1 through G-4.4 for wayfinding signage requirements.

4.22. The project plans indicate the use of temporary heating and cooling equipment for all affected buildings to facilitate hydronic piping replacements and vault construction. Please confirm whether all associated temporary heating and cooling work is required if the project schedule and the contractor’s means and methods do not necessitate the use of temporary equipment. For example, if piping replacements are completed during summer months (e.g., July), when heating snot required, would the installation and operation of temporary heating equipment still be mandatory for those buildings?

A. District's Response: Where it is true that there are certain times when temporary heating or cooling is unnecessary, it is critical that the teaching and learning environment is fully conditioned during classroom hours. For that reason, temporary heating and cooling must be available during the time period that is specified. Refer to G-0.0, Summary of Work, note #4A and 4B.

4.23. Would the owner allow the installation of temporary bypass piping, including additional or extended bypass runs are required to maintain system continuity and service to occupied buildings during construction? The us of temporary bypass piping may reduce or eliminate the need for temporary heating and cooling equipment, minimize operations disruptions, and provide more efficient and cost-effective means of maintaining building service during phased construction.

A. District's Response: Temporary bypasses would be acceptable in lieu of temporary equipment on a case-by-case basis. Note, however, the contractor shall account for pressure drop/losses, and maintain/coordinate fire department access roads, paths of travel and wayfinding signage.

4.24. The specifications state that the contractor shall include hazardous abatement and disposal for a minimum of four like-sized transite pipes at each excavation site where a new vault will be installed. Please clarify the anticipated quantity of asbestos cement (transite) pipe removal in terms of linear footage. Additionally, please confirm whether ACP abatement and disposal will be measured and compensated based on actual linear footage removed in the field, and how quantities exceeding or less than the specified minimum will be addressed.

A. District's Response: See Addendum #3, note has been revised for clarity. Contractor and Construction Manager shall keep inventory of linear footage and pipe sizes of piping abated during the construction phase. The difference will be trued-up upon substantial completion of the project.

4.25. Note 17 on M-4.2 states to "provide maintenance at hydronic pump(s). Inspect pump for leaks, vibration, and irregular sounds, inspect bearings, seals, impeller, bushings, and shaft sleeve. Re-grease bearings and verify couplings, connections and pump alignment. Check all fasteners and foundation. Replace work seals/bushings as needed. Is the intent of this note to have all bidders carry a full bearing and seal replacement for all existing pumps?

A. District's Response: No, there is a mix of older and new pumps at the buildings. The RSN has been modified on the M-4.1 – M-4.10 drawings. The intent is for the Contractor to provide a maintenance inspection and provide lubrication at each pump to be retained. Upon completion of inspections at each building, contractor shall provide a summary report and recommendations. Refer to Addendum #3, drawings M-4.1 – M-4.10.

4.26. Notes 8, 13 and 14 on M-4.1, M-4.4, M-4.5, M-4.6, M-4.7, M-4.8, M-4.9, M-4.10 each require work to be done on existing piping the mechanical rooms without a clear definition of the footages of piping, number of fittings or current condition of the piping needing to be prepped and painted. Can more information be provided to allow quantification of this work? Please confirm it is the intent of these notes to remove insulation from existing CHWS/R and HHWS/R piping, clean prime and paint existing piping, then re-insulate existing piping. No specs are provided for the painting of these pipes; can one please be provided?

A. District's Response:

B. The intent is to demolish all hydronic pipe insulation/jacketing at buildings where indicated in the Contract Documents to further evaluate condition of piping in the mechanical room(s). Replacement of insulation/jacketing in compliance with code & contract documents is required.

1. The anticipated Bill of Materials for each building has been updated in Addendum #3, which includes estimated linear footage of new piping, fittings, valves, specialties, insulation, jacketing, etc., and shall be used for the Contractor's bidding purposes. Assume a total of 70 LF of piping, existing and new, at the sizes indicated in the contract documents will be included with the scope for each building hydronic system (HHW & CHW). Existing pipe tasks such as prep, cleaning, painting, and insulation/jacketing demo

and install can be calculated using the 70LF assumption and the new pipe LF provided on the Bill of Materials.

2. Refer to Addendum #3, specification 09 90 00 Painting and Coating.

4.27. Notes 2 and 3 on M-1.1, M-1.2, M-1.3, M-1.4, all call for piping to be prepped and painted after welding is completed. Please provide specifications for primer and paint for these locations prior the insulation closure kits being installed.

A. District's Response: Refer to Addendum #3, specification 09 90 00 Painting and Coating, for black steel.

4.28. Note 5 on M-1.5 calls for PVC piping to be coated with 3 coats of UV-rated paint. Please provide specifications for required paint and primer system.

A. District's Response: Refer to Addendum #3, specification 09 90 00 Painting and Coating, for PVC or plastics.

4.29. On M-4.5, CHW Demo P&ID, Demo of an "ES" sensor is shown. This designation is not listed in the symbols & abbreviations. Please provide the following:

A. Identification of what this sensor is.

1. District's Response: It is believed the sensors are temperature transmitters and have been labeled as such in Addendum #3. Contractor shall VIF.

B. Limits of demo of this sensor (is it part of the existing Controls, or analog? If part of the controls, is it just demo to the nearest panel?

1. District's Response: Refer to Addendum #3. Remove and protect during construction. Reinstall to new piping, verify calibration and connectivity to BMS.

C. If it is controls, and not replaced, please provide programming requirements to remove this sensor- should the contractor carry reprogramming of the system to remove this sensor, or will SCCD Facilities cover this?

1. District's Response: See above. Refer also to "Controls Contractor Responsibilities" on G-0.0 of Addendum #3.

4.30. The project lists the new chilled and hot vaults as a deferred submittal. Can the owner please provide some design criteria so an accurate bid can be submitted? For instance, what size and type of hatches would the owner prefer? Do the vaults need to be traffic rated or pedestrian rated? Any specifics regarding the vaults would be helpful.

A. District's Response: Addendum #3 removes the hydronic vaults from the deferred approval; however final structural design will not be complete at the time of bidding. Detail 9 & 12/M-5.1, 8/M-5.2, M-5.4, and 7/M-5.6 all provide information on the vaults.

Additionally, the vault schedule on M-6.1 indicates traffic loading, riser, and hatch requirements. Provide bids based on final contract documents.

4.31. Are expansion calculations required for the chilled water piping? Or only the hot water piping?

A. District's Response: Only the HHW piping.

4.32. Are expansion calculations required for the temporary piping?

A. District's Response: Calculations are not required, but Contractor is responsible for adequate flexibility (i.e. expansion provisions), supports, and restraint for the temporary piping systems.

List of Attachments:

Section 00 01 20 – List of Schedules (Addendum #3)
Section 00 41 13 – Bid Form and Proposal (Addendum #3)
Section 00 52 13 – Agreement (Addendum #3)
Section 00 72 13 – General Conditions (Addendum #3)
Section 00 73 13 – Special Conditions (Addendum #3)
Section 01 22 00 – Alternates and Unit Pricing (Addendum #3)

DIVISION 09 - FINISHES
Section 09 90 00 PAINTING AND COATING (ADDENDUM #3)
DIVISION 23 - HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)
Section 23 05 19 METERS AND GAUGES FOR HVAC PIPING
Section 23 05 23 GENERAL-DUTY VALVES FOR HVAC PIPING (ADDENDUM #3)
Section 23 05 93 TESTING, ADJUSTING, AND BALANCING FOR HVAC (ADDENDUM #3)
Section 23 07 19 HVAC PIPING INSULATION
Section 23 09 34 VARIABLE-FREQUENCY MOTOR CONTROLLERS FOR HVAC
Section 23 21 13 HYDRONIC PIPING
Section 23 21 14 HYDRONIC SPECIALTIES (ADDENDUM #3)
Section 23 21 23 HYDRONIC PUMPS (ADDENDUM #3)
Section 23 25 00 HVAC WATER TREATMENT
DIVISION 26 - ELECTRICAL
Section 26 05 05 SELECTIVE DEMOLITION FOR ELECTRICAL
Section 26 05 19 LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES
Section 26 05 26 GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS
Section 26 05 33.13 CONDUIT FOR ELECTRICAL SYSTEMS
DIVISION 31 - EARTHWORK
Section 31 00 00 EARTHWORK AND GRADING
Section 31 10 00 SITE PREPARATION

Section 31 23 33 TRENCHING, BACKFILLING AND COMPACTING

DIVISION 32 - EXTERIOR IMPROVEMENTS

Section 32 10 00 DEMOLITION
Section 32 12 33 PAVING AND SURFACING
Section 32 17 23 PAVEMENT MARKING
Section 32 32 13 PORTLAND CEMENT CONCRETE RETAINING WALLS
Section 32 50 00 RESTORATION OF SURFACES

DIVISION 33 - UTILITIES

Section 33 61 13 UNDERGROUND THERMAL ENERGY DISTRIBUTION (ADDENDUM #3)

Drawing Sheets:

G-0.0
G-0.1
G-1.1
G-1.3
G-1.4
G-4.1
G-4.2
G-4.4
G-4.5
M-0.1
MD-1.1
M-1.1
MD-1.2
M-1.2
MD-1.4
M-1.4
MD-1.5
M-1.5
M-4.1
M-4.2
M-4.3
M-4.4
M-4.5
M-4.9
M-4.10
M-5.1
M-5.2
M-5.3
M-5.5
M-5.6
M-5.7
M-6.1

MD-7.1
E-0.1
E-1.1
ED-1.2
E-1.2
ED-1.4
E-1.4
E-7.1
E-7.2
E-7.4
S-5.1
S-5.2

Pre-Bid Questions & Responses.

END OF DOCUMENT

DOCUMENT 00 01 20

LIST OF SCHEDULES

BID PHASE SCHEDULE

- Mandatory Pre-Bid Conference (Virtual): Thursday, February 5th, 2026, 1:00 pm.
    - **Interested Parties need to register through the following link.**

      [REGISTER HERE]

      https://events.teams.microsoft.com/event/e5dbea08-5cb9-4466-b5cb-9bf5676b8bdc@dc5d168e-14e5-44b1-99ae-b7984aa29306

- Mandatory Job Walk (In-Person): Friday, February 6th, 2026, 11:00am.
    - Meeting location will be Building 1102, Kitchell Bond Office.
- Last date to submit questions to Andrew.Gleeson@Solano.edu : By Wednesday, February 25th, 2026, 2:00pm.
- Last addendum will be issued: By Wednesday, March 11th, 2026.
- **Bids Due: By Wednesday, March 18th, 2026, 2:00pm.**
- Mandatory Post Bid Interview: Thursday, March 19th, 2026, Time/ Location To-Be-Determined.
- Solano Community College Board of Trustees Approval: Wednesday, April 1st, 2026.
- Notice of Award: Anticipated by Thursday, April 2nd, 2026.
- Notice to Proceed: Anticipated by Monday, April 6th, 2026.

CONSTRUCTION SCHEDULE

- **Overall Project Duration:** April 6th, 2026 – January 15th, 2027
    - Submittal & Procurement: April 6th, 2026 – June 5th, 2026
    - Zone #1 & Zone #2 Construction: June 8th, 2026 – August 17th, 2026
        - Hardscape/ Landscape Repairs: Complete by August 31st, 2026
    - Zone #3 Construction: Not In Contract
    - Zone #4 Construction (Bid Alternate #1): August 31st, 2026 – October 26th, 2026
        - Hardscape/ Landscape Repairs: Complete by November 9th, 2026
    - Zone #5 Construction (Bid Alternate #8): November 9th, 2026 – December 18th, 2026
    - Project Closeout: December 18th, 2026 – January 15th, 2027
    - *Project Milestones are also listed on the Drawings.*

END OF DOCUMENT

DOCUMENT 00 41 13

BID FORM AND PROPOSAL

To: Solano Community College District ("District" or "Owner")

From: _____
(Proper Name of Bidder)

The undersigned declares that Bidder has read and understands the Contract Documents, including, without limitation, the Notice to Bidders and the Instructions to Bidders, and agrees and proposes to furnish all necessary labor, materials, and equipment to perform and furnish all work in accordance with the terms and conditions of the Contract Documents, including, without limitation, the Drawings and Specifications of **Bid No.25-026**, for the following project known as:

Hydronic System Modernization Phase 1 Project

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

_____ dollars $ _____
BASE BID

_____ dollars $ _____
10% Owner's Allowance of Base Bid

_____ dollars $ _____
ALTERNATES #1-#5 & #8 TOTAL

_____ dollars $ _____
TOTAL BID AMOUNT
(CUMULATIVE TOTAL OF BASE BID AMOUNT, 10% OWNER'S ALLOWANCE, AND ALTERNATES)

Bidder acknowledges and agrees that the Total Bid Amount accounts for any and all Allowance(s).

[ALTERNATES ON FOLLOWING PAGE]

Alternates:

Alternate #1

_____ dollars $ _____
Additive

Provide Zone #4 hydronic site repairs, Mechanical Room deferred maintenance upgrade, vault/valve additions, pressure testing of existing HHW & R piping (see Bid Alternate #4), temporary heating and cooling systems at B-500 & B-600, temporary bypasses at site piping, etc. as indicated on Sheet MD-1.4 and M-1.4.

Alternate #2

_____ dollars $ _____
Additive

If the pressure test of the section of piping at the indicated hot spot fails, demolish and replace HHWS & R piping as specified. The affected buildings for this work are B-1200 & B-1300. Refer to Sheet MD-1.2 ad M-1.2 for additional information.

Alternate #3

_____ dollars $ _____
Additive

If the pressure test of the section of piping at the indicated hot spot fails, demolish and replace HHWS & R piping as specified. The affected building for this work is B-1200. Refer to Sheet MD-1.2 ad M-1.2 for additional information.

Alternate #4

_____ dollars $ _____
Additive

If the pressure test of the section of piping at the indicated hot spot fails, demolish and replace HHWS & R piping as specified. The affected building for this work is B-500. Refer to Sheet MD-1.4 and M-1.4 for additional information. If Bid Alternate #1 is rejected, Bid Alternate #4 is no longer applicable (I.E. Rejected).

Alternate #5

_____ dollars $ _____
Additive

Demolish and replace the CHW piping and valves at the through <E> Vault #1. Provide 12" & 8" temporary bypasses to existing CHW piping West and North of Vault #1, include (3) temporary thrust blocks at 5' X 5' X 7' dimensions and 4 ft. min. embedment into undisturbed soil (see Detail 9/M-5.2 for reference). Sch. 40 PVC piping with solvent welded Sch. 80 fittings/joints shall be used for the 12" & 8" CHWS & R piping at the West and North branches respectively, 14" C900-DR18 PVC piping at the East side penetrations, and 14" STD. WT. Steel piping can be used inside the Vault with welded & flanged joints. Vault lid shall be removed to facilitate construction inside the Vault, retain and relocate <E> pipe supports inside the Vault. All other requirements related to insulation, jacketing, valve replacement, etc. included with Contract Documents shall be met for replacement effort. This work shall commence only when the need for campus cooling is no longer required (I.E. December – January).

Alternate #6

Not Applicable dollars $ Not Applicable
Additive/Deductive

Not Part of Scope

Alternate #7

Not Applicable dollars $ Not Applicable
Additive

Not Part of Scope

Alternate #8

_____ dollars $ _____
Additive

Provide a parallel 4" domestic water line in the outdoor walkway between B-1700A and the Pool. Domestic water piping shall be PVC piping with solvent welded joints. Contractor shall provide restraint couplings as necessary at connection to existing. Point of connection to existing shall be downstream of the underground ISO valve of B-1700A and the existing gas manifold enclosure. Domestic water riser shall occur outside the B-1700A mechanical room, transition to steel piping, penetrate the exterior wall, with connection to the existing riser. Existing piping shall be capped and abandoned in place (beneath bldg.) See MD-1.5 and M-1.5 for additional information.

Descriptions of alternates are primarily scope definitions and do not necessarily detail the full range of materials and processes needed to complete the construction.

Additional Detail Regarding Calculation of Base Bid

1. **Owner's Allowance**. The Bidder's Base Bid shall include a ten percent (10%) allowance for the Owner's use. Do not include alternates when calculating the Allowance Amount.

   The above allowance shall only be used by authorization by the Owner. Contractor shall not bill for or be due any portion of this allowance unless the District has identified specific work, Contractor has submitted a price for that work or the District has proposed a price for that work, the District has accepted the cost for that work, and the District has prepared an Allowance Expenditure Directive incorporating that work. Contractor hereby authorizes the District to execute a unilateral deductive change order at or near the end of the Project for all or any portion of the allowance not allocated. Any unused portion of the allowance will revert back to the District documented by a deductive change order.

2. [RESERVED]

3. The undersigned has reviewed the Work outlined in the Contract Documents and fully understands the scope of Work required in this Proposal, understands the construction and project management function(s) is described in the Contract Documents, and that each Bidder who is awarded a contract shall be in fact a prime contractor, not a subcontractor, to the District, and agrees that its Proposal, if accepted by the District, will be the basis for the Bidder to enter into a contract with the District in accordance with the intent of the Contract Documents.

4. The undersigned has notified the District in writing of any discrepancies or omissions or of any doubt, questions, or ambiguities about the meaning of any of the Contract Documents, and has contacted the Construction Manager before bid date to verify the issuance of any clarifying Addenda.

5. The undersigned agrees to commence work under this Contract on the date established in the Contract Documents and to complete all work within the time specified in the Contract Documents.

6. The liquidated damages clause of the General Conditions and Agreement is hereby acknowledged.

7. It is understood that the District reserves the right to reject this bid and that the bid shall remain open to acceptance and is irrevocable for a period of ninety (90) days.

8. The following documents are attached hereto:

   - Bid Bond on the District's form or other security
   - Designated Subcontractors List
   - Site Visit Certification
   - Non-Collusion Declaration
   - Iran Contracting Act Certification
   - Small, Local, and Diverse Business Program (SLDBE)

- Project Labor Agreement (PLA)

9. Receipt and acceptance of the following Addenda is hereby acknowledged:

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

10. Bidder acknowledges that the license required for performance of the Work is a **Class A and/or B license**.

11. Bidder hereby certifies that Bidder is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the Work.

12. Bidder specifically acknowledges and understands that if it is awarded the Contract, that it shall perform the Work of the Project while complying with all requirements of the Department of Industrial Relations.

13. Bidder hereby certifies that its bid includes sufficient funds to permit Bidder to comply with all local, state or federal labor laws or regulations during the Project, including payment of prevailing wage, and that Bidder will comply with the provisions of Labor Code section 2810(d) if awarded the Contract.

14. Bidder agrees to comply with all requirements of the Project Labor Agreement.

15. [RESERVED]

16. The Bidder represents that it is competent, knowledgeable, and has special skills with respect to the nature, extent, and inherent conditions of the Work to be performed. Bidder further acknowledges that there are certain peculiar and inherent conditions existent in the construction of the Work that may create, during the Work, unusual or peculiar unsafe conditions hazardous to persons and property.

17. Bidder expressly acknowledges that it is aware of such peculiar risks and that it has the skill and experience to foresee and to adopt protective measures to adequately and safely perform the Work with respect to such hazards.

18. Bidder expressly acknowledges that it is familiar with and capable of complying with applicable federal, State, and local requirements relating to COVID-19 or other public health emergency/epidemic/pandemic including, if required, preparing, posting, and implementing a Social Distancing Protocol.

19. Bidder expressly acknowledges that it is aware that if a false claim is knowingly submitted (as the terms "claim" and "knowingly" are defined in the California False Claims Act, Gov. Code, § 12650 et seq.), the District will be entitled to civil remedies

set forth in the California False Claim Act. It may also be considered fraud and the Contractor may be subject to criminal prosecution.

20. The undersigned Bidder certifies that it is, at the time of bidding, and shall be throughout the period of the Contract, licensed by the State of California to do the type of work required under the terms of the Contract Documents and registered as a public works contractor with the Department of Industrial Relations. Bidder further certifies that it is regularly engaged in the general class and type of work called for in the Contract Documents.

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

Dated this _____ day of _____ 20 ____

Name of Bidder: _____

Type of Organization: _____

Signature: _____

Print Name: _____

Title: _____

Address of Bidder: _____

Taxpayer Identification No. of Bidder: _____

Telephone Number: _____ Fax Number: _____

E-mail: _____ Web Page: _____

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

No.: _____ Class:_____ Expiration Date: _____

No.: _____ Class:_____ Expiration Date: _____

Public Works Contractor Registration No.: _____

END OF DOCUMENT

DOCUMENT 00 52 13

AGREEMENT

THIS AGREEMENT IS MADE AND ENTERED INTO THIS _____ DAY OF _____ _____, 20___, by and between the Solano Community College District ("District") and _____ _____ ("Contractor") ("Agreement").

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

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

Hydronic System Modernization Phase 1 Project

("Project" or "Contract" or "Work")

It is understood and agreed that the Work shall be performed and completed as required in the Contract Documents including, without limitation, the Drawings and Specifications and submission of all documents required to secure funding or by the Division of the State Architect for close-out of the Project, under the direction and supervision of, and subject to the approval of, the District or its authorized representative.

2. **The Contract Documents**: The complete Contract consists of all Contract Documents as defined in the General Conditions and incorporated herein by this reference. Any and all obligations of the District and Contractor are fully set forth and described in the Contract Documents. All Contract Documents are intended to cooperate so that any Work called for in one and not mentioned in the other or vice versa is to be executed the same as if mentioned in all Contract Documents.

3. **Interpretation of Contract Documents**: Should any question arise concerning the intent or meaning of Contract Documents, including the Drawings or Specifications, the question shall be submitted to the District for interpretation. If a conflict exists in the Contract Documents, valid, written modifications, beginning with the most recent, shall control over this Agreement (if any), which shall control over the Special Conditions, which shall control over any Supplemental Conditions, which shall control over the General Conditions, which shall control over the remaining Division 0 documents, which shall control over Division 1 Documents which shall control over Division 2 through Division 49 documents, which shall control over figured dimensions, which shall control over large-scale drawings, which shall control over small-scale drawings. In the case of a discrepancy or ambiguity solely between and among the Drawings and Specifications, the discrepancy or ambiguity shall be resolved in favor of the interpretation that will provide District with the functionally complete and operable Project described in the Drawings and Specifications. In no case shall a document calling for lower quality and/or quantity material or workmanship control. The decision of the District in the matter shall be final.

4. **Time for Completion**: It is hereby understood and agreed that the Work under this Contract shall be completed by **January 15th, 2027** ("Contract Time").

5. **Completion - Extension of Time**: Should the Contractor fail to complete this Contract, and the Work provided herein, within the time fixed for completion, due allowance being made for the contingencies provided for herein, the Contractor shall become liable to the District for all loss and damage that the District may suffer on account thereof. The Contractor shall coordinate its Work with the Work of all other contractors. The District shall not be liable for delays resulting from Contractor's failure to coordinate its Work with other contractors in a manner that will allow timely completion of Contractor's Work. Contractor shall be liable for delays to other contractors caused by Contractor's failure to coordinate its Work with the Work of other contractors.

6. **Liquidated Damages**: Time is of the essence for all work under this Agreement. It is hereby understood and agreed that it is and will be difficult and/or impossible to ascertain and determine the actual damage that the District will sustain in the event of and by reason of Contractor's delay; therefore, Contractor agrees that it shall pay to the District the sum of **FIVE THOUSAND DOLLARS AND 00/100 ($ 5,000.00)** per day as liquidated damages for each and every day's delay beyond the time herein prescribed in completion of the Work.

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

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

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

7. **Loss Or Damage**: The District and its agents and authorized representatives shall not in any way or manner be answerable or suffer loss, damage, expense, or liability for any loss or damage that may happen to the Work, or any part thereof, or in or about the same during its construction and before acceptance, and the Contractor shall assume all liabilities of every kind or nature arising from the Work, either by accident, negligence, theft, vandalism, or any cause whatsoever; and shall hold the District and its agents and authorized representatives harmless from all liability of every kind and nature arising from accident, negligence, or any cause whatsoever.

8. **Limitation Of District Liability:** District's financial obligations under this Contract shall be limited to the payment of the compensation provided in this Contract. Notwithstanding any other provision of this Contract, in no event shall District be liable, regardless of whether any claim is based on contract or tort, for any special, consequential, indirect or incidental damages, including, but not limited to, lost profits or revenue, lost bonding capacity, arising out of or in connection with this Contract for the services performed in connection with this Contract.

9. **Insurance and Bonds**: Prior to issuance of the Notice to Proceed by the District, Contractor shall provide all required certificates of insurance, insurance endorsements, and payment and performance bonds as evidence thereof.

10. **Prosecution of Work**: If the Contractor should neglect to prosecute the Work properly or fail to perform any provisions of this Contract, the District, may, pursuant to the General Conditions and without prejudice to any other remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.

11. **Authority of Architect, Project Inspector, and DSA**: Contractor hereby acknowledges that the Architect(s), the Project Inspector(s), and the Division of the State Architect ("DSA") have authority to approve and/or suspend Work if the Contractor's Work does not comply with the requirements of the Contract Documents, Title 24 of the California Code of Regulations, and all applicable laws and regulations. The Contractor shall be liable for any delay caused by its non-compliant Work.

12. **Assignment of Contract**: Neither the Contract, nor any part thereof, nor any moneys due or to become due thereunder, may be assigned by the Contractor without the prior written approval of the District, nor without the written consent of the Surety on the Contractor's Performance Bond (the "Surety"), unless the Surety has waived in writing its right to notice of assignment.

13. **Classification of Contractor's License**: Contractor hereby acknowledges that it currently holds valid Type _____ Contractor's license(s) issued by the State of California, Contractors' State License Board, in accordance with division 3, chapter 9, of the Business and Professions Code and in the classification called for in the Contract Documents.

14. **Registration as Public Works Contractor**: The Contractor and all Subcontractors currently are registered as public works contractors with the Department of Industrial Relations, State of California, in accordance with Labor Code section 1771.1.

15. **Payment of Prevailing Wages**: The Contractor and all Subcontractors shall pay all workers on all Work performed pursuant to this Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to sections 1770 et seq. of the California Labor Code.

16. **Labor Compliance Monitoring and Enforcement**: This Project is subject to labor compliance monitoring and enforcement by the Department of Industrial Relations pursuant to Labor Code section 1771.4 and Title 8 of the California Code of Regulations. Contractor specifically acknowledges and understands that it shall perform the Work of this Agreement while complying with all the applicable provisions of Division 2, Part 7, Chapter 1, of the Labor Code, including, without limitation, the requirement that the Contractor and all of its Subcontractors shall timely submit complete and accurate electronic certified payroll records as required by the Contract Documents, or the District may not issue payment.

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

_____ DOLLARS
AND xx/100 ($_____)

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

18. **Owner's Allowance:** Included in the Contract Price above is a ten percent (10% Percent) allowance for the Owner's use only, for the following price:

_____ DOLLARS
AND xx/100 ($_____)

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

19. **ALTERNATE #01:** Included in the Contract Price above is Alternate #01, per description on sheet G-0.0, for the following price:

_____ DOLLARS AND xx/100 ($_____)

20. **ALTERNATE #02:** Included in the Contract Price above is Alternate #02, per description on sheet G-0.0, for the following price:

_____ DOLLARS AND xx/100 ($_____)

21. **ALTERNATE #03:** Included in the Contract Price above is Alternate #03, per description on sheet G-0.0, for the following price:

_____ DOLLARS AND xx/100 ($_____)

22. **ALTERNATE #04:** Included in the Contract Price above is Alternate #04, per description on sheet G-0.0, for the following price:

_____ DOLLARS AND xx/100 ($_____)

23. **ALTERNATE #05:** Included in the Contract Price above is Alternate #05, per description on sheet G-0.0, for the following price:

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

~~**24.** **ALTERNATE #06:** Included in the Contract Price above is Alternate #06, per description on sheet G-0.0, for the following price:~~

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

~~**25.** **ALTERNATE #07:** Included in the Contract Price above is Alternate #07, per description on sheet G-0.0, for the following price:~~

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

26. **ALTERNATE #08:** Included in the Contract Price above is Alternate #08, per description on sheet G-0.0, for the following price:

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

27. **No Representations**: No representations have been made other than as set forth in writing in the Contract Documents, including this Agreement. Each of the Parties to this Agreement warrants that it has carefully read and understood the terms and conditions of this Agreement and all Contract Documents, and that it has not relied upon the representations or advice of any other Party or any attorney not its own.

28. **Entire Agreement**: The Contract Documents, including this Agreement, set forth the entire agreement between the parties hereto and fully supersede any and all prior agreements, understandings, written or oral, between the parties hereto pertaining to the subject matter thereof.

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

30. **Authority of Signatories**: Each party has the full power and authority to enter into and perform this Contract, and the person signing this Contract on behalf of each party has been properly authorized and empowered to enter into this Contract. This Contract may be executed in one or more counterparts, each of which shall be deemed an original. For this Agreement, and for all Contract Documents requiring a signature, a facsimile or electronic signature shall be deemed to be the equivalent of the actual original signature. All counterparts so executed shall constitute one Contract binding all the Parties hereto.

[SIGNATURES ON FOLLOWING PAGE]

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

CONTRACTOR	**SOLANO COMMUNITY COLLEGE DISTRICT**
_____	_____
By: _____	By: _____
Title: _____	Title: _____

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

END OF DOCUMENT

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GENERAL CONDITIONS

1. CONTRACT TERMS AND DEFINITIONS

1.1 Definitions

Wherever used in the Contract Documents, the following terms shall have the meanings indicated, which shall be applicable to both the singular and plural thereof:

1.1.1 Adverse Weather: Shall be only weather that satisfies all of the following conditions: (1) unusually severe precipitation, sleet, snow, hail, or extreme temperature conditions in excess of the norm for the location and time of year it occurred based on the closest weather station data averaged over the past five years, (2) that is unanticipated and would cause unsafe work conditions and/or is unsuitable for scheduled work that should not be performed during inclement weather (i.e., exterior finishes), and (3) at the Project.

1.1.2 Allowance Expenditure Directive: Written authorization for expenditure of allowance, if any.

1.1.3 Approval, Approved, and/or Accepted: Written authorization, unless stated otherwise.

1.1.4 Architect (or "Design Professional in General Responsible Charge"): The individual, partnership, corporation, joint venture, or any combination thereof, named as Architect, who will have the rights and authority assigned to the Architect in the Contract Documents. The term Architect means the Design Professional in General Responsible Charge as defined in DSA PR 13-02 on this Project or the Architect's authorized representative.

1.1.5 As-Builts: Reproducible blue line prints of drawings to be prepared on a monthly basis pursuant to the Contract Documents, that reflect changes made during the performance of the Work, recording differences between the original design of the Work and the Work as constructed since the preceding monthly submittal. See **Record Drawings**.

1.1.6 Bidder: A contractor who intends to provide a proposal to the District to perform the Work of this Contract.

1.1.7 Burdened: The labor rate for Contractor or any Subcontractor inclusive of any and all burden costs including, but not limited to, health and welfare pay, vacation and holiday pay, pension contributions, training rates, benefits of any kind, insurance of any kind, workers' compensation, liability insurance, truck expenses, supply expenses of any kind, payroll taxes, and any other taxes of any kind.

1.1.8 Change Order: A written order to the Contractor authorizing an addition to, deletion from, or revision in the Work, and/or authorizing an adjustment in the Contract Price or Contract Time.

1.1.9 Claim: A Dispute that remains unresolved at the conclusion of the all the applicable Dispute Resolution requirements provided herein.

1.1.10 Construction Change Directive: A written order prepared and issued by the District, the Construction Manager, and/or the Architect and signed by the District and the Architect, directing a change in the Work.

1.1.11 Construction Manager: The individual, partnership, corporation, joint venture, or any combination thereof, or its authorized representative, named as such by the District. If no Construction Manager is used on the Project that is the subject of this Contract, then all references to Construction Manager herein shall be read to refer to District.

1.1.12 Construction Schedule: The progress schedule of construction of the Project as provided by Contractor and approved by District.

1.1.13 Contract, Contract Documents: The Contract consists exclusively of the documents evidencing the agreement of the District and Contractor, identified as the Contract Documents. The Contract Documents consist of the following documents:

1.1.13.1 Notice to Bidders
1.1.13.2 Instructions to Bidders
1.1.13.3 Bid Form and Proposal
1.1.13.4 Bid Bond
1.1.13.5 Designated Subcontractors List
1.1.13.6 Site Visit Certification (if a site visit was required)
1.1.13.7 Non-Collusion Declaration
1.1.13.8 Notice of Award
1.1.13.9 Notice to Proceed
1.1.13.10 Agreement
1.1.13.11 Escrow of Bid Documentation
1.1.13.12 Escrow Agreement for Security Deposits in Lieu of Retention (if applicable)
1.1.13.13 Performance Bond
1.1.13.14 Payment Bond (Contractor's Labor & Material Bond)
1.1.13.15 General Conditions
1.1.13.16 Special Conditions (if applicable)
1.1.13.17 Project Labor Agreement (if applicable)
1.1.13.18 Hazardous Materials Procedures and Requirements
1.1.13.19 Workers' Compensation Certification
1.1.13.20 Prevailing Wage Certification
1.1.13.21 Disabled Veteran Business Enterprise Participation Certification (if applicable)
1.1.13.22 Small, Local, Diverse Business Program (SLDBE) (if applicable)
1.1.13.23 Project Labor Agreement (PLA) (if applicable)
1.1.13.24 Drug-Free Workplace Certification (if applicable)
1.1.13.25 Tobacco-Free Environment Certification
1.1.13.26 Hazardous Materials Certification (if applicable)
1.1.13.27 Lead-Based Materials Certification (if applicable)
1.1.13.28 Imported Materials Certification (if applicable)
1.1.13.29 Sex Offender Registration Act Certification (if applicable)

1.1.13.30 Buy American Certification (if certain federal funds used)
1.1.13.31 Roofing Project Certification (if applicable)
1.1.13.32 Registered Subcontractors List
1.1.13.33 Iran Contracting Act Certification (if applicable)
1.1.13.34 COVID-19 Vaccination/Testing Certification
1.1.13.35 Federal Debarment Certification (if applicable)
1.1.13.36 Post Bid Interview
1.1.13.37 All Plans, Technical Specifications, and Drawings
1.1.13.38 Any and all addenda to any of the above documents
1.1.13.39 Any and all change orders or written modifications to the above documents if approved in writing by the District

1.1.14 Contract Price: The total monies payable to the Contractor under the terms and conditions of the Contract Documents.

1.1.15 Contract Time: The time period stated in the Agreement for the completion of the Work.

1.1.16 Contractor: The person or persons identified in the Agreement as contracting to perform the Work to be done under this Contract, or the legal representative of such a person or persons.

1.1.17 Daily Job Report(s): Daily Project reports prepared by the Contractor's employee(s) who are present on Site, which shall include the information required herein.

1.1.18 Day(s): Unless otherwise designated, day(s) means calendar day(s).

1.1.19 Department of Industrial Relations (or "DIR"): is responsible, among other things, for labor compliance monitoring and enforcement of California prevailing wage laws and regulations for public works contracts.

1.1.20 Design Professional in General Responsible Charge: See definition of **Architect** above.

1.1.21 Dispute: A separate demand by Contractor for a time extension, or payment of money or damages arising from Work done by or on behalf of the Contractor pursuant to the Contract and payment of which is not otherwise expressly provided for or Contractor is not otherwise entitled to; or an amount of payment disputed by the District.

1.1.22 District: The public agency or the district for which the Work is performed. The governing board of the District or its designees will act for the District in all matters pertaining to the Contract. The District may, at any time,

1.1.22.1 Direct the Contractor to communicate with or provide notice to the Construction Manager or the Architect on matters for which the Contract Documents indicate the Contractor will communicate with or provide notice to the District; and/or

1.1.22.2 Direct the Construction Manager or the Architect to communicate with or direct the Contractor on matters for which the Contract Documents indicate the District will communicate with or direct the Contractor.

1.1.23 Drawings (or "Plans"): The graphic and pictorial portions of the Contract Documents showing the design, location, scope and dimensions of the work, generally including plans, elevations, sections, details, schedules, sequence of operation, and diagrams.

1.1.24 DSA: Division of the State Architect.

1.1.25 Force Account Directive: A process that may be used when the District and the Contractor cannot agree on a price for a specific portion of work or before the Contractor prepares a price for a specific portion of work and whereby the Contractor performs the work as indicated herein on a time and materials basis.

1.1.26 Job Cost Reports: Any and all reports or records detailing the costs associated with work performed on or related to the Project that Contractor shall maintain for the Project. Specifically, Job Cost Reports shall contain, but are not limited by or to, the following information: a description of the work performed or to be performed on the Project; quantity, if applicable, of work performed (hours, square feet, cubic yards, pounds, etc.) for the Project; Project budget; costs for the Project to date; estimated costs to complete the Project; and expected costs at completion. The Job Cost Reports shall also reflect all Contract cost codes, change orders, elements of non-conforming work, back charges, and additional services.

1.1.27 Labor Commissioner's Office (or "Labor Commissioner", also known as the Division of Labor Standards Enforcement ("DLSE")): Division of the DIR responsible for adjudicating wage claims, investigating discrimination and public works complaints, and enforcing Labor Code statutes and Industrial Welfare Commission orders.

1.1.28 Municipal Separate Storm Sewer System (or "MS4"): A system of conveyances used to collect and/or convey storm water, including, without limitation, catch basins, curbs, gutters, ditches, man-made channels, and storm drains.

1.1.29 Plans: See **Drawings**.

1.1.30 Premises: The real property owned by the District on which the Site is located.

1.1.31 Product(s): New material, machinery, components, equipment, fixtures and systems forming the Work, including existing materials or components required and approved by the District for reuse.

1.1.32 Product Data: Illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate a material, product, or system for some portion of the Work.

1.1.33 Program Manager: The individual, partnership, corporation, joint venture, or any combination thereof, or its authorized representative, named as such by the District. If no Program Manager is designated for Project that is the subject of

this Contract, then all references to Project Manager herein shall be read to refer to District.

1.1.34 Project: The planned undertaking as provided for in the Contract Documents.

1.1.35 Project Inspector (or "Inspector"): The individual(s) retained by the District in accordance with title 24 of the California Code of Regulations to monitor and inspect the Project.

1.1.36 Project Labor Agreement (or "PLA"): a prehire collective bargaining agreement in accordance with Public Contract Code section 2500 *et seq*. that establishes terms and conditions of employment for a specific construction project or projects and/or is an agreement described in Section 158(f) of Title 29 of the United States Code.

1.1.37 Proposed Change Order (or "PCO"): a written request prepared by the Contractor requesting that the District and the Architect issue a Change Order based upon a proposed change to the Work.

1.1.38 Provide: Shall include "provide complete in place," that is, "furnish and install," and "provide complete and functioning as intended in place" unless specifically stated otherwise.

1.1.39 Qualified SWPPP Practitioners (or "QSP"): certified personnel that attended a State Water Resources Control Board sponsored or approved training class and passed the qualifying exam.

1.1.40 Record Drawings: Reproducible drawings (or Plans) prepared pursuant to the requirements of the Contract Documents that reflect all changes made during the performance of the Work, recording differences between the original design of the Work and the Work as constructed upon completion of the Project. See also **As-Builts**.

1.1.41 Request for Information (or "RFI"): A written request prepared by the Contractor requesting that the Architect provide additional information necessary to clarify or amplify an item in the Contract Documents that the Contractor believes is not clearly shown or called for in the Drawings or Specifications or other portions of the Contract Documents, or to address problems that have arisen under field conditions.

1.1.42 Request for Substitution for Specified Item: A request by Contractor to substitute an equal or superior material, product, thing, or service for a specific material, product, thing, or service that has been designated in the Contract Documents by a specific brand or trade name.

1.1.43 Safety Orders: Written and/or verbal orders for construction issued by the California Division of Occupational Safety and Health ("CalOSHA") or by the United States Occupational Safety and Health Administration ("OSHA").

1.1.44 Safety Plan: Contractor's safety plan specifically adapted for the Project. Contractor's Safety Plan shall comply with all provisions regarding Project safety, including all applicable provisions in these General Conditions.

1.1.45 Samples: Physical examples that illustrate materials, products, equipment, finishes, colors, or workmanship and that, when approved in accordance with the Contract Documents, establish standards by which portions of the Work will be judged.

1.1.46 Shop Drawings: All drawings, prints, diagrams, illustrations, brochures, schedules, and other data that are prepared by the Contractor, a subcontractor, manufacturer, supplier, or distributor, that illustrate how specific portions of the Work shall be fabricated or installed.

1.1.47 Site: The Project site as shown on the Drawings.

1.1.48 Small, Local, and Diverse Business Program (SLDBE): The District's SLDBE Program will have a goal of 20% of the contract price performed by disadvantaged and/or local firms (prime and subcontractors, suppliers).

1.1.49 Specifications: That portion of the Contract Documents, Division 1 through Division 49, and all technical sections, and addenda to all of these, if any, consisting of written descriptions and requirements of a technical nature of materials, equipment, construction methods and systems, standards, and workmanship.

1.1.50 State: The State of California.

1.1.51 Storm Water Pollution Prevention Plan (or "SWPPP"): A document which identifies sources and activities at a particular facility that may contribute pollutants to storm water and contains specific control measures and time frames to prevent or treat such pollutants.

1.1.52 Subcontractor: A contractor and/or supplier who is under contract with the Contractor or with any other subcontractor, regardless of tier, to perform a portion of the Work of the Project.

1.1.53 Submittal Schedule: The schedule of submittals as provided by Contractor and approved by District.

1.1.54 Surety: The person, firm, or corporation that executes as surety the Contractor's Performance Bond and Payment Bond, and must be a California admitted surety insurer as defined in the Code of Civil Procedure section 995.120.

1.1.55 Work: All labor, materials, equipment, components, appliances, supervision, coordination, and services required by, or reasonably inferred from, the Contract Documents, that are necessary for the construction and completion of the Project.

1.2 Laws Concerning the Contract

Contract is subject to all provisions of the Constitution and laws of California and the United States governing, controlling, or affecting District, or the property, funds,

operations, or powers of District, and such provisions are by this reference made a part hereof. Any provision required by law to be included in this Contract shall be deemed to be inserted.

1.3 No Oral Agreements

No oral agreement or conversation with any officer, agent, or employee of District, either before or after execution of Contract, shall affect or modify any of the terms or obligations contained in any of the documents comprising the Contract.

1.4 No Assignment

Contractor shall not assign this Contract or any part thereof including, without limitation, any Work or money to become due hereunder without the prior written consent of the District. Assignment without District's prior written consent shall be null and void. Any assignment of money due or to become due under this Contract shall be subject to a prior lien for services rendered or material supplied for performance of work called for under this Contract in favor of all persons, firms, or corporations rendering services or supplying material to the extent that claims are filed pursuant to the Civil Code, Code of Civil Procedure, Government Code, Labor Code, and/or Public Contract Code, and shall also be subject to deductions for liquidated damages or withholding of payments as determined by District in accordance with this Contract. Contractor shall not assign or transfer in any manner to a Subcontractor or supplier the right to prosecute or maintain an action against the District.

1.5 Notice and Service Thereof

1.5.1 Any notice from one party to the other or otherwise under Contract shall be in writing and shall be dated and signed by the party giving notice or by a duly authorized representative of that party. Any notice shall not be effective for any purpose whatsoever unless served in one of the following manners:

1.5.1.1 If notice is given by personal delivery thereof, it shall be considered delivered on the day of delivery.

1.5.1.2 If notice is given by overnight delivery service, it shall be considered delivered one (1) day after date deposited, as indicated by the delivery service.

1.5.1.3 If notice is given by depositing same in United States mail, enclosed in a sealed envelope, it shall be considered delivered three (3) days after date deposited, as indicated by the postmarked date.

1.5.1.4 If notice is given by registered or certified mail with postage prepaid, return receipt requested, it shall be considered delivered on the day the notice is signed for.

1.5.1.5 Electronic mail may be used for convenience but is not a substitute for the notice and service requirements herein.

1.6 No Waiver

The failure of District in any one or more instances to insist upon strict performance of any of the terms of this Contract or to exercise any option herein conferred shall not be construed as a waiver or relinquishment to any extent of the right to assert or rely upon any such terms or option on any future occasion. No action or failure to act by the District, Architect, or Construction Manager shall constitute a waiver of any right or duty afforded the District under the Contract, nor shall any action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

1.7 Substitutions for Specified Items

Unless the Special Conditions contain different provisions, Contractor shall not substitute different items for any items identified in the Contract Documents without prior written approval of the District.

1.8 Materials and Work

1.8.1 Except as otherwise specifically stated in this Contract, Contractor shall provide and pay for all materials, labor, tools, equipment, transportation, supervision, temporary constructions of every nature, and all other services, management, and facilities of every nature whatsoever necessary to execute and complete this Contract, in a good and workmanlike manner, within the Contract Time.

1.8.2 Unless otherwise specified, all materials shall be new and of the best quality of their respective kinds and grades as noted or specified, workmanship shall be of good quality, and Contractor shall use all diligence to inform itself fully as to the required manufacturer's instructions and to comply therewith.

1.8.3 Materials shall be furnished in ample quantities and at such times as to ensure uninterrupted progress of Work and shall be stored properly and protected from the elements, theft, vandalism, or other loss or damage as required.

1.8.4 For all materials and equipment specified or indicated in the Drawings, the Contractor shall provide all labor, materials, equipment, and services necessary for complete assemblies and complete working systems, functioning as intended. Incidental items not indicated on Drawings, nor mentioned in the Specifications, that can legitimately and reasonably be inferred to belong to the Work described, or be necessary in good practice to provide a complete assembly or system, shall be furnished as though itemized here in every detail. In all instances, material and equipment shall be installed in strict accordance with each manufacturer's most recent published recommendations and specifications.

1.8.5 Contractor shall, after award of Contract by District and after relevant submittals have been reviewed, place orders for materials and/or equipment as specified so that delivery of same may be made without delays to the Work. Contractor shall, upon five (5) days' demand from District, present documentary evidence showing that orders have been placed.

1.8.6 District reserves the right but has no obligation, in response to Contractor's neglect or failure in complying with the above instructions, to place orders for such materials and/or equipment as the District may deem advisable in order that the Work may be completed at the date specified in the Contract, and all expenses incidental to the procuring of said materials and/or equipment shall be paid for by Contractor or deducted from payment(s) to Contractor.

1.8.7 Contractor warrants good title to all material, supplies, and equipment installed or incorporated in Work and agrees upon completion of all Work to deliver the Site to District, together with all improvements and appurtenances constructed or placed thereon by it, and free from any claims, liens, or charges. Contractor further agrees that neither it nor any person, firm, or corporation furnishing any materials or labor for any work covered by the Contract shall have any right to lien any portion of the Premises or any improvement or appurtenance thereon, except that Contractor may install metering devices or other equipment of utility companies or of political subdivision, title to which is commonly retained by utility company or political subdivision. In the event of installation of any such metering device or equipment, Contractor shall advise District as to owner thereof.

1.8.7.1 If a lien or a claim based on a stop payment notice of any nature should at any time be filed against the Work or any District property, by any entity that has supplied material or services at the request of the Contractor, Contractor and Contractor's Surety shall promptly, on demand by District and at Contractor's and Surety's own expense, take any and all action necessary to cause any such lien or a claim based on a stop payment notice to be released or discharged immediately therefrom.

1.8.7.2 If the Contractor fails to furnish to the District within ten (10) calendar days after demand by the District, satisfactory evidence that a lien or a claim based on a stop payment notice has been so released, discharged, or secured, the District may discharge such indebtedness and deduct the amount required therefor, together with any and all losses, costs, damages, and attorney's fees and expense incurred or suffered by District from any sum payable to Contractor under the Contract.

1.8.8 Nothing contained in this Article, however, shall defeat or impair the rights of persons furnishing materials or labor under any bond given by Contractor for their protection or any rights under any law permitting such protection or any rights under any law permitting such persons to look to funds due Contractor in hands of District (e.g., stop payment notices), and this provision shall be inserted in all subcontracts and material contracts and notice of its provisions shall be given to all persons furnishing material for work when no formal contract is entered into for such material.

1.8.9 Title to new materials and/or equipment for the Work of this Contract and attendant liability for its protection and safety shall remain with Contractor until incorporated in the Work of this Contract and accepted by District. No part of any materials and/or equipment shall be removed from its place of storage except for immediate installation in the Work of this Contract. Should the District, in its discretion, allow the Contractor to store materials and/or equipment for the Work off-site, Contractor will store said materials and/or equipment at a bonded warehouse and with appropriate insurance coverage at no cost to District.

Contractor shall keep an accurate inventory of all materials and/or equipment in a manner satisfactory to District or its authorized representative and shall, at the District's request, forward it to the District.

1.8.10 [RESERVED]

2. [RESERVED]

3. ARCHITECT

3.1 The Architect shall represent the District during the Project and will observe the progress and quality of the Work on behalf of the District. Architect shall have the authority to act on behalf of District to the extent expressly provided in the Contract Documents and to the extent determined by District. Architect shall have authority to reject materials, workmanship, and/or the Work whenever rejection may be necessary, in Architect's reasonable opinion, to ensure the proper execution of the Contract.

3.2 Architect shall, with the District and on behalf of the District, determine the amount, quality, acceptability, and fitness of all parts of the Work, and interpret the Specifications, Drawings, and shall, with the District, interpret all other Contract Documents.

3.3 Architect shall have all authority and responsibility established by law, including title 24 of the California Code of Regulations.

3.4 Contractor shall provide District and the Construction Manager with a copy of all written communication between Contractor and Architect at the same time as that communication is made to Architect, including, without limitation, all RFIs, correspondence, submittals, claims, and proposed change orders.

4. CONSTRUCTION MANAGER

4.1 If a Construction Manager is used on this Project ("Construction Manager" or "CM"), the Construction Manager will provide administration of the Contract on the District's behalf. After execution of the Contract and Notice to Proceed, all correspondence and/or instructions from Contractor and/or District shall be forwarded through the Construction Manager. The Construction Manager will not be responsible for and will not have control or charge of construction means, methods, techniques, sequences, or procedures or for safety precautions in connection with the Work, which shall all remain the Contractor's responsibility.

4.2 The Construction Manager, however, will have authority to reject materials and/or workmanship not conforming to the Contract Documents, as determined by the District, the Architect, and/or the Project Inspector. The Construction Manager shall also have the authority to require special inspection or testing of any portion of the Work, whether it has been fabricated, installed, or fully completed. Any decision made by the Construction Manager, in good faith, shall not give rise to any duty or responsibility of the Construction Manager to: the Contractor; any Subcontractor; the Contractor or Subcontractor's respective agents, employees; or other persons performing any of the

Work. The Construction Manager shall have free access to any or all parts of Work at any time.

4.3 If the District does not use a Construction Manager on this Project, all references within the Contract Documents to Construction Manager or CM shall be read as District.

5. INSPECTOR, INSPECTIONS, AND TESTS

5.1 Project Inspector

5.1.1 One or more Project Inspector(s), including special Project Inspector(s), as required, will be assigned to the Work by District, in accordance with requirements of title 24, part 1, of the California Code of Regulations, to enforce the building code and monitor compliance with Plans and Specifications for the Project previously approved by the DSA. Duties of Project Inspector(s) are specifically defined in section 4-342 of said part 1 of title 24.

5.1.2 No Work shall be carried on except with the knowledge and under the inspection of the Project Inspector(s). The Project Inspector(s) shall have free access to any or all parts of Work at any time. Contractor shall furnish Project Inspector(s) reasonable opportunities for obtaining such information as may be necessary to keep Project Inspector(s) fully informed respecting progress and manner of work and character of materials, including, but not limited to, submission of form DSA 156 (or the most current version applicable at the time the Work is performed) to the Project Inspector at least 48 hours in advance of the commencement and completion of construction of each and every aspect of the Work. Forms are available on the DSA's website at: http://www.dgs.ca.gov/dsa/Forms.aspx. Inspection of Work shall not relieve Contractor from an obligation to fulfill this Contract. Project Inspector(s) and the DSA are authorized to suspend work whenever the Contractor and/or its Subcontractor(s) are not complying with the Contract Documents. Any work stoppage by the Project Inspector(s) and/or DSA shall be without liability to the District. Contractor shall instruct its Subcontractors and employees accordingly.

5.1.3 If Contractor and/or any Subcontractor requests that the Project Inspector(s) perform any inspection off-site, this shall only be done if it is allowable pursuant to applicable regulations and DSA approval, if the Project Inspector(s) agree to do so, and at the expense of the Contractor.

5.2 Tests and Inspections

5.2.1 Tests and Inspections shall comply with title 24, part 1, California Code of Regulations, group 1, article 5, section 4-335, and with the provisions of the Specifications.

5.2.2 The District will select an independent testing laboratory to conduct the tests. Selection of the materials required to be tested shall be by the laboratory or the District's representative and not by the Contractor. The Contractor shall notify the District's representative a sufficient time in advance of its readiness for required observation or inspection.

5.2.3 The Contractor shall notify the District's representative a sufficient time in advance of the manufacture of material to be supplied under the Contract Documents, which must by terms of the Contract Documents be tested, in order that the District may arrange for the testing of same at the source of supply. This notice shall be provided, at a minimum, seventy-two (72) hours prior to the manufacture of the material that needs to be tested.

5.2.4 Any material shipped by the Contractor from the source of supply prior to having satisfactorily passed such testing and inspection or prior to the receipt of notice from said representative that such testing and inspection will not be required, shall not be incorporated into and/or onto the Project.

5.2.5 The District will select the testing laboratory and pay for the costs of all tests and inspections, excepting those inspections performed at Contractor's request and expense. Contractor shall reimburse the District for any and all laboratory costs or other testing costs for any materials found to be not in compliance with the Contract Documents. At the District's discretion, District may elect to deduct laboratory or other testing costs for noncompliant materials from the Contract Price, and such deduction shall not constitute a withholding.

5.3 Costs for After Hours and/or Off Site Inspections

If the Contractor performs Work outside the Inspector's regular working hours or requests the Inspector to perform inspections off Site, costs of any inspections required outside regular working hours or off Site shall be borne by the Contractor and may be invoiced to the Contractor by the District or the District may deduct those expenses from the next Progress Payment.

6. CONTRACTOR

Contractor shall construct and complete, in a good and workmanlike manner, the Work for the Contract Price including any adjustment(s) to the Contract Price pursuant to provisions herein regarding changes to the Contract Price. Except as otherwise noted, Contractor shall provide and pay for all labor, materials, equipment, permits (excluding DSA), fees, licenses, facilities, transportation, taxes, bonds and insurance, and services necessary for the proper execution and completion of the Work, except as indicated herein.

6.1 Status of Contractor

6.1.1 Contractor is and shall at all times be deemed to be an independent contractor and shall be wholly responsible for the manner in which it and its Subcontractors perform the services required of it by the Contract Documents. Nothing herein contained shall be construed as creating the relationship of employer and employee, or principal and agent, between the District, or any of the District's employees or agents, and Contractor or any of Contractor's Subcontractors, agents or employees. Contractor assumes exclusively the responsibility for the acts of its agents, and employees as they relate to the services to be provided during the course and scope of their employment. Contractor, its Subcontractors, agents, and its employees shall not be entitled to any rights or privileges of District employees. District shall be permitted to monitor the Contractor's activities to determine compliance with the terms of this Contract.

6.1.2 As required by law, Contractor and all Subcontractors shall be properly licensed and regulated by the Contractors State License Board, 9821 Business Park Drive, Sacramento, California 95827, http://www.cslb.ca.gov.

6.1.3 As required by law, Contractor and all Subcontractors shall be properly registered as public works contractors by the Department of Industrial Relations at: https://efiling.dir.ca.gov/PWCR/ActionServlet?action=displayPWCRegistrationForm or current URL.

6.1.4 Contractor represents that Contractor and all Subcontractors shall not be presently debarred, suspended, proposed for disbarment, declared ineligible or excluded pursuant to either Labor Code section 1777.1 or Labor Code section 1777.7.

6.1.5 [RESERVED]

6.1.6 Contractor represents that it has no existing interest and will not acquire any interest, direct or indirect, which could conflict in any manner or degree with the performance of the Work required under this Contract and that no person having any such interest shall be employed by Contractor.

6.1.7 If Contractor intends to make any change in the name or legal nature of the Contractor's entity, Contractor must first notify the District in writing prior to making any contemplated change. The District shall determine in writing if Contractor's intended change is permissible while performing this Contract.

6.2 Project Inspection Card(s)

Contractor shall verify that forms DSA 152 (or the current version applicable at the time the Work is performed) are issued for the Project prior to the commencement of construction.

6.3 Contractor's Supervision

6.3.1 During progress of the Work, Contractor shall keep on the Premises, and at all other locations where any Work related to the Contract is being performed, an experienced and competent project manager and construction superintendent who are employees of the Contractor, to whom the District does not object and at least one of whom shall be fluent in English, written and verbal.

6.3.2 The project manager and construction superintendent shall both speak fluently the predominant language of the Contractor's employees.

6.3.3 Before commencing the Work herein, Contractor shall give written notice to District of the name of its project manager and construction superintendent. Neither the Contractor's project manager nor construction superintendent shall be changed except with prior written notice to District. If the Contractor's project manager and/or construction superintendent proves to be unsatisfactory to Contractor, or to District, any of the District's employees, agents, the Construction Manager, or the Architect, the unsatisfactory project manager and/or construction superintendent shall be replaced. However, Contractor shall notify District in writing before any change occurs, but no less than two (2) business days prior. Any

replacement of the project manager and/or construction superintendent shall be made promptly and must be satisfactory to the District. The Contractor's project manager and construction superintendent shall each represent Contractor, and all directions given to Contractor's project manager and/or construction superintendent shall be as binding as if given to Contractor.

6.3.4 Contractor shall give efficient supervision to Work, using its best skill and attention. Contractor shall carefully study and compare all Contract Documents, Drawings, Specifications, and other instructions and shall at once report to District, Construction Manager, and Architect any error, inconsistency, or omission that Contractor or its employees and Subcontractors may discover, in writing, with a copy to District's Project Inspector(s). The Contractor shall have responsibility for discovery of errors, inconsistencies, or omissions.

6.4 Duty to Provide Fit Workers

6.4.1 Contractor and Subcontractor(s) shall at all times enforce strict discipline and good order among their employees and shall not employ or work any unfit person or anyone not skilled in work assigned to that person. It shall be the responsibility of Contractor to ensure compliance with this requirement. District may require Contractor to permanently remove unfit persons from Project Site.

6.4.2 Any person in the employ of Contractor or Subcontractor(s) whom District may deem incompetent or unfit shall be excluded from working on the Project and shall not again be employed on the Project except with the prior written consent of District.

6.4.3 The Contractor shall furnish labor that can work in harmony with all other elements of labor employed or to be employed in the Work.

6.5 Field Office

6.5.1 Contractor shall provide a temporary office on the Site for the District's use exclusively, during the term of the Contract.

6.6 Purchase of Materials and Equipment

The Contractor is required to order, obtain, and store materials and equipment sufficiently in advance of its Work at no additional cost or advance payment from District to assure that there will be no delays.

6.7 Documents on Work

6.7.1 Contractor shall at all times keep on the Site, or at another location as the District may authorize in writing, one (1) legible copy of all Contract Documents, including Addenda and Change Orders, and Titles 19 and 24 of the California Code of Regulations, the specified edition(s) of the Uniform Building Code, all approved Drawings, Plans, Schedules, and Specifications, and all codes and documents referred to in the Specifications, and made part thereof. These documents shall be kept in good order and available to District, Construction Manager, Architect, Architect's representatives, the Project Inspector(s), and all authorities having jurisdiction. Contractor shall be acquainted with and comply with the provisions of

these titles as they relate to this Project. (See particularly the duties of Contractor, Title 24, Part 1, California Code of Regulations, section 4-343.) Contractor shall also be acquainted with and comply with all California Code of Regulations provisions relating to conditions on this Project, particularly Titles 8 and 17. Contractor shall coordinate with Architect and Construction Manager and shall submit its verified report(s) according to the requirements of Title 24.

6.7.2 Daily Job Reports.

6.7.2.1 Contractor shall maintain, at a minimum, at least one (1) set of Daily Job Reports on the Project. These must be prepared by the Contractor's employee(s) who are present on Site, and must include, at a minimum, the following information:

6.7.2.1.1 A brief description of all Work performed on that day.
6.7.2.1.2 A summary of all other pertinent events and/or occurrences on that day.
6.7.2.1.3 The weather conditions on that day.
6.7.2.1.4 A list of all Subcontractor(s) working on that day, including DIR registration numbers.
6.7.2.1.5 A list of each Contractor employee working on that day and the total hours worked for each employee.
6.7.2.1.6 A complete list of all equipment on Site that day, whether in use or not.
6.7.2.1.7 A complete list of all materials, supplies, and equipment delivered on that day.
6.7.2.1.8 A complete list of all inspections and tests performed on that day.

6.7.2.2 Each day Contractor shall provide a copy of the previous day's Daily Job Report to the District or the Construction Manager.

6.8 Preservation of Records

Contractor shall maintain, and District shall have the right to inspect, Contractor's financial records for the Project, including, without limitation, Job Cost Reports for the Project in compliance with the criteria set forth herein. The District shall have the right to examine and audit all Daily Job Reports or other Project records of Contractor's project manager(s), project superintendent(s), and/or project foreperson(s), all certified payroll records and/or related documents including, without limitation, Job Cost Reports, payroll, payment, timekeeping and tracking documents; all books, estimates, records, contracts, documents, bid documents, bid cost data, subcontract job cost reports, and other data of the Contractor, any Subcontractor, and/or supplier, including computations and projections related to bidding, negotiating, pricing, or performing the Work or Contract modification, in order to evaluate the accuracy, completeness, and currency of the cost, manpower, coordination, supervision, or pricing data at no additional cost to the District. These documents may be duplicative and/or be in addition to any Bid Documents held in escrow by the District. The Contractor shall make available at its office at all reasonable times the materials described in this paragraph for the examination, audit, or reproduction until three (3) years after final payment under this Contract. Notwithstanding the provisions above, Contractor shall provide any records requested by any governmental agency, if available, after the time set forth above.

6.9 Integration of Work

6.9.1 Contractor shall do all cutting, fitting, patching, and preparation of Work as required to make its several parts come together properly, to fit it to receive or be received by work of other contractors, and to coordinate tolerances to various pieces of work, showing upon, or reasonably implied by, the Drawings and Specifications for the completed structure, and shall conform them as District and/or Architect may direct.

6.9.2 Contractor shall make its own layout of lines and elevations and shall be responsible for the accuracy of both Contractor's and Subcontractors' work resulting therefrom.

6.9.3 Contractor and all Subcontractors shall take all field dimensions required in performance of the Work, and shall verify all dimensions and conditions on the Site. All dimensions affecting proper fabrication and installation of all Work must be verified prior to fabrication by taking field measurements of the true conditions. If there are any discrepancies between dimensions in drawings and existing conditions which will affect the Work, Contractor shall bring such discrepancies to the attention of the District and Architect for adjustment before proceeding with the Work. In doing so, it is recognized that Contractor is not acting in the capacity of a licensed design professional, and that Contractor's examination is made in good faith to facilitate construction and does not create an affirmative responsibility of a design professional to detect errors, omissions or inconsistencies in the Contract Documents or to ascertain compliance with applicable laws, building codes or regulations. However, nothing in this provision shall abrogate Contractor's responsibilities for discovering and reporting any error, inconsistency, or omission pursuant to the Contract within the Contractor's standard of care including, without limitation, any applicable laws, ordinance, rules, or regulations. Following receipt of written notice from Contractor, the District and/or Architect shall inform Contractor what action, if any, Contractor shall take with regard to such discrepancies.

6.9.4 All costs caused by noncompliant, defective, or delayed Work shall be borne by Contractor, inclusive of repair work. Schedule delays resulting from unauthorized work shall be Contractor's responsibility.

6.9.5 Contractor shall not endanger any work performed by it or anyone else by cutting, excavating, or otherwise altering work and shall not cut or alter work of any other contractor except with consent of District.

6.10 Notifications

6.10.1 Contractor shall notify the Architect and Project Inspector, in writing, of the commencement of construction of each and every aspect of the Work at least 48 hours in advance by submitting form DSA 156 (or the most current version applicable at the time the Work is performed) to the Project Inspector. Forms are available on the DSA's website at: http://www.dgs.ca.gov/dsa/Forms.aspx.

6.10.2 Contractor shall notify the Architect and Project Inspector, in writing, of the completion of construction of each and every aspect of the Work at least 48 hours in advance by submitting form DSA 156 (or current version) to the Project Inspector.

6.11 Obtaining of Permits, Licenses and Registrations

6.11.1 Contractor shall secure and pay for all permits (except DSA), licenses, registrations, approvals and certificates necessary for prosecution of Work, including but not limited to those listed in the Special Conditions, if any, before the date of the commencement of the Work or before the permits, licenses, registrations, approvals and certificates are legally required to continue the Work without interruption. The Contractor shall obtain and pay, only when legally required, for all licenses, registrations, approvals, permits, inspections, and inspection certificates required to be obtained from or issued by any authority having jurisdiction over any part of the Work included in the Contract. All final permits, licenses, registrations, approvals and certificates shall be delivered to District before demand is made for final payment.

6.11.2 General Permit For Storm Water Discharges Associated With Construction and Land Disturbance Activities.

6.11.2.1 Contractor acknowledges that all California community college districts are obligated to develop and implement the following requirements for the discharge of storm water to surface waters from its construction and land disturbance activities pursuant to the Clean Water Act and Porter Cologne Water Quality Act. District has determined that the construction of this Project requires enrollment in the Construction Storm Water Permit. District has filed certain submittals referred to as Permit Registration Documents ("PRDS") with the Regional Water Control Board ("Storm Water Pollution Prevention Plan" or "SWPPP").

6.11.2.2 Contractor shall comply with any District SWPPP that is approved by the District and applicable to the Project, at no additional cost to the District. Contractor shall pay any fees and any penalties that may imposed by a regulatory agency for its non-compliance with the SWPPP during the course of Work.

6.11.2.3 Contractor shall provide a Qualified Storm Water Practitioner ("QSP") at no additional cost to the District, who shall be onsite and implement and monitor any and all SWPPP requirements applicable to the Project, including but not limited to:

6.11.2.3.1 All required visual observations, sampling, analysis, reporting and record keeping, including any Numeric Action Levels ("NALs"), if applicable;

6.11.2.3.2 Rain Event Action Plan ("REAP") at least forty eight (48) hours prior to any forecasted rain event requiring implementation of the REAP, including any erosion and sediment control measures needed to protect all exposed portions of the site, if applicable;

6.11.2.3.3 Active Treatment System ("ATS"), if applicable; and

6.11.2.3.4 Best management practices ("BMPs").

6.12 Royalties and Patents

6.12.1 Contractor shall obtain and pay, only when legally required, all royalties and license fees necessary for prosecution of Work before the earlier of the date of the commencement of the Work or the date that the license is legally required to continue the Work without interruption. Contractor shall defend suits or claims of infringement of patent, copyright, or other rights and shall hold the District, the Architect, and the Construction Manager harmless and indemnify them from loss on account thereof except when a particular design, process, or make or model of product is required by the Contract Documents. However, if the Contractor has reason to believe that the required design, process, or product is an infringement of a patent or copyright, the Contractor shall indemnify and defend the District, Architect and Construction Manager against any loss or damage unless the Contractor promptly informs the District of its information.

6.12.2 The review by the District or Architect of any method of construction, invention, appliance, process, article, device, or material of any kind shall be only its adequacy for the Work and shall not approve use by the Contractor in violation of any patent or other rights of any person or entity.

6.13 Work to Comply With Applicable Laws and Regulations

6.13.1 Contractor shall give all notices and comply with the following specific laws, ordinances, rules, and regulations and all other applicable laws, ordinances, rules, and regulations bearing on conduct of Work as indicated and specified, including but not limited to the appropriate statutes and administrative code sections. If Contractor observes that Drawings and Specifications are at variance therewith, or should Contractor become aware of the development of conditions not covered by Contract Documents that may result in finished Work being at variance therewith, Contractor shall promptly notify District in writing and any changes deemed necessary by District shall be made as provided in Contract for changes in Work.

6.13.1.1 National Electrical Safety Code, U. S. Department of Commerce

6.13.1.2 National Board of Fire Underwriters' Regulations

6.13.1.3 International Building Code, latest addition, and the California Code of Regulations, title 24, and other amendments

6.13.1.4 Manual of Accident Prevention in Construction, latest edition, published by A.G.C. of America

6.13.1.5 Industrial Accident Commission's Safety Orders, State of California

6.13.1.6 Regulations of the State Fire Marshall (title 19, California Code of Regulations) and Pertinent Local Fire Safety Codes

6.13.1.7 Americans with Disabilities Act

6.13.1.8 Education Code of the State of California

6.13.1.9 Government Code of the State of California

6.13.1.10 Labor Code of the State of California, division 2, part 7, Public Works and Public Agencies

6.13.1.11 Public Contract Code of the State of California

6.13.1.12 California Art Preservation Act

6.13.1.13 U. S. Copyright Act

6.13.1.14 U. S. Visual Artists Rights Act

6.13.2 Contractor shall comply with all applicable mitigation measures, if any, adopted by any public agency with respect to this Project pursuant to the California Environmental Quality Act (Public Resources Code section 21000 et seq.).

6.13.3 If Contractor performs any Work that it knew, or through exercise of reasonable care should have known, to be contrary to any applicable laws, ordinance, rules, or regulations, Contractor shall bear all costs arising therefrom and arising from the correction of said Work.

6.13.4 Where Specifications or Drawings state that materials, processes, or procedures must be approved by the DSA, State Fire Marshall, or other body or agency, Contractor shall be responsible for satisfying requirements of such bodies or agencies applicable at the time the Work is performed, and as determined by those bodies or agencies.

6.14 Safety/Protection of Persons and Property

6.14.1 The Contractor will be solely and completely responsible for conditions of the Site, including safety of all persons and property during performance of the Work. This requirement will apply continuously and not be limited to normal working hours.

6.14.2 The wearing of hard hats will be mandatory at all times for all personnel on Site. Contractor shall supply sufficient hard hats to properly equip all employees and visitors.

6.14.3 Any construction review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures in, on, or near the Site.

6.14.4 Implementation and maintenance of safety programs shall be the sole responsibility of the Contractor.

6.14.5 The Contractor shall furnish to the District a copy of the Contractor's safety plan within the time frame indicated in the Contract Documents and specifically adapted for the Project.

6.14.6 Contractor shall be responsible for all damages to persons or property that occur as a result of its fault or negligence in connection with the prosecution of this

Contract and shall take all necessary measures and be responsible for the proper care and completion and final acceptance by District. All Work shall be solely at Contractor's risk with the exception of damage to the Work caused by "acts of God" as defined in Public Contract Code section 7105.

6.14.7 Contractor shall take, and require Subcontractors to take, all necessary precautions for safety of workers on the Project and shall comply with all applicable federal, state, local, and other safety laws, standards, orders, rules, regulations, and building codes to prevent accidents or injury to persons on, about, or adjacent to premises where Work is being performed and to provide a safe and healthful place of employment. Contractor shall furnish, erect, and properly maintain at all times, all necessary safety devices, safeguards, construction canopies, signs, nets, barriers, lights, and watchmen for protection of workers and the public and shall post danger signs warning against hazards created by such features in the course of construction.

6.14.8 Hazards Control – Contractor shall store volatile wastes in covered metal containers and remove them from the Site daily. Contractor shall prevent accumulation of wastes that create hazardous conditions. Contractor shall provide adequate ventilation during use of volatile or noxious substances.

6.14.9 Contractor shall designate a responsible member of its organization on the Project, whose duty shall be to post information regarding protection and obligations of workers and other notices required under occupational safety and health laws, to comply with reporting and other occupational safety requirements, and to protect the life, safety, and health of workers. Name and position of person so designated shall be reported to District by Contractor.

6.14.10 Contractor shall correct any violations of safety laws, rules, orders, standards, or regulations. Upon the issuance of a citation or notice of violation by the Division of Occupational Safety and Health, Contractor shall correct such violation promptly.

6.14.11 Contractor shall comply with any District storm water requirements that are approved by the District and applicable to the Project, at no additional cost to the District.

6.14.12 In an emergency affecting safety of life or of work or of adjoining property, Contractor, without special instruction or authorization, shall act, at its discretion, to prevent such threatened loss or injury. Any compensation claimed by Contractor on account of emergency work shall be determined by agreement.

6.14.13 All salvage materials will become the property of the Contractor and shall be removed from the Site unless otherwise called for in the Contract Documents. However, the District reserves the right to designate certain items of value that shall be turned over to the District unless otherwise directed by District.

6.14.14 All connections to public utilities and/or existing on-site services, including, without limitation, internet, phone and data connections, shall be made and maintained in such a manner as to not interfere with the continuing use of same by the District during the entire progress of the Work.

6.14.15 Contractor shall provide such heat, covering, and enclosures as are necessary to protect all Work, materials, equipment, appliances, and tools against damage by weather conditions, such as extreme heat, cold, rain, snow, dry winds, flooding, or dampness.

6.14.16 The Contractor shall protect and preserve the Work from all damage or accident, providing any temporary roofs, window and door coverings, boxings, or other construction as required by the Architect. The Contractor shall be responsible for existing structures, walks, roads, trees, landscaping, and/or improvements in working areas; and shall provide adequate protection therefore. If temporary removal is necessary of any of the above items, or damage occurs due to the Work, the Contractor shall replace same at its expense with same kind, quality, and size of Work or item damaged. This shall include any adjoining property of the District and others.

6.14.17 Contractor shall take adequate precautions to protect existing roads, sidewalks, curbs, pavements, utilities, adjoining property, and structures (including, without limitation, protection from settlement or loss of lateral support), and to avoid damage thereto, and repair any damage thereto caused by construction operations.

6.14.18 Contractor shall confine apparatus, the storage of materials, and the operations of workers to limits indicated by law, ordinances, permits, or directions of Architect, and shall not interfere with the Work or unreasonably encumber Premises or overload any structure with materials. Contractor shall enforce all instructions of District and Architect regarding signs, advertising, fires, and smoking, and require that all workers comply with all regulations while on Project Site.

6.14.19 Contractor, Contractor's employees, Subcontractors, Subcontractors' employees, or any person associated with the Work shall conduct themselves in a manner appropriate for a school site. No verbal or physical contact with neighbors, students, and faculty, profanity, or inappropriate attire and/or logos, or behavior will be permitted. District may require Contractor to temporarily or permanently remove non-complying persons from Project Site.

6.14.20 Contractor shall take care to prevent disturbing or covering any survey markers, monuments, or other devices marking property boundaries or corners. If such markers are disturbed, Contractor shall have a civil engineer, registered as a professional engineer in California, replace them at no cost to District.

6.14.21 In the event that the Contractor enters into any agreement with owners of any adjacent property to enter upon the adjacent property for the purpose of performing the Work, Contractor shall fully indemnify, defend, and hold harmless each person, entity, firm, or agency that owns or has any interest in adjacent property. The form and content of the agreement of indemnification shall be approved by the District prior to the commencement of any Work on or about the adjacent property. The Contractor shall also indemnify the District as provided in the indemnification provision herein. These provisions shall be in addition to any other requirements of the owners of the adjacent property.

6.15 Working Evenings and Weekends

Contractor recognizes that time is of the essence, and that in order to meet the specified construction schedule, (s)he may be required to work increased hours, evenings and/or weekends at no additional cost to the District. Contractor shall give the District seventy-two (72) hours' notice prior to performing any evening and/or weekend work. Contractor shall perform all evening and/or weekend work only upon District's approval and in compliance with all applicable rules, regulations, laws, and local ordinances including, without limitation, all noise and light limitations. Contractor shall reimburse the District for any increased or additional Inspector charges as a result of Contractor's increased hours, or evening and/or weekend work.

6.16 Cleaning Up

6.16.1 The Contractor shall provide all services, labor, materials, and equipment necessary for protecting and securing the Work, all school occupants, furnishings, equipment, and building structure from damage until its completion and final acceptance by District. Dust barriers shall be provided to isolate dust and dirt from construction operations. At completion of the Work and portions thereof, Contractor shall clean to the original state any areas beyond the Work area that become dust laden as a result of the Work. The Contractor must erect the necessary warning signs and barricades to ensure the safety of all school occupants. The Contractor at all times must maintain good housekeeping practices to reduce the risk of fire damage and must make a fire extinguisher, fire blanket, and/or fire watch, as applicable, available at each location where cutting, braising, soldering, and/or welding is being performed or where there is an increased risk of fire.

6.16.2 Contractor at all times shall keep Premises, including property immediately adjacent thereto, free from debris such as waste, rubbish (including personal rubbish of workers, e.g., food wrappers, etc.), and excess materials and equipment caused by the Work. Contractor shall not leave debris under, in, or about the Premises (or surrounding property or neighborhood), but shall promptly remove same from the Premises on a daily basis. If Contractor fails to clean up, District may do so and the cost thereof shall be charged to Contractor. If Contract is for work on an existing facility, Contractor shall also perform specific clean-up on or about the Premises upon request by the District as it deems necessary for continued operations. Contractor shall comply with all related provisions of the Specifications.

6.16.3 If the Construction Manager, Architect, or District observes the accumulation of trash and debris, the District will give the Contractor a 24-hour written notice to mitigate the condition.

6.16.4 Should the Contractor fail to perform the required clean-up, or should the clean-up be deemed unsatisfactory by the District, the District may, at its sole discretion, then perform the clean-up. All cost associated with the clean-up work (including all travel, payroll burden, and costs for supervision) will be deducted from the Contract Price.

6.17 No Relief from Obligations Based on Review by Other Persons

6.17.1 Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents by act or omission of the District, Architect,

Construction Manager, Project Inspector, or DSA or other entities having jurisdiction including, but not limited to, administration of the Contract, review of submittals, or by tests, observation, inspection, or permit/interconnection approvals.

7. SUBCONTRACTORS

7.1 Contractor shall provide the District with information for all Subcontracts as indicated in the Contractor's Submittals and Schedules Section herein.

7.2 No contractual relationship exists between the District and any Subcontractor, supplier, or sub-subcontractor by reason of this Contract.

7.3 Contractor agrees to bind every Subcontractor by terms of this Contract as far as those terms that are applicable to Subcontractor's work including, without limitation, all labor, wage & hour, apprentice and related provisions and requirements. If Contractor shall subcontract any part of this Contract, Contractor shall be as fully responsible to District for acts and omissions of any Subcontractor and of persons either directly or indirectly employed by any Subcontractor, including Subcontractor caused Project delays, as it is for acts and omissions of persons directly employed by Contractor. The divisions or sections of the Specifications and/or the arrangement of the drawings are not intended to control the Contractor in dividing the Work among Subcontractors or limit the work performed by any trade.

7.4 District's consent to, or approval of, or failure to object to, any Subcontractor under this Contract shall not in any way relieve Contractor of any obligations under this Contract and no such consent shall be deemed to waive any provisions of this Contract.

7.5 Contractor is directed to familiarize itself with sections 4100 through 4114 of the Public Contract Code of the State of California, as regards subletting and subcontracting, and to comply with all applicable requirements therein. In addition, Contractor is directed to familiarize itself with sections 1720 through 1861 of the Labor Code of the State of California, as regards the payment of prevailing wages and related issues, and to comply with all applicable requirements therein including, without limitation, section 1775 and the Contractor's and Subcontractors' obligations and liability for violations of prevailing wage law and other applicable laws.

7.6 No Contractor whose Bid is accepted shall, without consent of the awarding authority and in full compliance with section 4100 et seq. of the Public Contract Code, including, without limitation, sections 4107, 4107.5, and 4109 of the Public Contract Code, and section 1771.1 of the Labor Code, either:

7.6.1 Substitute any person as a Subcontractor in place of the Subcontractor designated in the original Bid; or

7.6.2 Permit any Subcontract to be assigned or transferred, or allow any portion of the Work to be performed by anyone other than the original Subcontractor listed in the Bid; or

7.6.3 Sublet or subcontract any portion of the Work in excess of one-half of one percent (0.5%) of the Contractor's total bid as to which its original bid did not designate a Subcontractor.

7.7 The Contractor shall be responsible for the coordination of the trades, Subcontractors, sub-subcontractors, and material or equipment suppliers working on the Project.

7.7.1 Contractor is responsible for ensuring that all Subcontractors are properly registered as public works contractors by the Department of Industrial Relations.

7.8 Contractor is solely responsible for settling any differences between the Contractor and its Subcontractor(s) or between Subcontractors.

7.9 Contractor must include in all of its subcontracts the assignment provisions as indicated in the Termination section of these General Conditions.

8. OTHER CONTRACTS/CONTRACTORS

8.1 District reserves the right to let other contracts, and/or to perform work with its own forces, in connection with the Project. Contractor shall afford other contractors reasonable opportunity for introduction and storage of their materials and execution of their work and shall properly coordinate and connect Contractor's Work with the work of other contractors.

8.2 In addition to Contractor's obligation to protect its own Work, Contractor shall protect the work of any other contractor that Contractor encounters while working on the Project.

8.3 If any part of Contractor's Work depends for proper execution or results upon work of District or any other contractor, the Contractor shall inspect and, before proceeding with its Work, promptly report to the District in writing any defects in District's or any other contractor's work that render Contractor's Work unsuitable for proper execution and results. Contractor shall be held accountable for damages to District for District's or any other contractor's work that Contractor failed to inspect or should have inspected. Contractor's failure to inspect and report shall constitute Contractor's acceptance of all District's or any other contractor's work as fit and proper for reception of Contractor's Work, except as to defects that may develop in District's or any other contractor's work after execution of Contractor's Work and not caused by execution of Contractor's Work.

8.4 To ensure proper execution of its subsequent work, Contractor shall measure and inspect work already in place and shall at once report to the District in writing any discrepancy between that executed work and the Contract Documents.

8.5 Contractor shall ascertain to its own satisfaction the scope of the Project and nature of District's or any other contracts that have been or may be awarded by District in prosecution of the Project to the end that Contractor may perform this Contract in light of the other contracts, if any.

8.6 Nothing herein contained shall be interpreted as granting to Contractor exclusive occupancy of the Site, the Premises, or of the Project. Contractor shall not cause any unnecessary hindrance or delay to the use and/or operation(s) of the Premises and/or to District or any other contractor working on the Project. If simultaneous execution of any contract or Premises operation is likely to cause interference with performance of Contractor's Contract, Contractor shall coordinate with

those contractor(s), person(s), and/or entity(s) and shall notify the District of the resolution.

9. DRAWINGS AND SPECIFICATIONS

9.1 A complete list of all Drawings that form a part of the Contract is to be found as an index on the Drawings themselves, and/or may be provided to the Contractor and/or in the Table of Contents.

9.2 Materials or Work described in words that so applied have a well-known technical or trade meaning shall be deemed to refer to recognized standards, unless noted otherwise.

9.3 **Trade Name or Trade Term.** It is not the intention of this Contract to go into detailed descriptions of any materials and/or methods commonly known to the trade under "trade name" or "trade term." The mere mention or notation of "trade name" or "trade term" shall be considered a sufficient notice to Contractor that it will be required to complete the work so named, complete, finished, and operable, with all its appurtenances, according to the best practices of the trade.

9.4 The naming of any material and/or equipment shall mean furnishing and installing of same, including all incidental and accessory items thereto and/or labor therefor, as per best practices of the trade(s) involved, unless specifically noted otherwise.

9.5 Contract Documents are complementary, and what is called for by one shall be binding as if called for by all. As such, Drawings and Specifications are intended to be fully cooperative and to agree. However, if Contractor observes that Drawings and Specifications are in conflict with the Contract Documents, Contractor shall promptly notify District and Architect in writing, and any necessary changes shall be made as provided in the Contract Documents.

9.6 In the case of discrepancy or ambiguity in the Contract Documents, the order of precedence in the Agreement shall prevail. However, in the case of discrepancy or ambiguity solely between and among the Drawings and Specifications, the discrepancy or ambiguity shall be resolved in favor of the interpretation that will provide District with the functionally complete and operable Project described in the Drawings and Specifications. In case of ambiguity, conflict, or lack of information, District will furnish clarifications with reasonable promptness.

9.7 Drawings and Specifications are intended to comply with all laws, ordinances, rules, and regulations of constituted authorities having jurisdiction, and where referred to in the Contract Documents, the laws, ordinances, rules, and regulations shall be considered as a part of the Contract within the limits specified. Contractor shall bear all expense of correcting work done contrary to said laws, ordinances, rules, and regulations.

9.9 As required by Section 4-317(c), Part 1, Title 24, CCR: "Should any existing conditions such as deterioration or non-complying construction be discovered which is not covered by the DSA-approved documents wherein the finished work will not comply with Title 24, California Code of Regulations, a construction change document, or a

separate set of plans and specifications, detailing and specifying the required repair work shall be submitted to and approved by DSA before proceeding with the repair work."

9.9 Ownership of Drawings

All copies of Plans, Drawings, Designs, Specifications, and copies of other incidental architectural and engineering work, or copies of other Contract Documents furnished by District, are the property of District. They are not to be used by Contractor in other work and, with the exception of signed sets of Contract Documents, are to be returned to District on request at completion of Work, or may be used by District as it may require without any additional costs to District. Neither the Contractor nor any Subcontractor, or material or equipment supplier shall own or claim a copyright in the Drawings, Specifications, and other documents prepared by the Architect. District hereby grants the Contractor, Subcontractors, sub-subcontractors, and material or equipment suppliers a limited license to use applicable portions of the Drawings prepared for the Project in the execution of their Work under the Contract Documents.

10. CONTRACTOR'S SUBMITTALS AND SCHEDULES

Contractor's submittals shall comply with the provisions and requirements of the Specifications including, without limitation Submittals.

10.1 Schedule of Work, Schedule of Submittals, and Schedule of Values

10.1.1 Within **TEN (10)** calendar days after the date of the Notice to Proceed (unless otherwise specified in the Specifications), the Contractor shall prepare and submit to the District for review, in a form supported by sufficient data to substantiate its accuracy as the District may require:

10.1.1.1 Preliminary Schedule. A preliminary schedule of construction indicating the starting and completion dates of the various stages of the Work, including any information and following any form as may be specified in the Specifications. Once approved by District, this shall become the Construction Schedule. This schedule shall include and identify all tasks that are on the Project's critical path with a specific determination of the start and completion of each critical path task as well as all Contract milestones and each milestone's completion date(s) as may be required by the District.

10.1.1.1.1 The District is not required to approve a preliminary schedule of construction with early completion, i.e., one that shows early completion dates for the Work and/or milestones. Contractor shall not be entitled to extra compensation if the District approves a Construction Schedule with an early completion date and Contractor completes the Project beyond the date shown in the schedule but within the Contract Time. A Construction Schedule showing the Work completed in less than the Contract Time, the time between the early completion date and the end of the Contract Time shall be Float

10.1.1.2 Preliminary Schedule of Values. A preliminary schedule of values for all of the Work, which must include quantities and prices of items aggregating the Contract Price and must subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Unless

the Special Conditions contain different limits, this preliminary schedule of values shall include, at a minimum, the following information and the following structure:

10.1.1.2.1 Divided into at least the following categories:

10.1.1.2.1.1 Overhead and profit;
10.1.1.2.1.2 Supervision;
10.1.1.2.1.3 General conditions;
10.1.1.2.1.4 Layout;
10.1.1.2.1.5 Mobilization;
10.1.1.2.1.6 Submittals;
10.1.1.2.1.7 Bonds and insurance;
10.1.1.2.1.8 Close-out/Certification documentation;
10.1.1.2.1.9 Demolition;
10.1.1.2.1.10 Installation;
10.1.1.2.1.11 Rough-in;
10.1.1.2.1.12 Finishes;
10.1.1.2.1.13 Testing;
10.1.1.2.1.14 Punchlist and District acceptance.

10.1.1.2.2 And also divided by each of the following areas:

10.1.1.2.2.1 Site work;
10.1.1.2.2.2 By each building;
10.1.1.2.2.3 By each floor;

10.1.1.2.2.4 By each Phase;

10.1.1.2.3 The preliminary schedule of values shall not provide for values any greater than the following percentages of the Contract value:

10.1.1.2.3.1 Mobilization and layout combined to equal not more than 1%;
10.1.1.2.3.2 Submittals, samples and shop drawings combined to equal not more than 3%;
10.1.1.2.3.3 Bonds to equal not more than 1%.
10.1.1.2.3.4 Insurance to equal not less than 1%.
10.1.1.2.3.5 Closeout documentation shall have a value in the preliminary schedule of not less than 5%.

10.1.1.2.4 Notwithstanding any provision of the Contract Documents to the contrary, payment of the Contractor's overhead, supervision, general conditions costs, and profit, as reflected in the Cost Breakdown, shall be paid based on percentage complete, with the disbursement of Progress Payments and the Final Payment.

10.1.1.2.5 Contractor shall certify that the preliminary schedule of values as submitted to the District is accurate and reflects the costs as developed in preparing Contractor's bid. For example, without limiting the foregoing, Contractor shall not "front-load" the preliminary schedule of values with dollar amounts greater than the value of activities performed early in the Project.

10.1.1.2.6 The preliminary schedule of values shall be subject to the District's review and approval of the form and content thereof. In the event that the District objects to any portion of the preliminary schedule of values, the District shall notify the Contractor, in writing, of the District's objection(s) to the preliminary schedule of values. Within five (5) calendar days of the date of the District's written objection(s), Contractor shall submit a revised preliminary schedule of values to the District for review and approval. The foregoing procedure for the preparation, review and approval of the preliminary schedule of values shall continue until the District has approved the entirety of the preliminary schedule of values.

10.1.1.2.7 Once the preliminary schedule of values is approved by the District, this shall become the Schedule of Values. The Schedule of Values shall not be thereafter modified or amended by the Contractor without the prior consent and approval of the District, which may be granted or withheld in the sole discretion of the District.

10.1.1.3 Preliminary Schedule of Submittals. A preliminary schedule of submittals, including Shop Drawings, Product Data, and Samples submittals. Once approved by District, this shall become the Submittal Schedule. All submittals shall be forwarded to the District by the date indicated on the approved Submittal Schedule, unless an earlier date is necessary to maintain the Construction Schedule, in which case those submittals shall be forwarded to the District so as not to delay the Construction Schedule. Upon request by the District, Contractor shall provide an electronic copy of all submittals to the District. All submittals shall be submitted no later than 90 days after the Notice to Proceed.

10.1.1.4 Safety Plan. Contractor's Safety Plan specifically adapted for the Project. Contractor's Safety Plan shall comply with the following requirements:

10.1.1.4.1 All applicable requirements of California Division of Occupational Safety and Health ("CalOSHA") and/or of the United States Occupational Safety and Health Administration ("OSHA").

10.1.1.4.2 All provisions regarding Project safety, including all applicable provisions in these General Conditions.

10.1.1.4.3 Contractor's Safety Plan shall be in English and in the language(s) of the Contractor's and its Subcontractors' employees.

10.1.1.5 Complete Registered Subcontractors List. The name, address, telephone number, facsimile number, California State Contractors License number, classification, DIR registration number and monetary value of all Subcontracts of any tier for parties furnishing labor, material, or equipment for completion of the Project.

10.1.2 Contractor must provide all schedules both in hard copy and electronically, in a format (e.g., Microsoft Project or Primavera) approved in advance by the District.

10.1.3 The District will review the schedules submitted and the Contractor shall make changes and corrections in the schedules as requested by the District and resubmit the schedules until approved by the District.

10.1.4 The District shall have the right at any time to revise the schedule of values if, in the District's sole opinion, the schedule of values does not accurately reflect the value of the Work performed.

10.1.5 All schedules must be approved by the District before Contractor can rely on them as a basis for payment.

10.2 Monthly Progress Schedule(s)

10.2.1 Contractor shall provide Monthly Progress Schedule(s) to the District. A Monthly Progress Schedule shall update the approved Construction Schedule or the last Monthly Progress Schedule, showing all work completed and to be completed as well as updating the Registered Subcontractors List. The monthly Progress Schedule shall be sent within the timeframe requested by the District and shall be in a format acceptable to the District and contain a written narrative of the progress of work that month and any changes, delays, or events that may affect the work. The process for District approval of the Monthly Progress Schedule shall be the same as the process for approval of the Construction Schedule.

10.2.2 Contractor shall submit Monthly Progress Schedule(s) with all payment applications.

10.2.3 Contractor must provide all schedules both in hard copy and electronically, in a format (e.g., Microsoft Project or Primavera) approved in advance by the District.

10.2.4 The District will review the schedules submitted and the Contractor shall make changes and corrections in the schedules as requested by the District and resubmit the schedules until approved by the District.

10.2.5 The District shall have the right at any time to revise the schedule of values if, in the District's sole opinion, the schedule of values does not accurately reflect the value of the Work performed.

10.2.6 All schedules must be approved by the District before Contractor can rely on them as a basis for payment.

10.3 Material Safety Data Sheets (MSDS)

Contractor is required to ensure Material Safety Data Sheets are available in a readily accessible place at the Site for any material requiring a Material Safety Data Sheet per the federal "Hazard Communication" standard, or employees' "right to know" law. The Contractor is also required to ensure proper labeling on substances brought onto the job site and that any person working with the material or within the general area of the material is informed of the hazards of the substance and follows proper handling and protection procedures. Two additional copies of the Material Safety Data Sheets shall also be submitted directly to the District.

10.4 Submittals

Architect's favorable review shall neither be construed as a complete check nor relieve the Contractor, Subcontractor, manufacturer, fabricator, or supplier from responsibility for any deficiency that may exist or from any departures or deviations from the requirements of the Contract Documents unless the Contractor has, in writing, called Architect's attention to the deviations at the time of submission and the Architect has given specific written response. "Favorable review" shall mean merely that Architect has no objection to Contractor using, upon Contractor's own full responsibility, plan or method of Work proposed, or furnishing materials or equipment proposed.

11. SITE ACCESS, CONDITIONS, AND REQUIREMENTS

11.1 Site Investigation

Before bidding on this Work, Contractor shall make a careful investigation of the Site and thoroughly familiarize itself with the requirements of the Contract. By the act of submitting a bid for the Work included in this Contract, Contractor shall be deemed to have made a complete study and investigation, and to be familiar with and accepted the existing conditions of the Site.

Prior to commencing the Work, Contractor and the District's representative shall survey the Site to document the condition of the Site. Contractor will record the survey in digital videotape format and provide an electronic copy to the District within fourteen (14) days of the survey. This electronic record shall serve as a basis for determining any damages caused by the Contractor during the Project. The Contractor may also document any pre-existing conditions in writing, provided that both the Contractor and the District's representative agree on said conditions and sign a memorandum documenting the same.

11.2 Soils Investigation Report

11.2.1 When a soils investigation report obtained from test holes at Site or for the Project is available, that report may be available to the Contractor but shall not be a part of this Contract and shall not alleviate or excuse the Contractor's obligation to perform its own investigation. Any information obtained from that report or any information given on Drawings as to subsurface soil condition or to elevations of existing grades or elevations of underlying rock is approximate only, is not guaranteed, does not form a part of this Contract, and Contractor may not rely thereon. By submitting its bid, Contractor acknowledges that it has made visual examination of Site and has made whatever tests Contractor deems appropriate to determine underground condition of soil. Although any such report is not a part of this Contract, recommendations from the report may be included in the Drawings, Specifications, or other Contract Documents. It is Contractor's sole responsibility to thoroughly review all Contract Documents, Drawings, and Specifications.

11.2.2 Contractor agrees that no claim against District will be made by Contractor for damages and hereby waives any rights to damages if, during progress of Work, Contractor encounters subsurface or latent conditions at Site materially differing from those shown on Drawings or indicated in Specifications, or for unknown conditions of an unusual nature that differ materially from those ordinarily encountered in the work of the character provided for in Plans and Specifications,

except as indicated in the provisions of these General Conditions regarding trenches, trenching, and/or existing utility lines.

11.3 Access to Work

District and its representatives shall at all times have access to Work wherever it is in preparation or progress, including storage and fabrication. Contractor shall provide safe and proper facilities for such access so that District's representatives may perform their functions.

11.4 Layout and Field Engineering

11.4.1 All field engineering required for layout of this Work and establishing grades for earthwork operations shall be furnished by Contractor at its expense. This Work shall be done by a qualified, California-registered civil engineer approved in writing by District and Architect. Any required Record and/or As-Builts of Site development shall be prepared by the approved civil engineer.

11.4.2 The Contractor shall be responsible for having ascertained pertinent local conditions such as location, accessibility, and general character of the Site and for having satisfied itself as to the conditions under which the Work is to be performed. Contractor shall follow best practices, including but not limited to potholing to avoid utilities. District shall not be liable for any claim for allowances because of Contractor's error, failure to follow best practices, or negligence in acquainting itself with the conditions at the Site.

11.4.3 Contractor shall protect and preserve established benchmarks and monuments and shall make no changes in locations without the prior written approval of District. Contractor shall replace any benchmarks or monuments that are lost or destroyed subsequent to proper notification of District and with District's approval.

11.5 Utilities

Utilities shall be provided as indicated in the Specifications.

11.6 Sanitary Facilities

Sanitary facilities shall be provided as indicated in the Specifications.

11.7 Surveys

Contractor shall provide surveys done by a California-licensed civil engineer surveyor to determine locations of construction, grading, and site work as required to perform the Work.

11.8 Regional Notification Center

The Contractor, except in an emergency, shall contact the appropriate regional notification center at least two (2) days prior to commencing any excavation if the excavation will be conducted in an area or in a private easement that is known, or reasonably should be known, to contain subsurface installations other than the

underground facilities owned or operated by the District, and obtain an inquiry identification number from that notification center. No excavation shall be commenced and/or carried out by the Contractor unless an inquiry identification number has been assigned to the Contractor or any Subcontractor and the Contractor has given the District the identification number. Any damages arising from Contractor's failure to make appropriate notification shall be at the sole risk and expense of the Contractor. Any delays caused by failure to make appropriate notification shall be at the sole risk of the Contractor and shall not be considered for an extension of the Contract Time.

11.9 Existing Utility Lines

11.9.1 Pursuant to Government Code section 4215, District assumes the responsibility for removal, relocation, and protection of main or trunk utility lines and facilities located on the construction Site at the time of commencement of construction under this Contract with respect to any such utility facilities that are not identified in the Plans and Specifications. Contractor shall not be assessed for liquidated damages for delay in completion of the Project caused by failure of District or the owner of a utility to provide for removal or relocation of such utility facilities.

11.9.2 Locations of existing utilities provided by District shall not be considered exact, but approximate within a reasonable margin and shall not relieve Contractor of responsibilities to exercise reasonable care or costs of repair due to Contractor's failure to do so. District shall compensate Contractor for the costs of locating and repairing damage not due to the failure of Contractor to exercise reasonable care, and removing or relocating such utility facilities not indicated in the Plans and Specifications with reasonable accuracy, and for equipment necessarily idle during such work.

11.9.3 No provision herein shall be construed to preclude assessment against Contractor for any other delays in completion of the Work. Nothing in this Article shall be deemed to require District to indicate the presence of existing service laterals, appurtenances, or other utility lines, within the exception of main or trunk utility lines or whenever the presence of these utilities on the Site of the construction Project can be inferred from the presence of other visible facilities, such as buildings, meter junction boxes, on or adjacent to the Site of the construction.

11.9.4 If Contractor, while performing Work under this Contract, discovers utility facilities not identified by District in Contract Plans and Specifications, Contractor shall immediately notify the District and the utility in writing. The cost of repair for damage to above-mentioned visible facilities without prior written notification to the District shall be borne by the Contractor.

11.10 Notification

Contractor understands, acknowledges and agrees that the purpose of prompt notification to the District pursuant to these provisions is to allow the District to investigate the condition(s) so that the District shall have the opportunity to decide how the District desires to proceed as a result of the condition(s). Accordingly, failure of Contractor to promptly notify the District in writing, pursuant to these provisions, shall constitute Contractor's waiver of any claim for damages or delay incurred as a result of the condition(s).

11.11 Hazardous Materials

Contractor shall comply with all provisions and requirements of the Contract Documents related to hazardous materials including, without limitation, Hazardous Materials Procedures and Requirements.

11.12 No Signs

Neither the Contractor nor any other person or entity shall display any signs not required by law or the Contract Documents at the Site, fences trailers, offices, or elsewhere on the Site without specific prior written approval of the District.

12. TRENCHES

12.1 Trenches Greater Than Five Feet

Pursuant to Labor Code section 6705, if the Contract Price exceeds $25,000 and involves the excavation of any trench or trenches five (5) feet or more in depth, the Contractor shall, in advance of excavation, promptly submit to the District and/or a registered civil or structural engineer employed by the District or Architect, a detailed plan, stamped by a licensed engineer retained by the Contractor, showing the design of shoring for protection from the hazard of caving ground during the excavation of such trench or trenches.

12.2 Excavation Safety

If such plan varies from the Shoring System Standards established by the Construction Safety Orders, the plan shall be prepared by a registered civil or structural engineer, but in no case shall such plan be less effective than that required by the Construction Safety Orders. No excavation of such trench or trenches shall be commenced until said plan has been accepted by the District or by the person to whom authority to accept has been delegated by the District.

12.3 No Tort Liability of District

Pursuant to Labor Code section 6705, nothing in this Article shall impose tort liability upon the District or any of its employees.

12.4 No Excavation without Permits

The Contractor shall not commence any excavation Work until it has secured all necessary permits including the required CalOSHA excavation/shoring permit. Any permits shall be prominently displayed on the Site prior to the commencement of any excavation.

12.5 Discovery of Hazardous Waste and/or Unusual Conditions

12.5.1 Pursuant to Public Contract Code section 7104, if the Work involves digging trenches or other excavations that extend deeper than four feet below the Surface, the Contractor shall promptly, and before the following conditions are disturbed, notify the District, in writing, of any:

12.5.1.1 Material that the Contractor believes may be material that is hazardous waste, as defined in section 25117 of the Health and Safety Code, is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.

12.5.1.2 Subsurface or latent physical conditions at the Site differing from those indicated.

12.5.1.3 Unknown physical conditions at the Site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.

12.5.2 The District shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the Work, shall issue a Change Order under the procedures described herein.

12.5.3 In the event that a dispute arises between District and the Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the Contractor's cost of, or time required for, performance of any part of the Work, the Contractor shall not be excused from any scheduled completion date provided for by the Contract, but shall proceed with all work to be performed under the Contract. The Contractor shall retain any and all rights provided either by Contract or by law that pertain to the resolution of disputes and protests.

13. INSURANCE AND BONDS

13.1 Insurance

Unless different provisions and/or limits are indicated in the Special Conditions, all insurance required of Contractor and/or its Subcontractor(s) shall be at least as broad as the amounts and include the provisions set forth herein.

13.1.1 Commercial General Liability and Automobile Liability Insurance

13.1.1.1 Contractor shall procure and maintain, during the life of this Contract, Commercial General Liability Insurance and Automobile Liability Insurance that shall protect Contractor, District, State, Construction Manager(s), Project Inspector(s), and Architect(s) from all claims for bodily injury, property damage, personal injury, death, advertising injury, and medical payments arising from, or in connection with, operations under this Contract. This coverage shall be provided in a form at least as broad as Insurance Services (ISO) Form CG 0001 11188. Contractor shall ensure that Products Liability and Completed Operations coverage, Fire Damage Liability coverage, and Automobile Liability Insurance coverage including owned, non-owned, and hired automobiles, are included within the above policies and at the required limits, or Contractor shall procure and maintain these coverages separately.

13.1.1.2 Contractor's deductible or self-insured retention for its Commercial General Liability Insurance policy shall not exceed $25,000 unless approved in writing by District.

13.1.1.3 All such policies shall be written on an occurrence form.

13.1.2 Excess Liability Insurance

13.1.2.1 If Contractor's underlying policy limits are less than required, subject to the District's sole discretion, Contractor may procure and maintain, during the life of this Contract, an Excess Liability Insurance Policy to meet the policy limit requirements of the required policies in order to satisfy, in the aggregate with its underlying policy, the insurance requirements herein.

13.1.2.2 There shall be no gap between the per occurrence amount of any underlying policy and the start of the coverage under the Excess Liability Insurance Policy. Any Excess Liability Insurance Policy shall be written on a following form and shall protect Contractor, District, State, Construction Manager(s), Project Manager(s), and Architect(s) in amounts and including the provisions as set forth in the Supplementary Conditions (if any) and/or Special Conditions, and that complies with all requirements for Commercial General Liability and Automobile Liability and Employers' Liability Insurance.

13.1.2.3 The District, in its sole discretion, may accept an Excess Liability Insurance Policy that brings Contractor's primary limits to the minimum requirements herein.

13.1.3 Subcontractor(s): Contractor shall require its Subcontractor(s), if any, to procure and maintain Commercial General Liability Insurance, Automobile Liability Insurance, and Excess Liability Insurance (if Subcontractor elects to satisfy, in part the insurance required herein by procuring and maintaining an Excess Liability Insurance Policy) with forms of coverage and limits equal to the amounts required of the Contractor.

13.1.4 Workers' Compensation and Employers' Liability Insurance

13.1.4.1 In accordance with provisions of section 3700 of the California Labor Code, the Contractor and every Subcontractor shall be required to secure the payment of compensation to its employees.

13.1.4.2 Contractor shall procure and maintain, during the life of this Contract, Workers' Compensation Insurance and Employers' Liability Insurance for all of its employees engaged in work under this Contract, on/or at the Site of the Project. This coverage shall cover, at a minimum, medical and surgical treatment, disability benefits, rehabilitation therapy, and survivors' death benefits. Contractor shall require its Subcontractor(s), if any, to procure and maintain Workers' Compensation Insurance and Employers' Liability Insurance for all employees of Subcontractor(s). Any class of employee or employees not covered by a Subcontractor's insurance shall be covered by Contractor's insurance. If any class of employee or employee engaged in Work under this Contract, on or at the Site of the Project, is not protected under the Workers' Compensation Insurance, Contractor shall provide, or shall cause a Subcontractor to provide, adequate

insurance coverage for the protection of any employee(s) not otherwise protected before any of those employee(s) commence work.

13.1.5 Builder's Risk Insurance: Builder's Risk "All Risk" Insurance

Contractor shall procure and maintain, during the life of this Contract, Builder's Risk (Course of Construction), or similar first party property coverage acceptable to the District, issued on a replacement cost value basis. The cost shall be consistent with the total replacement cost of all insurable Work of the Project included within the Contract Documents. Coverage is to insure against all risks of accidental physical loss and shall include without limitation the perils of vandalism and/or malicious mischief (both without any limitation regarding vacancy or occupancy), sprinkler leakage, civil authority, theft, sonic disturbance, earthquake, flood, collapse, wind, rain, dust, fire, war, terrorism, lightning, smoke, and rioting. Coverage shall include debris removal, demolition, increased costs due to enforcement of all applicable ordinances and/or laws in the repair and replacement of damaged and undamaged portions of the property, and reasonable costs for the Architect's and engineering services and expenses required as a result of any insured loss upon the Work and Project, including completed Work and Work in progress, to the full insurable value thereof.

13.1.6 Pollution Liability Insurance

13.1.6.1 Contractor shall procure and maintain Pollution Liability Insurance that shall protect Contractor, District, State, Construction Manager(s), Project Inspector(s), and Architect(s) from all claims for bodily injury, property damage, including natural resource damage, cleanup costs, removal, storage, disposal, and/or use of the pollutant arising from operations under this Contract, and defense, including costs and expenses incurred in the investigation, defense, or settlement of claims. Coverage shall apply to sudden and/or gradual pollution conditions resulting from the escape or release of smoke, vapors, fumes, acids, alkalis, toxic chemicals, liquids, or gases, natural gas, waste materials, or other irritants, contaminants, or pollutants, including asbestos. This coverage shall be provided in a form at least as broad as Insurance Services Offices, Inc. (ISO) Form CG 2415, or Contractor shall procure and maintain these coverages separately.

13.1.6.2 Contractor warrants that any retroactive date applicable to coverage under the policy shall predate the effective date of the Contract and that continuous coverage will be maintained or an extended reporting or discovery period will be exercised for a period of three (3) years, beginning from the time that the Work under the Contract is completed.

13.1.6.3 If Contractor is responsible for removing any pollutants from a site, then Contractor shall ensure that Any Auto, including owned, non-owned, and hired, is included within the above policies and at the required limits, to cover its automobile exposure from transporting the pollutants from the site to an approved disposal site. This coverage shall include the Motor Carrier Act Endorsement, MCS 90.

13.1.7 Proof of Insurance and Other Requirements: Endorsements and Certificates

13.1.7.1 Contractor shall not commence Work nor shall it allow any Subcontractor to commence Work under this Contract, until Contractor and its Subcontractor(s) have procured all required insurance and Contractor has delivered in duplicate to the District complete endorsements (or entire insurance policies) and certificates indicating the required coverages have been obtained, and the District has approved these documents.

13.1.7.2 Endorsements, certificates, and insurance policies shall include the following:

13.1.7.2.1 A clause stating the following, or other language acceptable to the District:

"This policy shall not be canceled until written notice to District, Architect, and Construction Manager stating date of the cancellation by the insurance carrier. Date of cancellation may not be less than thirty (30) days after date of mailing notice."

13.1.7.2.2 Language stating in particular those insured, extent of insurance, location and operation to which insurance applies, expiration date, to whom cancellation and reduction notice will be sent, and length of notice period.

13.1.7.2.3 All endorsements, certificates and insurance policies shall state that District, its trustees, employees and agents, the State of California, Construction Manager(s), Project Manager(s), Inspector(s) and Architect(s) are named additional insureds under all policies except Workers' Compensation Insurance and Employers' Liability Insurance.

13.1.7.2.4 All endorsements shall waive any right to subrogation against any of the named additional insureds.

13.1.7.2.5 Contractor's and Subcontractors' insurance policy(s) shall be primary and non-contributory to any insurance or self-insurance maintained by District, its trustees, employees and/or agents, the State of California, Construction Manager(s), Project Manager(s), Inspector(s), and/or Architect(s).

13.1.7.2.6 Contractor's insurance limit shall apply separately to each insured against whom a claim is made or suit is brought.

13.1.7.3 No policy shall be amended, canceled or modified, and the coverage amounts shall not be reduced, until Contractor or Contractor's broker has provided written notice to District, Architect(s), and Construction Manager(s) stating date of the amendment, modification, cancellation or reduction, and a description of the change. Date of amendment, modification, cancellation or reduction may not be less than thirty (30) days after date of mailing notice.

13.1.7.4 Insurance written on a "claims made" basis shall be retroactive to a date that coincides with or precedes Contractor's commencement of Work, including subsequent policies purchased as renewals or replacements. Said policy is to be renewed by the Contractor and all Subcontractors for a period of

five (5) years following completion of the Work or termination of this Agreement. Such insurance must have the same coverage and limits as the policy that was in effect during the term of this Agreement, and will cover the Contractor and all Subcontractors for all claims made.

13.1.7.5 Unless otherwise stated in the Special Conditions, all of Contractor's insurance shall be with insurance companies with an A.M. Best rating of no less than **A: VII**.

13.1.7.6 The insurance requirements set forth herein shall in no way limit the Contractor's liability arising out of or relating to the performance of the Work or related activities.

13.1.7.7 Failure of Contractor and/or its Subcontractor(s) to comply with the insurance requirements herein shall be deemed a material breach of the Contract.

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13.1.8 Insurance Policy Limits

13.1.8.1 Unless different limits are indicated in the Special Conditions, the limits of insurance shall not be less than the following amounts:

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

13.1.8.2 If Contractor normally carries insurance in an amount greater than the minimum amounts required by District, that greater amount shall become the minimum required amount of insurance for purposes of the Contract. Therefore,

Contractor hereby acknowledges and agrees that all insurance carried by it shall be deemed liability coverage for all actions it performs in connection with the Contract.

13.2 Contract Security - Bonds

13.2.1 Contractor shall furnish two surety bonds issued by a California admitted surety insurer as follows:

13.2.1.1 Performance Bond: A bond in an amount at least equal to one hundred percent (100%) of Contract Price as security for faithful performance of this Contract.

13.2.1.2 Payment Bond: A bond in an amount at least equal to one hundred percent (100%) of the Contract Price as security for payment of persons performing labor and/or furnishing materials in connection with this Contract.

13.2.2 Cost of bonds shall be included in the Bid and Contract Price.

13.2.3 All bonds related to this Project shall be in the forms set forth in these Contract Documents and shall comply with all requirements of the Contract Documents, including, without limitation, the bond forms.

14. WARRANTY/GUARANTEE/INDEMNITY

14.1 Warranty/Guarantee

14.1.1 The Contractor shall obtain and preserve for the benefit of the District, manufacturer's warranties on materials, fixtures, and equipment incorporated into the Work.

14.1.2 In addition to guarantees required elsewhere, Contractor shall, and hereby does guarantee and warrant all Work furnished on the job against all defects for a period of **ONE (1)** year after the later of the following dates, unless a longer period is provided for in the Contract Documents:

14.1.2.1 The acceptance by the District's governing board of the Work, subject to these General Conditions, or

14.1.2.2 The date that commissioning for the Project, if any, was completed.

At the District's sole option, Contractor shall repair or replace any and all of that Work, together with any other Work that may be displaced in so doing, that may prove defective in workmanship and/or materials within a **ONE (1)** year period from date of completion as defined above, unless a longer period is provided for in the Contract Documents, without expense whatsoever to District. In the event of failure of Contractor and/or Surety to commence and pursue with diligence said replacements or repairs within ten (10) days after being notified in writing, Contractor and Surety hereby acknowledge and agree that District is authorized to proceed to have defects repaired and made good at expense of Contractor and/or Surety who hereby agree to pay costs and charges therefore immediately on demand.

14.1.3 If, in the opinion of District, defective work creates a dangerous condition or requires immediate correction or attention to prevent further loss to District or to prevent interruption of District operations, District will attempt to give the notice required above. If Contractor or Surety cannot be contacted or neither complies with District's request for correction within a reasonable time as determined by District, District may, notwithstanding the above provision, proceed to make any and all corrections and/or provide attentions the District believes are necessary. The costs of correction or attention shall be charged against Contractor and Surety of the guarantees provided in this Article or elsewhere in this Contract.

14.1.4 The above provisions do not in any way limit the guarantees on any items for which a longer guarantee is specified or on any items for which a manufacturer gives a guarantee for a longer period. Contractor shall furnish to District all appropriate guarantee or warranty certificates as indicated in the Specifications or upon request by District.

14.1.5 Nothing herein shall limit any other rights or remedies available to District.

14.2 Indemnity and Defense

14.2.1 To the furthest extent permitted by California law, the Contractor shall indemnify, keep and hold harmless the District, the Architect(s), and the Construction Manager(s), their respective consultants, separate contractors, board members, officers, representatives, agents, and employees, in both individual and official capacities ("Indemnitees"), against all suits, claims, injury, damages, losses, and expenses ("Claims"), including but not limited to attorney's fees, caused by, arising out of, resulting from, or incidental to, in whole or in part, the performance of the Work under this Contract by the Contractor, its Subcontractors, vendors, or suppliers. However, the Contractor's indemnification and hold harmless obligation shall be reduced by the proportion of the Indemnitees' and/or Architect's liability to the extent the Claim(s) is/are caused by the sole negligence, active negligence, or willful misconduct of the Indemnitees, and/or defects in design furnished by the Architect, as found by a court or arbitrator of competent jurisdiction. This indemnification and hold harmless obligation of the Contractor shall not be construed to negate, abridge, or otherwise reduce any right or obligation of indemnity that would otherwise exist or arise as to Indemnitee or other person described herein. This indemnification and hold harmless obligation includes, but is not limited to, any failure or alleged failure by Contractor to comply with any provision of law, any failure or alleged failure to timely and properly fulfill all of its obligations under the Contract Documents in strict accordance with their terms, and without limitation, any failure or alleged failure of Contractor's obligations regarding any stop payment notice actions or liens, including Civil Wage and Penalty Assessments and/or Orders by the DIR.

14.2.2 To the furthest extent permitted by California law, Contractor shall also defend Indemnitees, at its own expense, including but not limited to attorneys' fees and costs, against all Claims caused by, arising out of, resulting from, or incidental to, in whole or in part, the performance of the Work under this Contract by the Contractor, its Subcontractors, vendors, or suppliers. However, without impacting Contractor's obligation to provide an immediate and ongoing defense of Indemnitees, the Contractor's defense obligation shall be retroactively reduced by the proportion of the Indemnitees' and/or Architect's liability to the extent caused by the sole

negligence, active negligence, or willful misconduct of the Indemnitees, and/or defects in design furnished by the Architect, as found by a court or arbitrator of competent jurisdiction. The District shall have the right to accept or reject any legal representation that Contractor proposes to defend the Indemnitees. If any Indemnitee provides its own defense due to failure to timely respond to tender of defense, rejection of tender of defense, or conflict of interest of proposed counsel, Contractor shall reimburse such Indemnitee for any expenditures. Contractor's defense obligation shall not be construed to negate, abridge, or otherwise reduce any right or obligation of defense that would otherwise exist as to any Indemnitee or other person described herein. Contractor's defense obligation includes, but is not limited to, any failure or alleged failure by Contractor to comply with any provision of law, any failure or alleged failure to timely and properly fulfill all of its obligations under the Contract Documents in strict accordance with their terms, and without limitation, any failure or alleged failure of Contractor's obligations regarding any stop payment notice actions or liens, including Civil Wage and Penalty Assessments and/or Orders by the DIR. The Contractor shall give prompt notice to the District in the event of any Claim(s).

14.2.3 Without limitation of the provisions herein, if the Contractor's obligation to indemnify and hold harmless the Indemnitees or its obligation to defend Indemnitees as provided herein shall be determined to be void or unenforceable, in whole or in part, it is the intention of the parties that these circumstances shall not otherwise affect the validity or enforceability of the Contractor's agreement to indemnify, defend, and hold harmless the rest of the Indemnitees, as provided herein. Further, the Contractor shall be and remain fully liable on its agreements and obligations herein to the fullest extent permitted by law.

14.2.4 Pursuant to Public Contract Code section 9201, the District shall provide timely notification to Contractor of the receipt of any third-party claim relating to this Contract. The District shall be entitled to recover its reasonable costs incurred in providing said notification.

14.2.5 In any and all claims against any of the Indemnitees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the Contractor's indemnification obligation herein shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the Contractor or any Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

14.2.6 The District may retain so much of the moneys due the Contractor as shall be considered necessary, until disposition of any such Claims or until the District, Architect(s) and Construction Manager(s) have received written agreement from the Contractor that they will unconditionally defend the District, Architect(s) and Construction Manager(s), their respective officers, agents and employees, and pay any damages due by reason of settlement or judgment.

14.2.7 The Contractor's defense and indemnification obligations hereunder shall survive the completion of Work, the warranty/guarantee period, and the termination of the Contract.

15. TIME

15.1 Notice to Proceed

15.1.1 District may issue a Notice to Proceed within ninety (90) days from the date of the Notice of Award. Once Contractor has received the Notice to Proceed, Contractor shall complete the Work within the period of time indicated in the Contract Documents.

15.1.2 In the event that the District desires to postpone issuing the Notice to Proceed beyond ninety (90) days from the date of the Notice of Award, it is expressly understood that with reasonable notice to the Contractor, the District may postpone issuing the Notice to Proceed. It is further expressly understood by Contractor that Contractor shall not be entitled to any claim of additional compensation as a result of the postponement of the issuance of the Notice to Proceed.

15.1.3 If the Contractor believes that a postponement of issuance of the Notice to Proceed will cause a hardship to Contractor, Contractor may terminate the Contract. Contractor's termination due to a postponement shall be by written notice to District within ten (10) days after receipt by Contractor of District's notice of postponement. It is further understood by Contractor that in the event that Contractor terminates the Contract as a result of postponement by the District, the District shall only be obligated to pay Contractor for the Work that Contractor had performed at the time of notification of postponement. Should Contractor terminate the Contract as a result of a notice of postponement, District shall have the authority to award the Contract to the next lowest responsive responsible bidder.

15.2 Computation of Time / Adverse Weather

15.2.1 The Contractor will only be allowed a time extension for Adverse Weather conditions if requested by Contractor in compliance with the time extension request procedures and only if all of the following conditions are met:

15.2.1.1 The weather conditions constitute Adverse Weather, as defined herein;

15.2.1.2 Contractor can verify that the Adverse Weather caused delays in excess of five (5) hours of the indicated labor required to complete the scheduled tasks of Work on the day affected by the Adverse Weather;

15.2.1.3 The Contractor's crew is dismissed as a result of the Adverse Weather;

15.2.1.4 Said delay adversely affects the critical path in the Construction Schedule; and

15.2.1.5 Exceeds twelve (12) days of delay per year.

15.2.2 If the aforementioned conditions are met, a non-compensable day-for-day extension will only be allowed for those days in excess of those indicated herein.

15.2.3 The Contractor shall work seven (7) days per week, if necessary, irrespective of inclement weather, to maintain access and the Construction Schedule,

and to protect the Work under construction from the effects of Adverse Weather, all at no further cost to the District.

15.2.4 The Contract Time has been determined with consideration given to the average climate weather conditions prevailing in the County in which the Project is located.

15.3 Hours of Work

15.3.1 Sufficient Forces

Contractor and Subcontractors shall continuously furnish sufficient and competent work forces with the required levels of familiarity with the Project and skill, training and experience to ensure the prosecution of the Work in accordance with the Construction Schedule.

15.3.2 Performance During Working Hours

Work shall be performed during regular working hours as permitted by the appropriate governmental agency except that in the event of an emergency, or when required to complete the Work in accordance with job progress, Work may be performed outside of regular working hours with the advance written consent of the District and approval of any required governmental agencies.

15.3.3 No Work during Testing

Contractor shall, at no additional cost to the District and at the District's request, coordinate its Work to not disturb District students including, without limitation, not performing any Work when students at the Site are taking tests. The District or District's Representative will provide Contractor with a schedule of test dates concurrent with the District's issuance of the Notice to Proceed, or as soon as test dates are made available to the District.

15.4 Progress and Completion

15.4.1 Time of the Essence

Time limits stated in the Contract Documents are of the essence to the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

15.4.2 No Commencement Without Insurance or Bonds

The Contractor shall not commence operations on the Project or elsewhere prior to the effective date of insurance and bonds. The date of commencement of the Work shall not be changed by the effective date of such insurance or bonds. If Contractor commences Work without insurance and bonds, all Work is performed at Contractor's peril and shall not be compensable until and unless Contractor secures bonds and insurance pursuant to the terms of the Contract Documents and subject to District claim for damages.

15.5 Schedule

Contractor shall provide to District, Construction Manager, and Architect a schedule in conformance with the Contract Documents and as required in the Notice to Proceed and the Contractor's Submittals and Schedules section of these General Conditions.

15.6 Expeditious Completion

The Contractor shall proceed expeditiously with adequate forces and shall achieve Completion within the Contract Time.

16. EXTENSIONS OF TIME – LIQUIDATED DAMAGES

16.1 Liquidated Damages

Contractor and District hereby agree that the exact amount of damages for failure to complete the Work within the time specified is extremely difficult or impossible to determine. If the Work is not completed within the time specified in the Contract Documents, it is understood that the District will suffer damage. It being impractical and unfeasible to determine the amount of actual damage, it is agreed the Contractor shall pay to District as fixed and liquidated damages, and not as a penalty, the amount set forth in the Agreement for each calendar day of delay in completion. Contractor and its Surety shall be liable for the amount thereof pursuant to Government Code section 53069.85.

16.2 Excusable Delay

16.2.1 Contractor shall not be charged for liquidated damages because of any delays in completion of the Work which are not the fault of Contractor or its Subcontractors, including acts of God as defined in Public Contract Code section 7105, acts of enemy, epidemics, and quarantine restrictions. Contractor shall, within five (5) calendar days of beginning of any delay, notify District in writing of causes of delay including documentation and facts explaining the delay and the direct correlation between the cause and effect. District shall review the facts and extent of any delay and shall grant extension(s) of time for completing Work when, in its judgment, the findings of fact justify an extension. Extension(s) of time shall apply only to that portion of Work affected by delay, and shall not apply to other portions of Work not so affected. An extension of time may only be granted if Contractor has timely submitted the Construction Schedule as required herein.

16.2.2 Contractor shall notify the District pursuant to the claims provisions in these General Conditions of any anticipated delay and its cause. Following submission of a claim, the District may determine whether the delay is to be considered avoidable or unavoidable, how long it continues, and to what extent the prosecution and completion of the Work might be delayed thereby.

16.2.3 In the event the Contractor requests an extension of Contract Time for unavoidable delay, such request shall be submitted in accordance with the provisions in the Contract Documents governing changes in Work. When requesting time, requests must be submitted with full justification and documentation. If the Contractor fails to submit justification, it waives its right to a time extension at a later date. Such justification must be based on the official Construction Schedule as

updated at the time of occurrence of the delay or execution of Work related to any changes to the Scope of Work. Any claim for delay must include the following information as support, without limitation:

16.2.3.1 The duration of the activity relating to the changes in the Work and the resources (manpower, equipment, material, etc.) required to perform the activities within the stated duration.

16.2.3.1 Specific logical ties to the Contract Schedule for the proposed changes and/or delay showing the activity/activities in the Construction Schedule that are affected by the change and/or delay. In particular, Contractor must show an actual impact to the schedule, after making a good faith effort to mitigate the delay by rescheduling the work, by providing an analysis of the schedule ("Time Impact Analysis"). Such Time Impact Analysis shall describe in detail the cause and effect of the delay and the impact on the critical dates in the Project schedule. (A portion of any delay of seven (7) days or more must be provided.)

16.2.3.2 A recovery schedule must be submitted within twenty (20) calendar days of written notification to the District of causes of delay.

16.3 No Additional Compensation for Delays Within Contractor's Control

16.3.1 Contractor is aware that governmental agencies, including, without limitation, the Division of the State Architect, the Department of General Services, gas companies, electrical utility companies, water districts, and other agencies may have to approve Contractor-prepared drawings or approve a proposed installation. Accordingly, Contractor shall include in its bid, time for possible review of its drawings and for reasonable delays and damages that may be caused by such agencies. Thus, Contractor is not entitled to make a claim for damages or delays arising from the review of Contractor's drawings.

16.3.2 Contractor shall only be entitled to compensation for delay when all of the following conditions are met:

16.3.2.1 The District is responsible for the delay;

16.3.2.2 The delay is unreasonable under the circumstances involved;

16.3.2.3 The delay was not within the contemplation of the District and Contractor;

16.3.2.4 The delay could not have been avoided or mitigated by Contractor's reasonable diligence; and

16.3.2.5 Contractor timely complies with the claims procedure of the Contract Documents.

16.3.3 Where a change in the Work extends the Contract Time, Contractor may request and recover additional, actual direct costs, provided that Contractor can demonstrate such additional costs are:

16.3.3.1 Actually incurred performing the Work;

16.3.3.2 Not compensated by the Markup allowed; and

16.3.3.3 Directly result from the extended Contract Time.

Contractor shall comply with all required procedures, documentation and time requirements in the Contract Documents. Contractor may not seek or recover such costs using formulas (e.g. Eichleay, labor factors).

16.4 Float or Slack in the Schedule

Float or slack is the amount of time between the early start date and the late start date, or the early finish date and the late finish date, of any of the activities in the schedule. Float or slack is not for the exclusive use of or benefit of either the District or the Contractor, but its use shall be determined solely by the District.

17. CHANGES IN THE WORK

17.1 No Changes Without Authorization

17.1.1 There shall be no change whatsoever in the Drawings, Specifications, or in the Work without an executed Change Order or a written Construction Change Directive authorized by the District as herein provided. District shall not be liable for the cost of any extra work or any substitutions, changes, additions, omissions, or deviations from the Drawings and Specifications unless the District's governing board has authorized the same and the cost thereof has been approved in writing by Change Order or Construction Change Directive in advance of the changed Work being performed. No extension of time for performance of the Work shall be allowed hereunder unless claim for such extension is made at the time changes in the Work are ordered, and such time duly adjusted and approved in writing in the Change Order or Construction Change Directive. Contractor shall be responsible for any costs incurred by the District for professional services and DSA fees and/or delay to the Project Schedule, if any, for DSA to review any request for changes to the DSA approved plans and specifications for the convenience of the Contractor and/or to accommodate the Contractor's means and methods. The provisions of the Contract Documents shall apply to all such changes, additions, and omissions with the same effect as if originally embodied in the Drawings and Specifications.

17.1.2 Contractor shall perform immediately all work that has been authorized by a fully executed Change Order or Construction Change Directive. Contractor shall be fully responsible for any and all delays and/or expenses caused by Contractor's failure to expeditiously perform this Work.

17.1.3 Should any Change Order result in an increase in the Contract Price or extend the Contract Time, the cost of or length of extension in that Change Order shall be agreed to, in writing, by the District in advance of the Work by Contractor, and shall be subject to the monetary limitations set forth in Public Contract Code section 20118.4. In the event that Contractor proceeds with any change in Work without a Change Order executed by the District or Construction Change Directive, Contractor waives any claim of additional compensation or time for that additional work. Under no circumstances shall Contractor be entitled to any claim of additional compensation or time not expressly requested by Contractor in a Proposed Change Order or approved by District in an executed Change Order.

17.1.4 A Change Order or Construction Change Directive will become effective when approved by the Board, notwithstanding that Contractor has not signed it. A Change Order or Construction Change Directive will become effective without Contractor's signature provided District indicates it as a "Unilateral Change Order". Any dispute as to the adjustment in the Contract Price or Contract Time, if any, of the Unilateral Change Order shall be resolved pursuant to the Payment and Claims and Disputes provisions herein.

17.1.5 Contractor understands, acknowledges, and agrees that the reason for District authorization is so that District may have an opportunity to analyze the Work and decide whether the District shall proceed with the Change Order or alter the Project so that a change in Work becomes unnecessary.

17.2 Architect Authority

The Architect will have authority to order minor changes in the Work not involving any adjustment in the Contract Price, or an extension of the Contract Time, or a change that is inconsistent with the intent of the Contract Documents. These changes shall be effected by written Change Order, Construction Change Directive, by Architect's response(s) to RFI(s), or by Architect's Supplemental Instructions ("ASI").

17.3 Change Orders

17.3.1 A Change Order is a written instrument prepared and issued by the District and/or the Architect and signed by the District (as authorized by the District's Governing Board), the Contractor, the Architect, and approved by the Project Inspector (if necessary) and DSA (if necessary), stating their agreement regarding all of the following:

17.3.1.1 A description of a change in the Work;

17.3.1.2 The amount of the adjustment in the Contract Price, if any; and

17.3.1.3 The extent of the adjustment in the Contract Time, if any.

17.4 Construction Change Directives

17.4.1 A Construction Change Directive is a written order prepared and issued by the District, the Construction Manager, and/or the Architect and signed by the District and the Architect, directing a change in the Work. The District may, as provided by law, by Construction Change Directive and without invalidating the Contract, order changes in the Work consisting of additions, deletions, or other revisions. The adjustment to the Contract Price or Time, if any, is subject to the provisions of this section regarding Changes in the Work. If all or a portion of the Project is being funded by funds requiring approval by the State Allocation Board ("SAB"), these revisions may be subject to compensation once approval of same is received and funded by the SAB, and funds are released by the Office of Public School Construction ("OPSC"). Any dispute as to the adjustment in the Contract Price, if any, of the Construction Change Directive or timing of payment shall be resolved pursuant to the Payment and Claims and Disputes provisions herein.

17.4.2 The District may issue a Construction Change Directive in the absence of agreement on the terms of a Change Order.

17.5 Force Account Directives

17.5.1 When work, for which a definite price has not been agreed upon in advance, is to be paid for on a force account basis, all direct costs necessarily incurred and paid by the Contractor for labor, material, and equipment used in the performance of that Work, shall be subject to the approval of the District and compensation will be determined as set forth herein.

17.5.2 The District will issue a Force Account Directive to proceed with the Work on a force account basis, and a not-to-exceed budget will be established by the District.

17.5.3 All requirements regarding direct cost for labor, labor burden, material, equipment, and markups on direct costs for overhead and profit described in this section shall apply to Force Account Directives. However, the District will only pay for actual costs verified in the field by the District or its authorized representative(s) on a daily basis.

17.5.4 The Contractor shall be responsible for all cost related to the administration of Force Account Directive. The markup for overhead and profit for Contractor modifications shall be full compensation to the Contractor to administer Force Account Directive, and Contractor shall not be entitled to separately recover additional amounts for overhead and/or profit.

17.5.5 The Contractor shall notify the District or its authorized representative(s) at least twenty-four (24) hours prior to proceeding with any of the force account work. Furthermore, the Contractor shall notify the District when it has consumed eighty percent (80%) of the budget, and shall not exceed the budget unless specifically authorized in writing by the District. The Contractor will not be compensated for force account work in the event that the Contractor fails to timely notify the District regarding the commencement of force account work, or exceeding the force account budget.

17.5.6 The Contractor shall diligently proceed with the work, and on a daily basis, submit a daily force account report using Document 00 63 47, "Daily Force Account Report," no later than 5:00 p.m. each day. The report shall contain a detailed itemization of the daily labor, material, and equipment used on the force account work only. The names of the individuals performing the force account work shall be included on the daily force account reports. The type and model of equipment shall be identified and listed. The District will review the information contained in the reports, and sign the reports no later than the next work day, and return a copy of the report to the Contractor for their records. The District will not sign, nor will the Contractor receive compensation for work the District cannot verify. The Contractor will provide a weekly force account summary indicating the status of each Force Account Directive in terms of percent complete of the not-to-exceed budget and the estimated percent complete of the work.

17.5.7 In the event the Contractor and the District reach a written agreement on a set cost for the work while the work is proceeding based on a Force Account

Directive, the Contractor's signed daily force account reports shall be discontinued and all previously signed reports shall be invalid.

17.6 Price Request

17.6.1 Definition of Price Request

A Price Request ("PR") is a written request prepared by the Architect requesting the Contractor to submit to the District and the Architect an estimate of the effect of a proposed change in the Work on the Contract Price and the Contract Time.

17.6.2 Scope of Price Request

A Price Request shall contain adequate information, including any necessary Drawings and Specifications, to enable Contractor to provide the cost breakdowns required herein. The Contractor shall not be entitled to any additional compensation for preparing a response to a Price Request, whether ultimately accepted or not.

17.7 Proposed Change Order

17.7.1 Definition of Proposed Change Order

A Proposed Change Order ("PCO") is a written request prepared by the Contractor requesting that the District and the Architect issue a Change Order based upon a proposed change to the Work.

17.7.2 Changes in Contract Price

A PCO shall include breakdowns and backup documentation pursuant to the revisions herein and sufficient, in the District's judgment, to validate any change in Contract Price. In no case shall Contractor or any of its Subcontractors be permitted to reserve rights for additional compensation for Change Order Work.

17.7.3 Changes in Time

A PCO shall also include any changes in time required to complete the Project. Any additional time requested shall not be the number of days to make the proposed change, but must be based upon the impact to the Construction Schedule as defined in the Contract Documents. The Contractor shall justify the proposed change in time by submittal of a schedule analysis that accurately shows the impact of the change on the critical path of the Construction Schedule ("Time Impact Analysis"). If Contractor fails to request a time extension in a PCO, including the Time Impact Analysis then the Contractor is thereafter precluded from requesting, and waives any right to request, additional time and/or claim a delay. In no case shall Contractor or any of its Subcontractors be permitted to reserve rights for additional time for Change Order Work. A PCO that leaves the amount of time requested blank, or states that such time requested is "to be determined", is not permitted and shall also constitute a waiver of any right to request additional time and/or claim a delay.

17.7.4 Unknown and/or Unforeseen Conditions

If there is an Allowance, then Contractor must submit a Request for Allowance Expenditure Directive, including supporting documentation as described below, to receive authorization for the release of funds from the Allowance. Allowance Expenditure Directives shall be based on Contractor's costs, without overhead and profit, for products, delivery, installation, labor, insurance, payroll, taxes, bonding and equipment rental will be included in Allowance Expenditure Directive authorizing expenditure of funds from this Allowance. No overhead and profit shall be added to the Allowance Expenditure Directive. If cost of the unforeseen condition(s) exceed the Allowance, Contractor must submit a PCO for amounts in excess of the Allowance requesting an increase in Contract Price and/or Contract Time that is based at least partially on Contractor's assertion that Contractor has encountered unknown and/or unforeseen condition(s) on the Project, then Contractor shall base the PCO on provable information that, beyond a reasonable doubt and to the District's satisfaction, demonstrates that the unknown and/or unforeseen condition(s) were actually unknown and/or unforeseen and that the condition(s) were reasonably unknown and/or unforeseen. If not, the District shall deny the PCO as unsubstantiated, and the Contractor shall complete the Project without any increase in Contract Price and/or Contract Time based on that PCO.

17.7.5 Time to Submit Proposed Change Order

Contractor shall submit its PCO within five (5) working days of the date Contractor discovers, or reasonably should have discovered, the circumstances giving rise to the PCO, unless additional time to submit a PCO is granted in writing by the District. Time is of the essence in Contractor's submission of PCOs so that the District can promptly investigate the basis for the PCO. Accordingly, if Contractor fails to submit its PCO within this timeframe, Contractor waives, releases, and discharges any right to assert or claim any entitlement to an adjustment of the Contract Price and/or Time based on circumstances giving rise to the PCO

17.7.6 Proposed Change Order Certification

In submitting a PCO, Contractor certifies and affirms that the cost and/or time request is submitted in good faith, that the cost and/or time request is accurate and in accordance with the provisions of the Contract Documents, and the Contractor submits the cost and/or request for extension of time recognizing the significant civil penalties and treble damages which follow from making a false claim or presenting a false claim under Government Code section 12650 et seq.

It is expressly understood that the value of the extra Work or changes expressly includes any and all of the Contractor's costs and expenses, direct and indirect, resulting from additional time required on the Project or resulting from delay to the Project including, without limitation, cumulative impacts. Contractor is not entitled to separately recover amounts for overhead or other indirect costs. Any costs, expenses, damages, or time extensions not included are deemed waived.

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17.8 Format for Proposed Change Order

17.8.1 The following format shall be used as applicable by the District and the Contractor (e.g. Change Orders, PCO's) to communicate proposed additions and deductions to the Contract, supported by attached documentation. Any spaces left blank will be deemed no change to cost or time.

	WORK PERFORMED OTHER THAN BY CONTRACTOR	**ADD**	**DEDUCT**
(a)	**Material** (attach suppliers' invoice or itemized quantity and unit cost plus sales tax)		
(b)	**Add Labor** (attach itemized hours and rates, fully Burdened, and specify the hourly rate for each additional labor burden, for example, payroll taxes, fringe benefits, etc.)		
(c)	**Add Equipment** (attach suppliers' invoice)		
(d)	**Subtotal**		
(e)	**Add overhead and profit for any and all tiers of Subcontractor**, the total not to exceed ten percent (10%) of Item (d)		
(f)	**Subtotal**		
(g)	**Add General Conditions Cost** (if Time is Compensable) (attach supporting documentation)		
(h)	**Subtotal**		
(i)	**Add Overhead and Profit for Contractor**, not to exceed five percent (5%) of Item (h)		
(j)	**Subtotal**		
(k)	**Add Bond and Insurance**, not to exceed two percent (2%) of Item (j)		
(l)	**TOTAL**		
(m)	**Time** (zero unless indicated; "TBD" not permitted)	**___ Calendar Days**	

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	WORK PERFORMED BY CONTRACTOR	**ADD**	**DEDUCT**
(a)	**Material** (attach itemized quantity and unit cost plus sales tax)		
(b)	**Add Labor** (attach itemized hours and rates, fully Burdened, and specify the hourly rate for each additional labor burden, for example, payroll taxes, fringe benefits, etc.)		
(c)	**Add Equipment** (attach suppliers' invoice)		
(d)	**Add General Conditions Cost** (if Time is Compensable) (attach supporting documentation)		
(e)	**Subtotal**		
(f)	**Add Overhead and Profit for Contractor**, not to exceed fifteen percent (15%) of Item (e)		
(g)	**Subtotal**		
(h)	**Add Bond and Insurance**, not to exceed two percent (2%) of Item (g)		
(i)	**TOTAL**		
(j)	**Time** (zero unless indicated; "TBD" not permitted)	**___ Calendar Days**	

17.8.2 Labor. Contractor shall be compensated for the costs of labor actually and directly utilized in the performance of the Work. Such labor costs shall be the actual cost, use of any formulas (e.g., labor factors) is not allowed, not to exceed prevailing wage rates in the locality of the Site and shall be in the labor classification(s) necessary for the performance of the Work, fully Burdened. Labor costs shall exclude costs incurred by the Contractor in preparing estimate(s) of the costs of the change in the Work, in the maintenance of records relating to the costs of the change in the Work, coordination and assembly of materials and information relating to the change in the Work or performance thereof, or the supervision and other overhead and general conditions costs associated with the change in the Work or performance thereof, including but not limited to the cost for the job superintendent. If applicable, District will pay Contractor the reasonable costs for room and board, supported with appropriate backup documentation, without markup for profit or overhead as provided by U.S. General Services Administration per diem rates for California lodging, meals and incidentals, https://www.gsa.gov/travel/plan-book/per-diem-rates/per-diem-rates-lookup.

17.8.3 Materials. Contractor shall be compensated for the costs of materials necessarily and actually used or consumed in connection with the performance of the change in the Work. Costs of materials may include reasonable costs of transportation from a source closest to the Site of the Work and delivery to the Site. If discounts by material suppliers are available for materials necessarily used in the performance of the change in the Work, they shall be credited to the District. If materials necessarily used in the performance of the change in the Work are obtained from a supplier or source owned in whole or in part by the Contractor, compensation therefor shall not exceed the current wholesale price for such materials. If, in the reasonable opinion of the District, the costs asserted by the Contractor for materials in connection with any change in the Work are excessive, or if the Contractor fails to provide satisfactory evidence of the actual costs of such materials from its supplier or vendor of the same, the costs of such materials and the District's obligation to pay for the same shall be limited to the then lowest wholesale

price at which similar materials are available in the quantities required to perform the change in the Work. The District may elect to furnish materials for the change in the Work, in which event the Contractor shall not be compensated for the costs of furnishing such materials or any mark-up thereon.

17.8.4 Equipment. As a precondition for the District's duty to pay for Equipment rental or loading and transportation, Contractor shall provide satisfactory evidence of the actual costs of Equipment from the supplier, vendor or rental agency of same. Contractor shall be compensated for the actual cost of the necessary and direct use of Equipment in the performance of the change in the Work. Use of such Equipment in the performance of the change in the Work shall be compensated in increments of fifteen (15) minutes. Rental time for Equipment moved by its own power shall include time required to move such Equipment to the site of the Work from the nearest available rental source of the same. If Equipment is not moved to the Site by its own power, Contractor will be compensated for the loading and transportation costs in lieu of rental time. The foregoing notwithstanding, neither moving time or loading and transportation time shall be allowed if the Equipment is used for performance of any portion of the Work other than the change in the Work. Unless prior approval in writing is obtained by the Contractor from the Architect, the Project Inspector and the District, no costs or compensation shall be allowed for time while Construction Equipment is inoperative, idle or on standby, for any reason. Contractor shall not be entitled to an allowance or any other compensation for Equipment or tools used in the performance of change in the Work where such Equipment or tools have a replacement value of $500.00 or less. Equipment costs claimed by the Contractor in connection with the performance of any Work shall not exceed rental rates established by distributors or construction equipment rental agencies in the locality of the Site; any costs asserted which exceed such rental rates shall not be allowed or paid. Unless otherwise specifically approved in writing by the Architect, the Project Inspector and the District, the allowable rate for the use of Equipment in connection with the Work shall constitute full compensation to the Contractor for the cost of rental, fuel, power, oil, lubrication, supplies, necessary attachments, repairs or maintenance of any kind, depreciation, storage, insurance, labor (exclusive of labor costs of the Equipment operator), and any and all other costs incurred by the Contractor incidental to the use of such Equipment.

17.8.5 General Conditions Cost. The phrase "General Conditions Cost" shall mean, other than expressly limited or excluded herein, the costs of Contractor during the construction phase, including but not limited to: payroll costs for project manager for Work conducted at the Site, payroll costs for the superintendent and full-time general foremen, workers not included as direct labor costs engaged in support functions (e.g., loading/unloading, clean-up), costs of offices and temporary facilities including office materials, office supplies, office equipment, minor expenses, utilities, fuel, sanitary facilities and telephone services at the Site, costs of consultants not in the direct employ of Contractor or Subcontractors, and fees for permits and licenses.

17.8.6 Overhead and Profit. The phrase "Overhead and Profit" shall include field and office supervisors and assistants, watchperson, use of small tools, consumable, insurance other than construction bonds and insurance required herein, general conditions costs and home office expenses.

17.9 Change Order Certification

17.9.1 All Change Orders and PCOs include the following certification by the Contractor, either in the form specifically or incorporated by this reference:

17.9.1.1 The undersigned Contractor approves the foregoing as to the changes, if any, to the Contract Price specified for each item, and as to the extension of time allowed, if any, for completion of the entire Work as stated herein, and agrees to furnish all labor, materials, and service, and perform all work necessary to complete any additional work specified for the consideration stated herein. Submission of sums which have no basis in fact or which Contractor knows are false are at the sole risk of Contractor and may be a violation of the False Claims Act set forth under Government Code section 12650 et seq. It is understood that the changes herein to the Contract shall only be effective when approved by the governing board of the District.

17.9.1.2 It is expressly understood that the value of the extra Work or changes expressly includes any and all of the Contractor's costs and expenses, direct and indirect, resulting from additional time required on the Project or resulting from delay to the Project including, without limitation, cumulative impacts. Contractor is not entitled to separately recover amounts for overhead or other indirect costs. Any costs, expenses, damages, or time extensions not included are deemed waived.

17.9.2 Accord and Satisfaction: Contractor's execution of any Change Order shall constitute a full accord and satisfaction, and release, of all Contractor (and if applicable, Subcontractor) claims for additional time, money or other relief arising from or relating to the subject matter of the change including, without limitation, impacts of all types, cumulative impacts, inefficiency, overtime, delay and any other type of claim.

17.10 Determination of Change Order Cost

17.10.1 The amount of the increase or decrease in the Contract Price from a Change Order, if any, shall be determined in one or more of the following ways as applicable to a specific situation and at the District's discretion:

17.10.1.1 District acceptance of a PCO;

17.10.1.2 By unit prices contained in Contractor's original bid;

17.10.1.3 By agreement between District and Contractor.

17.11 Deductive Change Orders

All deductive Change Order(s) must be prepared pursuant to the provisions herein. Where a portion of the Work is deleted from the Contract, the reasonable value of the deducted work less the value of work performed shall be considered the appropriate deduction. The value submitted on the Schedule of Values shall be used to calculate the credit amount unless the bid documentation is being held in escrow as part of the Contract Documents. Unit Prices, if any, may be used in District's discretion in calculating reasonable value. If Contractor offers a proposed amount for a deductive

Change Order(s), Contractor shall include a minimum of five percent (5%) total profit and overhead to be deducted with the amount of the work of the Change Order(s). If Subcontractor work is involved, Subcontractors shall also include a minimum of five percent (5%) profit and overhead to be deducted with the amount of its deducted work. Any deviation from this provision shall not be allowed.

17.12 Addition or Deletion of Alternate Bid Item(s)

If the Bid Form and Proposal includes proposal(s) for Alternate Bid Item(s), during Contractor's performance of the Work, the District may elect to add or delete any such Alternate Bid Item(s) if not included in the Contract at the time of award. If the District elects to add or delete Alternate Bid Item(s) after Contract award, the cost or credit for such Alternate Bid Item(s) shall be as set forth in the Bid Form and Proposal unless the parties agree to a different price and the Contract Time shall be adjusted by the number of days allocated in the Contract Documents. If days are not allocated in the Contract Documents, the Contract Time shall be equitably adjusted.

17.13 Discounts, Rebates, and Refunds

For purposes of determining the cost, if any, of any change, addition, or omission to the Work hereunder, all trade discounts, rebates, refunds, and all returns from the sale of surplus materials and equipment shall accrue and be credited to the Contractor, and the Contractor shall make provisions so that such discounts, rebates, refunds, and returns may be secured, and the amount thereof shall be allowed as a reduction of the Contractor's cost in determining the actual cost of construction for purposes of any change, addition, or omission in the Work as provided herein.

17.14 Accounting Records

With respect to portions of the Work performed by Change Orders and Construction Change Directives, the Contractor shall keep and maintain cost-accounting records satisfactory to the District, including, without limitation, Job Cost Reports as provided in these General Conditions, which shall be available to the District on the same terms as any other books and records the Contractor is required to maintain under the Contract Documents. Such records shall include without limitation hourly records for Labor and Equipment and itemized records of materials and Equipment used that day in connection with the performance of any Work. All records maintained hereunder shall be subject to inspection, review and/or reproduction by the District, the Architect or the Project Inspector upon request. In the event that the Contractor fails or refuses, for any reason, to maintain or make available for inspection, review and/or reproduction such records, the District's reasonable good faith determination of the extent of adjustment to the Contract Price shall be final, conclusive, dispositive and binding upon Contractor.

17.15 Notice Required

If the Contractor desires to make a claim for an increase in the Contract Price, or any extension in the Contract Time for completion, it shall notify the District pursuant to the provisions herein, including the Article on Claims and Disputes. No claim shall be considered unless made in accordance with this subparagraph. Contractor shall proceed to execute the Work even though the adjustment may not have been agreed upon. Any change in the Contract Price or extension of the Contract Time resulting from such claim shall be authorized by a Change Order.

17.16 Applicability to Subcontractors

Any requirements under this Article shall be equally applicable to Change Orders or Construction Change Directives issued to Subcontractors by the Contractor to the extent as required by the Contract Documents.

17.17 Alteration to Change Order Language

Contractor shall not alter Change Orders or reserve time in Change Orders. Change Orders altered in violation of this provision, if in conflict with the terms set forth herein, shall be construed in accordance with the terms set forth herein. Contractor shall execute finalized Change Orders and proceed under the provisions herein with proper notice.

17.18 Failure of Contractor to Execute Change Order

Contractor shall be in default of the Contract if Contractor fails to execute a Change Order when the Contractor agrees with the addition and/or deletion of the Work in that Change Order.

18. REQUEST FOR INFORMATION

18.1 Any Request for Information shall reference all applicable Contract Document(s), including Specification section(s), detail(s), page number(s), drawing number(s), and sheet number(s), etc. The Contractor shall make suggestions and interpretations of the issue raised by each Request for Information. A Request for Information cannot modify the Contract Price, Contract Time, or the Contract Documents. Upon request by the District, Contractor shall provide an electronic copy of the Request for Information in addition to the hard copy.

18.2 The Contractor shall be responsible for any costs incurred for professional services that District may deduct from any amounts owing to the Contractor, if a Request for Information requests an interpretation or decision of a matter where the information sought is equally available to the party making the request. District, at its sole discretion, shall deduct from and/or invoice Contractor for all the professional services arising herein.

19. PAYMENTS

19.1 Contract Price

The Contract Price is stated in the Agreement and, including authorized adjustments, is the total amount payable by the District to the Contractor for performance of the Work under the Contract Documents.

19.2 Applications for Progress Payments

19.2.1 Procedure for Applications for Progress Payments

19.2.1.1 Application for Progress Payment

19.2.1.1.1 Not before the fifth (5th) day of each calendar month during the progress of the Work, Contractor shall submit to the District and the Architect an itemized Application for Payment for operations completed in accordance with the Schedule of Values. Such application shall be notarized, if required, and supported by the following or each portion thereof unless waived by the District in writing:

19.2.1.1.1.1 The amount paid to the date of the Application to the Contractor, to all its Subcontractors, and all others furnishing labor, material, or equipment for its Contract;

19.2.1.1.1.2 The amount being requested under the Application for Payment by the Contractor on its own behalf and separately stating the amount requested on behalf of each of the Subcontractors and all others furnishing labor, material, and equipment under the Contract;

19.2.1.1.1.3 The balance that will be due to each of such entities after said payment is made;

19.2.1.1.1.4 A certification that the As-Builts and annotated Specifications are current;

19.2.1.1.1.5 Itemized breakdown of work done for the purpose of requesting partial payment;

19.2.1.1.1.6 An updated and acceptable construction schedule in conformance with the provisions herein;

19.2.1.1.1.7 The additions to and subtractions from the Contract Price and Contract Time;

19.2.1.1.1.8 A total of the retentions held;

19.2.1.1.1.9 Material invoices, evidence of equipment purchases, rentals, and other support and details of cost as the District may require from time to time;

19.2.1.1.1.10 The percentage of completion of the Contractor's Work by line item;

19.2.1.1.1.11 Schedule of Values updated from the preceding Application for Payment;

19.2.1.1.1.12 A duly completed and executed conditional waiver and release upon progress payment compliant with Civil Code section 8132

from the Contractor and each subcontractor of any tier and supplier to be paid from the current progress payment;

19.2.1.1.1.13 A duly completed and executed unconditional waiver and release upon progress payment compliant with Civil Code section 8134 from the Contractor and each subcontractor of any tier and supplier that was paid from the previous progress payment(s); and

19.2.1.1.1.14 A certification by the Contractor of the following:

The Contractor warrants title to all Work performed as of the date of this payment application has been completed in accordance with the Contract Documents for the Project. The Contractor further warrants that all amounts have been paid for work which previous Certificates for Payment were issued and payments received and all Work performed as of the date of this payment application is free and clear of liens, claims, security interests, or encumbrances in favor of the Contractor, Subcontractors, material and equipment suppliers, workers, or other persons or entities making a claim by reason of having provided labor, materials, and equipment relating to the Work, except those of which the District has been informed. Submission of sums which have no basis in fact or which Contractor knows are false are at the sole risk of Contractor and may be a violation of the False Claims Act set forth under Government Code section 12650 et seq.

19.2.1.1.1.15 The Contractor shall be subject to the False Claims Act set forth in Government Code section 12650 et seq. for information provided with any Application for Progress Payment.

19.2.1.1.1.16 All remaining certified payroll records ("CPR(s)") for each journeyman, apprentice, worker, or other employee employed by the Contractor and/or each Subcontractor in connection with the Work for the period of the Application for Payment. As indicated herein, the District shall not make any payment to Contractor until:

19.2.1.1.1.16.1 Contractor and/or its Subcontractor(s) provide electronic CPRs directly to the DIR on no less than every 30 days while Work is being performed and within 30 days after the final day of Work performed on the Project for any journeyman, apprentice, worker or other employee was employed in connection with the Work, or within ten (10) days of any request by the District or the DIR to the requesting entity, and

19.2.1.1.1.16.2 Any delay in Contractor and/or its Subcontractor(s) providing CPRs in a timely manner may directly delay the Contractor's payment.

19.2.1.1.2 Applications received after June 20th will not be paid until the second week of July and applications received after December 12th will not be paid until the first week of January.

19.2.2 Prerequisites for Progress Payments

19.2.2.1 First Payment Request: The following items, if applicable, must be completed before the District will accept and/or process the Contractor's first payment request:

19.2.2.1.1 Installation of the Project sign;

19.2.2.1.2 Installation of field office;

19.2.2.1.3 Installation of temporary facilities and fencing;

19.2.2.1.4 Schedule of Values;

19.2.2.1.5 Contractor's Construction Schedule;

19.2.2.1.6 Schedule of unit prices, if applicable;

19.2.2.1.7 Submittal Schedule;

19.2.2.1.8 Receipt by Architect of all submittals due as of the date of the payment application;

19.2.2.1.9 Copies of necessary permits;

19.2.2.1.10 Copies of authorizations and licenses from governing authorities;

19.2.2.1.11 Initial progress report;

19.2.2.1.12 Surveyor qualifications;

19.2.2.1.13 Written acceptance of District's survey of rough grading, if applicable;

19.2.2.1.14 List of all Subcontractors, with names, license numbers, telephone numbers, and Scope of Work;

19.2.2.1.15 All bonds and insurance endorsements; and

19.2.2.1.16 Resumes of Contractor's project manager, and if applicable, job site secretary, record documents recorder, and job site superintendent.

19.2.2.2 Second Payment Request: The District will not process the second payment request until and unless all submittals and Shop Drawings have been accepted for review by the Architect.

19.2.2.3 No Waiver of Criteria: Any payments made to Contractor where criteria set forth herein have not been met shall not constitute a waiver of said criteria by District. Instead, such payment shall be construed as a good faith effort by District to resolve differences so Contractor may pay its Subcontractors

and suppliers. Contractor agrees that failure to submit such items may constitute a breach of contract by Contractor and may subject Contractor to termination.

19.3 Progress Payments

19.3.1 District's Approval of Application for Payment

19.3.1.1 Upon receipt of an Application for Payment, The District shall act in accordance with both of the following:

19.3.1.1.1 Each Application for Payment shall be reviewed by the District as soon as practicable after receipt for the purpose of determining that the Application for Payment is a proper Application for Payment.

19.3.1.1.2 Any Application for Payment determined not to be a proper Application for Payment suitable for payment shall be returned to the Contractor as soon as practicable, but not later than seven (7) days, after receipt. An Application for Payment returned pursuant to this paragraph shall be accompanied by a document setting forth in writing the reasons why the Application for Payment is not proper. The number of days available to the District to make a payment without incurring interest pursuant to this section shall be reduced by the number of days by which the District exceeds this seven-day return requirement.

19.3.1.1.3 An Application for Payment shall be considered properly executed if funds are available for payment of the Application for Payment, and payment is not delayed due to an audit inquiry by the financial officer of the District.

19.3.1.2 The District's review of the Contractor's Application for Payment will be based on the District's and the Architect's observations at the Site and the data comprising the Application for Payment that the Work has progressed to the point indicated and that, to the best of the District's and the Architect's knowledge, information, and belief, the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to:

19.3.1.2.1 Observation of the Work for general conformance with the Contract Documents,

19.3.1.2.2 Results of subsequent tests and inspections,

19.3.1.2.3 Minor deviations from the Contract Documents correctable prior to completion, and

19.3.1.2.4 Specific qualifications expressed by the Architect.

19.3.1.3 District's approval of the certified Application for Payment shall be based on Contractor complying with all requirements for a fully complete and valid certified Application for Payment.

19.3.2 Payments to Contractor

19.3.2.1 Within thirty (30) days after approval of the Application for Payment, Contractor shall be paid a sum equal to ninety-five percent (95%) of the value of the Work performed (as verified by Architect and Inspector and certified by Contractor) up to the last day of the previous month, less the aggregate of previous payments and amount to be withheld. The value of the Work completed shall be Contractor's best estimate. No inaccuracy or error in said estimate shall operate to release the Contractor, or any Surety upon any bond, from damages arising from such Work, or from the District's right to enforce each and every provision of this Contract, and the District shall have the right subsequently to correct any error made in any estimate for payment.

19.3.2.2 The Contractor shall not be entitled to have any payment requests processed, or be entitled to have any payment made for Work performed, so long as any lawful or proper direction given by the District concerning the Work, or any portion thereof, remains incomplete.

19.3.2.3 If the District fails to make any progress payment within thirty (30) days after receipt of an undisputed and properly submitted Application for Payment from the Contractor, the District shall pay interest to the Contractor equivalent to the legal rate set forth in subdivision (a) of Section 685.010 of the Code of Civil Procedure.

19.3.3 No Waiver

No payment by District hereunder shall be interpreted so as to imply that District has inspected, approved, or accepted any part of the Work. Notwithstanding any payment, the District may enforce each and every provision of this Contract. The District may correct or require correction of any error subsequent to any payment.

19.4 Decisions to Withhold Payment

19.4.1 Reasons to Withhold Payment

The District may withhold payment in whole, or in part, to the extent reasonably necessary to protect the District if, in the District's opinion, the representations to the District required herein cannot be made. The District may withhold payment, in whole, or in part, to such extent as may be necessary to protect the District from loss because of, but not limited to any of the following:

19.4.1.1 Defective Work not remedied within **FORTY-EIGHT (48)** hours of written notice to Contractor.

19.4.1.2 Stop Payment Notices or other liens served upon the District as a result of the Contract. Contractor agrees that the District may withhold up to 125% of the amount claimed in the Stop Payment Notice to answer the claim and to provide for the District's reasonable cost of any litigation pursuant to the stop payment notice.

19.4.1.3 Written notice from payment and/or performance bond surety(ies) to withhold payment from Contractor.

19.4.1.4 Liquidated damages assessed against the Contractor.

19.4.1.5 The cost of completion of the Contract if there exists a reasonable doubt that the Work can be completed for the unpaid balance of the Contract Price or by the completion date.

19.4.1.6 Damage to the District or other contractor(s).

19.4.1.7 Unsatisfactory prosecution of the Work by the Contractor.

19.4.1.8 Failure to store and properly secure materials.

19.4.1.9 Failure of the Contractor to submit, on a timely basis, proper, sufficient, and acceptable documentation required by the Contract Documents, including, without limitation, a Construction Schedule, Schedule of Submittals, Schedule of Values, Monthly Progress Schedules, Shop Drawings, Product Data and samples, Proposed product lists, executed Change Orders, and/or verified reports.

19.4.1.10 Failure of the Contractor to maintain As-Builts.

19.4.1.11 Erroneous estimates by the Contractor of the value of the Work performed, or other false statements in an Application for Payment.

19.4.1.12 Unauthorized deviations from the Contract Documents.

19.4.1.13 Failure of the Contractor to prosecute the Work in a timely manner in compliance with the Construction Schedule, established progress schedules, and/or completion dates.

19.4.1.14 Failure to provide acceptable electronic certified payroll records, as required by the Labor Code, by these Contract Documents, or by written request; for each journeyman, apprentice, worker, or other employee employed by the Contractor and/or by each Subcontractor in connection with the Work for the period of the Application for Payment or if payroll records are delinquent or inadequate.

19.4.1.15 Failure to properly pay prevailing wages as required in Labor Code section 1720 et seq., failure to comply with any other Labor Code requirements, and/or failure to comply with labor compliance monitoring and enforcement by the DIR.

19.4.1.16 Allowing an unregistered subcontractor, as described in Labor Code section 1725.5, to engage in the performance of any work under this Contract.

19.4.1.17 Failure to comply with any applicable federal statutes and regulations regarding minimum wages, withholding, payrolls and basic records, apprentice and trainee employment requirements, equal employment opportunity requirements, Copeland Act requirements, Davis-Bacon Act and related requirements, Contract Work Hours and Safety Standards Act requirements, if applicable.

19.4.1.18 Failure to properly maintain or clean up the Site.

19.4.1.19 Failure to timely indemnify, defend, or hold harmless the District.

19.4.1.20 Any payments due to the District, including but not limited to payments for failed tests, utilities changes, or permits.

19.4.1.21 Failure to pay Subcontractor(s) or supplier(s) as required by law and by the Contract Documents.

19.4.1.22 Failure to pay any royalty, license or similar fees.

19.4.1.23 Contractor is otherwise in breach, default, or in substantial violation of any provision of this Contract.

19.4.1.24 Failure to perform any implementation and/or monitoring required by any SWPPP for the Project and/or the imposition of any penalties or fines therefore whether imposed on the District or Contractor.

19.4.2 Reallocation of Withheld Amounts

19.4.2.1 District may, in its discretion, apply any withheld amount to pay outstanding claims or obligations as defined herein. In so doing, District shall make such payments on behalf of Contractor. If any payment is so made by District, then that amount shall be considered a payment made under Contract by District to Contractor and District shall not be liable to Contractor for any payment made in good faith. These payments may be made without prior judicial determination of claim or obligation. District will render Contractor an accounting of funds disbursed on behalf of Contractor.

19.4.2.2 If Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents or fails to perform any provision thereof, District may, after **FORTY-EIGHT (48)** hours' written notice to the Contractor and, without prejudice to any other remedy, make good such deficiencies. The District shall adjust the total Contract Price by reducing the amount thereof by the cost of making good such deficiencies. If District deems it inexpedient to correct Work that is damaged, defective, or not done in accordance with Contract provisions, an equitable reduction in the Contract Price (of at least one hundred fifty percent (150%) of the estimated reasonable value of the nonconforming Work) shall be made therefor.

19.4.3 Payment After Cure

When Contractor removes the grounds for declining approval, payment shall be made for amounts withheld because of them. No interest shall be paid on any retainage or amounts withheld due to the failure of the Contractor to perform in accordance with the terms and conditions of the Contract Documents.

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19.5 Subcontractor Payments

19.5.1 Payments to Subcontractors

No later than seven (7) days after receipt, or pursuant to Business and Professions Code section 7108.5 and Public Contract Code section 7107, the Contractor shall pay to each Subcontractor, out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to its Sub-subcontractors in a similar manner.

19.5.2 No Obligation of District for Subcontractor Payment

The District shall have no obligation to pay, or to see to the payment of, money to a Subcontractor except as may otherwise be required by law.

19.5.3 Joint Checks

District shall have the right in its sole discretion, if necessary for the protection of the District, to issue joint checks made payable to the Contractor and Subcontractors and/or material or equipment suppliers. The joint check payees shall be responsible for the allocation and disbursement of funds included as part of any such joint payment. In no event shall any joint check payment be construed to create any contract between the District and a Subcontractor of any tier, or a material or equipment supplier, any obligation from the District to such Subcontractor or a material or equipment supplier, or rights in such Subcontractor or a material or equipment supplier against the District.

20. COMPLETION OF THE WORK

20.1 Completion

20.1.1 District will accept completion of Contract and have the Notice of Completion recorded when the entire Work shall have been completed to the satisfaction of District.

20.1.2 The Work may only be accepted as complete by action of the governing board of the District.

20.1.3 District, at its sole option, may accept completion of Contract and have the Notice of Completion recorded when the entire Work shall have been completed to the satisfaction of District, except for minor corrective items, as distinguished from incomplete items. If Contractor fails to complete all minor corrective items within fifteen (15) days after the date of the District's acceptance of completion, District shall withhold from the final payment one hundred fifty percent (150%) of an estimate of the amount sufficient to complete the corrective items, as determined by District, until the item(s) are completed.

20.1.4 At the end of the 15-day period, if there are any items remaining to be corrected, District may elect to proceed as provided herein related to adjustments to Contract Price, and/or District's right to perform the Work of the Contractor.

20.2 Close-Out/Certification Procedures

20.2.1 Punch List

The Contractor shall notify the Architect when Contractor considers the Work complete. Upon notification, Architect will prepare a list of minor items to be completed or corrected ("Punch List"). The Contractor and/or its Subcontractors shall proceed promptly to complete and correct items on the Punch List. Failure to include an item on Punch List does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

20.2.2 Close-Out/Certification Requirements

20.2.2.1 Utility Connections

Buildings shall be connected to water, gas, sewer, and electric services, complete and ready for use. Service connections shall be made and existing services reconnected.

20.2.2.2 Record Drawings and Record Specifications

20.2.2.2.1 Contractor shall provide exact Record Drawings of the Work ("As-Builts") and Record Specifications upon completion of the Project and as a condition precedent to approval of final payment.

20.2.2.2.2 Contractor shall obtain the Inspector's approval of the corrected prints and employ a competent draftsman to transfer the Record Drawings information to the most current version of AutoCAD that is, at that time, currently utilized for plan check submission by either the District, the Architect, OPSC, and/or DSA, and print a complete set of transparent sepias. When completed, Contractor shall deliver corrected sepias and diskette/CD/other

20.2.2.2.3 Contractor is liable and responsible for any and all inaccuracies in the Record Drawings and Record Specifications, even if inaccuracies become evident at a future date.

20.2.2.3 Construction Storm Water Permit, if applicable

Contractor shall submit to District all electronic or hard copy records required by the Construction Storm Water Permit, if applicable, within seven (7) days of Completion of the Project.

20.2.2.4 Maintenance Manuals: Contractor shall prepare all operation and maintenance manuals and date as indicated in the Specifications.

20.2.2.5 Source Programming: Contractor shall provide all source programming for all items in the Project.

20.2.2.6 Verified Reports: Contractor shall completely and accurately fill out and file forms DSA 6-C or DSA 152 (or current form), as appropriate. Refer to

section 4-336 and section 4-343 of Part 1, Title 24 of the California Code of Regulations.

20.3 Final Inspection

20.3.1 Contractor shall comply with Punch List procedures as provided herein, and maintain the presence of a Project Superintendent and Project Manager until the Punch List is complete to ensure proper and timely completion of the Punch List. Under no circumstances shall Contractor demobilize its forces prior to completion of the Punch List without District's prior written approval. Upon receipt of Contractor's written notice that all of the Punch List items have been fully completed and the Work is ready for final inspection and District acceptance, Architect and Project Inspector will inspect the Work and shall submit to Contractor and District a final inspection report noting the Work, if any, required in order to complete in accordance with the Contract Documents. Absent unusual circumstances, this report shall consist of the Punch List items not yet satisfactorily completed.

20.3.2 Upon Contractor's completion of all items on the Punch List and any other uncompleted portions of the Work, the Contractor shall notify the District and Architect, who shall again inspect such Work. If the Architect finds the Work complete and acceptable under the Contract Documents, the Architect will notify Contractor, who shall then jointly submit to the Architect and the District its final Application for Payment.

20.3.3 Final Inspection Requirements

20.3.3.1 Before calling for final inspection, Contractor shall determine that the following have been performed:

20.3.3.1.1 The Work has been completed.

20.3.3.1.2 All life safety items are completed and in working order.

20.3.3.1.3 Mechanical and electrical Work including, without limitation, security system, data, and fire alarm, are complete and tested, fixtures are in place, connected, and ready for tryout.

20.3.3.1.4 Electrical circuits scheduled in panels and disconnect switches labeled.

20.3.3.1.5 Painting and special finishes complete.

20.3.3.1.6 Doors complete with hardware, cleaned of protective film, relieved of sticking or binding, and in working order.

20.3.3.1.7 Tops and bottoms of doors sealed.

20.3.3.1.8 Floors waxed and polished as specified.

20.3.3.1.9 Broken glass replaced and glass cleaned.

20.3.3.1.10 Grounds cleared of Contractor's equipment, raked clean of debris, and trash removed from Site.

20.3.3.1.11 Work cleaned, free of stains, scratches, and other foreign matter, and damaged and broken material replaced.

20.3.3.1.12 Finished and decorative work shall have marks, dirt, and superfluous labels removed.

20.3.3.1.13 Final cleanup, as provided herein.

20.4 Costs of Multiple Inspections

More than two (2) requests of the District to make a final inspection shall be considered an additional service of District, Architect, Construction Manager, and/or Project Inspector, and all subsequent costs will be invoiced to Contractor and if funds are available, withheld from remaining payments.

20.5 Partial Occupancy or Use Prior to Completion

20.5.1 District's Rights to Occupancy

The District may occupy or use any completed or partially completed portion of the Work at any stage, and such occupancy shall not constitute the District's Final Acceptance of any part of the Work. Neither the District's Final Acceptance, the making of Final Payment, any provision in Contract Documents, nor the use or occupancy of the Work, in whole or in part, by District shall constitute acceptance of Work not in accordance with the Contract Documents nor relieve the Contractor or the Contractor's Performance Bond Surety from liability with respect to any warranties or responsibility for faulty or defective Work or materials, equipment and workmanship incorporated therein. In the event that the District occupies or uses any completed or partially completed portion of the Work, the Contractor shall remain responsible for payments, security, maintenance, heat, utilities, damage to the Work, insurance, the period for correction of the Work, and the commencement of warranties required by the Contract Documents unless the Contractor requests in writing, and the District agrees, to otherwise divide those responsibilities. Any dispute as to responsibilities shall be resolved pursuant to the Claims and Disputes provisions herein, with the added provision that during the dispute process, the District shall have the right to occupy or use any portion of the Work that it needs or desires to use.

20.5.2 Inspection Prior to Occupancy or Use

Immediately prior to partial occupancy or use, the District, the Contractor, and the Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

20.5.3 No Waiver

Unless otherwise agreed upon, partial or entire occupancy or use of a portion or portions of the Work shall not constitute beneficial occupancy or District's acceptance of the Work not complying with the requirements of the Contract Documents.

21. FINAL PAYMENT AND RETENTION

21.1 Final Payment

Upon receipt and approval of a valid and final Application for Payment, the Architect will issue a final Certificate of Payment. The District shall thereupon jointly inspect the Work and either accept the Work as complete or notify the Architect and the Contractor in writing of reasons why the Work is not complete. Upon District's acceptance of the Work of the Contractor as fully complete by the Governing Board of the District (that, absent unusual circumstances, will occur when the Punch List items have been satisfactorily completed), the District shall record a Notice of Completion with the County Recorder, and the Contractor shall, upon receipt of final payment from the District, pay the amount due Subcontractors.

21.2 Prerequisites for Final Payment

The following conditions must be fulfilled prior to Final Payment:

21.2.1 A full release of all Stop Payment Notices served in connection with the Work shall be submitted by Contractor.

21.2.2 A duly completed and executed conditional waiver and release upon final payment compliant with Civil Code section 8136, from the Contractor and each subcontractor of any tier and supplier to be paid from the final payment.

21.2.3 A duly completed and executed unconditional waiver and release upon progress payment compliant with Civil Code section 8134, from the Contractor and each subcontractor of any tier and supplier that was paid from the previous progress payments.

21.2.4 A duly completed and executed Document 00 65 19.26, "AGREEMENT AND RELEASE OF ANY AND ALL CLAIMS" from the Contractor.

21.2.5 The Contractor shall have made all corrections to the Work that are required to remedy any defects therein, to obtain compliance with the Contract Documents or any requirements of applicable codes and ordinances, or to fulfill any of the orders or directions of District required under the Contract Documents.

21.2.6 Each Subcontractor shall have delivered to the Contractor all written guarantees, warranties, applications, and bonds required by the Contract Documents for its portion of the Work.

21.2.7 Contractor must have completed all requirements set forth under "Close-Out/Certification Procedures," including, without limitation, submission of an approved set of complete Record Drawings.

21.2.8 Architect shall have issued its written approval that final payment can be made.

21.2.9 The Contractor shall have delivered to the District all manuals and materials required by the Contract Documents, which must be approved by the District.

21.2.10 The Contractor shall have completed final clean-up as provided herein.

21.3 Retention

21.3.1 The retention, less any amounts disputed by the District or that the District has the right to withhold pursuant to provisions herein, shall be paid:

21.3.1.1 After approval by the Architect of the Application and Certificate of Payment,

21.3.1.2 After the satisfaction of the conditions set forth herein, and

21.3.1.3 After forty-five (45) days after the recording of the Notice of Completion by District.

21.3.2 No interest shall be paid on any retention, or on any amounts withheld due to a failure of the Contractor to perform, in accordance with the terms and conditions of the Contract Documents, except as provided to the contrary in any Escrow Agreement between the District and the Contractor pursuant to Public Contract Code section 22300.

21.4 Substitution of Securities

The District will permit the substitution of securities in accordance with the provisions of Public Contract Code section 22300.

22. UNCOVERING OF WORK

If a portion of the Work is covered without Inspector or Architect approval or not in compliance with the Contract Documents, it must, if required in writing by the District, the Project Inspector, or the Architect, be uncovered for the Project Inspector's or the Architect's observation and be corrected, replaced, and/or recovered at the Contractor's expense without change in the Contract Price or Contract Time.

23. NONCONFORMING WORK AND CORRECTION OF WORK

23.1 Nonconforming Work

23.1.1 Contractor shall promptly remove from Premises all Work identified by District as failing to conform to the Contract Documents whether incorporated or not. Contractor shall promptly replace and re-execute its own Work to comply with the Contract Documents without additional expense to the District and shall bear the expense of making good all work of other contractors destroyed or damaged by any removal or replacement pursuant hereto and/or any delays to the District or other Contractors caused thereby.

23.1.2 If Contractor does not remove Work that District has identified as failing to conform to the Contract Documents within a reasonable time, not to exceed **FORTY-EIGHT (48)** hours, District may remove it and may store any material at Contractor's expense. If Contractor does not pay expense(s) of that removal within ten (10) days' time thereafter, District may, upon ten (10) days' written notice, sell any material at auction or at private sale and shall deduct all costs and expenses

incurred by the District and/or District may withhold those amounts from payment(s) to Contractor.

23.2 Correction of Work

23.2.1 Correction of Rejected Work

Pursuant to the notice provisions herein, the Contractor shall immediately correct the Work rejected by the District, the Architect, or the Project Inspector as failing to conform to the requirements of the Contract Documents, whether observed before or after Completion and whether or not fabricated, installed, or completed. The Contractor shall bear costs of correcting the rejected Work, including additional testing, inspections, and compensation for the Inspector's or the Architect's services and expenses made necessary thereby.

23.2.2 One-Year Warranty Corrections

If, within one (1) year after the date of Completion of the Work or a designated portion thereof, or after the date for commencement of warranties established hereunder, or by the terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the District to do so. This period of one (1) year shall be extended with respect to portions of the Work first performed after Completion by the period of time between Completion and the actual performance of the Work. This obligation hereunder shall survive District's acceptance of the Work under the Contract and termination of the Contract. The District shall give such notice promptly after discovery of the condition.

23.3 District's Right to Perform Work

23.3.1 If the Contractor should neglect to prosecute the Work properly or fail to perform any provisions of this contract, the District, after **FORTY-EIGHT (48)** hours written notice to the Contractor, may, without prejudice to any other remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.

23.3.2 If it is found at any time, before or after completion of the Work, that Contractor has varied from the Drawings and/or Specifications, including, but not limited to, variation in material, quality, form, or finish, or in the amount or value of the materials and labor used, District may require at its option:

23.3.2.1 That all such improper Work be removed, remade or replaced, and all work disturbed by these changes be made good by Contractor at no additional cost to the District;

23.3.2.2 That the District deduct from any amount due Contractor the sum of money equivalent to the difference in value between the work performed and that called for by the Drawings and Specifications; or

23.3.2.3 That the District exercise any other remedy it may have at law or under the Contract Documents, including but not limited to the District hiring its

own forces or another contractor to replace the Contractor's nonconforming Work, in which case the District shall either issue a deductive Change Order, a Construction Change Directive, or invoice the Contractor for the cost of that work. Contractor shall pay any invoices within thirty (30) days of receipt of same or District may withhold those amounts from payment(s) to Contractor.

24. TERMINATION AND SUSPENSION

24.1 District's Request for Assurances

If District at any time reasonably believes Contractor is or may be in default under this Contract, District may in its sole discretion notify Contractor of this fact and request written assurances from Contractor of performance of Work and a written plan from Contractor to remedy any potential default under the terms this Contract that the District may advise Contractor of in writing. Contractor shall, within ten (10) calendar days of District's request, deliver a written cure plan that meets the District's requirements in its request for assurances. Contractor's failure to provide such written assurances of performance and the required written plan, within ten (10) calendar days of request, will constitute a material breach of this Contract sufficient to justify termination for cause.

24.2 District's Right to Terminate Contractor for Cause

24.2.1 Grounds for Termination: The District, in its sole discretion, may terminate the Contract and/or terminate the Contractor's right to perform the work of the Contract based upon any of the following:

24.2.1.1 Contractor refuses or fails to execute the Work or any separable part thereof with sufficient diligence as will ensure its completion within the time specified or any extension thereof, or

24.2.1.2 Contractor fails to complete said Work within the time specified or any extension thereof, or

24.2.1.3 Contractor persistently fails or refuses to perform Work or provide material of sufficient quality as to be in compliance with Contract Documents; or

24.2.1.4 Contractor persistently refuses, or repeatedly fails, except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials to complete the Work in the time specified; or

24.2.1.5 Contractor fails to make prompt payment to Subcontractors, or for material, or for labor; or

24.2.1.6 Contractor persistently disregards laws, or ordinances, or instructions of District; or

24.2.1.7 Contractor fails to supply labor, including that of Subcontractors, that is sufficient to prosecute the Work or that can work in harmony with all other elements of labor employed or to be employed on the Work; or

24.2.1.8 Contractor or its Subcontractor(s) is/are otherwise in breach, default, or in substantial violation of any provision of this Contract, including but not limited to a lapse in licensing or registration.

24.2.2 Notification of Termination

24.2.2.1 Upon the occurrence at District's sole determination of any of the above conditions, District may, without prejudice to any other right or remedy, serve written notice upon Contractor and its Surety of District's termination of this Contract and/or the Contractor's right to perform the work of the Contract. This notice will contain the reasons for termination. Unless, within three (3) days after the service of the notice, any and all condition(s) shall cease, and any and all violation(s) shall cease, or arrangement satisfactory to District for the correction of the condition(s) and/or violation(s) be made, this Contract and/or the Contractor's right to perform the Work of the Contract shall cease and terminate. Upon termination, Contractor shall not be entitled to receive any further payment until the entire Work is finished.

24.2.2.2 Upon Termination, District may immediately serve written notice of tender upon Surety whereby Surety shall have the right to take over and perform this Contract only if Surety:

24.2.2.2.1 Within three (3) days after service upon it of the notice of tender, gives District written notice of Surety's intention to take over and perform this Contract; and

24.2.2.2.2 Commences performance of this Contract within three (3) days from date of serving of its notice to District.

24.2.2.3 Surety shall not utilize Contractor in completing the Project if the District notifies Surety of the District's objection to Contractor's further participation in the completion of the Project. Surety expressly agrees that any contractor which Surety proposes to fulfill Surety's obligations is subject to District's approval. District's approval shall not be unreasonably withheld, conditioned or delayed.

24.2.2.4 If Surety fails to notify District or begin performance as indicated herein, District may take over the Work and execute the Work to completion by any method it may deem advisable at the expense of Contractor and/or its Surety. Contractor and/or its Surety shall be liable to District for any excess cost or other damages the District incurs thereby. Time is of the essence in this Contract. If the District takes over the Work as herein provided, District may, without liability for so doing, take possession of and utilize in completing the Work such materials, appliances, plan, and other property belonging to Contractor as may be on the Site of the Work, in bonded storage, or previously paid for.

24.3 Termination of Contractor for Convenience

24.3.1 District in its sole discretion may terminate the Contract in whole or in part upon three (3) days' written notice to the Contractor.

24.3.2 Upon notice, Contractor shall:

24.3.2.1 Cease operations as directed by the District in the notice;

24.3.2.2 Take necessary actions for the protection and preservation of the Work as soon as possible; and

24.3.2.3 Terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

24.3.3 Within 30 days of the notice, Contractor submit to the District a payment application for the actual cost for labor, materials, and services performed, including all Contractor's and Subcontractor(s)' mobilization and/or demobilization costs, that is unpaid. Contractor shall have no claims against the District except for the actual cost for labor, materials, and services performed that adequately documented through timesheets, invoices, receipts, or otherwise. District shall pay all undisputed invoice(s) for work performed until the notice of termination.

24.3.4 Under a termination for convenience, the District retains the right to all the options available to the District if there is a termination for cause.

24.4 Effect of Termination

24.4.1 Contractor shall, only if ordered to do so by the District, immediately remove from the Site all or any materials and personal property belonging to Contractor that have not been incorporated in the construction of the Work, or which are not in place in the Work. The District retains the right, but not the obligation, to keep and use any materials and personal property belonging to Contractor that have not been incorporated in the construction of the Work, or which are not in place in the Work. The Contractor and its Surety shall be liable upon the Performance Bond for all damages caused to the District by reason of the Contractor's failure to complete the Contract.

24.4.2 In the event that the District shall perform any portion of, or the whole of the Work, pursuant to the provisions of the General Conditions, the District shall not be liable nor account to the Contractor in any way for the time within which, or the manner in which, the Work is performed by the District or for any changes the District may make in the Work or for the money expended by the District in satisfying claims and/or suits and/or other obligations in connection with the Work.

24.4.3 In the event termination for cause is determined to have not been for cause, the termination shall be deemed to have been a termination for convenience effective as of the same date as the purported termination for cause.

24.4.4 In the event that the Contract is terminated for any reason, no allowances or compensation will be granted for the loss of any anticipated profit by the Contractor or any impact or impairment of Contractor's bonding capacity.

24.4.5 If the expense to the District to finish the Work exceeds the unpaid Contract Price, Contractor and Surety shall pay difference to District within twenty-one (21) days of District's request.

24.4.6 The District shall have the right (but shall have no obligation) to assume and/or assign to a general contractor or construction manager or other third party who is qualified and has sufficient resources to complete the Work, the rights of the Contractor under its subcontracts with any or all Subcontractors. In the event of an assumption or assignment by the District, no Subcontractor shall have any claim against the District or third party for Work performed by Subcontractor or other matters arising prior to termination of the Contract. The District or any third party, as the case may be, shall be liable only for obligations to the Subcontractor arising after assumption or assignment. Should the District so elect, the Contractor shall execute and deliver all documents and take all steps, including the legal assignment of its contractual rights, as the District may require, for the purpose of fully vesting in the District the rights and benefits of its Subcontractor under Subcontracts or other obligations or commitments. All payments due the Contractor hereunder shall be subject to a right of offset by the District for expenses and damages suffered by the District as a result of any default, acts, or omissions of the Contractor. Contractor must include this assignment provision in all of its contracts with its Subcontractors.

24.4.7 The foregoing provisions are in addition to and not in limitation of any other rights or remedies available to District.

24.5 Emergency Termination of Public Contracts Act of 1949

24.5.1 This Contract is subject to termination as provided by sections 4410 and 4411 of the Government Code of the State of California, being a portion of the Emergency Termination of Public Contracts Act of 1949.

24.5.1.1 Section 4410 of the Government Code states:

> In the event a national emergency occurs, and public work, being performed by contract, is stopped, directly or indirectly, because of the freezing or diversion of materials, equipment or labor, as the result of an order or a proclamation of the President of the United States, or of an order of any federal authority, and the circumstances or conditions are such that it is impracticable within a reasonable time to proceed with a substantial portion of the work, then the public agency and the contractor may, by written agreement, terminate said contract.

24.5.1.2 Section 4411 of the Government Code states:

> Such an agreement shall include the terms and conditions of the termination of the contract and provision for the payment of compensation or money, if any, which either party shall pay to the other or any other person, under the facts and circumstances in the case.

24.5.2 Compensation to the Contractor shall be determined at the sole discretion of District on the basis of the reasonable value of the Work done, including preparatory work. As an exception to the foregoing and at the District's discretion, in the case of any fully completed separate item or portion of the Work for which there is a separate previously submitted unit price or item on the accepted schedule of values, that price shall control. The District, at its sole discretion, may adopt the Contract Price as the reasonable value of the work done or any portion thereof.

24.6 Suspension of Work

24.6.1 District in its sole discretion may suspend, delay or interrupt the Work in whole or in part for such period of time as the District may determine upon three (3) days written notice to the Contractor.

24.6.1.1 An adjustment may be made for changes in the cost of performance of the Work caused by any such suspension, delay or interruption. No adjustment shall be made to the extent:

24.6.1.1.1 That performance is, was or would have been so suspended, delayed or interrupted by another cause for which Contractor is responsible; or

24.6.1.1.2 That an equitable adjustment is made or denied under another provision of the Contract; or

24.6.1.1.3 That the suspension of Work was the direct or indirect result of Contractor's failure to perform any of its obligations hereunder.

24.6.1.2 Any adjustments in cost of performance may have a fixed or percentage fee as provided in the section on Format for Proposed Change Order herein. This amount shall be full compensation for all Contractor's and its Subcontractor(s)' changes in the cost of performance of the Contract caused by any such suspension, delay or interruption.

25. CLAIMS PROCESS

25.1 Obligation to File Claims for Disputed Work

25.1.1 Should Contractor otherwise seek extra time or compensation for any reason whatsoever ("Disputed Work"), then Contractor shall first follow procedures set forth in the Contract Documents including, without limitation, Articles 15, 16 and 17, all of which are conditions precedent to submitting a Claim pursuant to Article 25. A Notice of Delay or Proposed Change Order are less formal procedures that proceed the formal claim and do not constitute a Claim. A Claim also does not include correspondence, RFIs, vouchers, invoices, progress payment applications, or other routine or authorized form of requests for progress payments in compliance with the Contract. If a dispute remains, then Contractor shall give written notice to District that expressly invokes this Article 25 within the time limits set forth herein.

25.1.2 Contractor's sole and exclusive remedy for Disputed Work is to file a written claim setting forth Contractor's position as required herein within the time limits set forth herein.

25.2 Duty to Perform during during Claims Process

Contractor and its subcontractors shall continue to perform its Work under the Contract including the disputed work, and shall not cause a delay of the Work during any dispute, claim, negotiation, mediation, or arbitration proceeding, except by written agreement by the District.

25.3 Definition of a Claim

25.3.1 Pursuant to Public Contract Code section 9204, the term "Claim" means a separate demand by the Contractor, sent by registered mail or certified mail with return receipt requested, for one or more of the following:

25.3.1.1 A time extension, including without limitation, for relief of damages or penalties for delay assessed by the District under the Contract;

25.3.1.2 Payment by the District of money or damages arising from work done by, or on behalf of, the Contractor pursuant to the Contract and payment of which is not otherwise expressly provided for or to which Contractor is not otherwise entitled to; or

25.3.1.3 An amount of payment disputed by the District.

25.4 Claims Presentation

25.4.1 Form and Contents of Claim

25.4.1.1 If Contractor intends to submit a Claim for an increase in the Contract Price and/or Contract Time for any reason including, without limitation, the acts of District or its agents, Contractor shall, within thirty (30) days after the event giving rise to the Claim, give notice of the Claim ("Notice of Potential Claim") in writing specifically identifying Contractor is invoking this Article 25 Claims Presentation. The Notice of Potential Claim shall provide Contractor's preliminary request for an adjustment to the Contract Price and/or Contract Time, with a description of the grounds therefore.

25.4.1.2 Within thirty (30) days after serving the written Notice of Potential Claim, Contractor shall provide a Claim including an itemized statement of the details and amounts of its Claim for any increase in the Contract Price of Contract Time as provided below, including a Time Impact Analysis and any and all other documentation substantiating Contractor's claimed damages:

25.4.1.2.1 The issues, events, conditions, circumstances and/or causes giving rise to the dispute, and shall show, in detail, the cause and effect of same;

25.4.1.2.2 Citation to provisions in the Contract Documents, statute sections, and/or case law entitling Contractor to an increase in the Contract Price or Contract Time;

25.4.1.2.3 The pertinent dates and/or durations and actual and/or anticipated effects on the Contract Price, Contract Schedule milestones and/or Contract Time adjustments;

25.4.1.2.4 The Time Impact Analysis of all time delays that shows actual time impact on the critical path; and

25.4.1.2.5 The line-item costs for labor, material, and/or equipment, if applicable, for all cost impacts priced like a change order according to Article

17 and must be updated monthly as to cost and entitlement if a continuing claim.

25.4.1.3 The Claim shall include the following certification by the Contractor:

25.4.1.3.1 The undersigned Contractor certifies under penalty of perjury that the attached dispute is made in good faith; that the supporting data is accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the adjustment for which Contractor believes the District is liable; and that I am duly authorized to certify the dispute on behalf of the Contractor.

25.4.1.3.2 Furthermore, Contractor understands that the value of the attached dispute expressly includes any and all of the Contractor's costs and expenses, direct and indirect, resulting from the Work performed on the Project, additional time required on the Project and/or resulting from delay to the Project including, without limitation, cumulative impacts. Contractor may not separately recover for overhead or other indirect costs. Any costs, expenses, damages, or time extensions not included are deemed waived.

25.4.2 Contractor shall bear all costs incurred in the preparation and submission of a Claim.

25.4.3 Failure to timely submit a Claim and the requisite supporting documentation shall constitute a waiver of Contractor's claim(s) against the District and Contractor's Claims for compensation or an extension of time shall be deemed waived, released, and discharged as to any entitlement for adjustment to the Contract Price and. or Contract Time.

25.5 Claim Resolution pursuant to Public Contract Code section 9204

Contractor may request to waive the claims procedure under Public Contract Code section 9204 and proceed directly to the commencement of a civil action or binding arbitration. If Contractor chooses to proceed, Contractor shall comply with the following steps.

25.5.1 STEP 1:

25.5.1.1 Upon receipt of a Claim by registered or certified mail, return receipt requested, including the documents necessary to substantiate it, the District shall conduct a reasonable review of the Claim and, within a period not to exceed 45 days, shall provide the Contractor a written statement identifying what portion of the Claim is disputed and what portion is undisputed. Upon receipt of a Claim, the District and Contractor may, by mutual agreement, extend the time period to provide a written statement. If the District needs approval from its governing body to provide the Contractor a written statement identifying the disputed portion and the undisputed portion of the Claim, and the governing body does not meet within the 45 days or within the mutually agreed to extension of time following receipt of Claim sent by registered mail or certified mail, return receipt requested, the District shall have up to three (3) days following the next duly publicly noticed meeting of the governing body after the 45-day period, or

extension, expires to provide Contractor a written statement identifying the disputed portion and the undisputed portion.

25.5.1.1.1 Any payment due on an undisputed portion of the Claim shall be processed and made within 60 days after the District issues its written statement. Amounts not paid in a timely manner as required by this section, section 25.4, shall bear interest at seven percent (7%) per annum.

25.5.1.2 Upon receipt of a Claim, the parties may mutually agree to waive, in writing, mediation and proceed directly to the commencement of a civil action or binding arbitration, as applicable. In this instance, District and Contractor must comply with the sections below regarding Public Contract Code section 20104 et seq. and Government Code Claim Act Claims.

25.5.1.3 If the District fails to issue a written statement, or to otherwise meet the time requirements of this section, this shall result in the Claim being deemed rejected in its entirety. A claim that is denied by reason of the District's failure to have responded to a claim, or its failure to otherwise meet the time requirements of this section, shall not constitute an adverse finding with regard to the merits of the claim or the responsibility or qualifications of Contractor.

25.5.2 STEP 2:

25.5.2.1 If Contractor disputes the District's written response, or if the District fails to respond to a Claim within the time prescribed, Contractor may demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, the District shall schedule a meet and confer conference within 30 days for settlement of the dispute. Within 10 business days following the conclusion of the meet and confer conference, if the claim or any portion of the claim remains in dispute, the District shall provide the Contractor a written statement identifying the portion of the claim that remains in dispute and the portion that is undisputed.

25.5.2.1.1.1 Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the District issues its written statement. Amounts not paid in a timely manner as required by this section, section 25.4, shall bear interest at seven percent (7%) per annum.

25.5.3 STEP 3:

25.5.3.1 Any disputed portion of the claim, as identified by Contractor in writing, shall be submitted to nonbinding mediation, with the District and Contractor sharing the associated costs equally. The District and Contractor shall mutually agree to a mediator within 10 business days after the disputed portion of the claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is

unsuccessful, the parts of the claim remaining in dispute shall be subject to applicable procedures outside this section.

25.5.3.1.1 For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section.

25.5.3.2 Unless otherwise agreed to by the District and Contractor in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Public Contract Code section 20104.4 to mediate after litigation has been commenced.

25.5.4 STEP 4:

25.5.4.1 If mediation under this section does not resolve the parties' dispute, the District may, but does not require arbitration of disputes under private arbitration or the Public Works Contract Arbitration Program.

25.6 Subcontractor Pass-Through Claims

25.6.1 If a subcontractor or a lower tier subcontractor lacks legal standing to assert a claim against a District because privity of contract does not exist, the contractor may present to the District a Claim on behalf of a subcontractor or lower tier subcontractor. A subcontractor may request in writing, either on his or her own behalf or on behalf of a lower tier subcontractor, that Contractor present a Claim for work which was performed by the subcontractor or by a lower tier subcontractor on behalf of the subcontractor. The subcontractor requesting that the Claim be presented to the District shall furnish reasonable documentation to support the Claim.

25.6.2 Within 45 days of receipt of this written request from a subcontractor, Contractor shall notify the subcontractor in writing as to whether the Contractor presented the Claim to the District and, if Contractor did not present the Claim, provide the subcontractor with a statement of the reasons for not having done so.

25.6.3 The Contractor shall bind all its Subcontractors to the provisions of this section and will hold the District harmless against Claims by Subcontractors.

25.7 Government Code Claim Act Claim

25.7.1 If a claim, or any portion thereof, remains in dispute upon satisfaction of all applicable Claim Resolution requirements the Contractor shall comply with all claims presentation requirements as provided in Chapter 1 (commencing with section 900) and Chapter 2 (commencing with section 910) of Part 3 of Division 3.6 of Title 1 of Government Code as a condition precedent to the Contractor's right to bring a civil action against the District.

25.7.2 Contractor shall bear all costs incurred in the preparation, submission and administration of a Claim. Any claims presented in accordance with the Government

Code must affirmatively indicate Contractor's prior compliance with the claims procedure herein of the claims asserted.

25.7.3 For purposes of those provisions, the running of the time within which a claim pursuant to Public Contract Code section 20104.2 only must be presented to the District shall be tolled from the time the claimant submits his or her written claim pursuant to subdivision (a) until the time that claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.

25.8 Claim Resolution pursuant to Public Contract Code section 20104 et seq.

25.8.1 In the event of a disagreement between the parties as to performance of the Work, the interpretation of this Contract, or payment or nonpayment for Work performed or not performed, the parties shall attempt to resolve all Claims of three hundred seventy-five thousand dollars ($375,000) or less which arise between Contractor and District by those procedures set forth in Public Contract Code section 20104, et seq., to the extent applicable.

25.8.1.1 Contractor shall file with the District any written Claim, including the documents necessary to substantiate it, upon the application for final payment.

25.8.1.2 For claims of less than fifty thousand dollars ($50,000), the District shall respond in writing within forty-five (45) days of receipt of the Claim or may request in writing within thirty (30) days of receipt of the Claim any additional documentation supporting the claim or relating to defenses or claims the District may have against the Contractor.

25.8.1.2.1 If additional information is required, it shall be requested and provided by mutual agreement of the parties.

25.8.1.2.2 District's written response to the documented Claim shall be submitted to the Contractor within fifteen (15) days after receipt of the further documentation or within a period of time no greater than that taken by the Contractor to produce the additional information, whichever is greater.

25.8.1.3 For claims of over fifty thousand dollars ($50,000) and less than or equal to three hundred seventy-five thousand dollars ($375,000), the District shall respond in writing to all written Claims within sixty (60) days of receipt of the claim, or may request, in writing, within thirty (30) days of receipt of the Claim any additional documentation supporting the Claim or relating to defenses or claims the District may have against the Contractor.

25.8.1.3.1 If additional information is required, it shall be requested and provided upon mutual agreement of the District and the Contractor.

25.8.1.3.2 The District's written response to the claim, as further documented, shall be submitted to the Contractor within thirty (30) days after receipt of the further documentation, or within a period of time no greater than that taken by the Contractor to produce the additional information or requested documentation, whichever is greater.

25.8.1.4 If Contractor disputes the District's written response, or the District fails to respond within the time prescribed, Contractor may so notify the District, in writing, either within fifteen (15) days of receipt of the District's response or within fifteen (15) days of the District's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, the District shall schedule a meet and confer conference within thirty (30) days for settlement of the dispute.

25.8.1.5 Following the meet and confer conference, if the claim or any portion of it remains in dispute, the Contractor may file a claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions the running of the time within which a claim must be filed shall be tolled from the time the Contractor submits its written Claim until the time the Claim is denied, including any period of time utilized by the meet and confer process.

25.8.1.6 For any civil action filed to resolve claims filed pursuant to this section, within sixty (60) days, but no earlier than thirty (30) days, following the filing of responsive pleadings, the court shall submit the matter to nonbinding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within fifteen (15) days by both parties of a disinterested third person as mediator, shall be commenced within thirty (30) days of the submittal, and shall be concluded within fifteen (15) days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court or by stipulation of both parties. If the parties fail to select a mediator within the 15-day period, any party may petition the court to appoint the mediator.

25.8.1.7 If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of the Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1141.11 of that code. The Civil Discovery Act of 1986, (Article 3 (commencing with Section 2016) of Chapter 3 of Title 3 of part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration.

25.8.1.8 The District shall not fail to pay money as to any portion of a Claim which is undisputed except as otherwise provided in the Contract Documents. In any suit filed pursuant to this section, the District shall pay interest due at the legal rate on any arbitration award or judgment. Interest shall begin to accrue on the date the suit is filed in a court of law.

25.8.2 Contractor shall bind its Subcontractors to the provisions of this Section and will hold the District harmless against disputes by Subcontractors.

25.9 Claim Procedure Compliance

25.9.1 Failure to submit and administer claims as required in Article 25 shall waive Contractor's right to claim on any specific issues not included in a timely submitted claim. Claim(s) not raised in a timely protest and timely claim submitted

under this Article 25 may not be asserted in any subsequent litigation, Government Code Claim, or legal action.

25.9.2 District shall not be deemed to waive any provision under this Article 25, if at District's sole discretion, a claim is administered in a manner not in accord with this Article 25. Waivers or modifications of this Article 25 may only be made by a signed change order approved as to form by legal counsel for both District and Contractor; oral or implied modifications shall be ineffective.

25.10 Claim Resolution Non-Applicability

25.10.1 The procedures for dispute and claim resolutions set forth in this Article shall not apply to the following:

25.10.1.1 Personal injury, wrongful death or property damage claims;

25.10.1.2 Latent defect or breach of warranty or guarantee to repair;

25.10.1.3 Stop payment notices;

25.10.1.4 District's rights set forth in the Article on Suspension and Termination;

25.10.1.5 Disputes arising out of labor compliance enforcement by the Department of Industrial Relations; or

25.10.1.6 District rights and obligations as a public entity set forth in applicable statutes; provided, however, that penalties imposed against a public entity by statutes, including, but not limited to, Public Contract Code sections 20104.50 and 7107, shall be subject to the Claim Resolution requirements provided in this Article.

25.11 Attorney's Fees

Should litigation be necessary to enforce any terms or provisions of this Agreement, then each party shall bear its own litigation and collection expenses, witness fees, court costs, and attorney's fees.

26. STATE LABOR, WAGE & HOUR, APPRENTICE, AND RELATED PROVISIONS

26.1 Labor Compliance and Enforcement

Since this Project is subject to labor compliance and enforcement by the Department of Industrial Relations ("DIR"), Contractor specifically acknowledges and understands that it shall perform the Work of this Agreement while complying with all the applicable provisions of Division 2, Part 7, Chapter 1, of the Labor Code and Title 8 of the California Code of Regulations, including, without limitation, the requirement that the Contractor and all Subcontractors shall timely furnish complete and accurate electronic certified payroll records directly to the DIR. The District may not issue payment if this requirement is not met.

26.2 Wage Rates, Travel, and Subsistence

26.2.1 Pursuant to the provisions of Article 2 (commencing at section 1770), Chapter 1, Part 7, Division 2, of the Labor Code, the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work in the locality in which this public work is to be performed for each craft, classification, or type of worker needed to execute this Contract are on file at the District's principal office and copies will be made available to any interested party on request. Contractor shall obtain and post a copy of these wage rates at the job site.

26.2.2 Holiday and overtime work, when permitted by law, shall be paid for at the general prevailing rate of per diem wages for holiday and overtime work on file with the Director of the Department of Industrial Relations, unless otherwise specified. The holidays upon which those rates shall be paid need not be specified by the District, but shall be all holidays recognized in the applicable collective bargaining agreement. If the prevailing rate is not based on a collectively bargained rate, the holidays upon which the prevailing rate shall be paid shall be as provided in Section 6700 of the Government Code.

26.2.3 Contractor shall pay and shall cause to be paid each worker engaged in Work on the Project the general prevailing rate of per diem wages determined by the Director of the Department of Industrial Relations, regardless of any contractual relationship which may be alleged to exist between Contractor or any Subcontractor and such workers.

26.2.4 If during the period this bid is required to remain open, the Director of the Department of Industrial Relations determines that there has been a change in any prevailing rate of per diem wages in the locality in which the Work under the Contract is to be performed, such change shall not alter the wage rates in the Notice to Bidders or the Contract subsequently awarded.

26.2.5 Pursuant to Labor Code section 1775, Contractor shall, as a penalty to District, forfeit the statutory amount (believed by the District to be currently up to two hundred dollars ($200) for each calendar day, or portion thereof, for each worker paid less than the prevailing rates, determined by the District and/or the Director, for the work or craft in which that worker is employed for any public work done under Contract by Contractor or by any Subcontractor under it. The difference between such prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the prevailing wage rate shall be paid to each worker by Contractor.

26.2.6 Any worker employed to perform Work on the Project, which Work is not covered by any classification listed in the general prevailing wage rate of per diem wages determined by the Director, shall be paid not less than the minimum rate of wages specified therein for the classification which most nearly corresponds to Work to be performed by him, and such minimum wage rate shall be retroactive to time of initial employment of such person in such classification.

26.2.7 Pursuant to Labor Code section 1773.1, per diem wages are deemed to include employer payments for health and welfare, pension, vacation, travel time, subsistence pay, and apprenticeship or other training programs authorized by Labor Code section 3093, and similar purposes.

26.2.8 Contractor shall post at appropriate conspicuous points on the Site of Project, a schedule showing all determined minimum wage rates and all authorized deductions, if any, from unpaid wages actually earned. In addition, Contractor shall post a sign-in log for all workers and visitors to the Site, a list of all subcontractors of any tier on the Site, and the required Equal Employment Opportunity poster(s).

26.3 Hours of Work

26.3.1 As provided in article 3 (commencing at section 1810), chapter 1, part 7, division 2, of the Labor Code, eight (8) hours of labor shall constitute a legal day's work. The time of service of any worker employed at any time by Contractor or by any Subcontractor on any subcontract under this Contract upon the Work or upon any part of the Work contemplated by this Contract shall be limited and restricted by Contractor to eight (8) hours per day, and forty (40) hours during any one week, except as hereinafter provided. Notwithstanding the provisions hereinabove set forth, Work performed by employees of Contractor in excess of eight (8) hours per day and forty (40) hours during any one week, shall be permitted upon this public work upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half times the basic rate of pay.

26.3.2 Contractor shall keep and shall cause each Subcontractor to keep an accurate record showing the name of and actual hours worked each calendar day and each calendar week by each worker employed by Contractor in connection with the Work or any part of the Work contemplated by this Contract. The record shall be kept open at all reasonable hours to the inspection of District and to the Division of Labor Standards Enforcement of the DIR.

26.3.3 Pursuant to Labor Code section 1813, Contractor shall as a penalty to the District forfeit the statutory amount (believed by the District to be currently twenty-five dollars ($25)) for each worker employed in the execution of this Contract by Contractor or by any Subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one calendar day and forty (40) hours in any one calendar week in violation of the provisions of article 3 (commencing at section 1810), chapter 1, part 7, division 2, of the Labor Code.

26.3.4 Any Work necessary to be performed after regular working hours, or on Sundays or other holidays shall be performed without additional expense to the District.

26.4 Payroll Records

26.4.1 Contractor shall upload, and shall cause each Subcontractor performing any portion of the Work under this Contract to upload, an accurate and complete certified payroll record ("CPR") electronically using DIR's eCPR System by uploading the CPRs by electronic XML file or entering each record manually using the DIR's iform (or current form) online on no less than every 30 days while Work is being performed and within 30 days after the final day of Work performed on the Project and within ten (10 days of any request by the District or Labor Commissioner at http://www.dir.ca.gov/Public-Works/Certified-Payroll-Reporting.html or current application and URL, showing the name, address, social security number, work classification, straight-time, and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other

employee employed by the Contractor and/or each Subcontractor in connection with the Work.

26.4.1.1 The CPRs enumerated hereunder shall be filed directly with the DIR on a weekly basis or to the requesting party, whether the District or DIR, within ten (10) days after receipt of each written request. The CPRs from the Contractor and each Subcontractor for each week shall be provided on or before Wednesday of the week following the week covered by the CPRs. District may not make any payment to Contractor until:

26.4.1.1.1 Contractor and/or its Subcontractor(s) provide CPRs acceptable to the DIR; and

26.4.1.1.2 Any delay in Contractor and/or its Subcontractor(s) providing CPRs to the DIR in a timely manner may directly delay Contractor's payment.

26.4.2 All CPRs shall be available for inspection at all reasonable hours at the principal office of Contractor on the following basis:

26.4.2.1 A certified copy of an employee's CPR shall be made available for inspection or furnished to the employee or his/her authorized representative on request.

26.4.2.2 CPRs shall be made available for inspection or furnished upon request to a representative of District, Division of Labor Standards Enforcement, Division of Apprenticeship Standards, and/or the DIR.

26.4.2.3 CPRs shall be made available upon request by the public for inspection or copies thereof made; provided, however, that a request by the public shall be made through the District, Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested CPRs have not been provided pursuant to the provisions herein, the requesting party shall, prior to being provided the records, reimburse the costs of preparation by Contractor, Subcontractors, and the entity through which the request was made. The public shall not be given access to the records at the principal office of Contractor.

26.4.3 Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by District, Division of Apprenticeship Standards, or Division of Labor Standards Enforcement shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address, and social security number. The name and address of Contractor awarded Contract or performing Contract shall not be marked or obliterated.

26.4.4 Contractor shall inform District of the location of the records enumerated hereunder, including the street address, city, and county, and shall, within five (5) working days, provide a notice of change of location and address.

26.4.5 In the event of noncompliance with the requirements of this section, Contractor shall have ten (10) days in which to comply subsequent to receipt of written notice specifying in what respects Contractor must comply with this section. Should noncompliance still be evident after the ten (10) day period, Contractor shall, as a penalty to District, forfeit up to one hundred dollars ($100) for each calendar

day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Labor Commissioner, these penalties shall be withheld from progress payments then due.

26.4.6 [RESERVED]

26.5 [RESERVED]

26.6 Apprentices

26.6.1 Contractor acknowledges and agrees that, if this Contract involves a dollar amount greater than or a number of working days greater than that specified in Labor Code section 1777.5, then this Contract is governed by the provisions of Labor Code Section 1777.5. It shall be the responsibility of Contractor to ensure compliance with this Article and with Labor Code section 1777.5 for all apprenticeship occupations.

26.6.2 Apprentices of any crafts or trades may be employed and, when required by Labor Code section 1777.5, shall be employed provided they are properly registered in full compliance with the provisions of the Labor Code.

26.6.3 Every such apprentice shall be paid the standard wage paid to apprentices under the regulations of the craft or trade at which he/she is employed, and shall be employed only at the work of the craft or trade to which she/he is registered.

26.6.4 Only apprentices, as defined in section 3077 of the Labor Code, who are in training under apprenticeship standards and written apprentice agreements under chapter 4 (commencing at section 3070), division 3, of the Labor Code, are eligible to be employed. The employment and training of each apprentice shall be in accordance with the provisions of the apprenticeship standards and apprentice agreements under which he/she is training.

26.6.5 Pursuant to Labor Code section 1777.5, if that section applies to this Contract as indicated above, Contractor and any Subcontractors employing workers in any apprenticeable craft or trade in performing any Work under this Contract shall apply to the applicable joint apprenticeship committee for a certificate approving the Contractor or Subcontractor under the applicable apprenticeship standards and fixing the ratio of apprentices to journeymen employed in performing the Work.

26.6.6 Pursuant to Labor Code section 1777.5, if that section applies to this Contract as indicated above, Contractor and any Subcontractor may be required to make contributions to the apprenticeship program.

26.6.7 If Contractor or Subcontractor willfully fails to comply with Labor Code section 1777.5, then, upon a determination of noncompliance by the Administrator of Apprenticeship, it shall:

26.6.7.1 Be denied the right to bid on any subsequent project for one (1) year from the date of such determination;

26.6.7.2 Forfeit as a penalty to District the full amount as stated in Labor Code section 1777.7. Interpretation and enforcement of these provisions shall be in

accordance with the rules and procedures of the California Apprenticeship Council and under the authority of the Chief of the Division of Apprenticeship Standards.

26.6.8 Contractor and all Subcontractors shall comply with Labor Code section 1777.6, which section forbids certain discriminatory practices in the employment of apprentices.

26.6.9 Contractor shall become fully acquainted with the law regarding apprentices prior to commencement of the Work. Special attention is directed to sections 1777.5, 1777.6, and 1777.7 of the Labor Code, and title 8, California Code of Regulations, section 200 et seq. Questions may be directed to the State Division of Apprenticeship Standards, 455 Golden Gate Avenue, 9th floor, San Francisco, California 94102.

26.7 Non-Discrimination

26.7.1 Contractor herein agrees to comply with the provisions of the California Fair Employment and Housing Act as set forth in part 2.8 of division 3 of the California Government Code, commencing at section 12900; the Federal Civil Rights Act of 1964, as set forth in Public Law 88-352, and all amendments thereto; Executive Order 11246; and all administrative rules and regulations found to be applicable to Contractor and Subcontractor.

26.7.2 Special requirements for Federally Assisted Construction Contracts: During the performance of this Contract, Contractor agrees to incorporate in all subcontracts the provisions set forth in Chapter 60-1.4(b) of Title 41 published in Volume 33 No. 104 of the Federal Register dated May 28, 1968.

26.8 Labor First Aid

Contractor shall maintain emergency first aid treatment for Contractor's workers on the Project which complies with the Federal Occupational Safety and Health Act of 1970 (29 U.S.C. § 651 *et seq*.) and the California Occupational Safety and Health Act of 1973 (Lab. Code, § 6300, et seq.; 8 Cal. Code of Regs., § 330, et seq.).

27. [RESERVED]

28. MISCELLANEOUS

28.1 Assignment of Antitrust Actions

28.1.1 Section 7103.5(b) of the Public Contract Code states:

In entering into a public works contract or subcontract to supply goods, services, or materials pursuant to a public works contract, the Contractor or subcontractor offers and agrees to assign to the awarding body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commending with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, which assignment shall be made and become effective at the time the awarding body tenders final payment to the Contractor, without further acknowledgment by the parties.

28.1.2 Section 4552 of the Government Code states:

In submitting a bid to a public purchasing body, the bidder offers and agrees that if the bid is accepted, it will assign to the purchasing body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, materials, or services by the bidder for sale to the purchasing body pursuant to the bid. Such assignment shall be made and become effective at the time the purchasing body tenders final payment to the bidder.

28.1.3 Section 4553 of the Government Code states:

If an awarding body or public purchasing body receives, either through judgment or settlement, a monetary recovery for a cause of action assigned under this chapter, the assignor shall be entitled to receive reimbursement for actual legal costs incurred and may, upon demand, recover from the public body any portion of the recovery, including treble damages, attributable to overcharges that were paid by the assignor but were not paid by the public body as part of the bid price, less the expenses incurred in obtaining that portion of the recovery.

28.1.4 Section 4554 of the Government Code states:

Upon demand in writing by the assignor, the assignee shall, within one year from such demand, reassign the cause of action assigned under this part if the assignor has been or may have been injured by the violation of law for which the cause of action arose and (a) the assignee has not been injured thereby, or (b) the assignee declines to file a court action for the cause of action.

28.1.5 Under this Article, "public purchasing body" is District and "bidder" is Contractor.

28.2 Excise Taxes

If, under Federal Excise Tax Law, any transaction hereunder constitutes a sale on which a Federal Excise Tax is imposed and the sale is exempt from such Federal Excise Tax because it is a sale to a State or Local Government for its exclusive use, District, upon request, will execute documents necessary to show (1) that District is a political subdivision of the State for the purposes of such exemption, and (2) that the sale is for the exclusive use of District. No Federal Excise Tax for such materials shall be included in any Contract Price.

28.3 Taxes

Contract Price is to include any and all applicable sales taxes or other taxes that may be due in accordance with section 7051 et seq. of the Revenue and Taxation Code, Regulation 1521 of the State Board of Equalization or any other tax code that may be applicable.

28.4 Shipments

Contractor is responsible for any or all damage or loss to shipments until delivered and accepted on Site, as indicated in the Contract Documents. There must be no charge for containers, packing, unpacking, drayage, or insurance. The total Contract Price shall be all inclusive (including sales tax) and no additional costs of any type will be considered.

28.5 Compliance with Government Reporting Requirements

If this Contract is subject to federal or other governmental reporting requirements because of federal or other governmental financing in whole or in part for the Project of which it is part, or for any other reason, Contactor shall comply with those reporting requirements at the request of the District at no additional cost.

END OF DOCUMENT

DOCUMENT 00 73 13

SPECIAL CONDITIONS

1. Mitigation Measures

Contractor shall comply with all applicable mitigation measures, if any, adopted by any public agency with respect to this Project pursuant to the California Environmental Quality Act. (Public Resources Code section 21000 *et seq*.)

2. Campus and Adjacent Buildings

2.1 Access. Access to the school buildings and entry to buildings, classrooms, restrooms, mechanical rooms, electrical rooms, or other rooms, for construction purposes, must be coordinated with District and onsite District personnel before Work is to start. Unless agreed to otherwise in writing, only a school custodian will be allowed to unlock and lock doors in existing building(s). The custodian will be available only while school is in session. If a custodian is required to arrive before 7:00 a.m. or leave after 3:30 p.m. to accommodate Contractor's Work, the overtime wages for the custodian will be paid by the Contractor, unless at the discretion of the District, other arrangements are made in advance.

2.2 Keys. Upon request, the District may, at its own discretion, provide keys to the school site for the convenience of the Contractor. The Contractor agrees to pay all expenses to re-key the entire school site and all other affected District buildings if the keys are lost or stolen, or if any unauthorized party obtains a copy of a key or access to the school.

2.3 Maintaining Services. The Contractor is advised that Work is to be performed in spaces regularly scheduled for instruction. Interruption and/or periods of shutdown of public access, electrical service, water service, lighting, or other utilities shall be only as arranged in advance with the District. Contractor shall provide temporary services to all facilities interrupted by Contractor's Work.

2.4 Maintaining Utilities. The Contractor shall maintain in operation during duration of Contract, drainage lines, storm drains, sewers, water, gas, electrical, steam, and other utility service lines within working area.

2.5 Confidentiality. Contractor shall maintain the confidentiality of all information, documents, programs, procedures and all other items that Contractor encounters while performing the Work. This requirement shall be ongoing and shall survive the expiration or termination of this Contract and specifically includes, without limitation, all student, parent, and employee disciplinary information and health information.

2.6 Work during Instructional Time. By submitting its bid, Contractor affirms that Work may be performed during ongoing instruction in existing facilities. If so, Contractor agrees to cooperate to the best of its ability to minimize any disruption to

school operations and any use of school facilities by the public up to, and including, rescheduling specific work activities, at no additional cost to District.

2.7 **No Work during Student Testing**. Contractor shall, at no additional cost to the District and at the District's request, coordinate its Work to not disturb District students including, without limitation, not performing any Work when students at the Site are taking State or Federally-required tests.

3. Badge Policy for Contractors

All Contractors doing work for the District will provide their workers with identification badges. These badges will be worn by all members of the Contractor's staff who are working in a District facility.

3.1 Badges must be filled out in full and contain the following information:

3.1.1 Name of Contractor

3.1.2 Name of Employee

3.1.3 Contractor's address and phone number

3.2 Badges are to be worn when the Contractor or his/her employees are on site and must be visible at all times. Contractors must inform their employees that they are required to allow District employees, the Architect, the Construction Manager, the Program Manager, or the Project Inspector to review the information on the badges upon request.

3.3 Continued failure to display identification badges as required by this policy may result in the individual being removed from the Project or assessment of fines against the Contractor.

4. Substitutions for Specified Items

Replace Section 1.7 in the General Conditions with the following provisions:

1.7.1 Whenever in the Specifications any materials, process, or article is indicated or specified by grade, patent, or proprietary name, or by name of manufacturer, that Specification shall be deemed to be followed by the words "or equal." Contractor may, unless otherwise stated, offer any material, process, or article that shall be substantially equal or better in every respect to that so indicated or specified.

1.7.1.1 If the material, process, or article offered by Contractor is not, in the opinion of the District, substantially equal or better in every respect to that specified, then Contractor shall furnish the material, process, or article specified in the Specifications without any additional compensation or change order.

1.7.1.2 This provision shall not be applicable with respect to any material, product, thing or service for which District made findings and gave notice in accordance with Public Contract Code section 3400(c);

therefore, Contractor shall not be entitled to request a substitution with respect to those materials, products or services.

1.7.2 A request for a substitution shall be submitted as follows:

1.7.2.1 Contractor shall notify the District in writing of any request for a substitution at least ten (10) days prior to bid opening as indicated in the Instructions to Bidders.

1.7.3 Within 35 days after the date of the Notice of Award, Contractor shall provide data substantiating a request for substitution of "an equal" item, including but not limited to the following:

1.7.3.1 All variations of the proposed substitute from the material specified including, but not limited to, principles of operation, materials, or construction finish, thickness or gauge of materials, dimensions, weight, and tolerances;

1.7.3.2 Available maintenance, repair or replacement services;

1.7.3.3 Increases or decreases in operating, maintenance, repair, replacement, and spare parts costs;

1.7.3.4 Whether or not acceptance of the substitute will require other changes in the Work (or in work performed by the District or others under Contract with the District); and

1.7.3.5 The time impact on any part of the Work resulting directly or indirectly from acceptance of the proposed substitute.

1.7.4 No substitutions shall be made until approved, in writing, by the District. The burden of proof as to equality of any material, process, or article shall rest with Contractor. The Contractor warrants that if substitutes are approved:

1.7.4.1 The proposed substitute is equal or superior in all respects to that specified, and that such proposed substitute is suitable and fit for the intended purpose and will perform adequately the function and achieve the results called for by the general design and the Contract Documents;

1.7.4.2 The Contractor provides the same warranties and guarantees for the substitute that would be provided for that specified;

1.7.4.3 The Contractor shall be fully responsible for the installation of the substitute and any changes in the Work required, either directly or indirectly, because of the acceptance of such substitute, with no increase in Contract Price or Contract Time. Incidental changes or extra component parts required to accommodate the substitute will be made by the Contractor without a change in the Contract Price or Contract Time;

1.7.4.4 The Contractor shall be responsible for any re-design costs occasioned by District's acceptance and/or approval of any substitute; and

1.7.4.5 The Contractor shall, in the event that a substitute is less costly than that specified, credit the District with one hundred percent (100%) of the net difference between the substitute and the originally specified material. In this event, the Contractor agrees to execute a deductive Change Order to reflect that credit.

1.7.5 In the event Contractor furnishes a material, process, or article more expensive than that specified, the difference in the cost of that material, process, or article so furnished shall be borne by Contractor.

1.7.6 In no event shall the District be liable for any increase in Contract Price or Contract Time due to any claimed delay in the evaluation of any proposed substitute or in the acceptance or rejection of any proposed substitute.

1.7.7 Contractor shall be responsible for any costs the District incurs for professional services, DSA fees, or delay to the Project Schedule, if applicable, while DSA reviews changes for the convenience of Contractor and/or to accommodate Contractor's means and methods. District may deduct those costs from any amounts owing to the Contractor for the review of the request for substitution, even if the request for substitution is not approved. District, at its sole discretion, shall deduct from the payments due to and/or invoice Contractor for all the professional services and/or DSA fees or delay to the Project Schedule, if applicable, while DSA reviews changes for the convenience of Contractor and/or to accommodate Contractor's means and methods arising herein.

5. Weather Days

Replace Section 15.2.1.5 in the General Conditions with the following:

15.2.1.5 The number of days of Adverse Weather exceeds the following parameters:

January	**8**	July	**0**
February	**7**	August	**0**
March	**6**	September	**0**
April	**4**	October	**2**
May	**2**	November	**4**
June	**1**	December	**7**

[THE REMAINDER OF THIS PAGE LEFT BLANK INTENTIONALLY]

6. [RESERVED]

7. Insurance Policy Limits

All of Contractor's insurance shall be with insurance companies with an A.M. Best rating of no less than A:XV. The limits of insurance shall not be less than:

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

8. Permits, Certificates, Licenses, Fees, Approvals

8.1 Payment for Permits, Certificates, Licenses, Fees, and Approvals. As required in the General Conditions, the Contractor shall secure and pay for all permits, licenses, approvals, and certificates necessary for the prosecution of the Work with the exception of the following:

- Division of the State Architect.

With respect to the above-listed items, Contractor shall be responsible for securing such items; however, District will be responsible for payment of these charges or fees. Contractor shall notify the District of the amount due with respect to such items and to whom the amount is payable. Contractor shall provide the District with an invoice and receipt with respect to such charges or fees.

9. Project Labor Agreement/Payroll Records

The District has entered into a Project Labor Agreement ("PLA"), which covers this Project.

Accordingly, the following provision is added as Section 26.4.6:

26.4.6 As Contractor and its subcontractors have agreed to be bound by the terms of the PLA entered into by the District on December 5th, 2013, Contractor and

its subcontractors may be excused from uploading CPRs electronically using DIR's eCPR System by uploading the CPRs by electronic XML file or entering each record manually using the DIR's iform (or current form) online at http://www.dir.ca.gov/Public-Works/Certified-Payroll-Reporting.html , or by using a more current application and URL. However, within ten (10) days of any request by the District or Labor Commissioner, Contractor and its subcontractors shall provide CPRs showing the name, address, social security number, work classification, straight time, and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by the Contractor and/or each subcontractor in connection with the Work.

10. As-Builts and Record Drawings

10.1 When called for by Division 1, Contractor shall submit As-Built Drawings pursuant to the Contract Documents consisting of one (1) set of computer-aided design and drafting ("CADD") files, one (1) set of As-Built Drawings in PDF Format, plus one (1) Full Size Hard Copy set.

10.2 Contractor shall submit Record Drawings pursuant to the Contract Documents consisting of one (1) set of computer-aided design and drafting ("CADD") files, one set of Record Drawings in PDF Format, plus one (1) Full Size Hard Copy Set.

11. Disabled Veteran Business Enterprise

Pursuant to Education Code section 71028 and Public Contract Code section 10115, the District has a participation goal for disabled veteran business enterprises ("DVBE") of at least three percent (3%) per year of the overall dollar amount expended each year on projects that receive state funding. If this Contract uses state funds, and/or as required by the bid documents, the lowest responsive responsible bidder awarded the Contract must submit the Disabled Veteran Business Enterprise Participation Certification to the District with its executed Agreement, identifying the steps contractor took to solicit DVBE participation in conjunction with this Contract.

12. Project Manager

The District will use a Project Manager on the Project that is the subject of this Contract. Kitchell is the Construction Manager for this Project.

13. Program Manager

Kitchell is the Program Manager designated for the Project that is the subject of this Contract.

14. [RESERVED]

15. [RESERVED]

16. [RESERVED]

17. Preliminary Schedule of Values

The preliminary schedule of values shall include, at a minimum, the following information and the following structure:

Replace Section 10.1.1.2.3 in the General Conditions with the following provisions:

10.1.1.2.3 The preliminary schedule of values shall not provide for values any greater than the following percentages of the Contract value:

10.1.1.2.3.1 Mobilization and layout combined to equal not more than 2%;

10.1.1.2.3.2 Submittals, samples and shop drawings combined to equal not more than 4%;

10.1.1.2.3.3 Bonds to equal not more than 1%

10.1.1.2.3.4 Insurance to equal not less 1.5%.

10.1.1.2.3.5 Closeout documentation shall have a value in the preliminary schedule of not less than 10%.

10.1.1.2.3.6 Demobilization to equal not more than 2%;

18. Underground Survey of Existing Utilities

The District will do their best ability to identify underground utilities, however prior to performing excavation activities the Contractor shall at their sole expense employ the services of a private locator to survey and ascertain the actual locations of existing underground utilities. Should the Contractor damage existing utilities during the prosecution of the work, they shall immediately notify the Project Manager in writing and diligently affect repairs to the damaged utility. The Contractor shall be responsible for all repairs and consequential damages resulting from utility outages caused as a result of the performance of work.

19. Schedule of Operation

19.1 Construction may be performed 24 hours per day, 7 days per week, providing that between the hours of 5pm and 7am, no work shall be performed outside the above hours without prior written authorization from the District / Project Manager. As described in General Conditions 00 72 13 Section 6.15.

19.2 Cutting, chipping, and off-haul of all trees must be scheduled and completed during weekends, Holidays, or school breaks. Dates must be approved by the District / Project Manager.

20. Temporary Facilities

20.1 The Contractor shall submit a project logistics plan to the Project Manager for approval withing fifteen (15) calendar days from the Notice to Proceed date. The logistics plan shall define how the Contractor plans to control site processes including, but not limited to, means and methods to accommodate

temporary utilities, temporary facilities, site traffic, off-site parking, materials delivery and material storage, temporary fending, etc. All subsequent relocation/ modifications need to be approved by the District / Project Manager.

21 Project Management Software

21.1 The District will be utilizing PROCORE to provide web-based project management software to track and manage this project. The contractor is required to use this software. Access to the software will be provided to the contractor at no cost for this project.

21.2 Use of this Project Management Software will not replace or change any contractual responsibilities of the project team members.

21.3 Training on the use of the software is provided at no cost by PROCORE on their website; https://www.procore.com/certification

22 Video Recording of District Training(s)

22.1 All District Training(s) as required in the Contract Documents will be video recorded by the Contractor and turned over to the District.

22.2 Training videos to provide clear, visual instruction on systems, equipment, and procedures.

22.3 Video Quality and Format: High resolution, minimum 1080P. MP4 video Format. Include clear audio of training, and adequate lighting.

22.4 Deliverable: Provide flash drive or secure downloadable link to District of all training videos.

22.5 All video training materials shall become the property of the District upon final acceptance. The District shall have unrestricted rights to use, reproduce, and distribute the videos for internal training purposes.

23 COVID-19 Safety Requirements

Contractor shall, at its cost, timely comply with all applicable federal, State, and local requirements relating to COVID-19 or other public health emergency/epidemic/pandemic. Further, except to the extent the Order provides otherwise, Contractor and Contractor's personnel, subcontractors and suppliers shall continue to comply with all applicable terms in the California Department of Public Health's State Public Health Officer Orders.

END OF DOCUMENT

DOCUMENT 01 22 00

ALTERNATES AND UNIT PRICING

PART 1 – ALTERNATES

1.01 RELATED DOCUMENTS AND PROVISIONS

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

A. General Conditions;

B. Special Conditions;

C. Bid Form and Proposal;

D. Instruction to Bidders.

1.02 DESCRIPTION

The items of work indicated below propose modifications to, substitutions for, additions to and/or deletions from the various parts of the Work specified in other Sections of the Specifications. The acceptance or rejection of any of the alternates is strictly at the option of the District subject to District's acceptance of Contractor's stated prices contained in this Proposal.

1.03 GENERAL

Where an item is omitted, or scope of Work is decreased, all Work pertaining to the item whether specifically stated or not, shall be omitted and where an items is added or modified or where scope of Work is increased, all Work pertaining to that required to render same ready for use on the Project in accordance with intention of Drawings and Specifications shall be included in an agreed upon price amount.

1.04 BASE BID

The Base Bid includes all work required to construct the Project completely and in accordance with the Contract Documents.

1.05 ALTERNATES

A. Alternate #01: Provide Zone #4 hydronic site repairs, Mechanical Room deferred maintenance upgrade, vault/valve additions, pressure testing of existing HHW & R piping (see Bid Alternate #4), temporary heating and cooling systems at B-500 & B-600, temporary bypasses at site piping, etc. as indicated on Sheet MD-1.4 and M-1.4.

B. Alternate #02: If the pressure test of the section of piping at the indicated hot spot fails, demolish and replace HHWS & R piping as specified. The

affected buildings for this work are B-1200 & B-1300. Refer to Sheet MD-1.2 ad M-1.2 for additional information.

C. Alternate #03: If the pressure test of the section of piping at the indicated Hot Spot fails, demolish and replace HHW&R piping as specified. The affected building for this work is B-1200. Refer to sheet MD-1.2 and M-1.2 for additional information.

D. Alternate #04: If the pressure test of the section of piping at the indicated hot spot fails, demolish and replace HHWS & R piping as specified. The affected building for this work is B-500. Refer to Sheet MD-1.4 and M-1.4 for additional information. If Bid Alternate #1 is rejected, Bid Alternate #4 is no longer applicable (I.E. Rejected).

E. Alternate #05: Demolish and replace the CHW piping and valves at the through <E> Vault #1. Provide 12" & 8" temporary bypasses to existing CHW piping West and North of Vault #1, include (3) temporary thrust blocks at 5' X 5' X 7' dimensions and 4 ft. min. embedment into undisturbed soil (see Detail 9/M-5.2 for reference). Sch. 40 PVC piping with solvent welded Sch. 80 fittings/joints shall be used for the 12" & 8" CHWS & R piping at the West and North branches respectively, 14" C900-DR18 PVC piping at the East side penetrations, and 14" STD. WT. Steel piping can be used inside the Vault with welded & flanged joints. Vault lid shall be removed to facilitate construction inside the Vault, retain and relocate <E> pipe supports inside the Vault. All other requirements related to insulation, jacketing, valve replacement, etc. included with Contract Documents shall be met for replacement effort. This work shall commence only when the need for campus cooling is no longer required (I.E. December – January).

F. Alternate #06: *Not Applicable*

G. Alternate #07: *Not Applicable*

H. Alternate #08: Provide a parallel 4" domestic water line in the outdoor walkway between B-1700A and the Pool. Domestic water piping shall be PVC with solvent welded joints. Contractor shall provide restraint couplings as necessary at connection to existing. Point of connection to existing shall be downstream of the underground ISO valve of B-1700A and the existing gas manifold enclosure. Domestic water riser shall occur outside the B-1700A mechanical room, transition to steel piping, penetrate the exterior wall, with connection to the existing riser. Existing piping shall be capped and abandoned in place (beneath bldg.) See MD-1.5 and M-1.5 for additional information.

The above Alternate descriptions are general in nature and for reference purposes only. The Contract Documents, including, without limitation, the Drawings and Specifications, must be referred to for the complete scope of Work.

PART 2 - UNIT PRICING

2.01 GENERAL

Contractor shall completely state all required figures based on Unit Prices listed below. Where scope of Work is decreased, all Work pertaining to the item, whether specifically stated or not, shall be omitted and where scope of Work is increased, all work pertaining to that item required to render same ready for use on the Project in accordance with intention of Drawings and Specifications shall be included in an agreed upon price amount.

2.02 UNIT PRICES

Furnish unit prices for each of the named items on a square foot, lineal foot, or per each basis, as applies. Unit prices shall include all labor, materials, services, profit, overhead, insurance, bonds, taxes, and all other incidental costs of Contractor, subcontractors, and supplier(s).

A. None Identified.

END OF DOCUMENT

SECTION 00 91 11
ADDENDUM NUMBER 3

PARTICULARS

1.01 DATE: 03/11/2026

1.02 PROJECT: 2510-00649-00 HYDRONIC SYSTEM MODERNIZATION

1.03 OWNER'S PROJECT NUMBER: 25-026

1.04 OWNER: SOLANO COMMUNITY COLLEGE DISTRICT

TO: PROSPECTIVE BIDDERS:

2.01 THIS ADDENDUM FORMS A PART OF THE CONTRACT DOCUMENTS AND MODIFIES THE ORIGINALBID DOCUMENTS DATED 01/23/2026, 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 84 PAGE(S) INCLUDING THE FOLLOWING SPECIFICATIONS AND DRAWINGS:

CHANGES TO THE PROJECT MANUAL - SPECIFICATIONS:

4.01 SECTION TABLE OF CONTENTS

A. Added new Section 09 90 00 - Painting and Coating.

4.02 SECTION 09 90 00-PAINTING AND COATING

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

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

A. Deleted Paragraph 2.01.E.2.e.

B. Deleted Paragraph 2.01.E.2.f.

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

D. Deleted Paragraph 2.01.F.2.d.

E. Deleted Paragraph 2.06 in it's entirety.

4.04 SECTION 23 05 93 - TESTING, ADJUSTING AND BALANCING

A. Revise Paragraph 1.01.A as follows: Testing, adjustment, and balancing of hydronic systems at each building.

B. Add Paragraph 1.01.B as follows: Testing, adjustment, and balancing for temporary hydronic systems

C. Revised Paragraph 3.06 in it's entirety. See attached.

D. Added Paragraph 3.07.G. See attached.

4.05 SECTION 23 21 14 - HYDRONIC SPECIALTIES

A. Deleted Paragraph 1.01.D

B. Deleted Paragraph 2.05 in it's entirety.

4.06 SECTION 23 21 23 - HYDRONIC PUMPS

A. Deleted Paragraph 2.03 in it's entirety. See attached.

4.07 SECTION 33 61 13 - UNDERGOUND THERMAL ENERGY DISTRIBUTION

A. Deleted Paragraph 1.01.B.2.

B. Deleted Paragraph 2.07 in it's entirety. See attached.

CHANGES TO DRAWINGS:

6.01 DRAWING G-0.0

A. Revisions added to "Summary of Work", reflecting the following modifications:
   1. General revisions and additional notes were added for clarity.
   2. Revised timelines of temporary cooling systems, temporary heating systems, and Construction Milestones by Zone.

B. Revisions added to "Bid Alternates", reflecting the following modification:
   1. General revisions additional notes were added for clarity.
   2. Bid Alternate #1 was revised to hydronic repairs for Zone #4 in lieu of providing temporary heating services to Zone #1.
   3. Bid Alternate #5 was revised to CHW repairs at Vault #1 in lieu of providing temporary heating services to Zone #2.
   4. Removed Bid Alternate #7 and language was revised to "NOT USED".

C. Revisions added to "Deferred Approval", reflecting the following modification:
   1. Removed language referring to hydronic vaults.

D. Revisions added to "Drawing Index", reflecting the following modification:
   1. General revisions were added to reflect Bid Alternate #1 revisions made on G-0.0.

6.02 DRAWING G-0.1

A. Inspections by manufacturer of pre-fabricated piping systems was added.

B. General revisions were added for clarity.

C. "Controls Contractor Responsibilities" notes was added.

6.03 DRAWING G-1.1

A. Zone #4 has been redefined as Bid Alternate #1.

6.04 DRAWING G-1.3

A. Zone #4 has been redefined as Bid Alternate #1.

6.05 DRAWING G-1.4

A. General revisions and clarifications made to "Surface Type Legend" and "Reference Sheet Notes".

B. General Sheet Note "F" was added to identify fill cover over existing or new piping.

C. Revisions added to the site plan, reflecting the following modifications:
   1. Revised temporary bypass piping and fencing at Vault #13.
   2. Landscape repairs after removal of temporary equipment at temporary equipment enclosures was added to site plan.
   3. Revision to surface repair at Vault #1 was added.

6.06 DRAWING G-4.1

A. Replace Sheet G-4.1 in it's entirety.
   1. General Sheet Notes were revised for clarity.
   2. Reference Sheet Note #3 was added for demolishing existing tee located inside of the temporary equipment enclosure.
   3. Reference Sheet Note #4 was added to utilize a temporary equipment pad at temporary equipment enclosures.
   4. Revised temporary piping, piping supports, and fencing enclosure configuration at B-1600 to maintain sufficient clearance for fire department access and clearance from building.

6.07 DRAWING G-4.2

A. General Sheet Notes were revised for clarity.

B. Reference Sheet Note #5 was added to utilize a temporary equipment pad at temporary equipment enclosures.

6.08 DRAWING G-4.4

A. General Sheet Notes were revised for clarity.

B. Reference Sheet Note #2 was added for utilizing a temporary equipment pad at temporary equipment enclosures.

6.09 DRAWING G-4.5

A. General Sheet Notes were revised for clarity.

B. General revisions and clarification made for restroom exit closure, signage, and exit route.

6.10 DRAWING M-0.1

A. Two abbreviations were added.

6.11 DRAWING MD-1.1

A. Replace Sheet MD-1.1 in it's entirety.
   1. General and ReferenceSheet Notes were revised for clarity.
   2. General Sheet Note "M" was added to refer to G-Sheets.
   3. ReferenceSheet Note #12 language was revised to installing temporary thrust blocks at CHW bypass piping points of connection.
   4. Temporary piping, piping supports, and fencing enclosure were revised to reflect the revisions on G-4.1.
   5. Sheet Title revised for coisiveness to match language on G-0.0.
   6. Bid Alternate #1 language removed for temporary heating to match G-0.0

6.12 DRAWING M-1.1

A. Replace Sheet M-1.1 in it's entirety.
   1. General and Reference Sheet Notes were revised for clarity.
   2. Reference Sheet Note #3 was revised to match language on G-0.0.
   3. Temporary piping, piping supports, and fencing enclosure were revised to reflect the revisions on G-4.1.
   4. Bid Alternate #1 language removed for temporary heating to match G-0.0

6.13 DRAWING MD-1.2

A. Replace Sheet MD-1.2 in it's entirety.
   1. General and Reference Sheet Notes were revised for clarity.
   2. Reference Sheet Note #13 language was revised to installing temporary thrust blocks at CHW bypass piping points of connection.
   3. Sheet Title revised for cohesiveness to match language on G-0.0.
   4. Bid Alternate #5 work was added to site plan to match language on G-0.0.
   5. Bid Alternate #1 language removed for temporary heating to match G-0.0

6.14 DRAWING M-1.2

A. Replace Sheet M-1.2 in it's entirety.
   1. General and Reference Sheet Notes were revised for clarity.
   2. Concrete-encased HHW anchor was added onto site plan, north of Vault #4.
   3. Bid Alternate #5 work was added to site plan to match language on G-0.0.
   4. Bid Alternate #1 language removed for temporary heating to match G-0.0

6.15 DRAWING MD-1.4

A. Replace Sheet MD-1.4 in it's entirety.
   1. General and Reference Sheet Notes were revised for clarity.

2. Referencheet Note #12 language was revised to installing temporary thrust blocks at CHW bypass piping points of connection.
3. Refrence Sheet Notes #13 was added for identifying underground points of connections for bypass piping.
4. Temporary piping and fencing enclosure were revised to reflect the revisions on G-4.1.
5. Bid Alternate #1 language removed for temporary heating to match G-0.0

6.16 DRAWING M-1.4

A. Replace Sheet M-1.4 in it's entirety.
1. General and Reference Sheet Notes were revised for clarity.
2. Temporary piping and fencing enclosure were revised to reflect the revisions on G-4.1.
3. Bid Alternate #1 language removed for temporary heating to match G-0.0

6.17 DRAWING MD-1.5

A. Sheet notes updated to reflect updated Bid Alternates.

6.18 DRAWING M-1.5

A. General sheet note K added.

6.19 DRAWING M-4.1

A. General revisions and additional notes were added for clarity.

B. HHW and CHW Upgrades schematics have been revised.

C. HHW and CHW Bill of Materials and additional notes have been revised for clarity.

6.20 DRAWING M-4.2

A. General revisions and additional notes were added for clarity.

B. HHW and CHW Upgrades schematics have been revised.

C. HHW and CHW Bill of Materials and additional notes have been revised for clarity.

6.21 DRAWING M-4.3

A. General revisions and additional notes were added for clarity.

B. HHW and CHW Upgrades schematics have been revised.

C. HHW and CHW Bill of Materials and additional notes have been revised for clarity.

6.22 DRAWING M-4.4

A. General revisions and additional notes were added for clarity.

B. HHW and CHW Upgrades schematics have been revised.

C. HHW and CHW Bill of Materials and additional notes have been revised for clarity.

6.23 DRAWING M-4.5

A. General revisions and additional notes were added for clarity.

B. HHW and CHW Upgrades schematics have been revised. HHW and CHW Bill of Materials and additional notes have been revised for clarity.

C. HHW and CHW Bill of Materials and additional notes have been revised for clarity.

6.24 DRAWING M-4.9

A. General revisions and additional notes were added for clarity.

B. HHW and CHW Upgrades schematics have been revised.

C. HHW and CHW Bill of Materials and additional notes have been revised for clarity.

6.25 DRAWING M-4.10

A. General revisions and additional notes were added for clarity.

B. HHW and CHW Upgrades schematics have been revised.

C. HHW and CHW Bill of Materials and additional notes have been revised for clarity.

D. Pipe stachion added to Detail #5 for piping support.

6.26 DRAWING M-5.1

A. General revisions and additional notes were added for clarity.

B. Detail #12 was added for Sidewalk Connection, referenced on G-1.4.

6.27 DRAWING M-5.2

A. General revisions and additional notes were added for clarity.

B. Detail #8 has been revised for clarity and additional notes have been added.

C. Detail #9 was added for temporary CHW Thrust Block & Bypass, referenced on M-sheets.

6.28 DRAWING M-5.3

A. General revisions were added for clarity.

6.29 DRAWING M-5.5

A. General revisions were added for clarity.

6.30 DRAWING M-5.6

A. General revisions and additional notes were added for clarity.

B. Detail #7 has been revised for clarity and additional notes have been added.

C. Detail 10 was added for pump elevation, referenced on M-sheets.

6.31 DRAWING M-5.7

A. Pipe routing revised on Detail #1 to reflect the site plan revisions on G-4.1.

6.32 DRAWING M-6.1

A. All equipment schedules have been updated for additional clarity and to reflect updated Bid Alternates.

6.33 DRAWING MD-7.1

A. Update to "Demo" schematic to reflect updates to site plans.

6.34 DRAWING M-7.1

A. Update to "New" schematic to reflect updates to site plans.

6.35 DRAWING E-0.1

A. Added NIU - Not In Use to abbreviations.

6.36 DRAWING E-1.1

A. Removed pump replacement scope.

6.37 DRAWING ED-1.2

A. Added and revised names of substation switchgear.

B. Revised reference sheet notes to reference specific switchgear.

6.38 DRAWING E-1.2

A. Updated reference sheet note to include replacement of VFDs.

6.39 DRAWING ED-1.4

A. Revised physical dimensions of temporary generators on site plan.

B. Updated reference sheet note #2 with revised generator kVA rating.

C. Removed "adequately" from reference sheet note #1.

6.40 DRAWING E-1.4

A. Updated to reflect Bid Alternate #1.

6.41 DRAWING E-7.1

A. Removed pump replacement scope of work.

6.42 DRAWING E-7.2

A. Added VFD replacement scope.

6.43 DRAWING E-7.4

A.

6.44 DRAWING S-5.1

A. Replace Sheet S-5.1 in it's entirety. See attached.

6.45 DRAWING S-5.2

A. Replace Sheet S-5.2 in it's entirety. See attached.

BIDDER'S QUESTIONS AND RESPONSES:

7.01 BIDDER'S QUESTION: ARE BIM COORDINATED SHOP DRAWINGS REQUIRED?

A. District's Response: No.

7.02 BIDDER'S QUESTION: WILL TEMPORARY CORDS BE ACCEPTABLE FOR ALL TEMPORARY ELECTRICAL SERVICES?

A. District's Response: Providing that it is secure and protected, appropriately sized, and meets the requirements stated in the drawings, temporary cords are acceptable.

7.03 BIDDER'S QUESTION: WOULD TEMPORARY HOSES RATED FOR THE APPROPRIATE SYSTEM PRESSURE, TEMPERATURE, GPM FOR THE TEMPORARY BYPASS PIPING BE ACCEPTABLE?

A. District's Response: Temporary hoses would be acceptable; however, the contractor shall account for pressure drop/losses and maintain/coordinate fire department access roads, paths of travel and wayfinding signage.

7.04 BIDDER'S QUESTION: WILL TEMPORARY STAINLESS STEEL GAS HOSE(S) BE ACCEPTABLE FOR THE TEMPORARY BOILERS?

A. District's Response: No, natural gas piping shall be Sch. 40 steel pipe, black or galvanized, with threaded connections. Refer to Section 01 50 00 “Temporary Facilities and Controls”, Article 1.09.

7.05 BIDDER'S QUESTION: PER SHEET MD-1.1 ‘REFERENCE SHEET NOTES’ #13 WHAT ARE THE LOCATIONS OF THE 4 ELECTRICAL HEATING UNITS & HOW ARE THEY BEING POWERED?

A. District's Response: Reference sheet notes 12 & 13 on MD-1.1 have been modified. Portable coolers and heaters have been deleted. B-1600 shall use temporary chiller/boiler equipment as is indicated in Addendum #3. A temporary equipment enclosure is now shown East of B-1600.

7.06 BIDDER'S QUESTION: PLEASE VERIFY THE QUANTITY OF ‘MOVE AND COOL’ UNITS NEEDED.

A. District's Response: All ‘Move and Cool” portables have been deleted from the contract documents and contract requirements. All references have been removed from the drawings in Addendum #3. See also response above.

7.07 BIDDER'S QUESTION: PLEASE VERIFY THE POWER SOURCE FOR THE ‘MOVE AND COOL’ 208/230V SINGLE PHASE.

A. District's Response: All ‘Move and Cool” portables have been deleted from the contract documents and contract requirements. All references have been removed from the drawings in Addendum #3. See also response(s) above.

7.08 BIDDER'S QUESTION: PER SHEET MD-1.1 'REFERENCE SHEET NOTES' #13 WHAT ARE THE LOCATIONS OF THE 4 ELECTRICAL HEATING UNITS & HOW ARE THEY BEING POWERED?

A. District's Response: Reference sheet notes 12 & 13 have been modified. Portable coolers and heaters have been deleted. B-1600 shall use temporary chiller/boiler equipment as is indicated in Addendum #3. See also response(s) above.

7.09 BIDDER'S QUESTION: IN ZONE 1 ARE WE TO ASSUME THAT A CLASS 2 COMPACT AGGREGATE PAD(S) ARE REQUIRED FOR THE TEMPORARY EQUIPMENT LOCATIONS?

A. District's Response: No, refer to Addendum #3, only B-1500 temporary equipment area will require a temporary pad at Zone #1. The other Zone #1 temporary equipment enclosures are located on landscapes/hardscapes that have negligible slopes. Contractor shall be responsible for returning landscape areas back to their original condition upon removal of temporary equipment. Temporary pads are indicated on plans, refer to Contract Documents, drawings G-4.1 – G-4.4.

7.10 BIDDER'S QUESTION: PER SHEET M-5.6 DETAIL #1 'DECOMPOSED GRANITE PAVING', WHAT LOCATIONS ARE THE DECOMPOSED GRANITE PAVING REQUIRED FOR?

A. District's Response: Decomposed Granite Paving occurs in Zone #1 at the B-2700 temporary equipment enclosure. Refer to Addendum #3, G-1.4. Contractor responsible for returning area to original condition upon removal of temporary equipment.

7.11 BIDDER'S QUESTION: PER SHEET MD-1.2 'REFERENCE SHEET NOTES' #13 – DOES THIS NOTE APPLY TO ALL TEMPORARY EQUIPMENT AREAS?

A. District's Response: No. RSN-13 on MD-1.2 has been revised in Addendum #3. Refer to sheets G-4.1 – G-4.4 for temporary pad requirements and G-1.4 for landscape/hardscape restoration requirements.

7.12 BIDDER'S QUESTION: PLEASE PROVIDE A CONCRETE PAD SPEC FOR REBAR AND MIX DESIGN. THIS WILL BE FOR ALL TEMPORARY PADS.

A. District's Response: Ground support for the temporary equipment does not require a concrete pad. However: (a) if temporary equipment is anchored to existing concrete slab, refer to detail 11 on drawing S-5.3, (b) if temporary equipment is anchored to existing grade/A.C./decomposed granite, refer to detail 9 on drawing S-5.3, and (c) refer to sheets G-4.1 – G-4.4 for temporary pad requirements.

7.13 BIDDER'S QUESTION: WHAT ARE THE WORK HOURS & WORK HOURS PER DAY?

A. District's Response: Contractor recognizes that time is of the essence. For this reason, construction may be performed 24 hours per day, 7 days per week, providing that between the hours of 5pm and 7am, no work shall be performed without prior written authorization from the District /Project Manager.

7.14 BIDDER'S QUESTION: IF NATIVE DOES NOT PASS COMPACTION WILL IMPORT SOIL BE BROUGHT IN?

A. District's Response: It is the Contractor's responsibility to pass the compaction test.

7.15 BIDDER'S QUESTION: WHAT IS THE SPEC AFTER BACKFILLING? DOES THE CONCRETE POUR BACK NEED BE IDENTICAL TO EXISTING? ALSO, THE ASPHALT. WOULD BE NEED IT TO BE THICKER OR PAVE THE SAME EXISTING THICKNESS?

A. District's Response: Refer to sheet M-5.3, detail 8/M-5.6 and detail 3/M-5.1.

7.16 BIDDER'S QUESTION: WOULD WE INSTALL AND BACKFILL IMMEDIATELY OR WAIT TILL THE SYSTEM HAS BEEN TESTED AND ASSURED ITS WORKING PRIOR TO BACK FILL?

A. District's Response: Wait until system has passed the hydro test and the system has passed inspections.

7.17 QUESTION: PLEASE CLARIFY THE MATERIAL AND TYPE OF TEMPORARY PIPING TO BE USED FOR THIS PROJECT.

A. District's Response: Refer to Section 01 50 00 “Temporary Facilities and Controls”, Article 1.09.G.

7.18 BIDDER'S QUESTION: DOES THE DISTRICT HAVE A DESIGNATED LOCATION FOR DISPOSAL OR STOCKPILING OF EXCAVATED SPOILS?

A. District's Response: No. Spoils shall be hauled offsite. Reusable fill can be stored at the designated laydown areas shown on G-1.2.

7.19 BIDDER'S QUESTION: THE SPECIFICATIONS ALLOW FOR C900 PVC FOR UNDERGROUND CHILLED WATER PIPING WITH DIAMETERS OF 14 INCHES AND LARGER. AT THE CONTRACTOR’S OPTION, MAY C900 PVC ALSO BE USED FOR SMALLER DIAMETERS IN LIEU OF SCHEDULE 40 PVC?

A. District's Response: No.

7.20 BIDDER'S QUESTION: THE PROJECT SPECIFICATIONS AND PLANS INDICATE THAT CERTAIN ACTIVITIES (SUCH AS SAWCUTTING AND COMMISSIONING) MAY BE REQUIRED DURING OFF-HOURS AND/OR WEEKENDS. WILL THE CONTRACTOR BE RESPONSIBLE FOR ANY OVERTIME INSPECTION OR SUPPORT FEES CHARGED BY THE OWNER FOR WORK PERFORMED DURING THESE PERIODS?

A. District's Response: For the work specified in the contract documents, the Owner shall be responsible for costs associated with the project inspector, geotechnical (and other) engineering, and DSA costs. Work not currently identified in the contract documents (i.e., changes issued via construction change document or field instruction), shall be negotiated on a case-by-case basis. Refer also to “Controls Contractor Responsibilities” on G-0.0 of Addendum #3.

7.21 BIDDER'S QUESTION: THE DRAWINGS INCLUDE A KIOSK SIGN DETAIL (SHEET G-5.1, DETAIL 3). PLEASE CLARIFY THE INTENDED LOCATION OF THIS SIGN, AS NO LOCATION APPEARS TO BE IDENTIFIED ON THE PLANS.

A. District's Response: The kiosk sign details are provided in order to have a movable wayfinding system that can be placed in strategic locations as the project progresses. See G-4.1 through G-4.4 for wayfinding signage requirements.

7.22 BIDDER'S QUESTION: THE PROJECT PLANS INDICATE THE USE OF TEMPORARY HEATING AND COOLING EQUIPMENT FOR ALL AFFECTED BUILDINGS TO FACILITATE HYDRONIC PIPING REPLACEMENTS AND VAULT CONSTRUCTION. PLEASE CONFIRM WHETHER ALL ASSOCIATED TEMPORARY HEATING AND COOLING WORK IS REQUIRED IF THE PROJECT SCHEDULE AND THE CONTRACTOR’S MEANS AND METHODS DO NOT NECESSITATE THE USE OF TEMPORARY EQUIPMENT. FOR EXAMPLE, IF PIPING REPLACEMENTS ARE COMPLETED DURING SUMMER MONTHS (E.G., JULY), WHEN HEATING IS NOT REQUIRED, WOULD THE INSTALLATION AND OPERATION OF TEMPORARY HEATING EQUIPMENT STILL BE MANDATORY FOR THOSE BUILDINGS?

A. District's Response: Where it is true that there are certain times when temporary heating or cooling is unnecessary, it is critical that the teaching and learning environment is fully conditioned during classroom hours. For that reason, temporary heating and cooling must be available during the time period that is specified. Refer to G-0.0, Summary of Work, note #4A and 4B.

7.23 BIDDER'S QUESTION: WOULD THE OWNER ALLOW THE INSTALLATION OF TEMPORARY BYPASS PIPING, INCLUDING ADDITIONAL OR EXTENDED BYPASS RUNS AS REQUIRED, TO MAINTAIN SYSTEM CONTINUITY AND SERVICE TO OCCUPIED BUILDINGS DURING CONSTRUCTION? THE USE OF TEMPORARY BYPASS PIPING MAY REDUCE OR ELIMINATE THE NEED FOR TEMPORARY HEATING AND COOLING EQUIPMENT, MINIMIZE OPERATIONAL DISRUPTIONS, AND PROVIDE A MORE EFFICIENT AND COST-EFFECTIVE MEANS OF MAINTAINING BUILDING SERVICE DURING PHASED CONSTRUCTION.

A. District's Response: Temporary bypasses would be acceptable in lieu of temporary equipment on a case-by-case basis. Note, however, the contractor shall account for pressure drop/losses, and maintain/coordinate fire department access roads, paths of travel and wayfinding signage.

7.24 QUESTION: THE SPECIFICATIONS STATE THAT THE CONTRACTOR SHALL INCLUDE HAZARDOUS ABATEMENT AND DISPOSAL FOR A MINIMUM OF FOUR LIKE-SIZED TRANSITE PIPES AT EACH EXCAVATION SITE WHERE A NEW VAULT WILL BE INSTALLED. PLEASE CLARIFY THE ANTICIPATED QUANTITY OF ASBESTOS CEMENT (TRANSITE) PIPE REMOVAL IN TERMS OF LINEAR FOOTAGE. ADDITIONALLY, PLEASE CONFIRM WHETHER ACP ABATEMENT AND DISPOSAL WILL BE MEASURED AND COMPENSATED BASED ON ACTUAL LINEAR FOOTAGE REMOVED IN THE FIELD, AND HOW QUANTITIES EXCEEDING OR LESS THAN THE SPECIFIED MINIMUM WILL BE ADDRESSED.

A. District's Response: See Addendum #3, note has been revised for clarity. Contractor and Construction Manager shall keep inventory of linear footage and pipe sizes of piping abated during the construction phase. The difference will be trued-up upon substantial completion of the project.

7.25 BIDDER'S QUESTION: NOTE 17 ON M-4.2 STATES TO "PROVIDE MAINTENANCE AT HYDRONIC PUMP(S). INSPECT PUMP FOR LEAKS, VIBRATION, AND IRREGULAR SOUNDS. INSPECT BEARINGS, SEALS, IMPELLER, BUSHINGS, AND SHAFT SLEEVE. RE-GREASE BEARINGS AND VERIFY COUPLINGS, CONNECTIONS AND PUMP ALIGNMENT. CHECK ALL FASTENERS AND FOUNDATION. REPLACE WORN SEALS/BUSHINGS AS NEEDED. IS THE INTENT OF THIS NOTE TO HAVE ALL BIDDERS CARRY A FULL BEARING AND SEAL REPLACEMENT FOR ALL EXISTING PUMPS?

A. District's Response: No, there is a mix of older and new pumps at the buildings. The RSN has been modified on the M-4.1 – M-4.10 drawings. The intent is for the Contractor to provide a maintenance inspection and provide lubrication at each pump to be retained. Upon completion of inspections at each building, contractor shall provide a summary report and recommendations. Refer to Addendum #3, drawings M-4.1 – M-4.10.

7.26 BIDDER'S QUESTION: NOTES 8,13 AND 14, ON M-4.1, M-4.4, M-4.5, M-4.6, M-4.7, M-4.8, M-4.9, M-4.10 EACH REQUIRE WORK TO BE DONE ON EXISTING PIPING IN THE MECHANICAL ROOMS WITHOUT A CLEAR DEFINITION OF THE FOOTAGES OF PIPING, NUMBER OF FITTINGS OR CURRENT CONDITION OF THE PIPING NEEDING TO BE PREPPED AND PAINTED. CAN MORE INFORMATION BE PROVIDED TO ALLOW QUANTIFICATION OF THIS WORK? PLEASE CONFIRM IT IS THE INTENT OF THESE NOTES TO REMOVE INSULATION FROM EXISTING CHWS/R AND HHWS/R PIPING, CLEAN, PRIME AND PAINT EXISTING PIPING, THEN RE-INSULATE EXISTING PIPING. NO SPECS ARE PROVIDED FOR THE PAINTING OF THESE PIPES; CAN ONE PLEASE BE PROVIDED?

A. District's Response:

B. The intent is to demolish all hydronic pipe insulation/jacketing at buildings where indicated in the Contract Documents to further evaluate condition of piping in the mechanical room(s). Replacement of insulation/jacketing in compliance with code & contract documents is required.

1. The anticipated Bill of Materials for each building has been updated in Addendum #3, which includes estimated linear footage of new piping, fittings, valves, specialties, insulation, jacketing, etc., and shall be used for the Contractor's bidding purposes. Assume a total of 70 LF of piping, existing and new, at the sizes indicated in the contract documents will be included with the scope for each building hydronic system (HHW & CHW). Existing pipe tasks such as prep, cleaning, painting, and insulation/jacketing demo and install can be calculated using the 70LF assumption and the new pipe LF provided on the Bill of Materials.
2. Refer to Addendum #3, specification 09 90 00 Painting and Coating.

7.27 BIDDER'S QUESTION: NOTES 2 AND 3 ON M-1.1, M-1.2, M-1.3, M-1.4, ALL CALL FOR PIPING TO BE PREPPED AND PAINTED AFTER WELDING IS COMPLETED. PLEASE PROVIDE SPECIFICATIONS FOR PRIMER AND PAINT FOR THESE LOCATIONS PRIOR TO THE INSULATION CLOSURE KITS BEING INSTALLED.

A. District's Response: Refer to Addendum #3, specification 09 90 00 Painting and Coating, for black steel.

7.28 BIDDER'S QUESTION: NOTE 5 ON M-1.5 CALLS FOR PVC PIPING TO BE COATED WITH 3 COATS OF UV RATED PAINT. PLEASE PROVIDE SPECIFICATIONS FOR REQUIRED PAINT AND PRIMER SYSTEM.

A. District's Response: Refer to Addendum #3, specification 09 90 00 Painting and Coating, for PVC or plastics.

7.29 BIDDER'S QUESTIONS: ON M-4.5, CHW DEMO P&ID, DEMO OF AN "ES" SENSOR IS SHOWN. THIS DESIGNATION IS NOT LISTED IN THE SYMBOLS & ABBREVIATIONS. PLEASE PROVIDE THE FOLLOWING:

A. Identification of what this sensor is.
   1. District's Response: It is believed the sensors are temperature transmitters and have been labeled as such in Addendum #3. Contractor shall VIF.

B. Limits of demo of this sensor (is it part of the existing Controls, or analog? If part of the controls, is it just demo to the nearest panel?
   1. District's Response: Refer to Addendum #3. Remove and protect during construction. Reinstall to new piping, verify calibration and connectivity to BMS.

C. If it is controls, and not replaced, please provide programming requirements to remove this sensor- should the contractor carry reprogramming of the system to remove this sensor, or will SCCD Facilities cover this?
   1. District's Response: See above. Refer also to “Controls Contractor Responsibilities” on G-0.0 of Addendum #3.

7.30 BIDDER'S QUESTION: THE PROJECT LISTS THE NEW CHILLED AND HOT VAULTS AS A DEFERRED SUBMITTAL. CAN THE OWNER PLEASE PROVIDE SOME DESIGN CRITERIA SO AN ACCURATE BID CAN BE SUBMITTED? FOR INSTANCE, WHAT SIZE AND TYPE OF HATCHES WOULD THE OWNER PREFER? DO THE VAULTS NEED TO BE TRAFFIC RATED OR PEDESTRIAN RATED? ANY SPECIFICS REGARDING THE VAULTS WOULD BE HELPFUL.

A. District's Response: Addendum #3 removes the hydronic vaults from the deferred approval; however final structural design will not be complete at the time of bidding. Detail 9 & 12/M-5.1, 8/M-5.2, M-5.4, and 7/M-5.6 all provide information on the vaults. Additionally, the vault schedule on M-6.1 indicates traffic loading, riser, and hatch requirements. Provide bids based on final contract documents.

7.31 BIDDER'S QUESTION: ARE EXPANSION CALCULATIONS REQUIRED FOR THE CHILLED WATER PIPING? OR ONLY THE HOT WATER PIPING?

A. District's Response: Only the HHW piping.

7.32 BIDDER'S QUESTION: ARE EXPANSION CALCULATIONS REQUIRED FOR THE TEMPORARY PIPING?

A. District's Response: Calculations are not required, but Contractor is responsible for adequate flexibility (i.e. expansion provisions), supports, and restraint for the temporary piping systems.

END OF SECTION

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

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Paint for Interior/Exterior Piping and Utilities

B. Scope:
   1. Finish surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
      a. Bare hydronic piping (i.e., chilled water and heating hot water)
      b. Gas piping
      c. Drain piping
      d. 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 Coat:
      a. Primer: Sherwin-Williams Pro-Cryl Univeral 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. PVC or Plastic:
   1. Primer: Sherwin-Williams Extreme Bond Bonding Primer, B51W00150, or equal rust-resistant metal primer.. 3.1 mils wet, 0.9 mils dry. 1 coat minimum.
   2. Finish Coat: Sherwin-Williams A-100 Exterior Latex Gloss, A8 Series, or equal. 4 mils wet, 1.3 mils dry per coat. 2 coats minimum.

D. 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

E. Color Schedule:
   1. Bare hydronic piping (i.e., chilled and heating hot water): Provide white paint color.
   2. Gas piping: Color match existing gas yellow paint color.

3. Drain piping: Flat black paint for all drain piping
4. 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 B16.5 - Pipe Flanges and Flanged Fittings: NPS 1/2 Through NPS 24 Metric/Inch Standard; 2025.

D. ASME B16.10 - Face-to-Face and End-to-End Dimensions of Valves; 2022, with Errata (2023).

E. ASME B16.34 - Valves — Flanged, Threaded, and Welding End; 2025.

F. ASME B31.9 - Building Services Piping; 2025.

G. ASTM A126 - Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings; 2004 (Reapproved 2023).

H. ASTM A216/A216M - Standard Specification for Steel Castings, Carbon, Suitable for Fusion Welding, for High-Temperature Service; 2021.

I. ASTM A536 - Standard Specification for Ductile Iron Castings; 2024.

J. ASTM B62 - Standard Specification for Composition Bronze or Ounce Metal Castings; 2017 (Reapproved 2025).

K. MSS SP-67 - Butterfly Valves; 2022.

L. MSS SP-71 - Gray Iron Swing Check Valves, Flanged and Threaded Ends; 2018.

M. MSS SP-80 - Bronze Gate, Globe, Angle, and Check Valves; 2019.

N. 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

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, if no Triple Duty):
      a. Size 2 inch (50 mm, DN) and Smaller: Bronze with bronze disc.
      b. Size 2-1/2 inch (65 mm, DN) and Larger: Iron with lever and spring, center-guided metal, or center-guided with resilient seat.
   4. Dead-End: Butterfly, single-flange (lug) type.

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, Brass and Bronze Valves:
      a. Threaded ends.
      b. Ball: Full port, two piece, bronze trim.
      c. Swing Check: Bronze disc, Class.
   2. Size 2-1/2 inch (65 mm, DN) and Larger, Iron Valves:
      a. 2-1/2 inch (65 mm, DN) to 4 inch (100 mm, DN): Flanged ends.
      b. Ball: 2-1/2 NPS (65 DN) to 10 inch (250 mm, DN), Class 150.

c. 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.
d. Swing Check: Metal seats, Class 150.
e. ~~Swing Check with Closure Control: 2-1/2 inch (65 mm, DN) to 12 inch (300 mm, DN), lever and spring, Class 125~~. ***(Addendum #3)***
f. ~~Center-Guided Check: Globe, metal seat, Class 125.~~ ***(Addendum #3)***

F. Heating Hot Water Valves:
1. Size 2 inch (50 mm, DN) and Smaller, Brass and Bronze Valves:
a. Threaded ends.
b. Ball: Full port, two piece, bronze trim.
c. Swing Check: Bronze disc, Class 150.
2. Size 2-1/2 inch (65 mm, DN) and Larger, Iron Valves:
a. Ball: 2-1/2 inch (65 mm, DN) to 10 inch (250 mm, DN), Class 150.
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 #3)***
d. ~~Center-Guided Check: Globe, resilient seat, Class 150.~~ ***(Addendum #3)***

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 (200 mm, DN) and larger.
2. Hand Lever: Quarter-turn valves 5 inch (150 mm, DN) 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.
3. Pipe Flanges and Flanged Fittings 1/2 inch (15 mm, DN) through 24 inch (600 mm, DN): ASME B16.5.

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.
6. Seats: PTFE.
7. Stem: Stainless steel.
8. Ball: Stainless steel, vented.
9. Operator: Through 4" pipe size: Provide lockable handle and stem extension.5" and over
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:
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).
    b. Sizes 14 to 24 inches (350 to 600 mm, DN): 150 psi (1034 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 handle or worm-gear-connected handwheel with open/close position indication for valves 4" and under.
8. Service Temperature Range: Minus 30 to 250 degrees F (Minus 34.4 to 121.1 degrees C).
9. Operator: Gear operator over direct-mount actuator base for sizes 5" and over.
10. Manufacturers:
    a. NIBCO INC; LD-2000: www.nibco.com/#sle.
    b. Substitutions: See Division 1.

2.05 BRONZE, SWING CHECK VALVES

A. Class 150:
1. Pressure and Temperature Rating: MSS SP-80, Type 3.
2. Design: Y-pattern, horizontal or vertical flow.
3. CWP Rating: 300 psi (2,068 kPa).
4. Body: Bronze, ASTM B62.
5. End Connections: Threaded.
6. Disc: Bronze.
7. Manufacturers:
    a. Apollo Valves: www.apollovalves.com/#sle.
    b. Nibco T-433 www.nibco.com

2.06 ~~IRON, SWING CHECK VALVES WITH CLOSURE CONTROL~~ ***(ADDENDUM #3)***

A. ~~Class 125:~~
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.~~
   c. ~~Substitutions: See Division 1 for substitution procedures.~~

2.07 CARBON STEEL, SWING CHECK VALVES

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.

2.08 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. Discard 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 is determined to be 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 horizontal maintaining hinge pin level.
   2. Orient center-guided into horizontal or vertical position, between flanges.

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.

END OF SECTION

SECTION 23 05 93
TESTING, ADJUSTING, AND BALANCING FOR HVAC

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Testing, adjustment, and balancing of hydronic systems ***at each building. (Addendum #3)***

B. ***Testing, adjusting, and balancing for temporary hydronic systems at each building. (Addendum #3)***

C. Measurement of final operating condition of HVAC systems.

1.02 REFERENCE STANDARDS

A. AABC (NSTSB) - AABC National Standards for Total System Balance, 7th Edition; 2016.

B. ASHRAE Std 111 - Measurement, Testing, Adjusting, and Balancing of Building HVAC Systems; 2024, with Errata (2025).

C. SMACNA (TAB) - HVAC Systems Testing, Adjusting and Balancing; 2023.

1.03 SUBMITTALS

A. See Division 1 for submittal procedures.

B. Installer Qualifications: Submit name of adjusting and balancing agency and TAB supervisor for approval within 30 days after award of Contract.

C. TAB Plan: Submit a written plan indicating the testing, adjusting, and balancing standard to be followed and the specific approach for each system and component.
   1. Submit six weeks prior to starting the testing, adjusting, and balancing work.
   2. Include at least the following in the plan:
      a. List of all air flow, water flow, sound level, system capacity and efficiency measurements to be performed and a description of specific test procedures, parameters, formulas to be used.
      b. Copy of field checkout sheets and logs to be used, listing each piece of equipment to be tested, adjusted and balanced with the data cells to be gathered for each.
      c. Identification and types of measurement instruments to be used and their most recent calibration date.
      d. Discussion of what notations and markings will be made on the duct and piping drawings during the process.
      e. Final test report forms to be used.
      f. Expected problems and solutions, etc.
      g. Details of how TOTAL flow will be determined; for example:
         1) Water: Pump curves, circuit setter, flow station, ultrasonic, etc.
      h. Time schedule for TAB work to be done in phases (by floor, etc.).
      i. Time schedule for deferred or seasonal TAB work, if specified.
      j. False loading of systems to complete TAB work, if specified.
      k. Procedures for field technician logs of discrepancies, deficient or uncompleted work by others, contract interpretation requests and lists of completed tests (scope and frequency).
      l. Procedures for formal deficiency reports, including scope, frequency and distribution.

D. Final Report: Indicate deficiencies in systems that would prevent proper testing, adjusting, and balancing of systems and equipment to achieve specified performance.
   1. Submit to the Construction Manager within two weeks after completion of testing, adjusting, and balancing.
   2. Revise TAB plan to reflect actual procedures and submit as part of final report.
   3. Submit draft copies of report for review prior to final acceptance of Project. Provide final copies for architect and for inclusion in operating and maintenance manuals.

4. Include actual instrument list, with manufacturer name, serial number, and date of calibration.
5. Form of Test Reports: Where the TAB standard being followed recommends a report format use that; otherwise, follow ASHRAE Std 111.
6. Units of Measure: Report data in both I-P (inch-pound) and SI (metric) units.
7. Include the following on the title page of each report:
   a. Name of Testing, Adjusting, and Balancing Agency.
   b. Address of Testing, Adjusting, and Balancing Agency.
   c. Project name.
   d. Project location.
   e. Project Engineer.
   f. Project Contractor.
   g. Project altitude.
   h. Report date.

E. Project Record Documents: Record actual locations of flow measuring stations and balancing valves and rough setting.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

A. Perform total system balance in accordance with one of the following:
   1. AABC (NSTSB), AABC National Standards for Total System Balance.
   2. ASHRAE Std 111, Practices for Measurement, Testing, Adjusting and Balancing of Building Heating, Ventilation, Air-Conditioning, and Refrigeration Systems.
   3. SMACNA (TAB).
   4. Maintain at least one copy of the standard to be used at project site at all times.

B. Begin work after completion of systems to be tested, adjusted, or balanced and complete work prior to Substantial Completion of the project.

C. TAB Agency Qualifications:
   1. Company specializing in the testing, adjusting, and balancing of systems specified in this section.
   2. Having minimum of three years documented experience.
   3. Certified by one of the following:
      a. AABC, Associated Air Balance Council: www.aabc.com/#sle; upon completion submit AABC National Performance Guaranty.
      b. TABB, The Testing, Adjusting, and Balancing Bureau of National Energy Management Institute: www.tabbcertified.org/#sle.

D. TAB Supervisor and Technician Qualifications: Certified by same organization as TAB agency.

3.02 EXAMINATION

A. Verify that systems are complete and operable before commencing work. Ensure the following conditions:
   1. Systems are started and operating in a safe and normal condition.
   2. Temperature control systems are installed complete and operable.
   3. Proper thermal overload protection is in place for electrical equipment.
   4. Hydronic systems are flushed, filled, and vented.
   5. Pumps are rotating correctly.
   6. Proper strainer baskets are clean and in place.
   7. Service and balance valves are open.

B. Submit field reports. Report defects and deficiencies that will or could prevent proper system balance.

C. Beginning of work means acceptance of existing conditions.

3.03 ADJUSTMENT TOLERANCES

A. Hydronic Systems: Adjust to within plus or minus 10 percent of design.

3.04 RECORDING AND ADJUSTING

A. Field Logs: Maintain written logs including:
   1. Running log of events and issues.
   2. Discrepancies, deficient or uncompleted work by others.
   3. Contract interpretation requests.
   4. Lists of completed tests.

B. Ensure recorded data represents actual measured or observed conditions.

C. Permanently mark settings of valves, dampers, and other adjustment devices allowing settings to be restored. Set and lock memory stops.

D. After adjustment, take measurements to verify balance has not been disrupted or that such disruption has been rectified.

E. Leave systems in proper working order, replacing belt guards, closing access doors, closing doors to electrical switch boxes, and restoring thermostats to specified settings.

3.05 WATER SYSTEM PROCEDURE

A. Adjust water systems to provide required or design quantities.

B. Use calibrated Venturi tubes, orifices, or other metered fittings and pressure gauges to determine flow rates for system balance. Where flow metering devices are not installed, base flow balance on temperature difference across various heat transfer elements in the system.

C. Adjust systems to provide specified pressure drops and flows through heat transfer elements prior to thermal testing. Perform balancing by measurement of temperature differential in conjunction with air balancing.

D. Effect system balance with automatic control valves fully open to heat transfer elements.

E. Effect adjustment of water distribution systems by means of balancing cocks, valves, and fittings. Do not use service or shut-off valves for balancing unless indexed for balance point.

F. Where available pump capacity is less than total flow requirements or individual system parts, full flow in one part may be simulated by temporary restriction of flow to other parts.

3.06 SCOPE

A. Test, adjust, and balance the following:
   1. ***Building*** HVAC Pumps ***- refer to plans for design criteria. (Addendum #3)***
   2. Rental boilers, chillers and pumps ***- report for each building, refer to plans for design criteria. (Addendum #3)***
   3. ***Primary Hydronic System Balancing Valves at Each Building - refer to plans for design criteria. (Addendum #3)***
   4. ***Existing Building AHU Heating and Cooling Coils. (Addendum #3)***

3.07 MINIMUM DATA TO BE REPORTED

A. Electric Motors:
   1. Manufacturer.
   2. Model/Frame.
   3. HP/BHP.
   4. Phase, voltage, amperage; nameplate, actual, no load.
   5. RPM.
   6. Service factor.

B. Pumps:
   1. Identification/number.
   2. Manufacturer.
   3. Size/model.

4. Impeller.
5. Service.
6. Design flow rate, pressure drop, BHP.
7. Actual flow rate, pressure drop, BHP.
8. Discharge pressure.
9. Suction pressure.
10. Total operating head pressure.
11. Shut off, discharge and suction pressures.
12. Shut off, total head pressure.

C. Combustion Equipment:
1. Boiler manufacturer.
2. Model number.
3. Firing rate.
4. Gas meter timing dial size.
5. Gas meter time per revolution.
6. Gas pressure at meter outlet.
7. Heat input.
8. Burner manifold gas pressure.
9. Heat output.

D. Chillers:
1. Identification/number.
2. Manufacturer.
3. Capacity.
4. Model number.
5. Evaporator entering water temperature, design and actual.
6. Evaporator leaving water temperature, design and actual.
7. Evaporator pressure drop, design and actual.
8. Evaporator water flow rate, design and actual.

E. Cooling Coils:
1. Identification/number.
2. Location.
3. Service.
4. Water flow, design and actual.
5. Water pressure drop, design and actual.

F. Heating Coils:
1. Identification/number.
2. Location.
3. Service.
4. Water flow, design and actual.
5. Water pressure drop, design and actual.

G. **Electric Boiler:** ***(Addendum #3)***
1. **Identification/number.**
2. **Location.**
3. **Manufacturer.**
4. **Model number.**
5. **Serial number.**
6. **kW Input.**
7. **Heat Output.**
8. **Ambient Temperature.**
9. **HHW Entering Temperature.**
10. **HHW Leaving Temperature.**

11. **Number of Steps.**
12. **Electric Element Bundle W/sq.in, quantity, kW size.**
13. **Pressure Relief Setting size and setting.**
14. **Flow Rate.**
15. **Inlet Pressure.**
16. **Outlet Pressure.**
17. **Volts.**
18. **Amps.**
19. **Test at each level of staging of boiler plant.**

END OF SECTION

SECTION 23 21 14
HYDRONIC SPECIALTIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Air vents.

B. Strainers.

C. Suction diffusers.

D. ~~Combination pump discharge valves.~~ ***(Addendum #3)***

E. Pressure-temperature test plugs.

F. Balancing valves.

1.02 REFERENCE STANDARDS

A. ASME B16.1 - Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250; 2020.

1.03 SUBMITTALS

A. See Division 1 for submittal procedures.

B. Product Data: Provide product data for manufactured products and assemblies required for this project. Include component sizes, rough-in requirements, service sizes, and finishes. Include product description and model.

C. Manufacturer's qualification statement.

D. Project Record Documents: Record actual locations of flow controls.

E. Maintenance Data: Include installation instructions, assembly views, lubrication instructions, and replacement parts list.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in installation of the type of products specified in this section, with minimum three years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Accept Specialties on site in shipping containers with labeling in place. Inspect for damage.

B. Provide temporary end caps and closures on devices, piping and fittings. Maintain in place until installation.

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

PART 2 PRODUCTS

2.01 AIR VENTS

A. Manufacturers:
   1. Armstrong International, Inc: www.armstronginternational.com/#sle.
   2. Bell & Gossett, a brand of Xylem, Inc: www.bellgossett.com/#sle.

B. Manual Air Vent: Short vertical sections of 2-inch (50 mm, DN) diameter pipe to form air chamber, with 1/8 inch (6 mm, DN) brass needle valve at top of chamber.

C. Float Air Vent:
   1. Standard Duty: Brass or semi-steel body, copper, polypropylene, or solid non-metallic float, stainless steel valve and valve seat; suitable for system operating temperature and pressure; with isolating valve. With pipe away provisions.

D. Maximum Fluid Pressure: 150 psi (1,034 kPa).

E. Maximum Fluid Temperature: 250 degrees F (121.1 degrees C).

2.02 STRAINERS

A. Manufacturers:
   1. Mueller Steam Speciaties, a Watts Co: www.watts.com:

B. Size 2 inch (50 mm, DN) and Under:
   1. Provide threaded bronze or iron body for up to 175 psi (1,200 kPa) working pressure, Y-pattern strainer with 1/32 inch (0.8 mm) stainless steel perforated screen.
   2. Mueller Steam Specikalty: Model 351M
   3. Or approved equal.

C. Size 2-1/2 inch (65 mm, DN) to 4 inch (100 mm, DN):
   1. Provide flanged forged steel or iron body for up to 150 psi (1028 kPa) working pressure, up to 250 degrees F (121.1 degrees C) working temperature, Y-pattern strainer with 1/16 inch (1.6 mm) stainless steel perforated screen.
   2. Mueller Steam Specialties: Model 781
   3. Or approved equal

2.03 SUCTION DIFFUSERS

A. Manufacturers:
   1. Bell & Gossett, a brand of Xylem, Inc: www.bellgossett.com/#sle.
   2. Substitutions: See Section 01 60 00 - Product Requirements.

B. Fitting: Angle pattern, cast-iron body, threaded for 2 inch (50 mm) and smaller, flanged for 2-1/2 inch (65 mm, DN) and larger, rated for 175 psi (1200 kPa) working pressure, with inlet vanes, cylinder strainer with 3/16 inch (5 mm) diameter openings, disposable 5/32 inch (4 mm) mesh strainer to fit over cylinder strainer, 20 mesh startup screen, and permanent magnet located in flow stream and removable for cleaning.

2.04 PUMP CONNECTORS

A. Manufacturers:
   1. The Metraflex Company: www.metraflex.com/#sle.

B. Flexible Connectors: Flanged, braided type with wetted components of stainless steel, sized to match piping.
   1. Maximum Operating Service: 150 psi (1030 kPa) at 240 degrees F (115.6 degrees C).
   2. Accommodate the Following:
      a. Axial Deflection in Compression and Expansion: .1/2"
      b. Lateral Movement: 1".
      c. Angular Rotation: 15 degrees.
      d. Force developed by 1.5 times specified maximum allowable operating pressure.
   3. End Connections: Flanged ductile iron; complying with ASME B16.1 Class 125.or threaded to match pump/suction diffuser fittings.
   4. Provide necessary accessories including, but not limited to, swivel joints.

2.05 ~~COMBINATION PUMP DISCHARGE VALVES~~ **(ADDENDUM #3)**

A. ~~Manufacturers:~~
   1. ~~Bell & Gossett, Xlyem: Triple Duty Valve, www.xylem.com~~
   2. ~~Substitutions: See Division 1~~

B. ~~Class 125:~~
   1. ~~Maximum Service Operation: 175 psi (1,200 kPa) at 125 degrees F (51.7 degrees C).~~

C. ~~Triple-Duty Globe Type: Flanged cast-iron straight pattern body with bolt-on bonnet, position indicator, non-slam check valve with spring-loaded bronze disc and seat, stainless steel stem, metering connectors, flow shutoff mechanism, and adjustable flow handle.~~

2.06 PRESSURE-TEMPERATURE TEST PLUGS

A. Manufacturers:

1. Peterson Equipment Company Inc; Pete's Plug: www.petesplug.com/#sle.

B. Construction: Brass body designed to receive temperature or pressure probe with removable protective cap, and Nordel rated for minimum 200 degrees F (93 degrees C).

C. Application: Use extended length plugs to clear insulated piping.

2.07 BALANCING VALVES

A. Manufacturers:
   1. ITT Bell & Gossett: Model Circuit Setter: www.bellgossett.com.

B. Construction:
   1. 1/2" to 2" Pipe Size
      a. Bronze body, brass ball construction with glass and carbon filled TFE seat rings. Valves to have differential pressure read-out ports across valve seat area. Read-out ports shall have integral EPT insert and check valve. Valve bodies shall have 1/4" tapped drain/purge point. Valve to have memory stop feature and integral calibrated nameplate with position indication. 300 psig design pressure, NPT connections. 250 F operating temperature.
   2. 2-1/2" to 12" Pipe Size
      a. Cast iron, flanged construction with 125 psig flanged connections suitable up to 175 psig working pressure at 250 F. Valves 2-1/2" - 3" shall have a brass ball with glass and carbon filled TFE seat rings. Valves 4" - 12" shall be fitted with a bronze seat, replaceable bronze disc with EPDM seal insert, and stainless steel stem. Valves shall have memory stop feature and calibrated nameplate with position indication.

2.08 LINK SEALS

A. The pipe to wall penetration closures shall be Link-Seal, as manufactured by Thunderline Corporation, or approved equal.

B. Seals shall be modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill the annular space between the pipe and wall opening. Links shall be loosely assembled with bolts to form a continuous rubber belt around the pipe with a pressure plate under each bolt head and nut.\

C. After the seal assembly is positioned in the opening, tightening of the bolts shall cause the rubber sealing elements to expand and effect a watertight seal between the pipe and opening.

D. Manufacturer shall be consulted for exact size of opening and model/construction of seal to be used for each application.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install specialties and equipment in accordance with manufacturer's instructions.

B. Provide manual air vents at system high points and as indicated.

C. For automatic air vents in ceiling spaces or other concealed locations, provide vent tubing to nearest drain.

D. Provide valved drain and hose connection on strainer blowdown connection.

E. Provide pump suction fitting on suction side of base-mounted centrifugal pumps where indicated. Remove temporary strainers after cleaning systems.

F. Support pump fittings with floor-mounted pipe and flange supports.

END OF SECTION

SECTION 23 21 23
HYDRONIC PUMPS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. In-line pumps.(stacked vertical turbine)

B. End-suction pumps.

1.02 REFERENCE STANDARDS

A. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

B. UL 778 - Standard for Motor-Operated Water Pumps; Current Edition, Including All Revisions.

1.03 SUBMITTALS

A. See Division 1 for submittal procedures.

B. Product Data: Provide certified pump curves showing performance characteristics with pump and system operating point plotted. Include NPSH curve when applicable. Include electrical characteristics and connection requirements.

C. Millwright's Certificate: Certify that base mounted pumps have been aligned. Submit alignment report.

D. Submit proof that vertical turbine pumps were installed aligned, and started by authorized factory representatives.

E. Manufacturer's Installation Instructions: Indicate hanging and support requirements and recommendations.

F. Operation and Maintenance Data: Include installation instructions, assembly views, lubrication instructions, and replacement parts list.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacture, assembly, and field performance of pumps, with minimum three years of documented experience.

B. Installers Qualifications: Company specializing in manufacture, assembly, field alignment and adjustment and performance of pumps, with minimum three years of documented experience.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Bell & Gossett, a Xylem Inc. brand; Series e-1510 and e-SV: www.bellgossett.com/#sle.

B. Substitutions: See Division 1 for substitution requirements and submittals.

2.02 GENERAL

A. Provide pumps that operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, and operate within 25 percent of midpoint of published maximum efficiency curve.

B. Base Mounted Pumps: Aligned by qualified millwright.

C. Electrical Requirements:
   1. Listed and classified by UL or testing agency acceptable to authority having jurisdiction as suitable for the purpose specified and indicated.
   2. Variable Frequency Drives (VFDs): Provide in accordance with Section 23 09 34, except for integral-VFDs.

2.03 ~~IN-LINE PUMPS~~ *(ADDENDUM #3)*

A. ~~Split-Coupled, Multi-Stage: Vertical pump with radially-split casing, bottom mount suction, and discharge pipe connections with gauge ports rated for discharge pressures up to 580 psi (3999 kPa).~~

B. ~~Casing: Cast iron with seal flush connection, flanged suction, and discharge ports with gauge port and drain plug.~~

C. ~~Impeller: Bronze, fully enclosed, keyed directly to motor shaft or extension.~~

D. ~~Shaft: Carbon steel with stainless steel impeller cap screw or nut and bronze sleeve.~~

E. ~~Seal: Mechanical seal, 225 degrees F (107 degrees C) maximum continuous duty temperature.~~

F. ~~Electrical:~~
   1. ~~See Contract Drawings for details.~~
   2. ~~Motor: 1,750 rpm, open drip-proof (ODP); see Section 23 05 13.~~
   3. ~~Wiring Terminations: Provide terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Enclose terminal lugs in terminal box sized to NFPA 70.~~

2.04 END-SUCTION PUMPS

A. End Suction Pump:: Base-mounted, single-stage pump with horizontal shaft and radially- or horizontally-split casing rated for discharge pressures up to 175 psi (1200 kPa).

B. Casing: Cast iron or ductile iron with renewable bronze casing wearing rings, seal flush connection, drain plug, flanged suction, and discharge flanged connections with gauge ports.

C. Impeller: Stainless steel, balanced, fully enclosed, keyed to shaft.

D. Bearings: Grease lubricated roller or ball bearings.

E. Shaft: Alloy steel with copper, bronze, or stainless steel shaft sleeve.

F. Seal: Mechanical, 225 degrees F (107 degrees C) maximum continuous duty temperature.

G. Drive: Flexible coupling with coupling guard.

H. Baseplate: Cast iron or fabricated steel with integral drain rim.

I. Performance:
   1. See Contract Drawings for pump schedules.

J. Electrical:
   1. See Contract Drawings for pump schedules.
   2. Wiring Terminations: Provide terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Enclose terminal lugs in terminal box sized to NFPA 70.

2.05 VERTICAL TURBINE PUMPS

A. Base mounted, vertical multistage turbine pump coupled to a standard motor. The liquid end, located between the upper cover and the pump casing, is held in place by tie rods. Connection arrangement and fitting types as shown on drawings.
   1. 360 psig max operating pressure,
   2. 250 F max operating temperature.
   3. Motor: TEFC, premium efficiency, VFD compatible, 3500 rpm motor and bearings. Voltage and phase per schedule.
   4. All wetted parts shall be stainless steel.
   5. ANSI flanges in line shall be AISI 316 stainless steel.
   6. Mechanical Seal

B. Capacities per schedule on Contract Drawings

C. Goulds Water Technology e-SV Multistage pump

PART 3 EXECUTION

3.01 PREPARATION

A. Verify that electric power is available and of the correct characteristics.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Provide access space around pumps for service. Provide no less than minimum space recommended by manufacturer.

C. Decrease from line size with long radius reducing elbows or reducers. Support piping adjacent to pump such that no weight is carried on pump casings. For close-coupled or base-mounted pumps, provide supports under elbows on pump suction and discharge line sizes 4 inches (102 mm) and over.

D. Provide line sized shut-off valve and strainer on pump suction, and line sized check and shut off valve on pump discharge.

E. Provide air cock and drain connection on horizontal pump casings.

F. Provide drains for bases and seals, piped to and discharging into floor drains.

G. Check, align, and certify alignment of base-mounted pumps prior to start-up. Provide alignment report for each pump. Comply with alignment procedures on vertical turbine pumps per manufacturer's written instruction.

H. Provide pump anchorage and inertia pads as required by manufacturer and as shown on drawings.

I. Fully grout all frame bases after pump alignment.

J. Lubricate pumps before start-up.

END OF SECTION

SECTION 33 61 13
UNDERGROUND THERMAL ENERGY DISTRIBUTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Pipe and pipe fittings for:
   1. Underground Heating Hot Water piping system.
   2. Underground Chilled Water piping system.
   3. Precast Vaults for Underground Piping Systems

B. Valves:
   1. Butterfly valves.
   2. ~~Balancing valves~~ ***(Addendum #3)***

1.02 REFERENCE STANDARDS

A. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings; 2021.

B. ASME B31.1 - Power Piping; 2024.

C. ASME B31.9 - Building Services Piping; 2025.

D. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2024.

E. ASTM A126 - Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings; 2004 (Reapproved 2023).

F. ASTM A234/A234M - Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service; 2025.

G. ASTM A743/A743M - Standard Specification for Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion Resistant, for General Application; 2021.

H. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2025.

1.03 SUBMITTALS

A. See Division 1 for submittal procedures.

B. Shop Drawings: Submit complete shop drawings for piping system showing all fittings, elevations, pipe accessories, hanger locations and all connected equipment. Submit shop drawings electronically in PDF or DWG format. Drawings shall be produced in AutoCad 2018, or Revit 2018 or later releases..

C. Product Data: Include data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalogue information. Indicate valve data and ratings.

D. Welders Certificate: Include welders certification of compliance with AWS D1.1.

E. Project Record Documents: Record actual locations of pipe routing, valve locations and unforeseen utilities.. Submit in same format as for Shop Drawings above.

F. Maintenance Data: Include installation instructions, spare parts lists, exploded assembly views.

G. Piping Pressure Test Reports: Provide piping pressure test reports indicating:
   1. Owner
   2. Project Address
   3. Project Name
   4. Testing Contractor
   5. Pipe Segment Tested
   6. Pipe Size, Service and material (including wall thickness information (schedule, SDR, etc.)
   7. Test Medium
   8. Date and Time of Test Start
   9. Starting Pressure and Temperature of Test Medium
   10. Starting Ambient Temperature

11. Date and Time of Test End
12. Ending Pressure and Temperature of Test Medium
13. Ending Ambient Temperature
14. Observations and Conclusions

H. Prefabricated Piping Systems: Provide manufacturer's shop drawings with dimensioned piping layout and details of all expansion loops, elbows, anchor points, building and/or manhole entry points and all other pertinent information needed to verify that the type of materials being offered are in accordance with these specifications. Prefabricated pipe units are to be subsequently dimensionalized and numbered to fit actual job conditions as field verified by the installing contractor prior to the start of factory fabrication work.

I. Thermal Stress Analysis: Submit computer modeled thermal stress analysis for piping systems handling fluids over 95 F. Analysis shall include reaction forces at anchors, maximum bending moments and stresses for all elbows, z-bends and expansion loops and shall show that proposed layout of piping system is within allowable stresses per ANSI/ASME B-31.9.Stress analysis shall be in two submittals, one prior to fabrication and one for final, as-built conditions. Final stress calcs shall be submitted with As-Built drawings described below.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified in this section, with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified in this section, with minimum three years of experience.

C. Welder Qualifications: Certify in accordance with AWS D1.1.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.

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

1.06 FIELD CONDITIONS

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

PART 2 PRODUCTS

2.01 HYDRONIC SYSTEM REQUIREMENTS

A. Comply with ASME B31.9 and applicable federal, state, and local regulations.

B. Piping: Provide piping, bolsters, anchors and supports as required, as indicated, and as follows:
1. Where more than one piping system material is specified, provide joining fittings that are compatible with piping materials and ensure that the integrity of the system is not jeopardized. Common anchors for chilled water and heating hot water are not allowed.
2. Use non-conducting dielectric connections whenever jointing dissimilar metals.
3. Provide pipe anchors, loops, and bolsters per drawing details and as per manufacturer's recommendations.
4. Provide temporary flanges/blinds, caps and temporary anchors, test connections and other ancilliaries as required to perform hydro testing of piping system, in segments as required to meet project requirements and time constraints. Remove temporary flanges, caps, anchors, etc, from all direct buried portions of piping at completion of testing.

C. Pipe-to-Valve Connections: Use flanges or unions to allow disconnection of components for servicing; do not use direct welded, soldered, or threaded connections. Flanges or unions shall be used in accessible manholes or tunnels only, unless otherwise indicated or shown on contract drawings. Grooved fittings and couplings are not acceptable for use on systems conveying fluids in excess of 95 degrees F.

D. Valves: Provide valves where indicated.

2.02 HEATING WATER PIPING, BURIED

A. STEEL CARRIER, HDPE JACKET: Underground piping for lines shall consist of a factory prefabricated, pre insulated system suitable for direct burial, consisting of a carrier pipe, insulation, and a corrosion resistant outer casing. Prefabricated piping system shall be , Ferro-Therm as manufactured by Thermacor Process, L.P., or approved equal. All straight sections, expansion loops, fittings, anchors and other accessories shall be factory fabricated to job dimensions and designed to minimize the number of field welds. Each system layout shall be computer-analyzed by the piping system manufacturer to determine stress on the carrier pipe and anticipated thermal movement of the service pipe. The system design shall be in strict conformance with ANSI B31.9 latest edition.

1. Carrier Pipe: ASTM A 53, Grade A or B, Schedule 40 for pipe sizes under 12", 0.375" wall for 12" and over, black, seamless or electric resistance welded .
2. Fittings: ASTM A 234/A 234M, forged steel welding type .
3. Joints: Welded.
4. Insulation: Polyurethane, spray applied, nominal density 2 pounds per cubic foot foam for straight sections and preformed foam for fittings - thickness as scheduled on drawings. K = .16 BTU-in/hr-SF-F.
5. Casing: Jacketing material shall be extruded, black, high density polyethylene (HDPE), having a minimum wall thickness of 125 mils for jacket sizes less than or equal to 12", 150 mils for jacket sizes larger than 12" to 24", and 175 mils for jacket sizes greater than 24".
6. Fittings: Fittings shall be factory fabricated and provide sufficient straight lengths of pipe on each end to allow for field joints in straight piping only. Insulation and casing shall be the same as for the straight piping system.
7. End Seals: Moisture barrier end seals shall be factory applied, sealed to the jacket and carrier pipe. Field applied end seals shall be installed at any field cut to the piping before continuing with the installation. End seals shall be:
   a. Heat Shrink: A single piece, polyethylene molded heat shrink end seal that is specifically designed for each pipe size
8. Field Joints (Pressure Testable): Straight run joints shall be field-insulated per the manufacturer's instructions, using polyurethane foam, same thickness as for pipe, and jacketed with an electro-fusion welded split sleeve. The manufacturer shall provide the fusion machine, straps, rubber bands, pressure gauges, and closure patches for the pressure testable joint cover. Heat shrink sleeve materials will not be accepted as the primary sealing method. ALL FIELD JOINTS ARE REQUIRED TO BE PRESSURE TESTED at 5 psi for 5 minutes while simultaneously soap tested at the joint closure’s seams for possible leaks. After passing the pressure test, the field joint is insulated and a closure patch is welded (as per joint closure instructions) over the foam holes. All field joint closures and insulation shall occur at straight sections of pipe only
9. Piping system shall be capable of field modifications (cutting and joining), to allow for rerouting to avoid unforeseen obstructions without affecting system warranty.
10. Anchors: Factory fabricated, solid steel plate welded to carrier pipe, extending through insulation, wrapped with high shrink ratio HDPE heat shrink wrapping. The steel plate shall be a minimum of ½" thick with an outside diameter 2" greater than that of the outer jacket.
11. Expansion Loops: Expansion loops shall be factory fabricated to verified dimensions. Manufacturer's recommended exterior bolstering material shall be installed to accommodate thermal movement. Bolsters to be provided by piping manufacturer.

B. STEEL PIPING IN VAULTS: Steel piping inside vaults shall conform to the following:

1. Pipe: ASTM A 53, Grade A or B, Schedule 40 for pipe sizes under 12", 0.375" wall for 12" and over, black, seamless or electric resistance welded.
2. Fittings: ASTM A 234/A 234M, forged steel welding type or 150 lb flanged.
3. Joints: Welded, or 150 lb flanged.

C. PIPE INSULATION IN VAULTS: Pipe insulation inside vaults shall conform to the following:
   1. Aerogel: Aspen Aerogels, Pyrogel XTE: Flexible high performance aerogel blanket, hydrophobic and breathable, with long lasting water resistance for both insulation and piping. Thermal conductivity of 0.16 BTU-in/hr-sq.ft-F at 212 F. Thickness as scheduled on drawings.
   2. Jacketing: PVC jackets with pipe ID and flow direction markers with snap around anchoring system. Tape system not acceptable.
   3. Labeling: Factory fabricated, mechanically attached PVC pipe ID labels, indicating service, supply or return and arrows indicating flow direction. Locate for ease of reading

2.03 CHILLED WATER PIPING, BURIED

A. PVC CARRIER, HDPE JACKET
   1. Underground piping for lines shall consist of a factory prefabricated, pre insulated system suitable for direct burial, consisting of a carrier pipe, insulation, and a corrosion resistant outer casing. Prefabricated piping system shall be Chill-Therm as manufactured by Thermacor Process, L.P., or approved equal.solvent welded PVC. All straight sections, anchors and other accessories shall be factory fabricated to job dimensions and designed to minimize the number of field joints.
      a. Carrier Pipe:
         1) Pipe size less than 14": Schedule 40 PVC
         2) Pipe sizes 14" and over: C900-DR18 PVC
      b. Fittings:
         1) Pipe size less than 14": PVC schedule 80, solvent welded.
         2) Pipe sizes 14" and over:C900-DR18 PVC, solvent welded bell and spigot.
      c. Joints:
         1) Pipe Size less than 14": Solvent weld factory schedule 80 fittings.
         2) Pipe size 14" and over: solvent welded bell & spigot.
      d. Transitions: Provide appropriate transition fittings for C900 to schedule 40 pipe connections.
      e. Thrust restraints (anchors): Provide poured in place concrete anchors to undisturbed earth to restrain all solvent welded PVC joints 8" and larger, as detailed on contract drawings..
      f. Insulation: Polyurethane, spray applied, nominal density 2 pounds per cubic foot foam for straight sections and preformed foam for fittings - thickness as scheduled on drawings. K = .16 BTU-in/hr-SF-F.
      g. Casing: Jacketing material shall be extruded, black, high density polyethylene (HDPE), having a minimum wall thickness of 125 mils for jacket sizes less than or equal to 12", 150 mils for jacket sizes larger than 12" to 24", and 175 mils for jacket sizes greater than 24".[<>]
      h. Fittings: Fittings solvent welded and shall be field assemblied and insulated (sticks and kits). Utilize pre-molded PVC fitting covers as molds and two part pour in polyurithane foam with HDPE jackets to match adjacent thicknesses.
      i. End Seals: Moisture barrier end seals shall be factory applied, sealed to the jacket and carrier pipe. Field applied end seals shall be installed at any field cut to the piping before continuing with the installation. End seals shall be:
         1) Heat Shrink: A single piece, polyethylene molded heat shrink end seal that is specifically designed for each pipe size
      j. Field Joints: Straight run joints and fittings shall be field-insulated per the manufacturer's instructions, using polyurethane foam poured in an HDPE sleeve and sealed with a heat shrink sleeve. All insulation and jacketing materials shall be furnished by piping system manufacturer.
      k. Piping system shall be capable of field modifications (cutting and joining), to allow for rerouting to avoid unforeseen obstructions without affecting system warranty.

2.04 PVC PIPING IN VAULTS:

A. Pipe: Piping specs in vaults shall be the same as for the main underground PVC system as specified in Article 2.03, above.

B. Companion Flanges: Solvent weld Van Stone flange with ANSI Class 150 bolt drilling with flat gaskets.

C. Closed cell Armacell Armaflex pipe insulation with UV reistant jacket.

D. Jacketing: Factory fabricated molded PVC jackets, sealed water and vapor tight.

E. Labeling: Factory fabricated, mechanically attached PVC pipe ID labels, indicating service, supply or return and arrows indicating flow direction. Locate for ease of reading.

2.05 UNIONS, FLANGES, AND COUPLINGS - IN VAULTS ONLY

A. Unions for Pipe 2 Inches (50 mm) and Under:
   1. Ferrous Piping: 150 psig (1034 kPa) malleable iron, threaded.
   2. PVC Pipe: schedule 80 PVC solvent welded two piece union.

B. Flanges for Pipe Over 2 Inches (50 mm):
   1. Ferrous Piping: 150 psig (1034 kPa) forged steel, slip-on, welded..
   2. PVC Piping: Class 150 solvent weld Van Stone flange.
   3. Gaskets: 1/16 inch (1.6 mm) thick preformed neoprene.

C. Dielectric Connections: Waterway with electro zinc plated casing, chemically inert, non corrosive, self-cleaning NSF/FDA listed dielectric thermoplastic waterway. Thermoplastic liner shall meet requirements of ASTM Standard F-492. Threaded ends. Victaulic, ClearFlow, or approved equal.

2.06 BUTTERFLY VALVES - IN MANHOLES AND VAULTS

A. Manufacturers
   1. DeZurik Water Controls; Model AWWA Butterfly Valves (BAW): www.dezurikwater.com. or equal, no known equal.
   2. Substitutions: See Division 1

B. General: Butterfly valves shall meet the requirements of AWWA C504 standards. Butterfly Valve shall have offset disc design, corrosion resistant shaft, stainless steel disc edge, and self-compensating shaft seals. Molded-in body seat with disc locators provides positive sealing and longer seat life on sizes 3 - 20". Large valves, 24" and larger shall have adjustable, replaceable seat, non-hollow disc structure, and rubber seat retained within a dovetail groove in the valve body and locked in place by an epoxy wedge.
   1. Temperature Range: to 290°F
   2. AWWA Class: 150B
   3. Body Material: Cast iron ASTM A126 Class B
   4. Disc Material: 316 Stainless Steel ASTM A743 Type CF8M
   5. Shaft Material: 316 Stainless Steel ASTM A276 Type 316
   6. Seat Material: Chloramine resistant EPDM Terpolymer of Ethylene Propylene & a Diene (-20 to 290 F)
   7. Packing Material: Chloramine resistant EPDM Self adjusting (-20 to 290 F)
   8. Valve Style: Flanged joint
   9. Coating: Epoxy coated, minimum 8 mils dry finish
   10. Actuator Type: Valves between 3"-36" shall have a scotch yoke mechanism that allows the actuators to provide a torque curve matching the torque required by the valve. The actuator shall have a steel threaded input shaft and ductile iron yoke nuts (traveling nut actuator). Valves between 30"-72" shall have a link-arm mechanism that will allow the actuator to provide characterized closure which slows valve travel as the disc comes into the seat. Provide handwheel for use in manholes and standard operating nut for buried service.

2.07 ~~BALANCING VALVES~~ *(ADDENDUM #3)*

A. ~~Manufacturers:~~

1. ~~ITT Bell & Gossett: Model Circuit Setter: www.bellgossett.com.~~

B. ~~Construction:~~
   1. ~~1/2" to 2" Pipe Size~~
      a. ~~Bronze body, brass ball construction with glass and carbon filled TFE seat rings. Valves to have differential pressure read-out ports across valve seat area. Read-out ports shall have integral EPT insert and check valve. Valve bodies shall have 1/4" tapped drain/purge point. Valve to have memory stop feature and integral calibrated nameplate with position indication. 300 psig design pressure, NPT connections. 250 F operating termperature.~~
   2. ~~2-1/2" to 12" Pipe Size~~
      a. ~~Cast iron, flanged construction with 125 psig flanged connections suitable up to 175 psig working pressure at 250 F. Valves 2-1/2" - 3" shall have a brass ball with glass and carbon filled TFE seat rings. Valves 4" - 12" shall be fitted with a bronze seat, replaceable bronze disc with EPDM seal insert, and stainless steel stem. Valves shall have memory stop feature and calibrated nameplate with position indication.~~

2.08 PRECAST CONCRETE VAULTS FOR HYDRONIC ENERGY UTILITIES

A. As specified and detailed on Contract Drawings.

PART 3 EXECUTION

3.01 PREPARATION

A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.

B. Remove scale and dirt on inside and outside before assembly.

C. Prepare piping connections to equipment using jointing system specified.

D. Keep open ends of pipe free from scale and dirt. Protect open ends with temporary plugs or caps.

E. After completion, fill, clean, and treat systems. Refer to Section 23 25 00 for additional requirements.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install heating water and chilled water piping to ASME B31.9 requirements.

C. Route piping in orderly manner, parallel to building structure, and maintain gradient.

D. Group piping whenever practical at common elevations.

E. Slope piping and arrange to drain at low points.

F. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.

G. Underground piping: Refer to Section 31 23 33 for trenching and backfilling.

H. Pipe Hangers and Supports:
   1. See Contract Drawings for piping supports and restraints inside valve vaults.

I. Provide clearance from structure and other equipment for installation of insulation and access to valves and fittings. .

J. Prepare unfinished pipe, fittings, supports, and accessories, ready for finish painting.

K. Install valves with stems upright or horizontal, not inverted.

L. Document on Record Drawings exact location and elevation of all utilities installed underground. Dimensions shall be recorded from permanent surface features on site. Document all existing utilities crossed with location marked from permanent surface features and elevation of each utility

M. In addition to installed piping exact locations and elevations per above, also document all existing utilities uncovered, crossed or otherwise discovered with information for Size, Service,

Pipe and Insulation materials, elevation, location from permanent surface features, and direction of pipe, using compass headings. document all such information on Contract Record Drawings and As-Built Drawings.

N. Information from Record Drawings shall be included on the final As-Built drawings.

3.03 PREFABRICATED PIPING SYSTEM INSTALLATION

A. Follow manufacturer's written instructions for all installation procedures.

B. Coordinate with manufacturer for field inspection prior to testing or backfilling. To assure proper installation of the piping materials, a manufacturer's field service instructor who is technically qualified to determine whether or not the installation is being made in accordance with the manufacturer's recommendations shall be present during critical periods of the materials installation and testing.

C. Polyurethane insulation shall be poured in place into the field weld area. All field applied insulation shall be placed inside preformed PVC or ABS pipe jacketing sections secured to pipe.. For straight sections, the mold for the insulation shall be made of clear adhesive backed polyester film. Joint area shall be sealed with a heat shrinkable adhesive backed wrap.

D. All insulation and coating materials for making the field joint shall be furnished by the prefabricated piping manufacturer.

E. Bedding and Backfilling:
   1. See also Section 31 23 16.13 Trenching for Site Utilities.
   2. Backfilling shall not begin until the heat shrink wrap has cooled,.
   3. Install external bolstering material of the type and dimensions as recommended/required by the manufacturer for external expansion compensation.
   4. Provide 4 inch layer of sand or fine gravel, tamped in the trench for a uniform bedding.
   5. The entire trench width shall be evenly backfilled with a similar material as the bedding in 6 inch compacted layers to a minimum height of 12 inches above the top of the piping system. The remaining trench shall be evenly and continuously backfilled in uniform layers with suitable excavated soil. Remove all unused spoils from site at end of construction in the designated area(s).

F. Field Modifications for rerouting
   1. Line and grade shall be modified in the field to avoid existing obstructions as required. Field modifications to slope and grade shall be as delineated on the Drawings. No increase in contract price will be permitted for piping installed within the defined tolerance.
   2. Modifications to pre-fabbed pipe shall be accomplished with pipe and fittings as specified for manhole applications, with preformed insulation and PVC jacketing.

3.04 TESTING

A. Unless otherwise noted, hydrostatically test all piping installed under this contract to 1-1/2 times the normal working pressure or 100 psig, whichever is higher for a period of not less than 30 minutes with no perceptable drop in pressure.

B. Provide necessary caps or blinds to protect equipment not rated for test pressure (safety valves, regulators, etc.).

C. Pressure test all buried piping prior to backfilling, unless otherwise noted.

D. Prefabricated/Preinsulated Piping Systems:
   1. Carrier piping shall be hydrostatically tested at 1-1/2 times normal operating pressure or 100 psig, whichever is higher, for a minimum of 30 minutes with no perceptable drop in pressure. Test prior to backfilling/insulating/wrapping field joints.

E. Pneumatic Testing:
   1. Pneumatic testing is expressly prohibited on any non-metallic piping.
   2. Other than as excepted above, pneumatic testing will not be considered without written consent from Owner or architect, and substantiation as to why hydrotesting is

inapplicable. Additional testing requirements and measures may be required for a pneumatic test and will be considered on a case-by-case basis.

F. Reports: Submit test reports for all pipeline sections tested per Submittals requirements in Part 1 of this specification.

END OF SECTION

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

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

STATEMENT OF GENERAL CONFORMANCE

APPENDIX A: EXAMPLE STATEMENT OF GENERAL CONFORMANCE FOR DPGRC

STATEMENT OF GENERAL CONFORMANCE
APPLICATION No.: 02-123745
FILE No.: 48-C1

THE DRAWINGS IDENTIFIED AS FOLLOWS:

- ☐ ALL DRAWING SHEETS INCLUDED IN THIS SET NOT BEARING MY STAMP AND SIGNATURE.
- ☒ DRAWING SHEETS DENOTED IN THE SHEET INDEX AS FOLLOWS: E- & S-SHEETS
- ☐ DRAWING SHEETS INCLUDED UNDER THE FOLLOWING PC APPROVAL(S):

HAVE BEEN PREPARED BY OTHER DESIGN PROFESSIONALS OR CONSULTANTS WHO ARE LICENSED AND AUTHORIZED TO PREPARE SUCH DRAWINGS (PLANS) IN THIS STATE. THEY HAVE BEEN EXAMINED BY ME FOR:

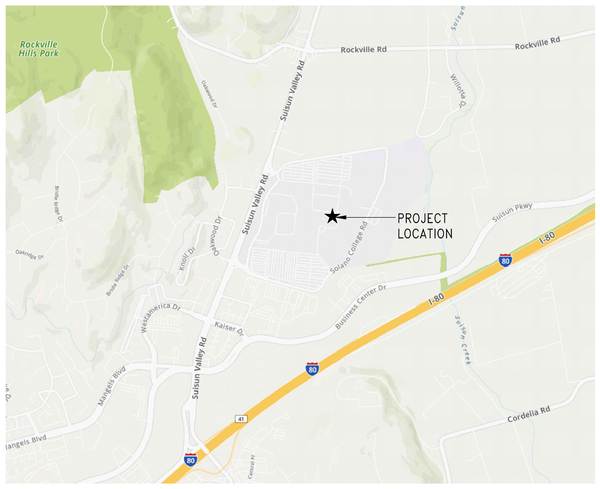
1. DESIGN INTENT AND APPEAR TO MEET THE APPROPRIATE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS AND THE PROJECT SPECIFICATIONS PREPARED BY ME, AND
2. COORDINATION WITH MY DRAWINGS (PLANS) AND SPECIFICATIONS AND ARE ACCEPTABLE FOR INCORPORATION INTO THE CONSTRUCTION OF THIS PROJECT.

PER TITLE 24, PART 1, SECTION 4-316(b): THIS STATEMENT OF GENERAL CONFORMANCE SHALL NOT BE CONSTRUED AS RELIEVING ME OF MY RIGHTS, DUTIES, AND RESPONSIBILITIES UNDER SECTIONS 17302 AND 81138 OF THE EDUCATION CODE AND SECTIONS 4-336, 4-341 AND 4-344 OF TITLE 24, PART 1.

SIGNATURE		DATE
		03/11/2026
EVAN EVERETT SARVER	M40066	09/30/2026
PRINTED NAME	LICENSE NUMBER	EXPIRATION DATE

VICINITY MAP

SCALE: N.T.S.



SITE PLAN

SCALE: N.T.S.



SUMMARY OF WORK

1. THE INTENT OF THIS PROJECT IS TO REPLACE DEFICIENT SECTIONS OF THE EXISTING HYDRONIC HHW AND CHW DISTRIBUTION SYSTEM SERVING THE SOLANO CC CAMPUS. UPGRADES AND REPAIRS WILL CONSIST OF SELECTED UNDERGROUND HYDRONIC PIPING REPLACEMENTS INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING: THE ADDITION OF ISOLATION VALVES, UTILITY VAULTS, AND UPGRADES AT (9) BUILDING MECHANICAL ROOMS SUCH AS REPLACEMENT OF HHW & CHW PUMPS, THE ADDITION OF CROSSOVER BRIDGES, BALANCING VALVES, ETC.
2. UNDERGROUND HYDRONIC CHW & HHW PIPING SHALL CONSIST OF:
   - A. HHWS&R (ALL SIZES): PRE-FABRICATED THERMACOR FERRO-THERM (OR APPROVED EQUAL) STICKS, STANDARD COMPONENT (SC) FITTINGS AND ANCHORS WITH THERMACOR PRESSURE TESTABLE JOINT CLOSURES. JOINTS SHALL BE WELDED.
   - B. CHWS&R (12" & BELOW): PREFABRICATED SCH. 40 PVC THERMACOR CHILL-THERM (OR APPROVED EQUAL) STICKS WITH SOLVENT WELDED JOINTS. FITTINGS SHALL BE SCH. 80 PVC, FIELD INSULATED, WITH FIELD INSTALLED JOINT CLOSURES AT EACH JOINT. THRUST BLOCKS REQUIRED AT CHANGES OF DIRECTION FOR PIPE SIZES 8" AND ABOVE. JOINTS WITHIN VAULT SHALL UTILIZE SCH. 80 VAN STONE FLANGES.
   - C. CHWS&R (14" ONLY): PREFABRICATED C900-DR18 THERMACOR CHILL-THERM (OR APPROVED EQUAL) STICKS WITH BELL & SPIGOT PUSH JOINTS. FITTINGS (AS NEEDED) SHALL BE C900-DR 18, B&G PUSH JOINT, FIELD INSULATED, WITH FIELD INSTALLED JOINT CLOSURES AT EACH PUSH JOINT. THRUST BLOCKS REQUIRED AT ALL CHANGES OF DIRECTION. UTILIZE DRESSER STYLE 62 TRANSITION COUPLING (OR APPROVED EQUAL) INSIDE VAULT(S) TO TRANSITION FROM C900-DR18 PVC PIPING TO SCH. 40 PVC PIPING.

   PRE-FABRICATED PIPING SHALL TERMINATE AT THE INTERIOR OF WALL PENETRATIONS (AT VAULTS OR OTHERWISE) AND FINISHED WITH A FACTORY END SEAL. FIELD INSTALLED SCH. 40 WELDED STEEL PIPING FOR HHW AND SCH. 40 PVC PIPING (W/ SCH. 80 FITTINGS) FOR CHW IS ACCEPTABLE AT INTERIOR SPACES. PROVIDE FIELD INSTALLED PYROGEL XTE INSULATION FOR HHW AND ARMACELL ARMAFLEX INSULATION FOR CHW, PVC JACKETING PIPE ID MARKERS, AND FLOW ARROWS. INSULATION AND JACKETING SHALL BE COMPLIANT WITH CEC, TITLE 24. DEZURIK BAW VALVES WITH EPDM SEALS RATED FOR DIRECT BURY USE (OR APPROVED EQUAL) SHALL BE USED FOR THE VAULT ISOLATION VALVES. EXCEPTION: OWNER SHALL PROVIDE (8) 4" DEZURIK BAW VALVES WITH NBR SEALS ACCEPTABLE ONLY FOR CHW APPLICATIONS. OWNER AND CONTRACTOR SHALL INSPECT AND ACCEPT THE EXCHANGE OF MATERIAL; AT THIS TIME THE CONTRACTOR TAKES OWNERSHIP OF THE EQUIPMENT (I.E. VALVES) FOR THE USE OF THE PROJECT.
3. DUE TO THE WIDESPREAD NATURE OF THIS PROJECT AND THE NEED TO KEEP CAMPUS FULLY OPERATIONAL, THE INTENT IS FOR THE CONTRACTOR TO CONDUCT THE WORK IN ZONES – THERE ARE FIVE (5) ZONES IDENTIFIED IN THE PROJECT. EACH ZONE WILL CONSIST OF A MAJOR SECTION OF THE CAMPUS HHW & CHW INFRASTRUCTURE AND INCLUDE UP TO THREE (3) BUILDINGS. TO MINIMIZE DISRUPTION, THE CONTRACTOR SHALL COORDINATE BRIEF SYSTEM SHUTDOWNS WITH THE COLLEGE TO EMPLOY TEMPORARY EQUIPMENT AND PROVISIONS THAT SHALL MAINTAIN OPERATIONS AND ENS CONTROLS DURING EACH ZONE'S CONSTRUCTION. THE FIVE (5) ZONES WITHIN THE SCOPE OF WORK CAN BE DEFINED AS FOLLOWS (AND SHOWN GRAPHICALLY ON G-1.1):
   - A. ZONE #1: UNDERGROUND CHW & HHW PIPING INFRASTRUCTURE SOUTH OF VAULT #1 AND EAST OF <E>VAULT #13. BUILDINGS AFFECTED IN THIS ZONE INCLUDE B-2700, AND B-1500, BOTH OF WHICH SHALL RECEIVE UPGRADES AT BUILDING HYDRONIC PUMP MECHANICAL ROOMS. THREE (3) NEW UTILITY VAULTS (VLT-7, 8 & 9) AND ISOLATION VALVES SHALL BE ADDED TO THIS AREA OF THE HYDRONIC INFRASTRUCTURE. CHW & HHW INFRASTRUCTURE AT <E> VAULT #1 SHALL BE UPGRADED.
   - B. ZONE #2: UNDERGROUND CHW & HHW PIPING INFRASTRUCTURE NORTH OF VAULT #1. BUILDINGS AFFECTED IN THIS ZONE INCLUDE B-1400, B-1300, AND B-1200, ALL OF WHICH SHALL RECEIVE UPGRADES AT BUILDING HYDRONIC PUMP MECHANICAL ROOMS. TWO (2) NEW UTILITY VAULTS (VLT-4 & 5) AND ISOLATION VALVES WILL BE ADDED TO THIS AREA OF THE HYDRONIC INFRASTRUCTURE.
   - C. ZONE #3: NOT IN CONTRACT
   - D. ZONE #4 (BID ALTERNATE #1): UNDERGROUND CHW & HHW PIPING INFRASTRUCTURE SOUTH OF VAULT #13. BUILDINGS AFFECTED IN THIS ZONE INCLUDE B-500 AND B-600, BOTH OF WHICH SHALL RECEIVE UPGRADES AT BUILDING HYDRONIC PUMP MECHANICAL ROOMS. ONE (1) NEW UTILITY VAULT (VLT-12) AND ISOLATION VALVES WILL BE ADDED TO THIS AREA OF THE HYDRONIC INFRASTRUCTURE. CHW & HHW INFRASTRUCTURE AT <E> VAULT #13 SHALL BE UPGRADED AND THE HIGH POINT AIR VENT LOCATIONS WEST OF VAULT #13 SHALL BE REPLACED AND ROUTED BENEATH THE EXISTING UTILITIES.
   - E. ZONE #5 (BID ALTERNATE #8): REFER TO MD-1.5 AND M-1.5 FOR THE REPLACEMENT OF THE DOMESTIC WATER (DW) PIPING TO THE RISER WITHIN THE B-1700A MECH. RM.
4. TEMPORARY HEATING AND COOLING SYSTEMS, DURING THE TIME PERIODS AND DURATIONS INDICATED BELOW, ARE REQUIRED SUCH THAT NO BUILDING IS WITHOUT COOLING OR HEATING FOR ANY GIVEN TIME DURING OCCUPIED HOURS. LIQUIDATED DAMAGES AS DETERMINED BY OWNER (SEE DIV. 00 AND 01) WILL BE APPLIED FOR EACH DAY HEATING AND COOLING IS NOT AVAILABLE TO CAMPUS BUILDINGS. THE INTENT FOR THE TEMPORARY SYSTEMS IS FOR THE CONTRACTOR TO PROVIDE DEDICATED TEMPORARY HEATING AND COOLING EQUIPMENT FOR EACH INDIVIDUAL BUILDING, INCLUDING BUILDING HHW & CHW PUMPS, TEMPORARY PIPING, WATER TREATMENT, AIR SEPARATORS, ISOLATION VALVES, EXPANSION TANKS, INSULATION, SUPPORTS, POWER, ETC., SUCH THAT EACH BUILDING MECHANICAL ROOM IS BYPASSED BY THE TEMPORARY SYSTEMS IN ORDER TO MINIMIZE BUILDING DISRUPTION DURING CONSTRUCTION ACTIVITIES. TEMPORARY EQUIPMENT AND SERVICES ARE REQUIRED AT EACH BUILDING AFFECTED BY "ZONE" CONSTRUCTION, UNTIL CONSTRUCTION FOR THAT SPECIFIC ZONE IS COMPLETE IN ITS ENTIRETY INCLUDING PRESSURE TEST, WATER TREATMENT, FINAL CONNECTIONS, ETC. THE FOLLOWING TEMPORARY SERVICE REQUIREMENTS APPLY:
   - A. TEMPORARY COOLING: REQUIRED FROM THE START OF FEBRUARY THROUGH THE END OF NOVEMBER AND SHALL BE PROVIDED VIA AIR COOLED CHILLERS. TEMPORARY COOLING/CHW SYSTEMS SHALL SUPPLY CHILLED WATER OF NOT MORE THAN 45°F.
   - B. TEMPORARY HEATING: REQUIRED FROM THE START OF AUGUST THROUGH THE END OF MAY AND SHALL BE PROVIDED VIA NATURAL GAS-FIRED BOILERS WHERE AN EXISTING GAS MANIFOLD IS PRESENT AT THE BUILDING, OR AN ELECTRIC BOILER IF BUILDING ELECTRICAL CAPACITY IS SUFFICIENT. IF NEITHER ARE AVAILABLE, CONTRACTOR SHALL PROVIDE DIESEL/OIL GENERATORS, DIESEL/OIL FUEL, AND TEMPORARY FEEDERS/PANELS TO SUPPLY POWER TO A TEMPORARY ELECTRIC BOILER. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR FURTHER INFORMATION. TEMPORARY HEATING SYSTEMS SHALL SUPPLY HEATING HOT WATER OF NOT LESS THAN 170°F.
   - C. TEMPORARY FENCING AND WAYFINDING: REQUIRED AT ALL CONTRUCTION AREAS INCLUDING WAYFINDING SIGNAGE IDENTIFYING ACCESSIBLE PATHS OF TRAVEL. FENCING SHALL PROVIDE A SAFE BOUNDARY FROM TEMPORARY EQUIPMENT, PIPING, POWER, EXCAVATION SITES, MACHINERY, LAYDOWN AREAS, ETC.
   - D. TEMPORARY SHUTDOWNS: SHUTDOWNS SHALL BE COORDINATED WITH THE COLLEGE. SHUTDOWNS OF THE HHW AND CHW SYSTEM WILL BE REQUIRED TO FACILITATE THE INSTALLATION AND REMOVAL OF TEMPORARY BYPASSES AT THE SITE PIPING AND TEMPORARY CONNECTIONS AT THE BUILDINGS. TEMPORARY SHUTDOWNS SHALL OCCUR OVER WEEKEND AND OVERNIGHT PERIODS TO PROVIDE SUFFICIENT TIME FOR CONTRACTOR TO RESTORE HHW AND CHW SERVICE PRIOR TO 6:00AM THE FOLLOWING SCHOOL DAY OR MONDAY MORNING.
5. CONSTRUCTION MILESTONES BY ZONE: THE CONSTRUCTION EFFORTS (INCLUDING BOTH SITE AND BUILDING REPAIRS) AT EACH ZONE ARE SUGGESTED TO BE COMPLETED IN ACCORDANCE TO THE MILESTONE SCHEDULE BELOW FROM THE INITIAL SHUTDOWN AND SWITCH OVER TO TEMPORARY SYSTEMS. ZONE PRIORITIES CAN BE REARRANGED IF APPROVED BY OWNER AND ENGINEER. DUE TO COLLEGE REQUIREMENTS, THE PROJECT SHALL FOLLOW A FAST-TRACK CONSTRUCTION SCHEDULE WITH SUGGESTED MILESTONES AS DESCRIBED BELOW:
   - A. SUBMITTALS & PROCUREMENT: APRIL 6TH, 2026 – JUNE 5TH, 2026 (9 WEEKS)
   - B. ZONE #1 & ZONE #2 CONSTRUCTION: JUNE 8TH, 2026 – AUGUST 17TH, 2026 (10 WEEKS) FOR SUBSTATANTIAL CONSTRUCTION COMPLETION THROUGH TRENCH BACKFILL AND COMPACTION ACTIVITIES. AN ADDITIONAL TWO (2) WEEKS SHALL BE PROVIDED FOR HARDSCAPE/LANDSCAPE REPAIRS TO BE COMPLETED BY NO LATER THAN AUGUST 31ST, 2026.
   - C. ZONE #3 CONSTRUCTION: NOT IN CONTRACT
   - D. ZONE #4 CONSTRUCTION (BID ALTERNATE #1): AUGUST 31ST, 2026 – OCTOBER 26TH, 2026 (8 WEEKS). AN ADDITIONAL TWO (2) WEEKS SHALL BE PROVIDED FOR HARDSCAPE/LANDSCAPE REPAIRS TO BE COMPLETED BY NO LATER THAN NOVEMBER 9TH, 2026.
   - E. ZONE #5 CONSTRUCTION (BID ALTERNATE #8): NOVEMBER 9TH, 2026 – DECEMBER 18TH, 2026 (6 WEEKS)
   - F. PROJECT CLOSEOUT: DECEMBER 18TH, 2026 – JANUARY 15TH, 2027 (3.5 WEEKS)
6. PROJECT COMPLETION: CONTRACTOR SHALL COMMISSION THE HYDRONIC SYSTEMS DURING THE WEEKEND AND/OR OVERNIGHT PERIOD IN WHICH THE SHUTDOWN AND SWITCH OVER OCCURS TO REMOVE THE TEMPORARY EQUIPMENT. OVERALL PROJECT COMPLETION IS REQUIRED BY JANUARY 15TH, 2027.

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:

1. 2025 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR
2. 2022 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR
3. 2022 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 CCR
4. 2022 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 CCR
5. 2022 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR
6. 2022 CALIFORNIA ENERGY CODE, PART 6, TITLE 24 CCR
7. 2022 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 CCR
8. 2022 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR
9. 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 CCR
10. 2022 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 CCR
11. TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS
12. NFPA 72 NATIONAL FIRE ALARM CODE, WITH CA AMENDMENTS: 2022 EDITION (CA AMENDED)
13. NFPA 170 STANDARD FOR FIRE SAFETY AND EMERGENCY SYMBOLS: 2018 EDITION
14. SFM 12-10-2 SINGLE POINT LATCHING OR LOCKING DEVICES
15. SFM 12-10-3 EMERGENCY EXIT & PANIC HARDWARE
16. UL 38-99 AMENDMENTS MANUAL OPERATED SIGNAL BOXES, WITH REVISIONS, THRU FEB.2, 2005, WITH CA
17. UL 305-2012 PANIC HARDWARE WITH REVISIONS THRU AUG. 2014
18. UL 464 AUDIBLE SIGNALING DEVICES FOR FIRE ALARM AND SIGNALING SYSTEMS, INCLUDING ACCESSORIES, 2003 EDITION
19. UL 864-2014 CONTROL UNITS AND ACCESSORIES FOR FIRE ALARM SYSTEMS, WITH REVISIONS THRU DEC, 2014 AND CA AMENDMENTS

AMERICANS WITH DISABILITIES ACT (A.D.A.) FEDERAL ACCESSIBILITY STANDARDS

ACI 318-19, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE

AISC MANUAL OF STEEL CONSTRUCTION

ASCE/SEJ 7-16, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES WITH SUPPLEMENT NO. 1

NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION

UL 1971 – STANDARD FOR SIGNALING DEVICES FOR THE HEARING IMPAIRED 2002 (R2010)

FOR A LIST OF APPLICABLE STANDARDS, INCLUDING CALIFORNIA AMENDMENTS TO THE NFPA STANDARDS, REFER TO CBC CHAPTER 35 AND CFC CHAPTER 80.

BID ALTERNATES

- A — BID ALTERNATE #1 (ADDITIVE): PROVIDE ZONE #4 HYDRONIC SITE REPAIRS, MECHANICAL ROOM DEFERRED MAINTENANCE UPGRADES, VAULT/VALVE ADDITIONS, PRESSURE TESTING OF EXISTING HHWS&R PIPING (SEE BID ALTERNATE #4), TEMPORARY HEATING AND COOLING SYSTEMS AT B-500 & B-600, TEMPORARY BYPASSES AT SITE PIPING, ETC. AS INDICATED ON MD-1.4 AND M-1.4.
- A — BID ALTERNATE #2 (ADDITIVE): IF THE PRESSURE TEST OF THE SECTION OF PIPING AT THE INDICATED HOT SPOT FAILS, DEMOLISH AND REPLACE HHWS&R PIPING AS SPECIFIED. THE AFFECTED BUILDINGS FOR THIS WORK ARE B-1200 & B-1300. REFER TO SHEET MD-1.2 AND M-1.2 FOR ADDITIONAL INFORMATION.
- A — BID ALTERNATE #3 (ADDITIVE): IF THE PRESSURE TEST OF THE SECTION OF PIPING AT THE INDICATED HOT SPOT FAILS, DEMOLISH AND REPLACE HHWS&R PIPING AS SPECIFIED. THE AFFECTED BUILDING FOR THIS WORK IS B-1200. REFER TO SHEET MD-1.2 AND M-1.2 FOR ADDITIONAL INFORMATION.
- A — BID ALTERNATE #4 (ADDITIVE): IF THE PRESSURE TEST OF THE SECTION OF PIPING AT THE INDICATED HOT SPOT FAILS, DEMOLISH AND REPLACE HHWS&R PIPING AS SPECIFIED. THE AFFECTED BUILDING FOR THIS WORK IS B-500. REFER TO SHEET MD-1.4 AND M-1.4 FOR ADDITIONAL INFORMATION. IF BID ALTERNATE #1 IS REJECTED, BID ALTERNATE #4 IS NO LONGER APPLICABLE (I.E. REJECTED).
- A — BID ALTERNATE #5 (ADDITIVE): DEMOLISH AND REPLACE THE CHW PIPING AND VALVES AT AND THROUGH <E> VAULT #1. PROVIDE 12" AND 8" TEMPORARY BYPASSES TO EXISTING CHW PIPING WEST AND NORTH OF VAULT #1, INCLUDE (3) TEMPORARY THRUST BLOCKS AT 5'x5'x7' DIMENSIONS AND 4 FT. MIN. EMBEDMENT INTO UNDISTURBED SOIL (SEE DETAIL 9/M-5.2 FOR REFERENCE). SCH. 40 PVC PIPING WITH SOLVENT WELDED SCH. 80 FITTINGS/JOINTS SHALL BE USED FOR THE 12" & 8" CHWS&R PIPING AT THE WEST AND NORTH BRANCHES RESPECTIVELY, 14" C900-DR18 PVC PIPING AT THE EAST SIDE PENETRATIONS, AND 14" STD. WT. STEEL PIPING CAN BE USED INSIDE THE VAULT WITH WELDED & FLANGED JOINTS. VAULT LID SHALL BE REMOVED TO FACILITATE CONSTRUCTION INSIDE THE VAULT. RETAIN AND RELOCATE <E> PIPE SUPPORTS INSIDE THE VAULT. ALL OTHER REQUIREMENTS RELATED TO INSULATION, JACKETING, VALVE PLACEMENT, ETC. INCLUDED WITH CONTRACT DOCUMENTS SHALL BE MET FOR REPLACEMENT EFFORT. THIS WORK SHALL COMMENCE ONLY WHEN THE NEED FOR CAMPUS COOLING IS NO LONGER REQUIRED (I.E. DECEMBER – JANUARY).
- A — BID ALTERNATE #6 (ADDITIVE): NOT USED
- A — BID ALTERNATE #7 (ADDITIVE): NOT USED
- A — BID ALTERNATE #8 (ADDITIVE): PROVIDE A PARALLEL 4" DOMESTIC WATER IN THE OUTDOOR WALKWAY BETWEEN B-1700A AND THE POOL. DOMESTIC WATER PIPING SHALL BE PVC PIPING WITH SOLVENT WELDED JOINTS. CONTRACTOR SHALL PROVIDE RESTRAINT COUPLINGS AS NECESSARY AT CONNECTION TO EXISTING. POINT OF CONNECTION TO EXISTING SHALL BE DOWNSTREAM OF THE UNDERGROUND ISO VALVE NORTH OF B-1700A AND THE EXISTING GAS MANIFOLD ENCLOSURE. DOMESTIC WATER RISER SHALL OCCUR OUTSIDE THE B-1700A MECHANICAL ROOM, TRANSITION TO STEEL PIPING, PENETRATE THE EXTERIOR WALL WITH CONNECTION TO THE EXISTING RISER. EXISTING PIPING SHALL BE CAPPED AND ABANDONED IN PLACE (BENEATH BLDG). SEE MD-1.5 AND M-1.5 FOR ADDITIONAL INFORMATION.

DEFERRED APPROVAL

- A — NONE

DRAWING INDEX (TOTAL 62 SHEETS)

SHEET NO.	DESCRIPTION
G-0.0	COVER SHEET
G-0.1	GENERAL NOTES
G-1.1	OVERALL SITE PLAN – EXISTING UTILITIES
G-1.2	OVERALL SITE PLAN – LAYDOWN AREAS, AND TEMPORARY EQUIPMENT
G-1.3	OVERALL ACCESS SITE PLAN
G-1.4	OVERALL SITE PLAN – EXCAVATION, TRENCHING AND SURFACE RESTORATION
G-4.1	ENLARGED SITE PLAN ZONE #1
G-4.2	ENLARGED SITE PLAN ZONE #2
G-4.3	ENLARGED SITE PLAN ZONE #3 (NOT IN CONTRACT)
G-4.4	ENLARGED SITE PLAN ZONE #4 (BID ALTERNATE #1) A
G-4.5	ENLARGED SITE PLAN ZONE #5 (BID ALTERNATE #8)
G-5.1	GENERAL DETAILS
M-0.1	MECHANICAL SYMBOLS & ABBREVIATIONS
MD-1.1	MECHANICAL ENLARGED SITE PLAN ZONE #1 (B-1500, B-1600, & B-2700) – DEMO & TEMPORARY
M-1.1	MECHANICAL ENLARGED SITE PLAN ZONE #1 (B-1500, B-1600, & B-2700) – NEW
MD-1.2	MECHANICAL ENLARGED SITE PLAN ZONE #2 (B-1200, B-1300, & B-1400) – DEMO & TEMPORARY
M-1.2	MECHANICAL ENLARGED SITE PLAN ZONE #2 (B-1200, B-1300, & B-1400) – NEW
MD-1.3	MECHANICAL ENLARGED SITE PLAN ZONE #3 (B-700, B-800, & B-900) – DEMO & TEMPORARY (NOT IN CONTRACT)
M-1.3	MECHANICAL ENLARGED SITE PLAN ZONE #3 (B-700, B-800, & B-900) – NEW (NOT IN CONTRACT)
MD-1.4	MECHANICAL ENLARGED SITE PLAN ZONE #4 (B-500, & B-600) – DEMO & TEMPORARY (BID ALTERNATE #1) A
M-1.4	MECHANICAL ENLARGED SITE PLAN ZONE #4 (B-500, & B-600) – NEW (BID ALTERNATE #1) A
MD-1.5	MECHANICAL ENLARGED SITE PLAN ZONE #5 (B-1700A) – DEMO (BID ALTERNATE #8) A
M-1.5	MECHANICAL ENLARGED SITE PLAN ZONE #5 (B-1700A) – NEW (BID ALTERNATE #8)
M-4.1	BUILDING 1500 MECHANICAL ROOM – ZONE #1: CHW & HHW
M-4.2	BUILDING 2700 MECHANICAL ROOM – ZONE #1: CHW & HHW
M-4.3	BUILDING 1200 MECHANICAL ROOM – ZONE #2: CHW & HHW
M-4.4	BUILDING 1300 MECHANICAL ROOM – ZONE #2: CHW & HHW
M-4.5	BUILDING 1400 MECHANICAL ROOM – ZONE #2: CHW & HHW
M-4.6	BUILDING 700 MECHANICAL ROOM – ZONE #3: CHW & HHW (NOT IN CONTRACT)
M-4.7	BUILDING 800 MECHANICAL ROOM – ZONE #3: CHW & HHW (NOT IN CONTRACT)
M-4.8	BUILDING 900 MECHANICAL ROOM – ZONE #3: CHW & HHW (NOT IN CONTRACT)
M-4.9	BUILDING 500 MECHANICAL ROOM – ZONE #4: CHW & HHW (BID ALTERNATE #1) A
M-4.10	BUILDING 600 MECHANICAL ROOM – ZONE #4: CHW & HHW (BID ALTERNATE #1) A
M-5.1	MECHANICAL DETAILS
M-5.2	MECHANICAL DETAILS
M-5.3	MECHANICAL DETAILS
M-5.4	MECHANICAL DETAILS
M-5.5	MECHANICAL DETAILS
M-5.6	MECHANICAL DETAILS
M-5.7	MECHANICAL DETAILS
M-6.1	MECHANICAL SCHEDULES
MD-7.1	MECHANICAL PRIMARY HYDRONIC PIPING SYSTEM SCHEMATIC – DEMO
M-7.1	MECHANICAL PRIMARY HYDRONIC PIPING SYSTEM SCHEMATIC – NEW
E-0.1	ELECTRICAL GENERAL NOTES, SYMBOLS & ABBREVIATIONS
ED-1.1	ELECTRICAL ENLARGED SITE PLAN ZONE #1 (B-1500, B-1600, & B-2700) – DEMO
E-1.1	ELECTRICAL ENLARGED SITE PLAN ZONE #1 (B-1500, B-1600, & B-2700) – NEW
ED-1.2	ELECTRICAL ENLARGED SITE PLAN ZONE #2 (B-1200, B-1300, & B-1400) – DEMO
E-1.2	ELECTRICAL ENLARGED SITE PLAN ZONE #2 (B-1200, B-1300, & B-1400) – NEW
ED-1.3	ELECTRICAL ENLARGED SITE PLAN ZONE #3 (B-700, B-800, & B-900) – DEMO (NOT IN CONTRACT)
E-1.3	ELECTRICAL ENLARGED SITE PLAN ZONE #3 (B-700, B-800, & B-900) – NEW (NOT IN CONTRACT)
ED-1.4	ELECTRICAL ENLARGED SITE PLAN ZONE #4 (B-500, & B-600) – DEMO (BID ALTERNATE #1) A
E-1.4	ELECTRICAL ENLARGED SITE PLAN ZONE #4 (B-500, & B-600) – NEW (BID ALTERNATE #1) A
E-5.1	ELECTRICAL DETAILS
E-6.1	ELECTRICAL LOAD CALCULATIONS
E-7.1	ELECTRICAL SINGLE LINE DIAGRAM – ZONE #1
E-7.2	ELECTRICAL SINGLE LINE DIAGRAM – ZONE #2
E-7.3	ELECTRICAL SINGLE LINE DIAGRAM – ZONE #3 (NOT IN CONTRACT)
E-7.4	ELECTRICAL SINGLE LINE DIAGRAM – ZONE #4 (BID ALTERNATE #1) A
E-7.5	ELECTRICAL CAMPUS SINGLE LINE DIAGRAM
S-5.1	STRUCTURAL GENERAL NOTES AND ANCHORAGE SCHEDULE & DETAILS
S-5.2	STRUCTURAL HANGERS & BRACES SUPPORT DETAILS AND ANCHORAGE DETAILS
S-5.3	STRUCTURAL NON-PERMANENT EQUIPMENT ANCHORAGE DETAILS

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REGISTERED PROFESSIONAL ENGINEER — EVAN EVERETT SARVER — No. M40066 EXP. 09-30-2026 — MECHANICAL — STATE OF CALIFORNIA

DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
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.

GENERAL NOTES

1. ALL WORK, MATERIALS, AND METHODS TO BE USED FOR SEISMIC RESTRAINTS SHALL BE AS DETAILED ON THE APPROVED DRAWINGS.
2. ALL WORK SHALL CONFORM WITH ALL APPLICABLE LOCAL, STATE, AND NATIONAL CODES.
3. PIPE HANGERS AND SUPPORTS SHALL BE SUPERSTRUT OR EQUAL INCLUDING CHANNEL, HANGERS, STRAPS, ISOLATORS, INSULATION, SHAW PIPE SHIELDS, INC., PORTABLE PIPE HANGERS, INC.
4. PATCH EXISTING AND NEW OPENINGS SO FINISH PROFILES, FIXTURES, ETC. MATCH ADJACENT UNDISTURBED WORK.
5. 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.
6. ALL WORK MUST BE SCHEDULED WITH THE PROJECT MANAGER TO MINIMIZE DISTURBANCE OF NORMAL ACTIVITIES. COORDINATE WORK WITH PROJECT MANAGER.
7. 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.
8. CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
9. PRIOR TO SUBMITTING PROPOSAL, BIDDER SHALL EXAMINE ALL GENERAL CONSTRUCTION DRAWINGS AND SHALL HAVE HAD VISITED THE CONSTRUCTION SITE. HE SHALL BE FAMILIAR WITH THE EXISTING CONDITIONS UNDER WHICH HE 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 HIS PART.
10. 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. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE RESTORATION OF LANDSCAPING (LAWN, MULCH, ETC.), TRAFFIC RATED CONCRETE AND ASPHALT-CONCRETE, AND PEDESTRIAN RATED CONCRETE PATHWAYS.
11. 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.
12. 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.
13. 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.
14. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE OWNER WITH A COMPLETE SET OF RECORD DRAWING, INCLUDING THE WORK OF ALL SUBCONTRACTORS.
15. ALL PRODUCTS AND MATERIALS USED ON THIS PROJECT SHALL BE FREE OF ASBESTOS.
16. 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.
17. 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.
18. PENETRATIONS OF DUCTS, PIPES, CONDUITS, ETC. IN WALLS AND FLOOR-CEILING ASSEMBLIES REQUIRING PROTECTED OPENINGS SHALL BE FIRE STOPPED, PER THE U.L. FIRE LISTINGS. FIRE STOP MATERIAL SHALL BE A TESTED ASSEMBLY. SEE PLANS FOR ADDITIONAL REQUIREMENTS. SUBMIT U.L. FIRE RATED ASSEMBLIES TO FIRE MARSHALL FOR APPROVAL.
19. THE INSTALLATION OF PIPING AND EQUIPMENT SHALL BE MADE IN SUCH 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.
20. ALL LOCATIONS OF PIPING AND EQUIPMENT ARE SHOWN DIAGRAMMATICALLY TO THE EXTENT THAT ALL FITTINGS, OFFSETS, ETC. ARE NOT SHOWN. ADHERE TO LOCATIONS AS CLOSELY AS POSSIBLE. HOWEVER, RUNS OR SHAPE OF PIPING CAN VARY, AS REQUIRED TO MEET FOUNDATION, STRUCTURAL AND OTHER INTERFERENCES. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD FOR FABRICATION OF THE PIPING, PENETRATIONS, AND ALL COMPONENTS INTO A COMPLETE AND OPERABLE SYSTEM.
21. 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.
22. ALL SOLDER AND PLUMBING FIXTURES SHALL CONFORM TO NON LEAD STANDARDS.
23. PROVIDE ACCESS PANELS WHERE SHUT OFF VALVES AND WATER HAMMER ARRESTERS ARE LOCATED IN WALLS OR ABOVE HARD CEILINGS.
24. 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.
25. EXACT LOCATION OF EXISTING UTILITIES HAVE NOT BEEN INDEPENDENTLY VERIFIED. CONTRACTOR SHALL FIELD VERIFY ALL CONNECTION POINTS AND LOCATIONS. VERIFICATION OF ADEQUATE FALL FOR WASTE LINE SHALL BE DONE PRIOR TO BEGINNING WORK OF THIS CONTRACT.
26. 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.
27. EXAMINE MECHANICAL & STRUCTURAL DRAWINGS AND SPECIFICATIONS TO DETERMINE THE SEQUENCE OF CONSTRUCTION THROUGHOUT THE PROJECT, INCLUDING EXISTING, TEMPORARY, REMODELED AND NEW AREAS.
28. CONTRACTOR TO LEGALLY DISPOSE OF OR RECYCLE PROJECT DEBRIS.
29. ALL DEVICES & EQUIPMENT ARE NEW, UNLESS OTHERWISE NOTED.
30. SALVAGED EQUIPMENT SHALL BE TURNED OVER TO OWNER. COORDINATE WITH OWNER FOR STORAGE LOCATION.
31. MAINTAIN FIRE RATING OF ALL ASSEMBLIES PENETRATED.
32. SEAL ALL EXTERIOR PENETRATIONS WATER-TIGHT.
33. UNLESS OTHERWISE NOTED, ARRANGE, PAY FOR, COORDINATE AND PROVIDE ALL PERMITS NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM.
34. ALL CONSTRUCTION AND DEMOLITION SHALL BE IN ACCORDANCE WITH CHAPTER 33 OF THE CBC AND CFC, AND THE WRITTEN SITE SAFETY PLAN.
35. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EQUIPMENT, MATERIALS, SUPPLIES, ETC. RELATED TO THE PROJECT THAT ARE STORED OR LEFT ON SITE. THIS SHALL INCLUDE ENCLOSURES AND SECURITY AS NECESSARY TO PROTECT MATERIALS.

INTERRUPTIONS TO EXISTING SYSTEMS:

1. THE CONTRACT REQUIRES THAT ALL ELECTRICAL CONNECTIONS REQUIRING AN OUTAGE SHALL OCCUR ON A WEEKEND OR BETWEEN THE HOURS OF 10PM AND 7AM, MONDAY THROUGH FRIDAY. OUTAGES SHALL BE SCHEDULED AND APPROVED IN ADVANCE AND IN WRITING AT LEAST 10 DAYS PRIOR TO THE OUTAGE. WORK SHALL BE SCHEDULED SUCH THAT AT NO TIME WILL ANY EMERGENCY FEEDER, CIRCUIT OR FIRE ALARM ZONE BE OUT OF SERVICE. THIS MEANS THAT CONTRACTOR, SHALL INCLUDE ALL PROVISIONS FOR TEMPORARY FEEDERS IN ORDER TO ACCOMPLISH THIS REQUIREMENT.

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 WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS, A CCD OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY THE DIVISION OF STATE ARCHITECT BEFORE PROCEEDING WITH THE WORK".

LAYING OUT THE WORK:

ACCURATELY LAYOUT INSTALLATION OF EQUIPMENT PRIOR TO BEGINNING WORK. LAYOUT WORK SHALL INCLUDE PROVISIONS FOR CONNECTIONS TO <E>SERVICES, NECESSARY TURN & CHANGES IN ELEVATION, BYPASSING OBSTRUCTIONS, AND ANY OTHER IMPEDIMENT ASSOCIATED WITH THE BELOW GRADE PIPING INSTALLATIONS.

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PROJECT INSPECTION AND TEST REQUIREMENTS:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH SUBCONTRACTORS, OWNER, LOR, AND INSPECTORS, AND SCHEDULING THE SPECIFIED INSPECTIONS AND TESTS.
2. UNLESS OTHERWISE NOTED, CONTRACTOR SHALL PROVIDE A MINIMUM OF 3 DAYS NOTICE TO INSPECTOR AND/OR LOR FOR REQUESTED INSPECTIONS AND TESTS. FOR CONCRETE POURS, SOILS COMPACTION, AND SOILS BACKFILL INSPECTIONS, A MINIMUM OF 5 DAYS NOTICE SHALL BE PROVIDED TO INSPECTOR AND/OR LOR FOR REQUESTED INSPECTIONS AND TESTS.
3. CONTRACTOR SHALL INCORPORATE SPECIFIED INSPECTIONS AND TESTS INTO MASTER CONSTRUCTION SCHEDULE, INCLUDING ADEQUATE PROVISIONS FOR INSPECTIONS AS DEFINED BELOW. CONTRACTOR SHALL IDENTIFY DAYS IN WHICH INSPECTIONS AND TESTING ARE NOT NECESSARY/REQUIRED AND INCORPORATE INTO THE MASTER CONSTRUCTION SCHEDULE. SEQUENCE "NEW" WORK SUCH THAT INSPECTIONS DO NOT OCCUR SIMULTANEOUSLY NOR AT DIFFERING AREAS OF WORK.
4. IF INSPECTIONS ARE REQUIRED, CONTRACTOR SHALL NOT PROCEED WITH WORK TO BE INSPECTED UNTIL INSPECTIONS ARE CONDUCTED, ANY REMEDIAL WORK IS COMPLETED, AND WORK IS ACCEPTED.
5. ANY WORK REQUIRING INSPECTIONS WHERE THE WORK HAS BEEN COMPLETED AND MADE INACCESSIBLE, AND NOT SIGNED OFF BY THE INSPECTOR, IS SUBJECT TO BE RE-EXPOSED AND RE-CONSTRUCTED AT NO COST OR SCHEDULE IMPACT TO THE OWNER.
6. CONTRACTOR SHALL FACILITATE THE SHARE OF INFORMATION WITH INSPECTOR AND LOR AS RELATES TO MANUFACTURER INSTALLATION INSTRUCTIONS AND OTHER CODES/STANDARDS.
7. CONTRACTOR SHALL PROVIDE ASSISTANCE TO THE INSPECTOR OR LOR IF/AS NEEDED FOR MOVING SOILS, OR BARRICADES, OPENING MANHOLES, ETC.
8. CONTRACTOR SHALL PROVIDE PHOTOGRAPHIC DOCUMENTATION OF ALL UNDERGROUND WORK, INCLUDING EVERY ITEM/PROCESS WITNESSED, BEFORE AND AFTER BACKFILL IN COMPLIANCE WITH THE CONTRACT DOCUMENTS.
9. INSPECTOR SHALL HAVE THE RIGHT AND ABILITY TO STOP AND RESTART CONTRACTOR WORK, OR PORTION THEREOF, IF POOR OR FAULTY INSTALLATION IS OBSERVED. IF THIS OCCURS, INSPECTOR SHALL DISTRIBUTE EMAIL CORRESPONDENCE WITH THE INSPECTION REPORT DESCRIBING THE ERROR TO THE OWNER, ENGINEER, AND CONSTRUCTION MANAGER IMMEDIATELY.
10. DAILY INSPECTION REPORTS ARE REQUIRED TO BE SUBMITTED TO CONSTRUCTION MANAGER AND/OR OWNER'S REPRESENTATIVE. CONSTRUCTION MANAGER IS RESPONSIBLE FOR SUBMITTING INSPECTION REPORTS TO THE AGREED UPON CONSTRUCTION ADMINISTRATION PLATFORM IN AGREED UPON FORMAT/FORM (E.G., AIA FORMAT).
11. INSPECTOR SHALL HAVE A MINIMUM OF TWO YEARS OF EXPERIENCE SPECIFIC TO THE INSTALLATION OF UNDERGROUND THERMAL ENERGY DISTRIBUTION SYSTEMS.

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12. CONTRACTOR SHALL COORDINATE WITH MANUFACTURER OF PRE-FABRICATED PIPING SYSTEM(S) AND SCHEDULE (1) SITE VISIT PER MONTH FOR THE DURATION OF THE PROJECT FOR QUALITY ASSURANCE. CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING AND FEES ASSOCIATED WITH MANUFACTURER TECHNICIAN SITE VISITS.

PHOTOGRAPHIC CONSTRUCTION RECORDS:

1. 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.
2. 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:

1. 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.
2. 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.
3. FOR FINAL COMPLETION, DOCUMENT ALL PUNCH LIST ITEM COMPLETION BY PHOTOGRAPH OR VIDEO.
4. DELIVER CONSTRUCTION PHOTOGRAPHS AND VIDEOS WITHIN 10 DAYS OF CREATION. ALL PHOTOS AND VIDEOS SHALL BE OF SUFFICIENT QUALITY TO CLEARLY DEPICT WORK.

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CONTROLS CONTRACTOR RESPONSIBILITIES:

1. PROVIDE FULL BMS PROGRAMMING, TRENDING, ALARM MANAGEMENT, GRAPHICS UPDATES, AND ON SITE TECHNICIAN SUPPORT FOR ALL SCHEDULED CAMPUS HEATING HOT WATER (HHW) AND CHILLED WATER (CHW) SHUTDOWNS, SWITCHOVER EVENTS, AND TEMPORARY BYPASS OPERATIONS. SUPPORT INCLUDES SAFE DISABLING, ENABLING, AND SEQUENCING OF CENTRAL PLANT AND BUILDING HYDRONIC SYSTEMS.
2. ADJUST BUILDING OCCUPANCY SCHEDULES, HEATING/COOLING SETPOINTS, AND HYDRONIC CONTROL STRATEGIES AS REQUIRED TO FACILITATE CONSTRUCTION ACTIVITIES. ALL SCHEDULE AND SETPOINT CHANGES SHALL BE DOCUMENTED AND RESTORED TO PRE CONSTRUCTION VALUES AFTER EACH EVENT UNLESS OTHERWISE DIRECTED BY THE OWNER.
3. PROVIDE BMS INTEGRATION FOR ANY TEMPORARY PUMPS, HEAT TRANSFERRING EQUIPMENT, VALVES, OR SENSORS ASSOCIATED WITH MAINTAINING SERVICE. INCLUDE PROGRAMMING, TEMPORARY CONTROL SEQUENCES, LABELING OF TEMPORARY POINTS/GRAPHICS, ALARM THRESHOLDS, AND TRENDING NECESSARY TO ENSURE STABLE OPERATION DURING TEMPORARY CONDITIONS.
4. ACTIVELY MONITOR AND TUNE BUILDING AND PLANT CONTROLS DURING CONSTRUCTION PHASES TO MAINTAIN REASONABLE TEMPERATURE CONDITIONS IN OCCUPIED BUILDINGS AND TO PROTECT CRITICAL SPACES FROM LOSS OF HEATING OR COOLING. PRIORITIZE EQUIPMENT PROTECTION ALARMS (FREEZE, OVERHEAT, PUMP FAILURE) AND IMPLEMENT TEMPORARY ADJUSTMENTS ONLY AS NEEDED TO PREVENT NUISANCE ALARMS.
5. PRIOR TO EACH SHUTDOWN OR SWITCHOVER, ENABLE TREND LOGS AND VERIFY ALARM ROUTING FOR KEY PLANT AND BUILDING PARAMETERS (SUPPLY/RETURN WATER TEMPERATURES, DIFFERENTIAL PRESSURES, PUMP STATUS/SPEED, MAIN VALVE POSITIONS, REPRESENTATIVE AIR HANDLING UNIT SUPPLY TEMPERATURES, AND CRITICAL ZONE TEMPERATURE CONDITIONS). RESTORE NORMAL TREND INTERVALS AND ALARM THRESHOLDS UPON COMPLETION OF EACH PHASE.
6. PRIOR TO THE START OF CONSTRUCTION, PROVIDE COMPLETE BACKUPS OF ALL CONTROLLER PROGRAMS, FRONT END DATABASES, GRAPHICS, SCHEDULES, ALARMS, AND TREND CONFIGURATIONS. MAINTAIN A LOG OF ALL CONTROL CHANGES AND OVERRIDES THROUGHOUT THE PROJECT. AT COMPLETION OF EACH EVENT, PROVIDE UPDATED BACKUPS AND VERIFY ALL OVERRIDDEN POINTS HAVE BEEN RETURNED TO AUTO.
7. FOLLOWING COMPLETION OF TEMPORARY SERVICE PHASES AND FINAL PIPING REINSTATEMENT, RESTORE ALL BMS PROGRAMMING, SCHEDULES, SEQUENCES, GRAPHICS, AND ALARMS TO PRE CONSTRUCTION CONDITIONS OR TO OWNER APPROVED FINAL OPERATING PARAMETERS. REMOVE TEMPORARY PROGRAMMING, GRAPHICS, AND POINTS AFTER THEY ARE NO LONGER REQUIRED.
8. PROVIDE ON SITE BMS TECHNICIAN SUPPORT FOR ALL SCHEDULED SHUTDOWN, SWITCHOVER, AND RESTORATION EVENTS, INCLUDING AFTER HOURS OR WEEKEND WORK AS REQUIRED BY THE CONSTRUCTION SCHEDULE. PROVIDE REMOTE BMS MONITORING CAPABILITY DURING ALL ACTIVE WORK WINDOWS.
9. ASSIST THE OWNER AND MECHANICAL CONTRACTOR WITH VERIFICATION OF SYSTEM PERFORMANCE BEFORE, DURING, AND AFTER SHUTDOWN EVENTS. SUPPORT FUNCTIONAL TESTS CONFIRMING PROPER VALVE OPERATION, PUMP SEQUENCING, TEMPERATURE STABILITY, COMMUNICATION INTEGRITY, AND ALARM FUNCTIONALITY.
10. CONTROLS CONTRACTOR SHALL HAVE A MINIMUM OF THREE (3) YEARS OF EXPERIENCE WORKING WITH SOLANO COMMUNITY COLLEGE DISTRICT IN THE LAST FIFTEEN (15) YEARS.

SPECIAL REQUIREMENTS FOR TRENCHING, EXCAVATION, & BACKFILL

1. EXISTING UTILITIES SHALL BE LOCATED BY CONTRACTOR THROUGH THE CONTRACTOR PROVIDED UTILITY LOCATING SERVICE SUBCONTRACTOR. UTILITIES SHALL BE CLEARLY MARKED WITH NON-PERMANENT PAINT WITH DEPTH ESTIMATES PROVIDED BY THE LOCATING SUBCONTRACTOR.
2. CONTRACTOR SHALL POTHOLE A MINIMUM OF 10' IN ADVANCE OF ANY TRENCHING OR EXCAVATING OPERATIONS. POTHOLING SHALL LOCATE AND EXPOSE ANY AND ALL UTILITIES IN THE PATH OF TRENCHING OR EXCAVATING ACTIVITIES. POTHOLING SHALL BE BY VACUUM EXCAVATING EQUIPMENT OR HAND DIGGING. ALL UTILITIES ENCOUNTERED SHALL BE CLEARLY MARKED, AND HAND EXCAVATED TO PREVENT DAMAGE.
3. ALL UTILITIES LOCATED, WHETHER OR NOT SHOWN ON CONTRACT DRAWINGS ARE TO BE MARKED ON THE PROJECT RECORD DRAWINGS, AS TO SIZE AND SERVICE, WITH EITHER A REFERENCE TO STATION NUMBER OR REFERENCE TO PERMANENT SURFACE FEATURES, AND ELEVATIONS NOTED (REFERENCED TO SEA LEVEL). REGARDLESS OF OTHER REQUIREMENTS (OR LACK THEREOF) FOR AS-BUILT DRAWINGS, CONTRACTOR SHALL PROVIDE AS-BUILT, ELECTRONIC DOCUMENTATION OF ALL UTILITIES CROSSED OR EXPOSED, INDICATING LOCATION, SIZE, SERVICE AND ELEVATION, WHETHER SHOWN ON CONTRACT DOCUMENTS OR NOT.
4. ANY AND ALL RFI'S OR CLARIFICATIONS RELATED TO UNDERGROUND INTERFERENCES FOR ANY TRENCHING OR EXCAVATION ACTIVITIES SHALL INCLUDE ALL INFORMATION RELATING TO SIZE, SERVICE, LOCATION AND ELEVATION OF SUBJECT UNDERGROUND OBSTRUCTION, AND A PROPOSED SOLUTION.
5. THE COLLEGE AND CONTRACTOR ACKNOWLEDGE THAT THAT DURING THE COURSE OF EXCAVATION, IRRIGATION PIPING WILL LIKELY BE ACCIDENTALLY CUT OR IN SOME WAY BROKEN SEVERAL TIMES AND/OR IN SEVERAL PLACES. CONTRACTOR SHALL INCLUDE IN BASE BID MONIES TO ACCOMMODATE MATERIAL AND LABOR TO REPAIR THE IRRIGATION PIPING - ASSUME 1 BREAK PER 10 FEET OF TRENCH AT EACH TRENCH LOCATION. THIS INCLUDES:
   - A. IMMEDIATELY CAPPING BROKEN SECTION OF PIPE (WHETHER ACTIVE OR INACTIVE) AND IMMEDIATELY NOTIFYING THE COLLEGE OF THE IRRIGATION PIPING INCIDENT.
   - B. CUTTING AND REPLACEMENT OF DAMAGED IRRIGATION PIPE.
   - C. REPAIR OF CONTROL WIRING.
   - D. REPAIR AND REPLACEMENT OF CONTROL VALVES.
   - E. PUMPING OF EXCESS WATER OR ANY POOLED WATER INTO THE NEAREST STORM DRAIN.
   - F. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INVENTORY AND ITEMIZE IRRIGATION PIPING REPAIRS THAT OCCUR WITHIN TWO WEEKS OF OCCURRENCE.
   - G. IN THE EVENT THAT WATER IS ALLOWED TO FLOW UNCHECKED FROM A BROKEN OR RUPTURED LINE FOR GREATER THAN 15 MINUTES, THE DISTRICT SHALL HAVE THE RIGHT TO HAVE THE LINE REPAIRED AND THE CONTRACTOR SHALL BE BILLED FOR THE REPAIR WORK.
6. PROVIDE LABOR, MATERIAL, EQUIPMENT AND SERVICES NECESSARY TO COMPLETE THE TRENCHING, BACKFILLING AND COMPACTING NECESSARY FOR THIS PROJECT. COMPLY WITH DISTRICT STANDARDS, SECTION 31 23 33 – TRENCHING, BACKFILLING AND COMPACTING. THE RELATIVE COMPACTION OF TAMPED BEDDING MATERIAL SHALL BE NOT LESS THAN 90%. THE RELATIVE COMPACTION OF THE INITIAL BACKFILL SHALL BE NOT LESS THAN 90%. THE RELATIVE COMPACTION OF BACKFILL SHALL NOT BE LESS THAN 95% WITHIN 2-1/2 FEET OF FINISHED PERMANENT SURFACE GRADE OR 1-1/2 FEET BELOW THE FINISHED SUBGRADE, WHICHEVER IS GREATER.
7. A GEOTECHNICAL TESTING AGENCY (BY DISTRICT) SHALL BE RESPONSIBLE FOR COMPACTION TESTING, MOISTURE CONTENT TESTING, AND FOR QUALITY CONTROL TESTING DURING THE FILL OPERATIONS. TEST RESULTS SHALL BE SUBMITTED TO THE PROJECT MANAGER. GEOTECHNICAL AGENCY SHALL REVIEW FILL MATERIALS WITH RESPECT TO COMPLIANCE OF DISTRICT STANDARDS.
8. COORDINATE WITH DISTRICT FOR LOCATION OF NATIVE SOILS, AND LAYDOWN AREAS FOR MATERIALS. CONTRACTOR SHALL OFF-HAUL SPOILS.
9. COORDINATE ALL CLOSURES & PATHWAY OBSTRUCTIONS OR BLOCKAGES WITH DISTRICT PRIOR TO PROCEEDING WITH WORK. ALL DISRUPTION TO CAMPUS ACTIVITIES SHALL BE COORDINATED WITH DISTRICT.

HYDRONIC SHUT DOWN & SWITCH OVER REQUIREMENTS FOR TEMPORARY SERVICES

1. PREREQUISITE WORK & CHECKLIST (THIS APPLIES TO ALL ZONE WORK, IMPLEMENT 'BY ZONE'):
   - A. CONTRACTOR TO VIF AND CONFIRM THE PRECISE LOCATIONS OF TEMPORARY HHW & CHW PIPING PENETRATIONS INTO THE BUILDING. IF ROOF OR WALL PENETRATIONS ARE SUGGESTED, CONTRACTOR TO VIF REBAR PATTERNS, WALL/ROOF FRAMING, AND TEMPORARY POINTS OF CONNECTION TO BUILDING HYDRONICS PRIOR TO CUTTING INTO THE EXISTING BUILDING ENVELOPE. SEE FURTHER DETAIL ON INDIVIDUAL BUILDING DRAWINGS M-4.1 THROUGH M-4.10.
   - B. CONTRACTOR TO COMPILE A BUILDING ISOLATION AND SWITCH OVER PROCEDURE. PROCEDURE SHALL IDENTIFY THE SCHEDULE OF THE SWITCH OVER EFFORT, SPECIFIC VALVES THAT WILL BE MANIPULATED, AND MANPOWER REQUIRED TO SWITCH OVER THE BUILDING HYDRONIC SYSTEMS TO TEMPORARY EQUIPMENT SERVICE SUCH THAT THE BUILDING MECHANICAL ROOM AND PUMPS ARE BYPASSED. CONFIRM PROCEDURE WITH ENGINEER OF RECORD PRIOR TO PROCEEDING WITH WORK.
   - C. CONFIRM THAT ALL TEMPORARY HEATING AND COOLING EQUIPMENT AT EACH BUILDING WITHIN THE WORK ZONE IS IN PLACE AND OPERATIONAL. THIS INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:
     - i. TEMPORARY ELECTRIC AND/OR GAS SERVICES ARE SIZED FOR THE SPECIFIED TEMPORARY HEATING/COOLING EQUIPMENT IN ACCORDANCE WITH THE NEC, CPC, CMC, AND NFPA STANDARDS. THIS INCLUDES VALIDATION OF PROPER CIRCUIT PROTECTION AND FEEDER SIZING IN COMPLIANCE WITH NEC AND PROPER GAS SIZING AND DELIVERY PRESSURES IN COMPLIANCE WITH CPC. TEMPORARY ELECTRIC AND GAS SERVICES SHALL BE TESTED PER CODE AND PRIOR TO ENABLING TEMPORARY GAS AND/OR ELECTRIC SERVICE. THIS INCLUDES VALIDATION OF SYSTEM FUNCTIONALITY AND TESTING OF ALARMS TO ENSURE TIMELY NOTICE IF ANY TEMPORARY EQUIPMENT FAILS.
     - ii. TEMPORARY PIPING IS IN PLACE, SECURED TO TEMPORARY PIPE SUPPORTS, AND ROUTED TO THE TEMPORARY POINTS OF CONNECTION INSIDE THE BUILDING. TEMPORARY POINTS OF CONNECTION SHALL BE LOCATED SUCH THAT THE BUILDING HYDRONIC PUMPS ARE BYPASSED BY THE TEMPORARY HHW/CHW SYSTEM. PENETRATIONS AT THE BUILDING INTERIOR SHALL OCCUR AT EXISTING DOORWAYS, AT EXTERIOR WALLS, OR AT BUILDING ROOFS TO ACCESS CEILING SPACES.
     - iii. TEMPORARY CONSTRUCTION FENCING IS IN PLACE AROUND ALL AREAS OF WORK AND ALL WAYFINDING IS IN PLACE.
     - iv. SOUND LEVELS INSIDE THE NEAREST CLASSROOM SHALL BE NOT GREATER NC-35. CONTRACTOR TO CONDUCT SOUND PRE-READING AT NEAREST CLASSROOM(S). IF SOUND LEVELS ARE GREATER THAN NC-35 WITH TEMP. GENERATORS, BOILERS, PUMPS, AND/OR CHILLERS ONLINE, PROVIDE SOUND ATTENUATING BLANKETS AT TEMPORARY EQUIPMENT ENCLOSURES TO REDUCE SOUND OF MACHINERY (I.E. TEMP. CHILLERS, GENERATORS, BOILERS, PUMPS, ETC.).

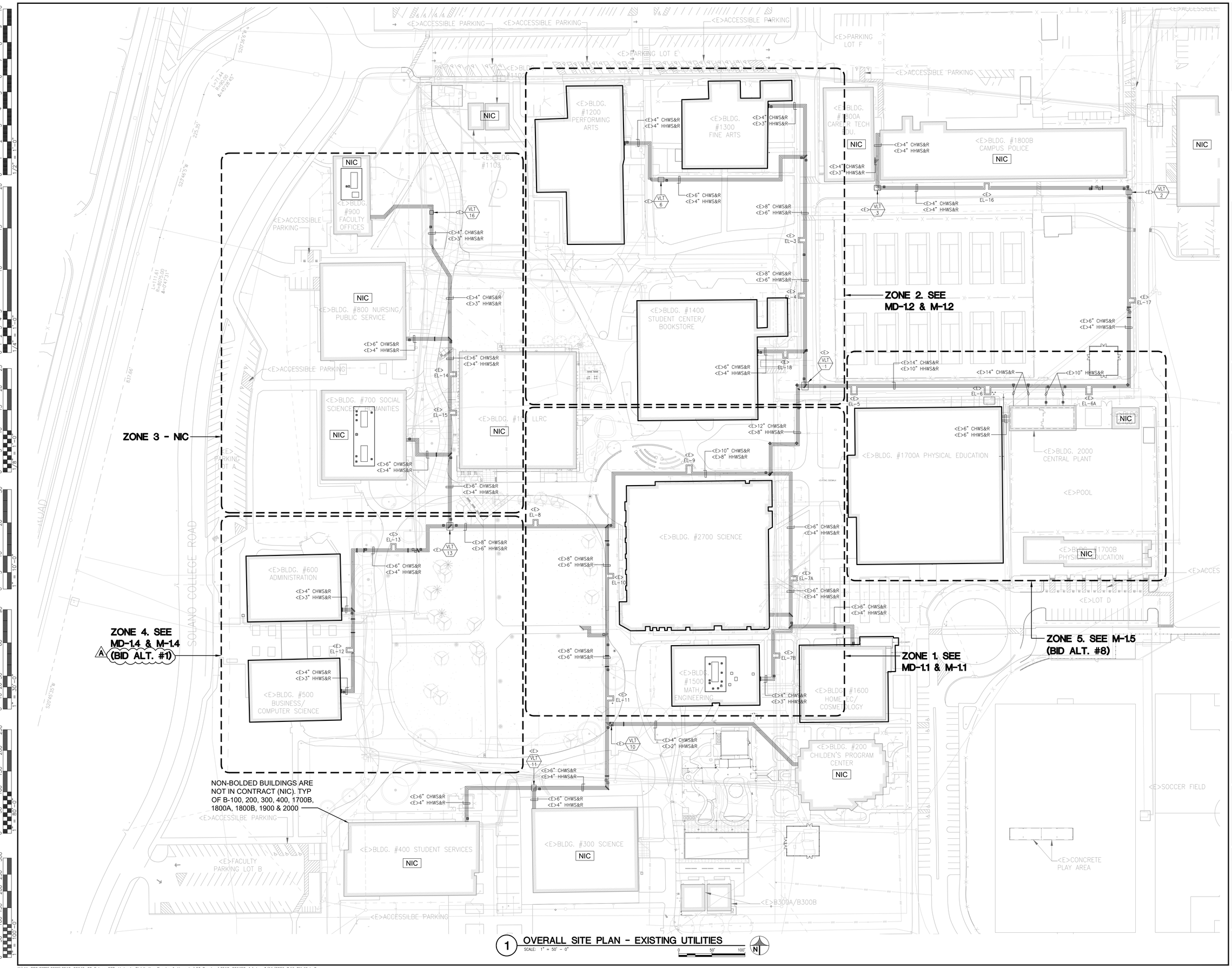
REQUIREMENTS FOR CORED/SAWCUT HOLES THROUGH CONCRETE WALLS

1. ALL BARS IN VICINITY OF PROPOSED CORED/SAWCUT HOLES SHALL BE LOCATED WITH MAGNETIC LOCATING DEVICE AND EACH BAR LOCATION PLAINLY AND ACCURATELY MARKED ON WALL SURFACE PRIOR TO LOCATING HOLES. MARKINGS SHALL BE REMOVED AFTER ALL HOLES ARE CORED/SAWCUT.
2. NOTIFY ENGINEER UPON BAR LOCATION AND MARKING FOR HIS DIRECTION BEFORE PROCEEDING.
3. HOLES SHALL BE LOCATED NOT LESS THAN 1" CLEAR FROM REINFORCING. REFER TO ORIGINAL AS-BUILT DRAWINGS FOR EXISTING REINFORCING LAYOUT IN EXISTING WALLS.
4. CONFIRM THAT PROPOSED HOLE LOCATIONS DO NOT INTERFERE WITH OPERATION OF ANY EQUIPMENT OR WITH EXISTING OR NEW PIPES OR CONDUITS.
5. DO NOT OVERCUT AT CORNERS.
6. MINIMUM DISTANCE BETWEEN DRILLED-CORE HOLES TO BE 2 x WALL THICKNESS.

DSA ADMINISTRATIVE REQUIREMENT

1. A COPY OF PARTS 1 T

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1 OVERALL SITE PLAN - EXISTING UTILITIES
SCALE: 1" = 50' - 0"

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REGISTERED PROFESSIONAL ENGINEER — ERIN EMMETT SWEET — No. M40086 EXP. 09-30-2026 — MECHANICAL — STATE OF CALIFORNIA

DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE		
MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

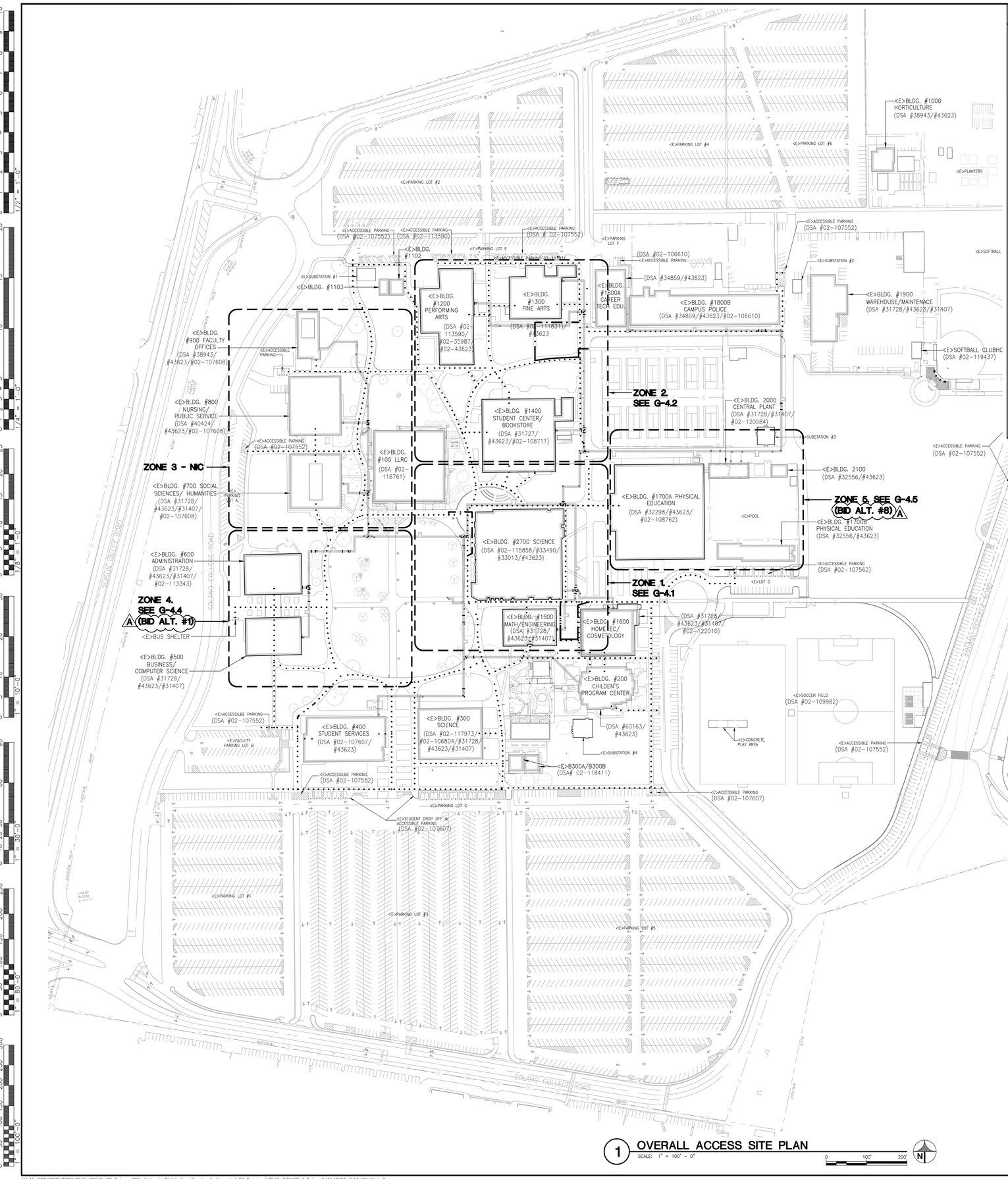
SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	EES
APPROVED BY:	EES

SHEET TITLE
OVERALL SITE PLAN EXISTING UTILITIES

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

G-1.1
SHEET OF –

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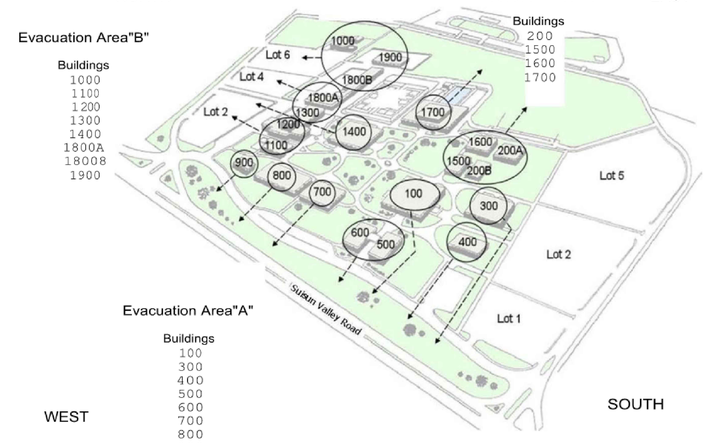
1 OVERALL ACCESS SITE PLAN
SCALE: 1" = 100' - 0"

SAFE DISPERSAL AREA MAP

Fairfield Main Campus, 4000 Suisun Valley Road, Fairfield, California 94534
(707) 864-7000 PAGE 5

CAM PUS EVACUATION AREA MAP

In the event of a campus emergency that requires a mandatory evacuation of the buildings on campus, students, faculty, and staff will proceed to the evacuation areas designated on this map. Note: Evacuation routes are to the NORTH,EAST, and WEST of campus.



PATH OF TRAVEL

ACCESSIBLE PATH OF TRAVEL AS INDICATED ON PLAN IS A BARRIER-FREE ACCESS ROUTE WITHOUT ABRUPT LEVEL CHANGES EXCEEDING ½" IF BEVELED AT 1:2 MAXIMUM SLOPE OR VERTICAL LEVEL CHANGES NOT EXCEEDING ¼" MAXIMUM AND AT LEAST 48" IN WIDTH. SURFACE IS STABLE, FIRM, AND SLIP-RESISTANT. CROSS-SLOPE SHALL NOT BE STEEPER THAN 1:48 AND SLOPE IN THE DIRECTION OF TRAVEL SHALL NOT BE STEEPER THAN 1:20. ACCESSIBLE PATH OF TRAVEL SHALL BE MAINTAINED FREE OF OVERHANGING OBSTRUCTIONS TO 80" MINIMUM AND FREE OF OBJECTS PROTRUDING MORE THAN 4" FROM THE WALL, ABOVE 27" AND LESS THAN 80" ABOVE THE FLOOR.

PATH OF TRAVEL UPGRADES

THE POT IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS MEETS THE REQUIREMENTS OF THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE (CBC) ACCESSIBILITY PROVISIONS FOR PATH OF TRAVEL REQUIREMENTS FOR ALTERATIONS, ADDITIONS AND STRUCTURAL REPAIRS. AS PART OF THE DESIGN OF THIS PROJECT, THE POT WAS EXAMINED AND ANY ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WERE DETERMINED TO BE NON-COMPLIANT WITH THE CBC HAVE BEEN IDENTIFIED AND THE CORRECTIVE WORK NECESSARY TO BRING THEM INTO COMPLIANCE HAS BEEN INCLUDED WITHIN THE SCOPE OF THIS PROJECT'S WORK THROUGH DETAILS, DRAWINGS AND SPECIFICATIONS INCORPORATED INTO THESE CONSTRUCTION DOCUMENTS. ANY NONCOMPLIANT ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WILL NOT BE CORRECTED BY THIS PROJECT BASED ON VALUATION THRESHOLD LIMITATIONS OR A FINDING OF UNREASONABLE HARDSHIP ARE INDICATED IN THESE CONSTRUCTION DOCUMENTS.

DURING CONSTRUCTION, IF POT ITEMS WITHIN THE SCOPE OF THE PROJECT REPRESENTED AS CBC COMPLIANT ARE FOUND TO BE NONCONFORMING BEYOND REASONABLE CONSTRUCTION TOLERANCES, THE ITEMS SHALL BE BROUGHT INTO COMPLIANCE WITH THE CBC AS A PART OF THIS PROJECT BY MEANS OF A CONSTRUCTION CHANGE DOCUMENT."

MEANS OF EGRESS

MEANS OF EGRESS SHALL BE MAINTAINED IN ACCORDANCE WITH THE 2022 CALIFORNIA FIRE CODE, SECTION 1032.

LEGEND

PATH OF TRAVEL

ALTERNATE PATH OF TRAVEL

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National **Strength.**
Local **Action.**

REGISTERED PROFESSIONAL ENGINEER
MINH SHERWIN ONG
No. M40086
EXP. 09-30-2026
MECHANICAL
STATE OF CALIFORNIA
DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE		
MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

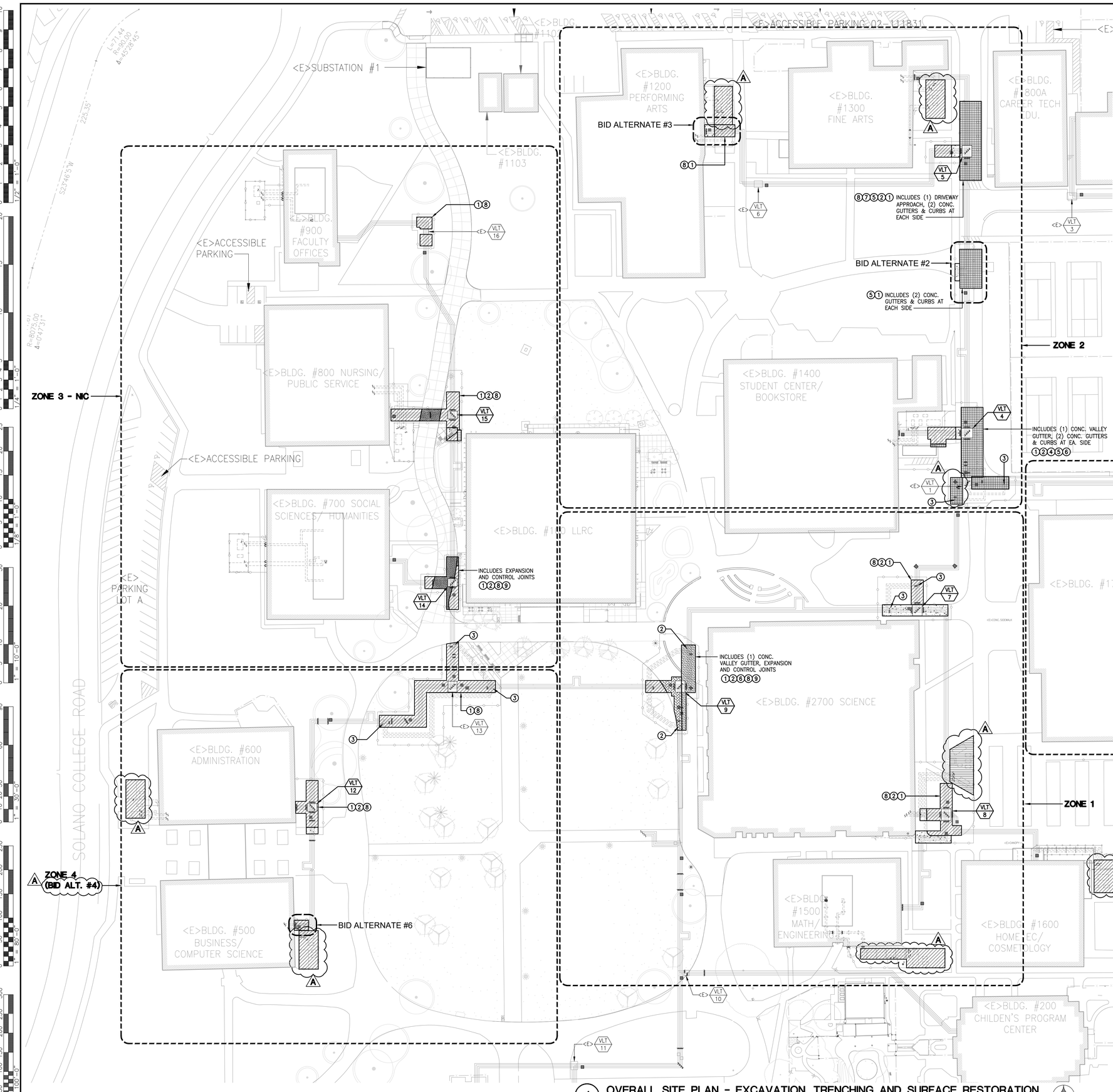
SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	JEG
APPROVED BY:	EES

SHEET TITLE
OVERALL ACCESS SITE PLAN

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

G-1.3
SHEET OF –

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1 OVERALL SITE PLAN - EXCAVATION, TRENCHING AND SURFACE RESTORATION

SCALE: 1" = 40' - 0"

SURFACE TYPE LEGEND

- LANDSCAPE – MATCH EXISTING, REFER TO DETAIL 4/M–5.1 AND PHOTOGRAPHIC RECORDS. LAWN: 90% DWARF FESCUE, 10% KENTUCKY BLUEGRASS MULCH: 3" DEEP RECYCLED BARK, 1/2"–1"ø, 1"–2" LONG. MAINTAIN 3" CLEAR FORM ROOT CROWNS.
- TURF CELL PAVING, GRASSPAVE2 (OR APPROVED EQUAL) – VEHICULAR TRAFFIC RATED — REMOVE AND REINSTALL PER MANUFACTURER'S INSTRUCTION (A)
- CONCRETE – PEDESTRIAN RATED * REFER TO DETAIL 12/M–5.1 & 3/M–5.3 (A)
- CONCRETE – VEHICULAR TRAFFIC RATED REFER TO DETAIL 4/M–5.3
- ASPHALT CONCRETE – VEHICULAR TRAFFIC RATED REFER TO DETAIL 7&8/M–5.3
- STABILIZED DECOMPOSED GRANITE REFER TO DETAIL 1/M–5.6
- STORMWATER PLANTER (MATCH EXISTING, REFER TO DISTRICT STANDARDS & PHOTOGRAPHIC RECORDS)

* PEDESTRIAN PATHWAYS SHALL HAVE A RUNNING SLOPE OF 5% MAX. AND A CROSS SLOPE OF 2% MAX.

REFERENCE SHEET NOTES

1. BACKFILL TRENCH AS PER SPECIFICATIONS AND DETAILS 2/M–5.1 & 4/M–5.1. PROVIDE 90% COMPACTION FOR AREAS IN LANDSCAPE AND 24" OF COVER AND 95% COMPACTION FOR VEHICULAR TRAFFIC RATED AREAS. REPAIR HARDSCAPE AS INDICATED, REFER TO SPECIFICATIONS, THE "SURFACE TYPE LEGEND" HEREIN AND SHEET M–5.3 DETAILS.
2. SAWCUT HARDSCAPE (AS NEEDED), EXCAVATE WITH CARE, AND LOCATE <E> HHWS&R AND CHWS&R PIPING BELOW GRADE. VIF LOCATION FOR NEW VAULT AND EXCAVATE AS NEEDED FOR THE FOOTPRINT OF THE VAULT. REFER TO "NEW" WORK SHEETS FOR VAULT LOCATIONS AND M–6.1 FOR VAULT SCHEDULE. PROVIDE 12" OF CLASS 1 AB FOR VAULT BEDDING (A)
3. SAWCUT HARDSCAPE (AS NEEDED), EXCAVATE WITH CARE AND IDENTIFY TEMPORARY POINTS OF CONNECTION AT THE <E> UNDERGROUND HHW & CHW TO BYPASS AREA OF WORK. FOR BIDDING PURPOSES, ASSUME HYDRONIC PIPING IS AT A CENTERLINE DEPTH OF 6'–0" BELOW GRADE.
4. DEMO AND REPAIR CONCRETE CURB UPON COMPLETION OF UNDERGROUND HYRONIC REPAIRS TO DISTRICT STANDARDS. REFER TO DETAIL 1/M–5.3.
5. DEMO AND REPAIR CONCRETE CURB AND GUTTER UPON COMPLETION OF UNDERGROUND HYRONIC REPAIRS PER DISTRICT STANDARDS. REFER TO DETAIL 2/M–5.3.
6. DEMO AND REPAIR CONCRETE VALLEY GUTTER UPON COMPLETION OF UNDERGROUND HYRONIC REPAIRS PER DISTRICT STANDARDS. REFER TO DETAIL 5/M–5.3.
7. DEMO AND REPAIR DRIVEWAY APPROACH UPON COMPLETION OF UNDERGROUND HYRONIC REPAIRS PER DISTRICT STANDARDS. REFER TO DETAIL 6/M–5.3.
8. DEMO AND RESTORE LANDSCAPE UPON COMPLETION OF UNDERGROUND HYRONIC REPAIRS TO MATCH EXISTING CONDITIONS PRIOR TO EXCAVATION.
9. INSTALL CONTROL & EXPANSION JOINTS ON CONCRETE PAVEMENT UPON COMPLETION OF UNDERGROUND HYRONIC REPAIRS PER DISTRICT STANDARDS. REFER DETAIL 4&5/M–5.6.
10. SAWCUT HARDSCAPE, EXCAVATE WITH CARE, AND LOCATE <E> DW VALVE AND PIPING BELOW GRADE. VIF LOCATION <E> DW PIPING BETWEEN B–1700A AND THE POOL FENCING. REFER TO M–1.5 FOR "NEW" WORK RELATED TO DW SYSTEM.

GENERAL SHEET NOTES

A. THIS PLAN INDICATES THE VARIOUS SURFACE TYPES (HARDSCAPE OR LANDSCAPE) TO BE DEMOLISHED AND REPAIRED INKIND. FOR EACH AREA IN WHICH WORK IS SHOWN, CONTRACTOR SHALL PROVIDE EXCAVATION FOR UNCOVERING THE EXISTING HYDRONIC PIPING TO BE REPLACED. CONTRACTOR SHALL ASSUME PIPING IS AT 6'–0" BELOW FINISH GRADE. CONTRACTOR SHALL PROVIDE SHORING. CONTRACTOR SHALL ALSO PROVIDE BEDDING, BACKFILL, AND COMPACTION IN COMPLIANCE WITH DETAIL 4/M–5.1 AND DISTRICT STANDARDS FOR EXCAVATION, TRENCHING AND BACKFILL.

B. CONTRACTOR SHALL INCLUDE HAZARDOUS ABATEMENT AND DISPOSAL FOR A MIN. OF FOUR LIKE–SIZED (REFERING TO HYDRONIC PIPING IN SCOPE) TRANSITE PIPES AT EACH EXCAVATION SITE IN WHICH A NEW VAULT WILL BE INSTALLED.

C. EXISTING UTILITIES SHALL BE LOCATED BY CONTRACTOR THROUGH THE CONTRACTOR PROVIDED UTILITY LOCATING SERVICE SUBCONTRACTOR. UTILITIES SHALL BE CLEARLY MARKED WITH NON–PERMANENT PAINT WITH DEPTH ESTIMATES PROVIDED BY THE LOCATING SUBCONTRACTOR.

D. EXCAVATE WITH CARE TO AVOID DAMAGING EXISTING UTILITIES. EXCAVATE MANUALLY NEAR EXISTING UTILITIES. ANY DAMAGED UTILITIES OR SUSPECTED LEAKS SHALL BE REPORTED TO THE OWNER AND CONSTRUCTION MANAGER IMMEDIATELY. FOR TRENCHES AT DEPTH OF 5 FT. OR GREATER, SHORING SHALL BE INSTALLED PER OSHA REQUIREMENTS FOR WORKER SAFETY.

E. SCAN FOR REBAR PRIOR TO SAWCUTTING CONCRETE AREAS. IF REBAR IS DETECTED, DO NOT CUT OR DAMAGE EXISTING REBAR.

(A) F. IF LESS THAN SPECIFIED 24" OF FILL COVER IS IDENTIFIED ABOVE EXISTING OR NEW HYDRONIC PIPING, REPORT FINDINGS TO ENGINEER IMMEDIATELY.

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National Strength. Local Action.

REGISTERED PROFESSIONAL ENGINEER — JOHN EMMETT SWEENEY — No. M40086 EXP. 09-30-2026 — MECHANICAL — STATE OF CALIFORNIA

DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

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DSA APPL #02-123745

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SOBE PROJECT NO:	2510–00649
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CHECKED BY:	JEG
APPROVED BY:	EES

SHEET TITLE

OVERALL SITE PLAN EXCAVATION, TRENCHING AND SURFACE RESTORATION

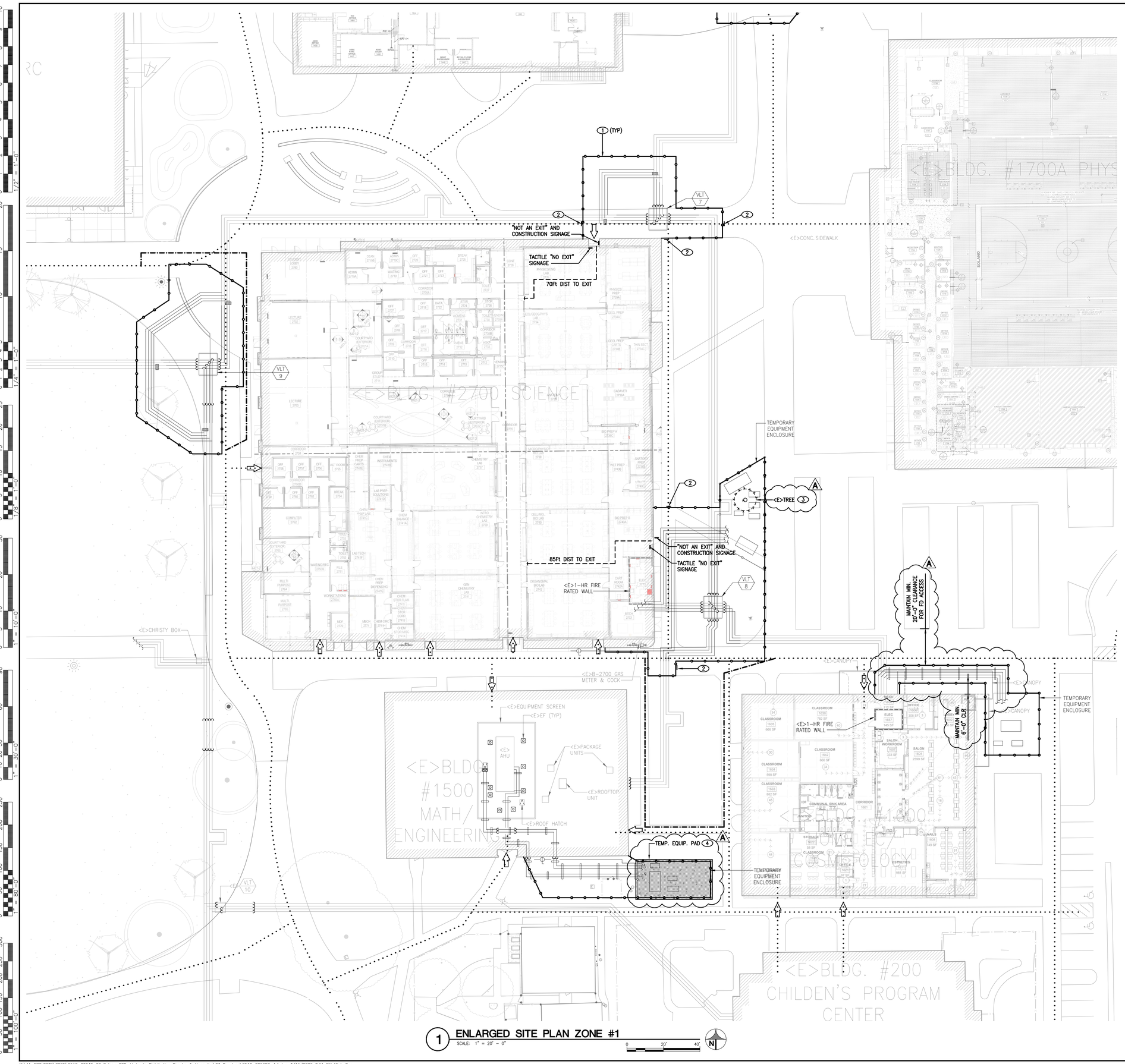
SCALE: AS NOTED

THIS DRAWING IS 30" X 42" AT FULL SIZE

G-1.4

SHEET OF –

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1 ENLARGED SITE PLAN ZONE #1

SCALE: 1" = 20' - 0"

0 20' 40'

GENERAL SHEET NOTES

A. THE CAMPUS SHALL BE OCCUPIED AND FULLY FUNCTIONAL DURING THE ENTIRE COURSE OF CONSTRUCTION. ACCESS TO ALL BUILDINGS SHALL BE MAINTAINED WITH TEMPORARY WALKWAYS, BRIDGES, BARRIERS AND SIGNS – SEE DISTRICT STANDARDS.

B. A WORK PLAN SHALL BE COORDINATED AND APPROVED BY THE DISTRICT PRIOR TO THE START OF ANY TRENCHING ACTIVITY. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

C. CAMPUS SIGNAGE MUST BE INSTALLED PRIOR TO OPENING ANY HEADING.

D. SAWCUTTING OF CONCRETE AND ASPHALT TO OCCUR AFTER HOURS. SEE SPECIFICATIONS. SEE PATCHING DETAILS ON DRAWING M-5.3 AND DETAILS 4 AND 5/M-5.6.

E. ALL LANDSCAPING AND HARDSCAPING DAMAGED AS A RESULT OF WORK SHALL BE RESTORED TO AS-FOUND CONDITION. SAWCUTTING OF HARDSCAPE SHALL BE FROM SCOREMARK TO SCOREMARK. REFER TO DETAIL 8 & 8/M-5.6 FOR CONCRETE AND ASPHALT PATCHING DETAILS FOR INTERFACE TO EXISTING CONCRETE OR ASPHALT

F. NORMAL UNDERGROUND UTILITY LOCATION PROVISIONS (I.E. USA LOCATOR SERVICE) ARE NOT AVAILABLE ON CAMPUSES AS A RULE. CONTRACTOR IS RESPONSIBLE TO PROVIDE PRIVATE SERVICE FOR LOCATION OF UNDERGROUND SERVICES. PROVIDE ACCESS REQUEST PRIOR TO DISRUPTION OF ANY SERVICE, OR ACCESS TO ANY SENSITIVE/OCCUPIED AREA.

G. MAINTAIN ACCESSIBILITY ACCESS TO ALL BUILDINGS, PATHWAYS. PROVIDE TRENCH PLATE AS SHOWN AND/OR AS REQUIRED. COORDINATE REMOVAL AND/OR RELOCATION OF TRENCH PLATE WITH CAMPUS. SEE ADA RAMP DETAILS ON DRAWING E-5.1. PROVIDE SMOOTH OR BEVELED TRANSITIONS FROM GRADE TO TRENCH PLATE PER ADA REQUIREMENTS.

A H. CONTRACTOR SHALL PROVIDE TREE PROTECTION PLAN FOR REVIEW PRIOR TO CONDUCTING ANY WORK AT EXISTING TREES. THE TREE PROTECTION PLAN SHALL BE SUBMITTED AS A DETAIL ON THE FINAL SITE PLAN USED FOR CONSTRUCTION. A CERTIFIED ARBORIST, REGISTERED CONSULTING ARBORIST OR REGISTERED PROFESSIONAL FORESTER SHALL BE RETAINED TO ACT AS THE PROJECT ARBORIST TO MONITOR CONSTRUCTION ACTIVITIES. PRUNE AFFECTED TREES PER ANSI A300 PRUNING STANDARDS. INSTALL TEMPORARY 6' HIGH CHAIN LINK PROTECTIVE FENCING ON CONCRETE FOOTINGS 5' FROM THE TRUNK. INSTALL A 6" LAYER OF CLEAN WOOD CHIPS, WATER TREES AND KEEP SOIL MOIST TO A DEPTH OF 18" WITHIN THE PROTECTIVE FENCING. ALL EXCAVATION, WHEN APPROVED BY THE ARBORIST, WITHIN THE PROTECTED FENCING SHALL BE PERFORMED WITH HANDHELD EQUIPMENT OR AN "AIR SPADE"

I. ADA PARKING STALLS TO REMAIN OPEN AND ACCESSIBLE AT ALL TIMES. IN THE EVENT ANY CONSTRUCTION ACTIVITIES BLOCK ACCESSIBLE PARKING SPACES, PROVIDE ALTERNATE TEMP. LOCATION WITH ACCESSIBLE DESIGNATION SIGNAGE AND GRAPHICS PER CBC SECTION 1129B.3 AND 1129B.4

A NOTE: EXISTING PVC PIPING MAY NOT BE INSTALLED WITH TRACER WIRE. ASSUME HAND EXCAVATION FOR CHW PIPING UNLESS TRACER WIRE IDENTIFIED IN FIELD.

REFERENCE SHEET NOTES

1. PROVIDE TEMPORARY FENCING AROUND AREAS OF WORK WITHIN PROJECT ZONE. TEMPORARY FENCING SHALL BE PROVIDED AT ALL AREAS OF WORK INCLUDING TEMPORARY HYDRONIC PIPING, TEMPORARY HEATING AND COOLING EQUIPMENT, TEMPORARY GAS PIPING, TEMPORARY GENERATOR(S), EXCAVATION SITES AND EQUIPMENT, AND LAYDOWN/STORAGE AREAS.

A 2. "PATHWAY CLOSED" SIGNAGE SEE DRAWING G-5.1.

A 3. DEMO EXISTING TREE AND GRIND STUMP TO BELOW GRADE TO PROVIDE CLEARANCE FOR TEMPORARY EQUIPMENT. IDENTIFY, DEMOLISH BACK OUTSIDE OF AREA OF WORK, AND CAP IRRIGATION SERVING EXISTING TREE.

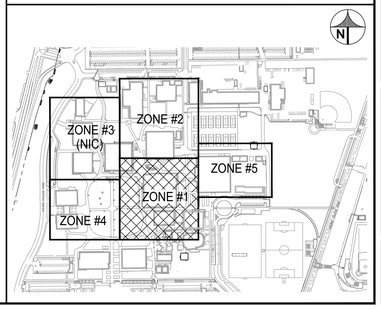
4. PROVIDE TEMPORARY EQUIPMENT PAD USING CLASS II AGGRAVATED BASE COMPACTED TO 90% RELATIVE COMPACTION. TEMPORARY PAD SHALL HAVE A MINIMUM DEPTH OF 6 INCHES AND SLOPED MAXIMUM 2% AWAY FROM THE BUILDING. SAFE-OFF AND CAP AREA DRAINS (AS OCCURS) WITH 1" PLYWOOD BOARD SPANNED A MIN. 2 FT. BEYOND DRAIN OPENING IN EA. DIRECTION. RETURN TO <E> CONDITION UPON COMPLETION OF WORK AND REMOVAL OF TEMPORARY EQUIPMENT. REFER TO G-1.4.

LEGEND

- TEMPORARY CHAIN LINK FENCE
- PATH OF TRAVEL
- ALTERNATE PATH OF TRAVEL
- ALTERNATE BUILDING EXIT
- ACCESSIBLE BUILDING ENTRANCE
- TEMPORARY TRENCHPLATE FOR BUILDING/CAMPUS ACCESS

NOTE:
SEE SHEET G-1.2 FOR OTHER LEGEND DESIGNATION.

KEY PLAN



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SOLANO COMMUNITY COLLEGE DISTRICT

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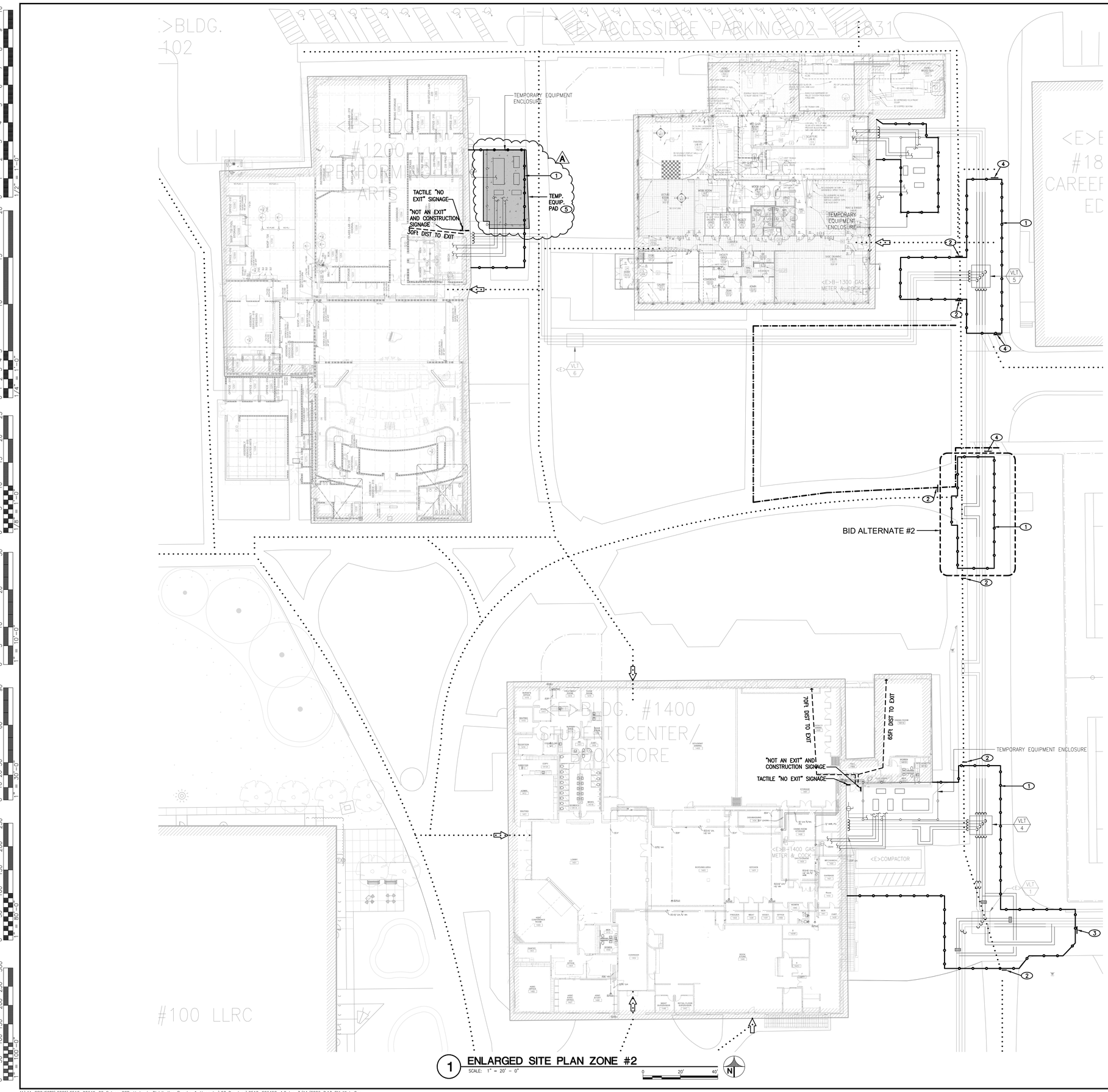
SOBE PROJECT NO:	2510-00649
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CHECKED BY:	JEG
APPROVED BY:	EES

SHEET TITLE
ENLARGED SITE PLAN ZONE #1

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

G-4.1
SHEET OF –

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1 ENLARGED SITE PLAN ZONE #2
SCALE: 1" = 20' - 0"

GENERAL SHEET NOTES

A. THE CAMPUS SHALL BE OCCUPIED AND FULLY FUNCTIONAL DURING THE ENTIRE COURSE OF CONSTRUCTION. ACCESS TO ALL BUILDINGS SHALL BE MAINTAINED WITH TEMPORARY WALKWAYS, BRIDGES, BARRIERS AND SIGNS – SEE DISTRICT STANDARDS.

B. A WORK PLAN SHALL BE COORDINATED AND APPROVED BY THE DISTRICT PRIOR TO THE START OF ANY TRENCHING ACTIVITY. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

C. CAMPUS SIGNAGE MUST BE INSTALLED PRIOR TO OPENING ANY HEADING.

D. SAWCUTTING OF CONCRETE AND ASPHALT TO OCCUR AFTER HOURS. SEE SPECIFICATIONS. SEE PATCHING DETAILS ON DRAWING M-5.3 AND DETAILS 4 AND 5/M-5.6.

E. ALL LANDSCAPING AND HARDSCAPING DAMAGED AS A RESULT OF WORK SHALL BE RESTORED TO AS-FOUND CONDITION. SAWCUTTING OF HARDSCAPE SHALL BE FROM SCOREMARK TO SCOREMARK. REFER TO DETAIL 8 & 8/M-5.6 FOR CONCRETE AND ASPHALT PATCHING DETAILS FOR INTERFACE TO EXISTING CONCRETE OR ASPHALT

F. NORMAL UNDERGROUND UTILITY LOCATION PROVISIONS (I.E. USA LOCATOR SERVICE) ARE NOT AVAILABLE ON CAMPUSES AS A RULE. CONTRACTOR IS RESPONSIBLE TO PROVIDE PRIVATE SERVICE FOR LOCATION OF UNDERGROUND SERVICES. PROVIDE ACCESS REQUEST PRIOR TO DISRUPTION OF ANY SERVICE, OR ACCESS TO ANY SENSITIVE/OCCUPIED AREA.

G. MAINTAIN ACCESSIBILITY ACCESS TO ALL BUILDINGS, PATHWAYS. PROVIDE TRENCH PLATE AS SHOWN AND/OR AS REQUIRED. COORDINATE REMOVAL AND/OR RELOCATION OF TRENCH PLATE WITH CAMPUS. SEE ADA RAMP DETAILS ON DRAWING E-5.1. PROVIDE SMOOTH OR BEVELED TRANSITIONS FROM GRADE TO TRENCH PLATE PER ADA REQUIREMENTS.

A H. CONTRACTOR SHALL PROVIDE TREE PROTECTION PLAN FOR REVIEW PRIOR TO CONDUCTING ANY WORK AT EXISTING TREES. THE TREE PROTECTION PLAN SHALL BE SUBMITTED AS A DETAIL ON THE FINAL SITE PLAN USED FOR CONSTRUCTION. A CERTIFIED ARBORIST, REGISTERED CONSULTING ARBORIST OR REGISTERED PROFESSIONAL FORESTER SHALL BE RETAINED TO ACT AS THE PROJECT ARBORIST TO MONITOR CONSTRUCTION ACTIVITIES. PRUNE AFFECTED TREES PER ANSI A300 PRUNING STANDARDS. INSTALL TEMPORARY 6' HIGH CHAIN LINK PROTECTIVE FENCING ON CONCRETE FOOTINGS 5' FROM THE TRUNK. INSTALL A 6" LAYER OF CLEAN WOOD CHIPS, WATER TREES AND KEEP SOIL MOIST TO A DEPTH OF 18" WITHIN THE PROTECTIVE FENCING. ALL EXCAVATION, WHEN APPROVED BY THE ARBORIST, WITHIN THE PROTECTED FENCING SHALL BE PERFORMED WITH HANDHELD EQUIPMENT OR AN "AIR SPADE"

I. ADA PARKING STALLS TO REMAIN OPEN AND ACCESSIBLE AT ALL TIMES. IN THE EVENT ANY CONSTRUCTION ACTIVITIES BLOCK ACCESSIBLE PARKING SPACES, PROVIDE ALTERNATE TEMP. LOCATION WITH ACCESSIBLE DESIGNATION SIGNAGE AND GRAPHICS PER CBC SECTION 1129B.3 AND 1129B.4

A NOTE: EXISTING PVC PIPING MAY NOT BE INSTALLED WITH TRACER WIRE. ASSUME HAND EXCAVATION FOR CHW PIPING UNLESS TRACER WIRE IDENTIFIED IN FIELD.

REFERENCE SHEET NOTES

1. PROVIDE TEMPORARY FENCING AROUND AREAS OF WORK WITHIN ZONE #2. TEMPORARY FENCING SHALL BE PROVIDED AT ALL AREAS OF WORK INCLUDING TEMPORARY HYDRONIC PIPING, TEMPORARY HEATING AND COOLING EQUIPMENT, TEMPORARY GAS PIPING, TEMPORARY GENERATOR(S), EXCAVATION SITES AND EQUIPMENT, AND LAYDOWN/STORAGE AREAS.
2. "PATHWAY CLOSED" SIGNAGE, SEE DETAIL 1/G-5.1.
3. "EXIT CLOSED" SIGNAGE, SEE DETAIL 1/G-5.1.
4. "ENTRANCE CLOSED" SIGNAGE SEE DETAIL 1/G-5.1.

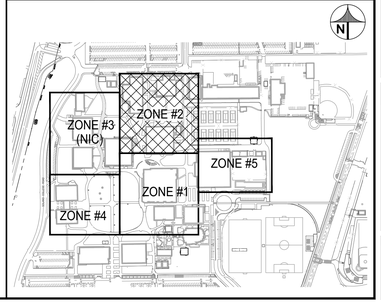
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LEGEND

- TEMPORARY CHAIN LINK FENCE
- PATH OF TRAVEL
- ALTERNATE PATH OF TRAVEL
- ALTERNATE BUILDING EXIT
- ACCESSIBLE BUILDING ENTRANCE
- TEMPORARY TRENCHPLATE FOR BUILDING/CAMPUS ACCESS

NOTE:
SEE SHEET G-1.2 FOR OTHER LEGEND DESIGNATION.

KEY PLAN



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APPROVED BY:	EES

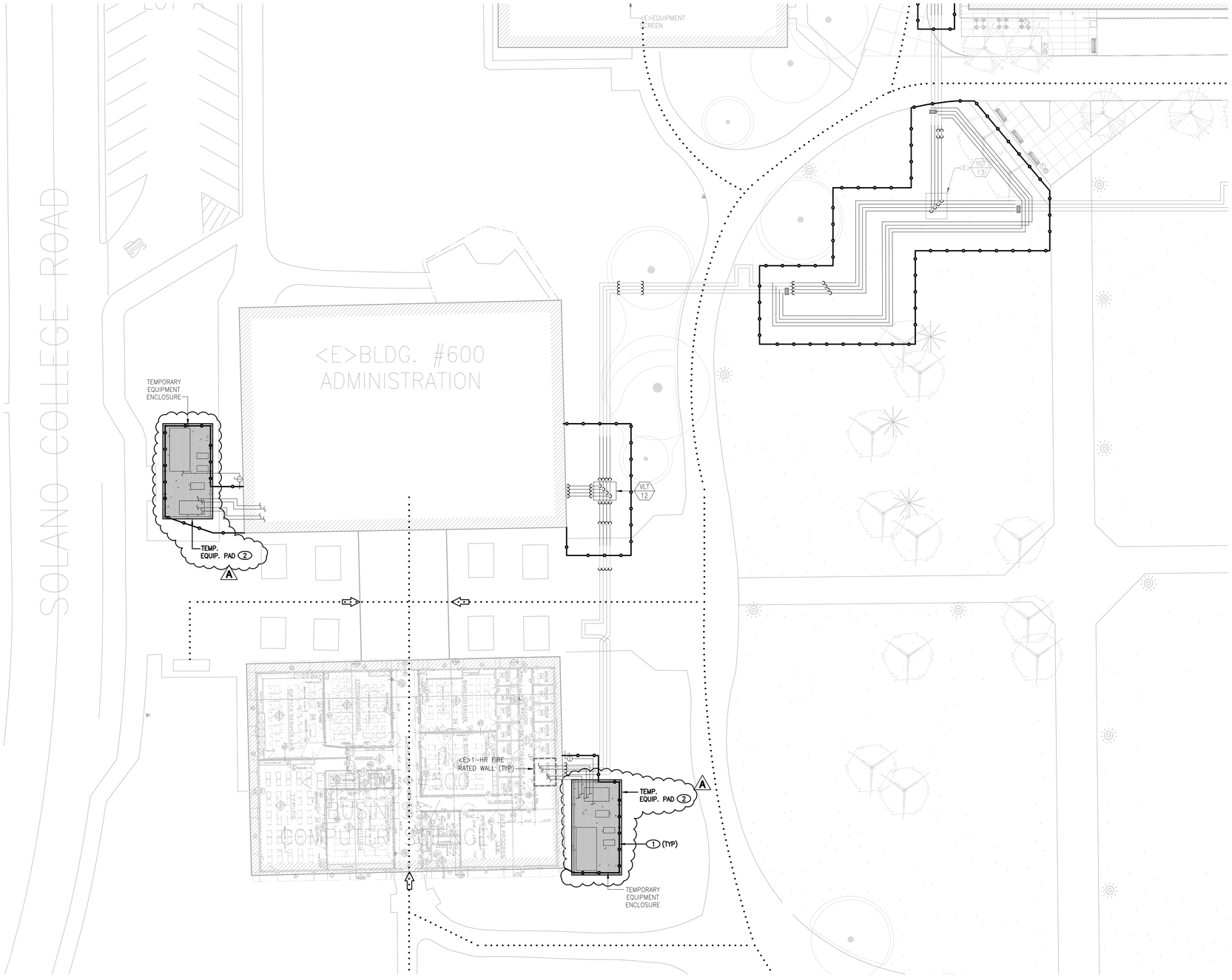
SHEET TITLE
ENLARGED SITE PLAN ZONE #2

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

G-4.2
SHEET OF –

M:\AA-PROJECTS\2025\2510-00649-00 Solano CCD, Hydronic Distribution Repairs & Upgrades\03 Drawings\2510-00649G-4.2.dwg 3/11/2026 7:13 PM Minh Ong

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



1 ENLARGED SITE PLAN ZONE #4 (BID ALTERNATE #1)
SCALE: 1" = 20' - 0"

GENERAL SHEET NOTES

A. THE CAMPUS SHALL BE OCCUPIED AND FULLY FUNCTIONAL DURING THE ENTIRE COURSE OF CONSTRUCTION. ACCESS TO ALL BUILDINGS SHALL BE MAINTAINED WITH TEMPORARY WALKWAYS, BRIDGES, BARRIERS AND SIGNS – SEE DISTRICT STANDARDS.

B. A WORK PLAN SHALL BE COORDINATED AND APPROVED BY THE DISTRICT PRIOR TO THE START OF ANY TRENCHING ACTIVITY. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

C. CAMPUS SIGNAGE MUST BE INSTALLED PRIOR TO OPENING ANY HEADING.

D. SAWCUTTING OF CONCRETE AND ASPHALT TO OCCUR AFTER HOURS. SEE SPECIFICATIONS. SEE PATCHING DETAILS ON DRAWING M-5.3 AND DETAILS 4 AND 5/M-5.6.

E. ALL LANDSCAPING AND HARDSCAPING DAMAGED AS A RESULT OF WORK SHALL BE RESTORED TO AS-FOUND CONDITION. SAWCUTTING OF HARDSCAPE SHALL BE FROM SCOREMARK TO SCOREMARK. REFER TO DETAIL 8 & 8/M-5.6 FOR CONCRETE AND ASPHALT PATCHING DETAILS FOR INTERFACE TO EXISTING CONCRETE OR ASPHALT

F. NORMAL UNDERGROUND UTILITY LOCATION PROVISIONS (I.E. USA LOCATOR SERVICE) ARE NOT AVAILABLE ON CAMPUSES AS A RULE. CONTRACTOR IS RESPONSIBLE TO PROVIDE PRIVATE SERVICE FOR LOCATION OF UNDERGROUND SERVICES. PROVIDE ACCESS REQUEST PRIOR TO DISRUPTION OF ANY SERVICE, OR ACCESS TO ANY SENSITIVE/OCCUPIED AREA.

G. MAINTAIN ACCESSIBILITY ACCESS TO ALL BUILDINGS, PATHWAYS. PROVIDE TRENCH PLATE AS SHOWN AND/OR AS REQUIRED. COORDINATE REMOVAL AND/OR RELOCATION OF TRENCH PLATE WITH CAMPUS. SEE ADA RAMP DETAILS ON DRAWING E-5.1. PROVIDE SMOOTH OR BEVELED TRANSITIONS FROM GRADE TO TRENCH PLATE PER ADA REQUIREMENTS.

A H. CONTRACTOR SHALL PROVIDE TREE PROTECTION PLAN FOR REVIEW PRIOR TO CONDUCTING ANY WORK AT EXISTING TREES. THE TREE PROTECTION PLAN SHALL BE SUBMITTED AS A DETAIL ON THE FINAL SITE PLAN USED FOR CONSTRUCTION. A CERTIFIED ARBORIST, REGISTERED CONSULTING ARBORIST OR REGISTERED PROFESSIONAL FORESTER SHALL BE RETAINED TO ACT AS THE PROJECT ARBORIST TO MONITOR CONSTRUCTION ACTIVITIES. PRUNE AFFECTED TREES PER ANSI A300 PRUNING STANDARDS. INSTALL TEMPORARY 6' HIGH CHAIN LINK PROTECTIVE FENCING ON CONCRETE FOOTINGS 5' FROM THE TRUNK. INSTALL A 6" LAYER OF CLEAN WOOD CHIPS, WATER TREES AND KEEP SOIL MOIST TO A DEPTH OF 18" WITHIN THE PROTECTIVE FENCING. ALL EXCAVATION, WHEN APPROVED BY THE ARBORIST, WITHIN THE PROTECTED FENCING SHALL BE PERFORMED WITH HANDHELD EQUIPMENT OR AN "AIR SPADE"

I. ADA PARKING STALLS TO REMAIN OPEN AND ACCESSIBLE AT ALL TIMES. IN THE EVENT ANY CONSTRUCTION ACTIVITIES BLOCK ACCESSIBLE PARKING SPACES, PROVIDE ALTERNATE TEMP. LOCATION WITH ACCESSIBLE DESIGNATION SIGNAGE AND GRAPHICS PER CBC SECTION 1129B.3 AND 1129B.4

A NOTE: EXISTING PVC PIPING MAY NOT BE INSTALLED WITH TRACER WIRE. ASSUME HAND EXCAVATION FOR CHW PIPING UNLESS TRACER WIRE IDENTIFIED IN FIELD.

REFERENCE SHEET NOTES

1. PROVIDE TEMPORARY FENCING AROUND AREAS OF WORK WITHIN ZONE #4. TEMPORARY FENCING SHALL BE PROVIDED AT ALL AREAS OF WORK INCLUDING TEMPORARY HYDRONIC PIPING, TEMPORARY HEATING AND COOLING EQUIPMENT, TEMPORARY GAS PIPING, TEMPORARY GENERATOR(S), EXCAVATION SITES AND EQUIPMENT, AND LAYDOWN/STORAGE AREAS.

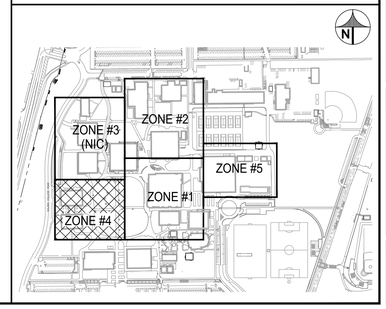
A 2. PROVIDE TEMPORARY EQUIPMENT PAD USING CLASS II AGGRAVATED BASE COMPACTED TO 90% RELATIVE COMPACTION. TEMPORARY PAD SHALL HAVE A MINIMUM DEPTH OF 6 INCHES AND SLOPED MAXIMUM 2% AWAY FROM THE BUILDING. SAFE-OFF AND CAP AREA DRAINS (AS OCCURS) WITH 1" PLYWOOD BOARD SPANNED A MIN. 2 FT. BEYOND DRAIN OPENING IN EA. DIRECTION. RETURN TO <E> CONDITION UPON COMPLETION OF WORK AND REMOVAL OF TEMPORARY EQUIPMENT, REFER TO G-1.4.

LEGEND

- TEMPORARY CHAIN LINK FENCE
- PATH OF TRAVEL
- ALTERNATE PATH OF TRAVEL
- ALTERNATE BUILDING EXIT
- ACCESSIBLE BUILDING ENTRANCE
- TEMPORARY TRENCHPLATE FOR BUILDING/CAMPUS ACCESS

NOTE:
SEE SHEET G-1.2 FOR OTHER LEGEND DESIGNATION.

KEY PLAN



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

REGISTERED PROFESSIONAL ENGINEER
JOHN BARRETT SWIRE
No. M40086
EXP. 09-30-2026
MECHANICAL
STATE OF CALIFORNIA
DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

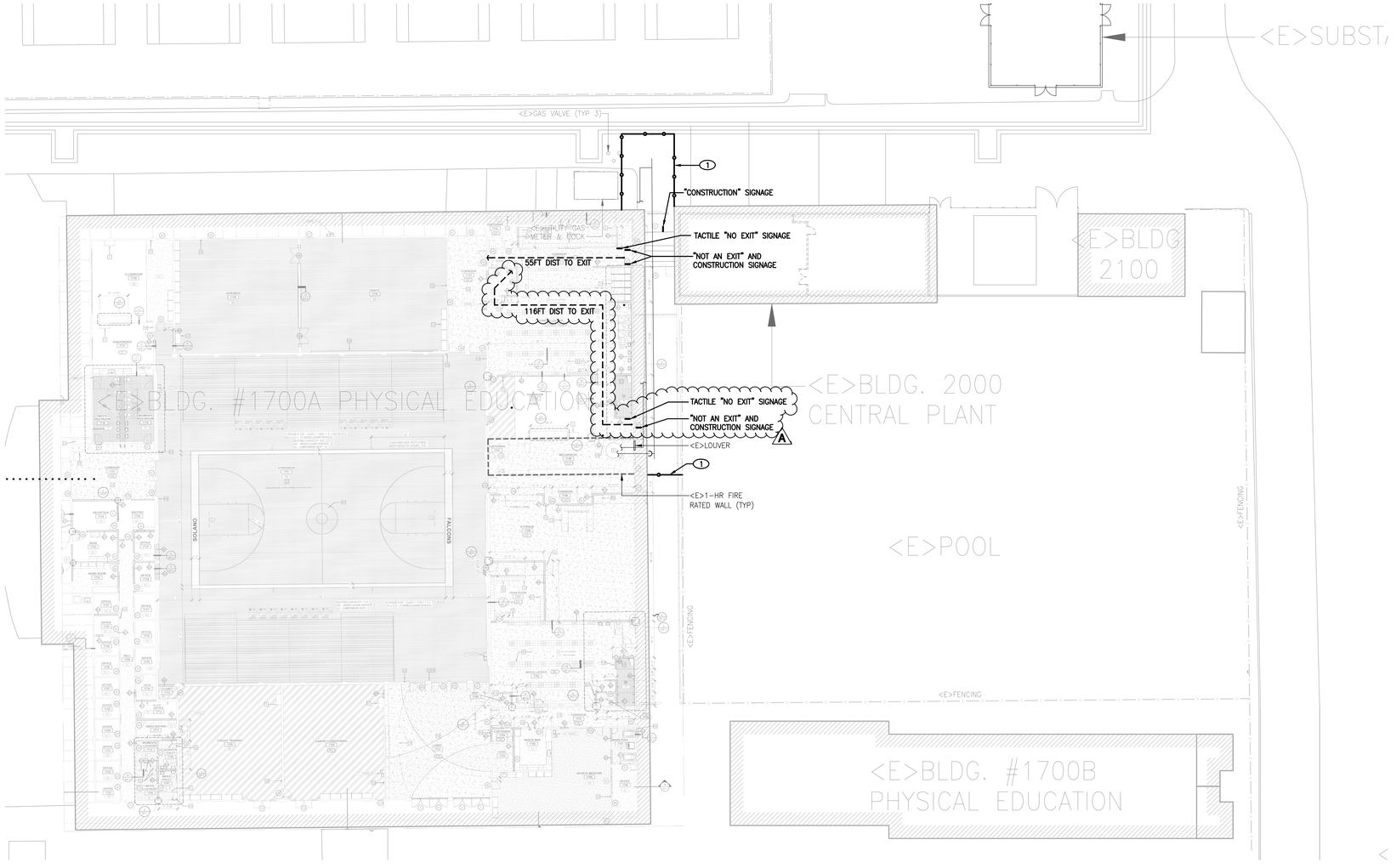
SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	JEG
APPROVED BY:	EES

SHEET TITLE
ENLARGED SITE PLAN ZONE #4 (BID ALTERNATE #1) A

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

G-4.4
SHEET OF –

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



1 ENLARGED SITE PLAN ZONE #5 (BID ALTERNATE #8)
SCALE: 1" = 20' - 0"

GENERAL SHEET NOTES

A. THE CAMPUS SHALL BE OCCUPIED AND FULLY FUNCTIONAL DURING THE ENTIRE COURSE OF CONSTRUCTION. ACCESS TO ALL BUILDINGS SHALL BE MAINTAINED WITH TEMPORARY WALKWAYS, BRIDGES, BARRIERS AND SIGNS – SEE DISTRICT STANDARDS.

B. A WORK PLAN SHALL BE COORDINATED AND APPROVED BY THE DISTRICT PRIOR TO THE START OF ANY TRENCHING ACTIVITY. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

C. CAMPUS SIGNAGE MUST BE INSTALLED PRIOR TO OPENING ANY HEADING.

D. SAWCUTTING OF CONCRETE AND ASPHALT TO OCCUR AFTER HOURS. SEE SPECIFICATIONS. SEE PATCHING DETAILS ON DRAWING M-5.3 AND DETAILS 4 AND 5/M-5.6.

E. ALL LANDSCAPING AND HARDSCAPING DAMAGED AS A RESULT OF WORK SHALL BE RESTORED TO AS-FOUND CONDITION. SAWCUTTING OF HARDSCAPE SHALL BE FROM SCOREMARK TO SCOREMARK. REFER TO DETAIL 8 & 8/M-5.6 FOR CONCRETE AND ASPHALT PATCHING DETAILS FOR INTERFACE TO EXISTING CONCRETE OR ASPHALT

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G. MAINTAIN ACCESSIBILITY ACCESS TO ALL BUILDINGS, PATHWAYS. PROVIDE TRENCH PLATE AS SHOWN AND/OR AS REQUIRED. COORDINATE REMOVAL AND/OR RELOCATION OF TRENCH PLATE WITH CAMPUS. SEE ADA RAMP DETAILS ON DRAWING E-5.1. PROVIDE SMOOTH OR BEVELED TRANSITIONS FROM GRADE TO TRENCH PLATE PER ADA REQUIREMENTS.

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REFERENCE SHEET NOTES

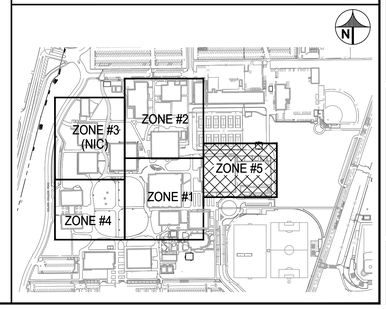
1. PROVIDE TEMPORARY FENCING AROUND AREAS OF WORK WITHIN ZONE #5. TEMPORARY FENCING SHALL BE PROVIDED AT ALL AREAS OF WORK.

LEGEND

- TEMPORARY CHAIN LINK FENCE
- PATH OF TRAVEL
- ALTERNATE PATH OF TRAVEL
- ALTERNATE BUILDING EXIT
- ACCESSIBLE BUILDING ENTRANCE
- TEMPORARY TRENCHPLATE FOR BUILDING/CAMPUS ACCESS

NOTE:
SEE SHEET G-1.2 FOR OTHER LEGEND DESIGNATION.

KEY PLAN



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HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE MARK	DATE	DESCRIPTION
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SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	JEG
APPROVED BY:	EES

SHEET TITLE
ENLARGED SITE PLAN ZONE #5 (BID ALTERNATE #8)

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

G-4.5
SHEET OF –

EQUIPMENT ANCHORAGE NOTES

APPLICABLE CODE: 2022 CBC

MEP COMPONENT ANCHORAGE NOTE:

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA-APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTION 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26, AND 30:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G., HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE NOR BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVING A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.

B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

APPLICABLE CODE: 2022 CBC PER IR 16-13

MEP DISTRIBUTION SYSTEM BRACING NOTE FOR PIPING, DUCTWORK, AND ELECTRICAL CONDUIT:

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7 SECTION 13.3 AS DEFINED IN ASCE 7 SECTIONS 13.6.5, 13.6.6, 13.6.7, AND 13.6.8; AND 2022 CBC SECTIONS 1617A.1.24, 1617A.1.25, AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEMS ARE AS NOTED BELOW. THE MEP DESIGN PROFESSIONAL ENGINEER RESPONSIBLE FOR CONTENT ON THESE SHEETS HAS VERIFIED THAT THE DESIGN METHODS IDENTIFIED BELOW ARE IN ACCORDANCE WITH DSA IR 16-13.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP ☒ MD ☐ PP ☐ E ☐ OPTION 1: PROJECT-SPECIFIC DESIGN

MP ☐ MD ☐ PP ☐ E ☐ OPTION 2: DESIGN BASED ON OSHPD OPM, WITHIN PROJECT SUBMITTAL

MP ☐ MD ☐ PP ☐ E ☐ OPTION 3: DESIGN BASED ON OSHPD OPM, DEFERRED SUBMITTAL

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

1/2" = 1'-0"
1/4" = 1'-0"
1/8" = 1'-0"
1" = 10'-0"
1" = 30'-0"
1" = 80'-0"
1" = 100'-0"

SYMBOLS

GENERAL

- EXTENT OF DEMOLITION
- NEW TO EXISTING CONNECTION
- REVISION NUMBER
- WORK ITEM (MECHANICAL)
- DETAIL DESIGNATION — DETAIL NUMBER / DRAWING NUMBER (IF BLANK, SAME SHEET)
- EQUIPMENT DESIGNATION — EQUIPMENT TYPE / EQUIPMENT NUMBER
- SECTION DESIGNATION — SECTION NUMBER / DRAWING NUMBER
- TO BE DEMOLISHED — <N> EQUIPMENT
- TO BE DEMOLISHED — RELOCATED EQUIPMENT

PIPING

- 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)

PIPING SPECIALTIES

- 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

VALVES

- BALL
- BUTTERFLY
- GATE
- GATE, ANGLE
- GLOBE
- GLOBE, ANGLE
- THREE WAY
- CONTROL
- IN PIT

VALVES, SPECIAL DUTY

- 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

AIR CONDITIONING

- CONDENSER WATER (RETURN)(SUPPLY)
- CHILLED WATER (RETURN)(SUPPLY)
- DRAIN
- HOT/CHILLED WATER (RETURN)(SUPPLY)
- PRIMARY CHILLED WATER (RETURN)(SUPPLY)
- SECONDARY CHILLED WATER (RETURN)(SUPPLY)
- TERTIARY CHILLED WATER (RETURN)(SUPPLY)

CONTROLS

- ANALOG INPUT
- ANALOG OUTPUT
- BYPASS TIMER
- CONTROLLER
- DIFFERENTIAL PRESSURE TRANSMITTER
- DIGITAL (ON/OFF) INPUT
- DIGITAL (ON/OFF) OUTPUT
- FLOW ELEMENT
- FLOW TRANSMITTER
- FLOW SWITCH
- FLOWMETER
- FLOWMETER, ORIFICE
- HUMIDITY CONTROLLER
- HUMIDITY TRANSMITTER
- MOTOR/ACTUATOR
- MOTOR STARTER
- PRESSURE INDICATOR
- PID CONTROL LOOP (REPRESENTATION)
- PRESSURE SWITCH
- PRESSURE TRANSMITTER
- REHEAT COIL
- RELAY COIL
- SENSOR
- TEMPERATURE SENSOR
- TEMPERATURE ELEMENT
- TEMPERATURE INDICATOR
- TEMPERATURE TRANSMITTER
- THERMOSTAT OR TEMPERATURE SENSOR (DDC) (36" TO 48" AFF.)
- HEATING COIL
- COOLING COIL
- DIRECT EXPANSION COIL
- GAS FIRED HEAT EXCHANGER
- VARIABLE FREQUENCY DRIVE

ABBREVIATIONS

@	AT
AAV	AUTOMATIC AIR VENT
ABD	ABANDONED
AC	AIR CONDITIONING UNIT DESIGNATION
ACC	AIR COOLED CONDENSER
ACM	ASBESTOS CONTAINING MATERIAL
ACP	ASBESTOS CEMENT PIPE
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AH	AIR HANDLER
AHU	AIR HANDLING UNIT
AHUC	AIR HANDLING UNIT CONTROLLER
AI	ANALOG INPUT
ALM	ALARM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AO	ANALOG OUTPUT
APD	AIR PRESSURE DROP (IN.W.G.)
ARCH	ARCHITECTURAL
AS	AIR SEPARATOR
ASJ	ALL SERVICE JACKET
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASSY	ASSEMBLY
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
ATR	ALL THREADED ROD
B	BOILER
BAS	BUILDING AUTOMATION SYSTEM
BAV	BALANCING VALVE
BDD	BACKDRAFT DAMPERS
BFP	BACKFLOW PREVENTER
BFV	BUTTERFLY VALVE
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
BUR	BUILT-UP ROOFING
BV	BALL VALVE
℄	CENTERLINE
CA	COMPRESSED AIR
CC, C/C	COOLING COIL
CD	CONDENSATE DRAIN
CFF	CAP FOR FUTURE
CFM or ∮	CUBIC FEET PER MINUTE
CFT	CHEMICAL FEED TANK
CHCP	CHILLER CONTROL PANEL
CHW(R)(S)(T)	CHILLED WATER (RETURN)(SUPPLY)(TEMP)
CL	CENTER LINE
CLG	CEILING
CLR	CENTERLINE RADIUS
CO	CLEAN-OUT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECT OR CONNECTION
CONT	CONTINUATION
CONTR.	CONTRACTOR
CP	CONTROL PANEL
CR	CONDENSATE RETURN
CRAC	COMPUTER ROOM AIR CONDITIONER
CT	COOLING TOWER
CTL	CONTROL
CU	COPPER
CV	CONTROL VALVE
CW	CITY WATER
CWP	CONDENSER WATER PUMP
CW(R)(S)(T)	CONDENSER WATER (RETURN)(SUPPLY) (TEMPERATURE)
D	DRAIN
DA	DEAERATOR
DB	DRY BULB
DCW	DOMESTIC CITY WATER
DDC	DIRECT DIGITAL CONTROL
DHW(R)	DOMESTIC HOT WATER (RETURN)
DI	DISCRETE INPUT
DIA	DIAMETER
DISC	DISCONNECT
DN	DOWN
DO	DISCRETE OUTPUT
DP	DIFFERENTIAL PRESSURE
DPS	DIFFERENTIAL PRESSURE SWITCH
DPT	DIFFERENTIAL PRESSURE TRANSDUCER
DWDI	DOUBLE WIDTH, DOUBLE INLET
DWG	DRAWING
DWH	DOMESTIC WATER HEATER
DX	DIRECT EXPANSION
<E>	EXISTING
EA(T)	EXHAUST AIR (TEMPERATURE)
EAD	EXHAUST AIR DUCT
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EJ	EXPANSION JOINT
EL	EXPANSION LOOP
ELEV	ELEVATION
ELEC	ELECTRICAL
EMCS	ENERGY MANAGEMENT & CONTROL SYSTEM
EMS	ENERGY MANAGEMENT SYSTEM
EOD	EXTENT OF DEMOLITION
E/P	ELECTRO/PNEUMATIC TRANSDUCER
EQ	EQUAL
EQUIP.	EQUIPMENT
ESP	EXTERNAL STATIC PRESSURE (IN.W.G.)
ET	EXPANSION TANK
EWLC	ELECTRONIC WATER LEVEL CONTROLLER
EWS	EMERGENCY EYEWASH AND SHOWER
EWT	ENTERING WATER TEMPERATURE
<F>	FUTURE
F	FAHRENHEIT
FA	FACE AREA
FAF	FORCED AIR FURNACE
FC	FLEXIBLE CONNECTION
FCO	FLOOR CLEAN OUT
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FDC	FIRE DEPARTMENTCONNECTION
FDD	FLUE DISCHARGE DEFLECTOR
FHC	FIRE HOSE CABINET
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FLR	FLOOR
FM	FLOW METER
FMS	FACILITY MONITORING SYSTEM
FO(R)(S)	FUEL OIL (RETURN)(SUPPLY)
FOV	FUEL OIL VENT
FPF	FINS PER FOOT
FRP	FIBER REINFORCED POLYMER
FS	FLOW SWITCH
FSD	COMBINATION FIRE AND SMOKE DAMPER
FT	FLOW TRANSMITTER or FEET
G	GAS
GA	GAUGE
GAL	GALLONS
GALV	GALVANIZED
GF	GAS FURNACE
GPM	GALLONS PER MINUTE
GSM	GALVANIZED SHEET METAL
GV	GATE VALVE
H	HUMIDIFIER
HB	HOSE BIBB
HC	HEATING COIL
HDR	HEADER
HGR	HANGER
HHW(R)(S)(P)(T)	HEATING HOT WATER (RETURN)(SUPPLY)(PUMP) (TEMPERATURE)
HP	HORSE POWER
HPCR	HIGH PRESSURE CONDENSATE RETURN
HPS	HIGH PRESSURE STEAM
HT	HEIGHT
HVAC	HEATING VENTILATING AND AIR CONDITIONING
HWP	HOT WATER PUMP
HX	HEAT EXCHANGER
HZ	HERTZ; CYCLES PER SECOND
IA	INSTRUMENT AIR
ICW	INDUSTRIAL COLD WATER
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN.	INCH
IN.W.G.	INCHES WATER GAGE (PRESSURE)
IRL	IRRIGATION LINE
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LPS	LOW PRESSURE STEAM
LWCO	LOW WATER CUT OFF
LWT	LEAVING WATER TEMPERATURE
MA(T)	MIXED AIR (TEMPERATURE)
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MBH	1,000 BTU PER HOUR
MCA	MINIMUM CIRCUIT AMPACITY
MCC	MOTOR CONTROL CENTER
MD	MANUAL VOLUME DAMPER
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MMBTUH	MILLIONS BTU PER HOUR
MOCP	MAXIMUM OVER CURRENT PROTECTION
MOT	MOTORIZED
MPG	MEDIUM PRESSURE GAS
MR	MECHANICAL ROOM
MT, MTD, MTG	MOUNT, MOUNTED, MOUNTING
MU	MAKE-UP
<N>	NEW
N.C.	NORMALLY CLOSED
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NOX	NITROGEN OXIDE
N.O.	NORMALLY OPEN
NPSH(R)	NET POSITIVE SUCTION HEAD (REQUIRED)
N.T.S.	NOT TO SCALE
OA(G)	OUTSIDE AIR (GRILLE)
OA(T)	OUTSIDE AIR (TEMPERATURE)
OAD	OUTSIDE AIR DAMPER
OAI	OUTSIDE AIR INTAKE
OBD	OPPOSED BLADE DAMPER
O.C.	ON CENTER
OD	OUTSIDE DIMENSION or OUTSIDE DIAMETER
OS&Y	OUTSIDE STEM & YOKE GATE VALVE
OV	OUTLET VELOCITY
OX	OXYGEN
OWS	OPERATOR'S WORK STATION
P	PLATE
P	PUMP
PCHW(R)(S)(T)	PRIMARY CHILLED WATER (RETURN)(SUPPLY) (TEMPERATURE)
PCHWP	PRIMARY CHILLED WATER PUMP
PCR	PUMPED CONDENSATE RETURN
PD	PRESSURE DROP
PE	PNEUMATIC TO ELECTRIC RELAY
PG	PIPE GUIDE
PHW(R)(S)	PRIMARY HOT WATER (RETURN)(SUPPLY)
P&ID	PROCESS & INSTRUMENTATION DIAGRAM
PIV	POST INDICATING VALVE
PLY or PLYWD	PLYWOOD
PM	POWER METER
POC	POINT OF CONNECTION
PRS	PRESSURE REDUCING STATION
PRV	PRESSURE REDUCING VALVE
PS	PRESSURE SWITCH
PSI(G)	POUNDS PER SQUARE INCH (GAUGE)
PS-N	PIPE SUPPORT DESIGNATION
PTDF	PRESSURE TREATED DOUGLAS FIR
PVC	POLYVINYL CHLORIDE
PW	POOL WATER
R	RELAY
<RE>	REMOVE EXISTING
<RR>	REMOVE/RELOCATE
<RRN>	REMOVE & REPLACE WITH <N>
RA	RETURN AIR
RAD	RETURN AIR DUCT
RAG	RETURN AIR GRILLE
RA(T)	RETURN AIR (TEMPERATURE)
R.C.	RELATIVE COMPACTION
RD	ROOF DRAIN
REQ'D	REQUIRED
RF	RETURN AIR FAN
RFG	REFRIGERANT
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RIM	RIM ELEVATION
RIP	RETIRED-IN-PLACE
RLA	RATED LOAD AMPS
RO	REVERSE OSMOSIS
RPM	REVOLUTIONS PER MINUTE
RV	RELIEF VALVE
RW	RECLAIMED WATER
RWL	RAIN WATER LEADER
SAD	SUPPLY AIR DUCT
S.A.D.	SEE ARCHITECTURAL DRAWINGS
SAG	SUPPLY AIR GRILLE
SA(T)	SUPPLY AIR (TEMPERATURE)
SCBA	SELF-CONTAINED BREATHING APPARATUS
S.C.D.	SEE CIVIL DRAWINGS
SCHW(R)(S)(T)	SECONDARY CHW (RETURN)(SUPPLY)(TEMPERATURE)
SCHWP	SECONDARY CHW PUMP
SD	STORM DRAIN
SDCO	STORM DRAIN CLEAN-OUT
S.E.D.	SEE ELECTRICAL DRAWINGS
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SENS	SENSIBLE
SF	SUPPLY FAN
SHHW(R)(S)(T)	SECONDARY HEATING HOT WATER (RETURN)(SUPPLY) (TEMPERATURE)
SIM.	SIMILAR
S.L.D.	SEE LANDSCAPE DRAWINGS
SM	SHEET METAL
SMD	SMOKE DAMPER
SMH	STEAM MANHOLE
SOVL	SOLENOID VALVE
SP	STATIC PRESSURE
SPD	SUMP PUMP DISCHARGE
S.P.D.	SEE PLUMBING DRAWINGS
SPECS	SPECIFICATIONS
SRV	SAFETY RELIEF VALVE
SS	SANITARY SEWER
S/S	START/STOP
S.S.D.	SEE STRUCTURAL DRAWINGS
SST	STAINLESS STEEL
ST	SOUND TRAP
STD	STANDARD
STM	STEAM
STRUCT	STRUCTURAL
STS	STATUS
SW	SWITCH
SXR	SQUARE TO ROUND TRANSITION
T	THERMOSTAT OR TEMPERATURE SENSOR (DDC)
TBA	TO BE ABANDONED
TBR	TO BE REMOVED
TCHW(R)(S)(T)	TERTIARY CHW (RETURN)(SUPPLY)(TEMPERATURE)
TCHWP	TERTIARY CHW PUMP
TCP	TEMPERATURE CONTROL PANEL
TDH	TOTAL DYNAMIC HEAD
TDV	TRIPLE DUTY VALVE
TEMP	TEMPERATURE
TG	TRANSFER AIR GRILLE
T&G	TONGUE & GROOVE
TH	THERMOMETER
TI	TEMPERATURE INDICATOR
TOD	TOP OF DUCT
TP	TEST PLUG (PETE'S PLUG)
TR	THROUGH ROOF
TRANS	TRANSITION
TS	TEMPERATURE SENSOR
TSP	TOTAL STATIC PRESSURE (IN.W.G.)
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
U.O.N.	UNLESS OTHERWISE NOTED
V OR VT	VENT
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VB	VACCUM BREAKER
VFD	VARIABLE FREQUENCY DRIVE
VSD	VARIABLE SPEED DRIVE
VI	VIBRATION ISOLATOR
V.I.F.	VERIFY IN FIELD
VR	VENT RISER
VT	VENT
VTR	VENT THROUGH ROOF
W	WASTE
W/	WITH
WB	WET BULB
WC	WATER COLUMN
WP	WEATHER PROOF
WPD	WATER PRESSURE DROP (FT WATER)
WT	WEIGHT
WV	WATER VALVE
XFMR	TRANSFORMER
XMTR	TRANSMITTER

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Local Action.

REGISTERED PROFESSIONAL ENGINEER — ERIN EMMETT SWEET — No. M40086 — EXP. 09-30-2026 — MECHANICAL — STATE OF CALIFORNIA

DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE		
MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	EES
APPROVED BY:	EES

SHEET TITLE

MECHANICAL SYMBOLS & ABBREVIATIONS

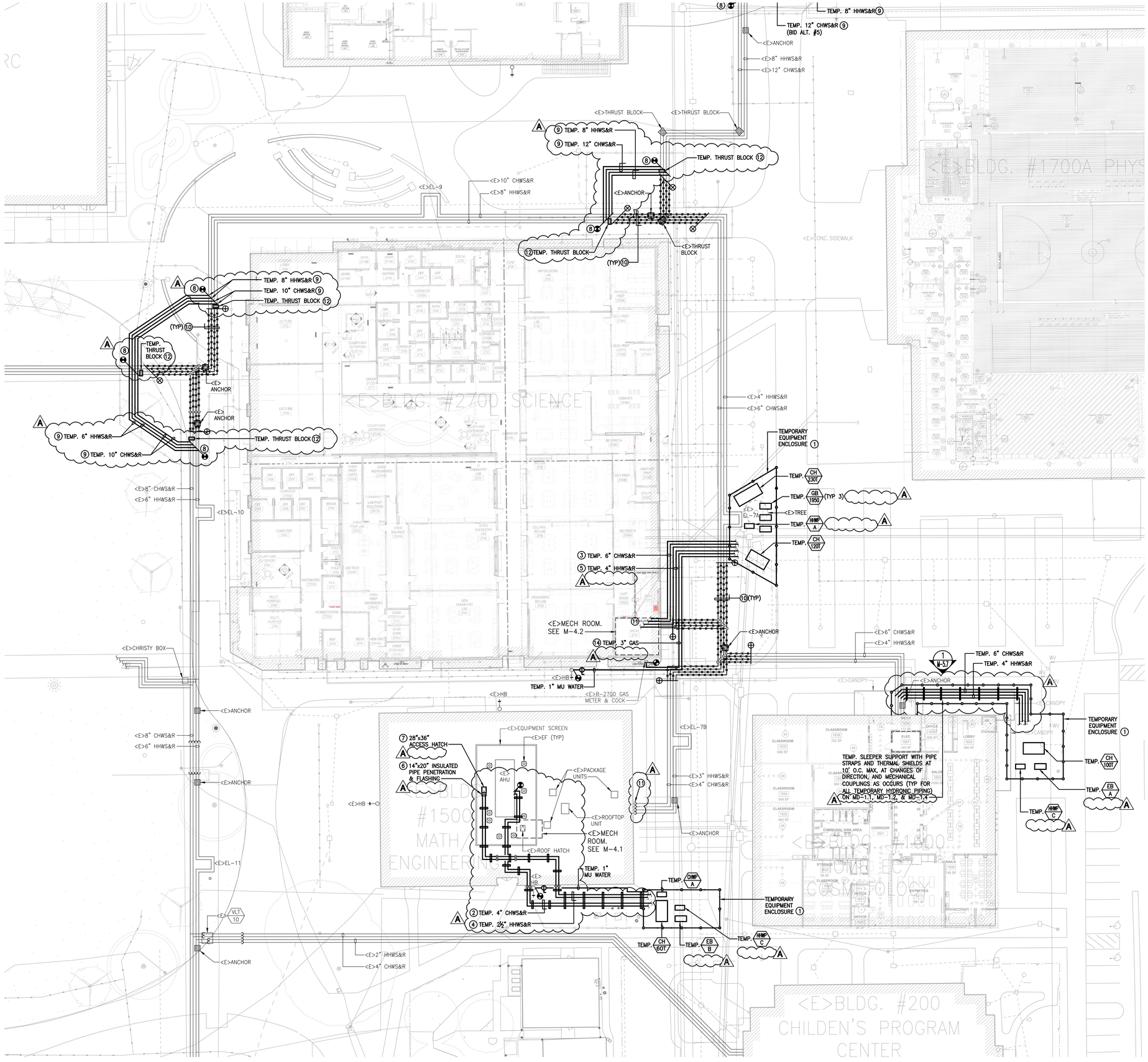
SCALE: AS NOTED
THIS DRAWING IS 30" X 42" AT FULL SIZE

M-0.1

SHEET OF –

M:\AA-PROJECTS\2025\2510-00649-00 Solano CCD, Hydronic Distribution Repairs & Upgrades\03 Drawings\2510-00649M-0.1.dwg 3/11/2026 7:08 PM Minh Ong

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1 ENLARGED SITE PLAN ZONE #1 - DEMO & TEMPORARY

SCALE: 1" = 20' - 0"

GENERAL SHEET NOTES

A. COORDINATE ALL SHUT DOWNS WITH DISTRICT. NO SYSTEM SHUT DOWNS SHALL OCCUR WITHOUT DISTRICT APPROVAL. SYSTEM SHUT DOWNS SHALL OCCUR OFF HOURS AND SHALL NOT EFFECT CAMPUS OPERATIONS AT ANY GIVEN TIME DURING "OCCUPIED" HOURS. SHUT DOWNS FOR SWITCH OVERS SHALL OCCUR DURING OFF HOURS (WEEKEND, HOLIDAY, OR NIGHT). A

B. REFER TO "HYDRONIC SHUT DOWN & SWITCH OVER REQUIREMENTS FOR TEMPORARY SERVICES" ON G-0.1.

C. NOT USED.

D. UNLESS OTHERWISE NOTED, NO BUILDING SHALL BE WITHOUT COOLING OR HEATING SERVICE AT ANY GIVEN TIME. TEMPORARY HEATING/COOLING SYSTEMS MUST BE SERVING THE EFFECTED ZONE BUILDINGS, AND TEMPORARY BYPASSES IN THE SITE HYDRONIC PIPING MUST BE SERVING THE REMAINDER OF THE CAMPUS PRIMARY CHW & HHW SYSTEM(S) PRIOR TO CONDUCTING FURTHER DEMOLITION OR NEW WORK FOR A DEDICATED ZONE. A

E. CONTRACTOR SHALL INCLUDE HAZARDOUS ABATEMENT AND DISPOSAL FOR A MIN. OF FOUR TRANSITE PIPES AT EACH EXCAVATION SITE IN WHICH A NEW VAULT WILL BE INSTALLED. ASSUME A PIPE SIZE OF (2) 12" AND (2) 8" FOR THE TRANSITE PIPING TO BE ABATED, 50 LF TOTAL OF EACH PIPE SIZE. A

F. PRIOR TO TRENCHING FOR PIPE OR EXCAVATION FOR VAULTS, EXISTING UTILITIES SHALL BE LOCATED BY CONTRACTOR THROUGH THE CONTRACTOR PROVIDED UTILITY LOCATING SERVICE SUBCONTRACTOR. UTILITIES SHALL BE CLEARLY MARKED WITH NON-PERMANENT PAINT WITH DEPTH ESTIMATES PROVIDED BY THE LOCATING SUBCONTRACTOR. CONTRACTOR TO NOTIFY ENGINEER IF PROPOSED HYDRONIC PIPES CONFLICT WITH CROSSING EXISTING UTILITIES. A

G. REFER TO PROJECT SPECIFICATIONS MANUAL.

H. PRIOR TO CONSTRUCTION, ISOLATED SECTIONS ASSOCIATED WITH THE AREAS OF WORK SHALL BE DRAINED TO SANITARY SEWER. A

I. CONTRACTOR SHALL TAKE PHOTOGRAPHIC RECORDS OF EXISTING CONDITION AT AREAS OF WORK PRIOR TO CONDUCTING DEMOLITION ACTIVITIES. REFER TO SHEET G-0.1.

J. TEMPORARY EQUIPMENT SHOWN DOES NOT INCLUDE ELECTRICAL OR SERVICE CLEARANCES. THE CONTRACTOR SHALL PROVIDE ELECTRICAL CLEARANCES IN COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND EQUIPMENT SERVICE CLEARANCES PER MANUFACTURER'S INSTALLATION REQUIREMENTS A

K. CONTRACTOR TO CONDUCT SOUND PRE-READINGS AT (2) NEAREST CLASSROOMS TO TEMPORARY EQUIPMENT ENCLOSURE. DOCUMENT SOUND LEVELS AND REPORT TO ENGINEER. ONCE TEMPORARY EQUIPMENT IS INSTALLED, TEST SOUND LEVEL AT SAME CLASSROOM(S) WITH TEMPORARY EQUIPMENT ENABLED, AND REPORT TO ENGINEER. IF SOUND LEVELS EXCEED NC-35, CONTRACTOR SHALL PROVIDE SOUND ATENNUATING BLANKETS TO THE TEMPORARY EQUIPMENT ENCLOSURE WITH MIN. THICKNESS OF 2". A

L. MINIMUM DISTANCE BETWEEN DRILLED-CORE HOLES TO BE 2 x WALL THICKNESS. A

M. SEE GENERAL (G-) SHEETS FOR PATH OF TRAVEL, WAYFINDING, TEMPORARY FENCING, EXCAVATION, TRENCHING, SURFACE WORK, AND TEMPORARY EQUIPMENT PAD REQUIREMENTS.

(#) REFERENCE SHEET NOTES

1. PROVIDE TEMPORARY HEATING AND COOLING EQUIPMENT AT EACH BUILDING WITHIN ZONE #1 (B-1500 & B-2700). REFER TO M-6.1 FOR TEMPORARY EQUIPMENT SCHEDULES. UNLESS OTHERWISE NOTED, TEMPORARY BOILER AND CHILLER SYSTEMS SHALL INCLUDE THE FOLLOWING ITEMS: PUMP, PUMP VFD, AIR VENT, EXPANSION TANK, CHEMICAL POT FEEDERS & TEST PORTS, AND MAKE-UP WATER PROVISIONS.

2. PROVIDE TEMPORARY CHWS&R PIPING FROM TEMPORARY CHW EQUIPMENT TO THE POINTS OF CONNECTION AT THE <E> AHU SERVING B-1500. REFER TO SHEET M-4.1 FOR TEMPORARY CHW POINTS OF CONNECTION AND MECH. RM. CHW UPGRADES. COORDINATE WITH COLLEGE FOR SHUT DOWN & SWITCH OVER.

3. PROVIDE TEMPORARY CHWS&R PIPING FROM TEMPORARY CHW EQUIPMENT TO THE POINTS OF CONNECTION INSIDE THE B-2700 MECHANICAL ROOM. PENETRATION OF TEMPORARY PIPING INTO SPACE SHALL BE THROUGH THE <E> MECHANICAL ROOM DOORWAY. REFER TO SHEET M-4.2 FOR TEMPORARY CHW POINTS OF CONNECTION AND MECH. RM. CHW UPGRADES. COORDINATE WITH COLLEGE FOR SHUT DOWN & SWITCH OVER.

4. PROVIDE TEMPORARY HHWS&R PIPING FROM TEMPORARY HHW EQUIPMENT TO THE POINTS OF CONNECTION INSIDE CEILING SPACE ABOVE THE B-1500 MECHANICAL ROOM. SEE RSN #6 FOR TEMPORARY HHW PIPE PENETRATION AND RSN #7 FOR CEILING ACCESS FROM ROOFTOP. REFER TO G-0.0 & M-4.1 FOR ADDITIONAL INFORMATION. (APPLIES TO TEMP. HEATING ONLY) A

5. PROVIDE TEMPORARY HHWS&R PIPING FROM TEMPORARY HHW EQUIPMENT TO THE POINTS OF CONNECTION INSIDE THE B-2700 MECHANICAL ROOM. PENETRATION OF TEMPORARY PIPING INTO SPACE SHALL BE THROUGH THE <E> MECHANICAL ROOM DOORWAY. REFER TO G-0.0 & M-4.2 FOR ADDITIONAL INFORMATION. (APPLIES TO TEMP. HEATING ONLY) A

6. CUT 14" X 20" PENETRATION IN ROOF FOR INSULATED PIPE PENETRATION CURB AND FLASHING. PENETRATION SHALL OCCUR BETWEEN <E> 2X FRAMING (I.E. AVOID <E> FRAMING). REFER TO DETAIL 1&2/M-5.5. CONTRACTOR TO VERIFY ROOF SLOPE AND PROVIDE CRICKET (1/4" PER FT. MIN. SLOPE) AT PENETRATION CURB TO ENSURE POSITIVE DRAINAGE AROUND CURB. (APPLIES TO TEMP. HEATING ONLY) A

7. CUT 28" x 36" PENETRATION IN ROOF FOR ACCESS HATCH TO CEILING SPACE. REFER TO DETAIL 6/M-5.1 & 4/M-5.5. CONTRACTOR TO VERIFY ROOF SLOPE AND PROVIDE CRICKET (1/4" PER FT. MIN. SLOPE) AT HATCH CURB TO ENSURE POSITIVE DRAINAGE AROUND CURB. (APPLIES TO TEMP. HEATING ONLY) A

8. IDENTIFY TEMPORARY POINTS OF CONNECTION AT THE <E> UNDERGROUND HHW & CHW TO BYPASS AREA OF WORK. REFER TO G-1.4 FOR TRENCHING AND SURFACE WORK.

9. PROVIDE TEMPORARY CHWS&R AND HHWS&R BYPASS PIPING TO SERVE UNEFFECTED (BY CONSTRUCTION) AREAS OF THE CAMPUS. UTILIZE LINESTOPS OR <E> ISOLATION VALVES TO FACILITATE CONNECTION TO <E> HYDRONIC PIPING. PROVIDE CAPS TO ISOLATE THE "LIVE" HYDRONIC SYSTEM FROM PIPING UNDER CONSTRUCTION WITHIN THE ZONE. REFER TO DETAIL 9/M-5.2 & 3/M-5.5 FOR INSTALLED CONDITIONS. A

10. LOCATE <E> HHWS&R AND CHWS&R PIPING BELOW GRADE. VIF LOCATION FOR NEW VAULT AND EXCAVATE AS NEEDED FOR THE FOOTPRINT OF THE VAULT. REFER TO G-1.4 FOR TRENCHING AND SURFACE WORK. A

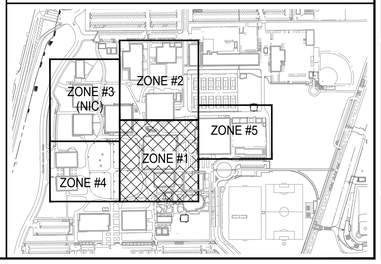
11. DEMOLISH INSULATION AND JACKETING AT CHW & HHW HYDRONIC RISERS. DEMOLISH EXISTING VALVES AND SECTIONS OF PIPING TO FACILITATE THE INSTALLATION OF LINE SIZED TEES AND NEW VALVES. SEE DETAIL 5/M-4.1 FOR HYDRONIC RISER UPGRADE.

12. PROVIDE TEMPORARY THRUST BLOCK AT CHWS&R BYPASS CONNECTIONS. INSTALL TEMPORARY SUPPORT PIPING AND FLANGE AT BYPASS POC, AND ANCHOR FLANGE TO TEMPORARY THRUST BLOCK. THRUST BLOCK SHALL BE INSTALLED NO MORE THAN 3FT AWAY FROM CHWS&R BYPASS PIPING. REFER TO DETAIL 9/M-5.2 FOR ADDITIONAL INFORMATION.

13. NOT USED.

14. PROVIDE 3" TEMPORARY GAS FROM THE <E> B-2700 GAS MANIFOLD TO B-2700 TEMPORARY GAS BOILERS. POINT OF CONNECTION SHALL OCCUR AT TEST PORT DIRECTLY UPSTREAM OF THE BUILDING GAS MANIFOLD. COORDINATE ISOLATION AT CAMPUS UTILITY GAS MAIN WITH DISTRICT GAS INSPECTOR AND FOLLOW UTILITY PROCEDURES. (APPLIES TO TEMP. HEATING ONLY) A

KEY PLAN



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REGISTERED PROFESSIONAL ENGINEER — ERIN EMMETT SWEET — No. M40086 EXP. 09-30-2026 — MECHANICAL — STATE OF CALIFORNIA

DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE

MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	EES
APPROVED BY:	EES

SHEET TITLE

MECHANICAL
ENLARGED SITE PLAN
ZONE #1 (B-1500, B-1600, & B-2700)
DEMO & TEMPORARY A

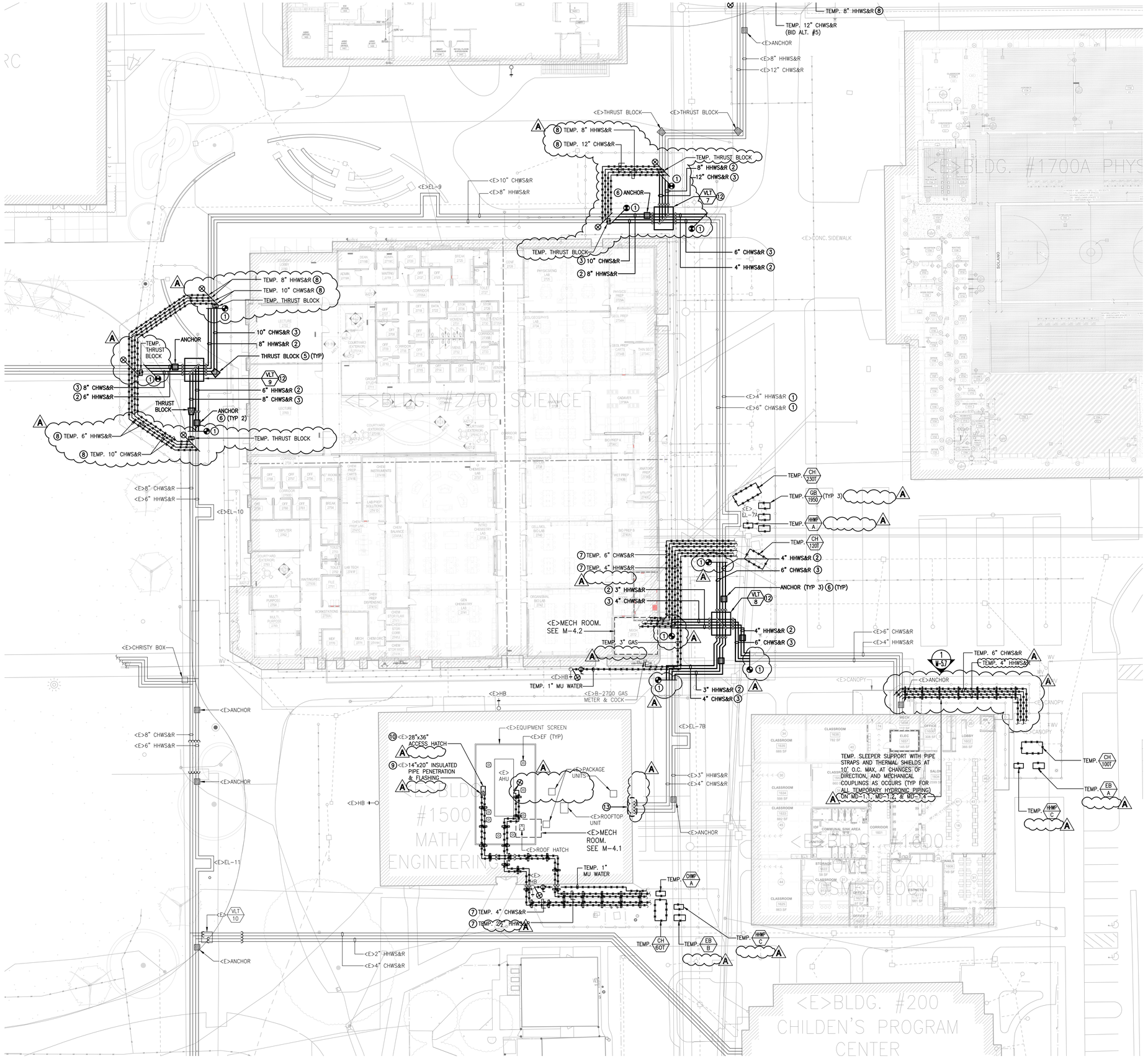
SCALE: AS NOTED

THIS DRAWING IS 30" X 42" AT FULL SIZE

MD-1.1

SHEET OF –

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1 ENLARGED SITE PLAN ZONE #1 - NEW

SCALE: 1" = 20' - 0"

0 20' 40'

GENERAL SHEET NOTES

A. COORDINATE ALL SHUT DOWNS WITH DISTRICT. NO SYSTEM SHUT DOWNS SHALL OCCUR WITHOUT DISTRICT APPROVAL. SYSTEM SHUT DOWNS SHALL OCCUR OFF HOURS AND SHALL NOT EFFECT CAMPUS OPERATIONS AT ANY GIVEN TIME DURING "OCCUPIED" HOURS. SHUT DOWNS FOR SWITCH OVERS SHALL OCCUR DURING OFF HOURS (WEEKEND AND/OR NIGHT).

B. REFER TO "HYDRONIC SHUT DOWN & SWITCH OVER REQUIREMENTS FOR TEMPORARY SERVICES" ON G-0.1.

C. NOT USED.

D. UNLESS OTHERWISE NOTED, NO BUILDING SHALL BE WITHOUT COOLING OR HEATING SERVICE AT ANY GIVEN TIME. TEMPORARY HEATING/COOLING SYSTEMS MUST BE SERVING THE EFFECTED ZONE BUILDINGS, AND TEMPORARY BYPASSES IN THE SITE HYDRONIC PIPING MUST BE SERVING THE REMAINDER OF CAMPUS PRIOR CONDUCTING FURTHER DEMOLITION OR NEW WORK FOR A DEDICATED ZONE.

E. CONTRACTOR SHALL COMPLY WITH ALL INSPECTION AND TEST REQUIREMENTS RELATED TO UNDERGROUND SITE PIPING REPAIRS AS RELATES TO: WELDING, PRESSURE TESTABLE JOINT CLOSURES, EXCAVATION, PRESSURE TESTING, MANUFACTURER REQUIRED PROCEDURES FOR FIELD INSULATION KITS, FITTING INSULATION KITS, END SEALS, ETC.

F. EXISTING UTILITIES SHALL BE LOCATED BY CONTRACTOR THROUGH THE CONTRACTOR PROVIDED UTILITY LOCATING SERVICE SUBCONTRACTOR. UTILITIES SHALL BE CLEARLY MARKED WITH NON-PERMANENT PAINT WITH DEPTH ESTIMATES PROVIDED BY THE LOCATING SUBCONTRACTOR.

G. REFER TO PROJECT SPECIFICATIONS MANUAL.

H. FIELD INSULATION KITS (PRESSURE TESTABLE AND NON-PRESSURE TESTABLE) FOR DIRECT-BURIED FIELD JOINTS SHALL BE INSTALLED BY COMPANY AND INDIVIDUALS TRAINED ON INSTALLATION REQUIREMENTS OF THE PRE-FABRICATED PIPING SYSTEM MANUFACTURER.

I. NEW SECTIONS OF STEEL PIPING SHALL BE PRESSURE TESTED AND CHEMICALLY TREATED PRIOR TO CONNECTION TO EXISTING PIPING.

J. NO METALIC OR STEEL COMPONENTS SHALL BE EXPOSED TO SOILS IN A DIRECT BURIED SECTION OF PIPING. COUPLINGS, TRANSITION ADAPTERS, SADDLE TEES, FLANGES, NUT AND BOLT SETS SHALL BE ENCASULATED IN LIQUID POUR POLYURETHANE INSULATION AND HDPE HEAT SHRINK JACKETING AND TAPE. THREADED PORTIONS OF BOLTS/RODS SHALL BE WRAPPED IN PLASTIC PRIOR TO APPLICATION OF LIQUID POUR POLYURETHANE INSULATION.

A K. UNDERGROUND THERMAL ENERGY SYSTEM, QUALITY ASSURANCE: UNDERGROUND PIPE MANUFACTURER SHALL PROVIDE ON-SITE TRAINING TO INSTALLERS FOR PROPER ASSEMBLY AND INSTALLATION OF FIELD FABRICATED COMPONENTS AND MATERIALS (PIPING, INSULATION, JACKETING, ETC.). CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING TRAINING FOR INSTALLERS AND PROJECT INSPECTORS. ONLY INDIVIDUALS WHO HAVE COMPLETED THE MANUFACTURER'S TRAINING SHALL BE ALLOWED TO PERFORM INSTALLATION OF UNDERGROUND PRE-FABRICATED PIPING SYSTEMS.

REFERENCE SHEET NOTES

1. IDENTIFY POINTS OF CONNECTION AT EXISTING PIPING AND VERIFY PIPE IS IN SERVICEABLE CONDITION. PIPE WALL THICKNESS SHALL BE NOT LESS THAN 87.5% OF THE NOMINAL THICKNESS FOR A STR. SCH. 40 STEEL OR PVC PIPE.

A 2. PROVIDE PRE-FABRICATED/PRE-INSULATED HHWS&R PIPING. ALL WELDS AND EXPOSED BARE PIPE SHALL BE PREPPED, PRIMED & PAINTED AFTER WELDING IS COMPLETE. PROVIDE PRESSURE TESTABLE JOINT CLOSURE KITS AT EACH FIELD JOINT. REFER TO DETAIL 7/M-5.1.

A 3. PROVIDE PRE-FABRICATED/PRE-INSULATED CHWS&R PIPING. PREP AND CLEAN ENDS AND UNIONS FOR SOLVENT WELDED JOINTS. PROVIDE JOINT CLOSURE KITS AT FIELD JOINTS AND INSULATION KITS FOR FITTINGS 6" SIZE AND LESS. SEE G-0.0 FOR ADDITIONAL INFORMATION.

4. NOT USED.

5. PROVIDE THRUST BLOCKS AT ALL FITTINGS AND CHANGES OF DIRECTION FOR PVC HYDRONIC PIPING 8" OR GREATER IN SIZE. ALL NON-SOLVENT WELDED PVC BELL & SPIGOT JOINTS (AT EXISTING, IF DISCOVERED), REFER TO DETAIL 1&2/M-5.2.

6. PROVIDE PRE-FABRICATED/PRE-INSULATED ANCHORS (THERMACOR OR APPROVED EQUAL), INCLUDING FULLY FABRICATED ANCHOR PLATES, WATER SHED RINGS, CORROSION COATING, POLYURETHANE INSULATION, AND JACKETING. COMPLETE WELDED CONNECTION TO PIPING AND PRESSURE TESTABLE JOINT CLOSURE PRIOR TO POURING CONCRETE. ANCHOR PLATES SHALL BE CONCRETE ENCASED, REFER TO DETAIL 8/M-5.1.

A 7. UPON "PASSED" PRESSURE TEST AND CHEMICAL TREATMENT PROCESS OF THE NEW HHW & CHW SITE PIPING, AND COMPLETED MECHANICAL ROOM UPGRADES, CONDUCT SHUT DOWN AND SWITCH OVER FROM TEMPORARY SYSTEMS (USING INSTALLED VALVES) TO THE COMPLETED HHW & CHW PIPING SYSTEM. REMOVE TEMPORARY HHW & CHW TEMPORARY PIPING, SUPPORTS, ELECTRICAL CONNECTIONS, AND GAS PIPING. REMOVE TEMPORARY MECHANICAL EQUIPMENT AND ENCLOSURE. COORDINATE WITH COLLEGE FOR SHUT DOWN & SWITCH OVER.

8. UPON "PASSED" PRESSURE TEST AND CHEMICAL TREATMENT PROCESS OF THE NEW HHW & CHW SITE PIPING, AND COMPLETED MECHANICAL ROOM UPGRADES, CONDUCT SHUT DOWN AND SWITCH OVER FROM TEMPORARY SYSTEMS TO THE COMPLETED HHW & CHW PIPING SYSTEM. REMOVE TEMPORARY HHW & CHW TEMPORARY BYPASS PIPING AT THE UNDERGROUND SITE PIPING. CUT OUT TEMPORARY ELBOW AND COMPLETE FINAL POINTS OF CONNECTION TO HYDRONIC PIPING FU SYSTEM AND VENT AIR FROM BUILDING HHW & CHW SYSTEM. HIGH POINTS. COORDINATE WITH COLLEGE FOR SHUT DOWN & SWITCH OVER. RESTORE ALL HARDSCAPE AND LANDSCAPE TO AS FOUND CONDITION (SEE G-1.4).

A 9. HHWS&R PIPE ROOF PENETRATION AND QUICK CONNECT "FOR TEMPORARY SERVICE" SHALL REMAIN. PROVIDE BLIND FLANGE AT CLOSED BUTTERFLY VALVES. APPLIES TO TEMP HEATING ONLY.

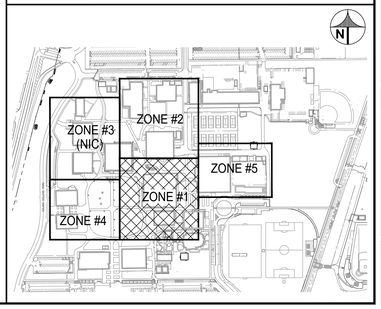
10. CEILING ACCESS HATCH TO REMAIN. DEMOLISH TEMPORARY LADDER SYSTEM AND PROVIDE PAD LOCKABLE LATCH AT EXTERIOR OF HATCH (FOR FACILITIES USE). REFER TO DETAIL 4/M-5.5 FOR ROOF HATCH DETAIL. APPLIES TO TEMP HEATING ONLY.

A 11. NOT USED.

A 12. PROVIDE NEW VAULT, REFER TO VAULT DETAIL 8/M-5.2 AND VAULT SCHEDULE ON M-6.1 FOR REQUIRED FEATURES. PRE-FABRICATED/PRE-INSULATED PIPING SHALL TERMINATE A MIN. 9" INSIDE THE VAULT WALLS. REMAINDER OF PIPING SHALL BE FIELD INSTALLED SCH. 40 STEEL PIPING WITH WELDED/FLANGED JOINTS. CHW PVC PIPING SHALL PENETRATE AND REMAIN PVC WITHIN THE VAULT. ALL PENETRATIONS SHALL BE SEALED WITH LINK SEAL PER DETAIL 5/M-5.1. PROVIDE INSULATION AND JACKETING PER SPECIFICATIONS.

13. PROVIDE LINE SIZED TEE AND NEW ISOLATION VALVES AT HYDRONIC RISERS AT THE EXTERIOR OF THE BUILDING. PROVIDE BLIND FLANGE AT "FOR FUTURE" BRANCH CONNECTION. REFER TO DETAIL SHEETS M-4.1 THROUGH M-4.10.

KEY PLAN



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San Jose, California 95112-2218
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WWW.SALASOBRIEN.COM
National Strength.
Local Action.

REGISTERED PROFESSIONAL ENGINEER
ERIN EMMETT SPRING
No. M40086
EXP. 09-30-2026
MECHANICAL
STATE OF CALIFORNIA

DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	EES
APPROVED BY:	EES

SHEET TITLE

MECHANICAL ENLARGED SITE PLAN ZONE #1 (B-1500, B-1600, & B-2700) NEW

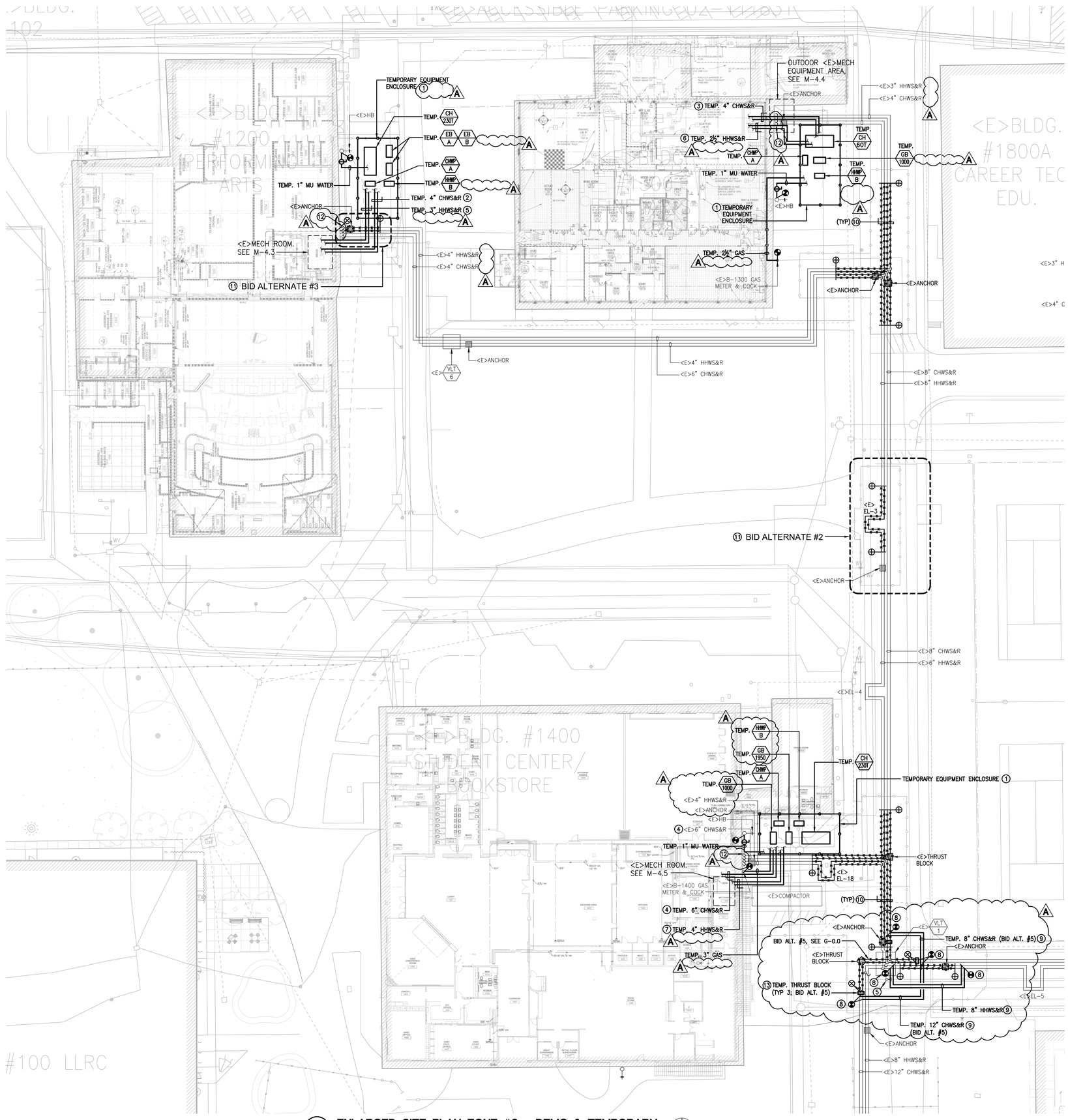
SCALE: AS NOTED

THIS DRAWING IS 30" X 42" AT FULL SIZE

M-1.1

SHEET OF –

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



1 ENLARGED SITE PLAN ZONE #2 - DEMO & TEMPORARY
SCALE: 1" = 20' - 0"

GENERAL SHEET NOTES

A. COORDINATE ALL SHUT DOWNS WITH DISTRICT. NO SYSTEM SHUT DOWNS SHALL OCCUR WITHOUT DISTRICT APPROVAL. SYSTEM SHUT DOWNS SHALL OCCUR OFF HOURS AND SHALL NOT EFFECT CAMPUS OPERATIONS AT ANY GIVEN TIME DURING "OCCUPIED" HOURS. SHUT DOWNS FOR SWITCH OVERS SHALL OCCUR DURING OFF HOURS (WEEKEND, HOLIDAY AND/OR NIGHT). A

B. REFER TO "HYDRONIC SHUT DOWN & SWITCH OVER REQUIREMENTS FOR TEMPORARY SERVICES" ON G-0.1.

C. NOT USED.

D. UNLESS OTHERWISE NOTED, NO BUILDING SHALL BE WITHOUT COOLING OR HEATING SERVICE AT ANY GIVEN TIME. TEMPORARY HEATING/COOLING SYSTEMS MUST BE SERVING THE EFFECTED ZONE BUILDINGS, AND TEMPORARY BYPASSES IN THE SITE HYDRONIC PIPING MUST BE SERVING THE REMAINDER OF THE CAMPUS PRIMARY CHW & HHW SYSTEM(S) PRIOR TO CONDUCTING FURTHER DEMOLITION OR NEW WORK FOR A DEDICATED ZONE. A

E. CONTRACTOR SHALL INCLUDE HAZARDOUS ABATEMENT AND DISPOSAL FOR A MIN. OF FOUR TRANSITE PIPES AT EACH EXCAVATION SITE IN WHICH A NEW VAULT WILL BE INSTALLED. ASSUME A PIPE SIZE OF (2) 12" AND (2) 8" FOR THE TRANSITE PIPING TO BE ABATED, 50 LF TOTAL OF EACH PIPE SIZE.

F. PRIOR TO TRENCHING FOR PIPE OR EXCAVATION FOR VAULTS, EXISTING UTILITIES SHALL BE LOCATED BY CONTRACTOR THROUGH THE CONTRACTOR PROVIDED UTILITY LOCATING SERVICE SUBCONTRACTOR. UTILITIES SHALL BE CLEARLY MARKED WITH NON-PERMANENT PAINT WITH DEPTH ESTIMATES PROVIDED BY THE LOCATING SUBCONTRACTOR. CONTRACTOR TO NOTIFY ENGINEER IF PROPOSED HYDRONIC PIPES CONFLICT WITH CROSSING EXISTING UTILITIES.

G. REFER TO PROJECT SPECIFICATIONS MANUAL.

H. PRIOR TO CONSTRUCTION, ISOLATED SECTIONS ASSOCIATED WITH THE AREAS OF WORK SHALL BE DRAINED TO SANITARY SEWER. A

I. CONTRACTOR SHALL TAKE PHOTOGRAPHIC RECORDS OF EXISTING CONDITION AT AREAS OF WORK PRIOR TO CONDUCTING DEMOLITION ACTIVITIES. REFER TO SHEET G-0.1.

J. TEMPORARY EQUIPMENT SHOWN DOES NOT INCLUDE ELECTRICAL OR SERVICE CLEARANCES. THE CONTRACTOR SHALL PROVIDE ELECTRICAL CLEARANCES IN COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND EQUIPMENT SERVICE CLEARANCES PER MANUFACTURER'S INSTALLATION REQUIREMENTS A

K. CONTRACTOR TO CONDUCT SOUND PRE-READINGS AT (2) NEAREST CLASSROOMS TO TEMPORARY EQUIPMENT ENCLOSURE. DOCUMENT SOUND LEVELS AND REPORT TO ENGINEER. ONCE TEMPORARY EQUIPMENT IS INSTALLED, TEST SOUND LEVEL AT SAME CLASSROOM(S) WITH TEMPORARY EQUIPMENT ENABLED, AND REPORT TO ENGINEER. IF SOUND LEVELS EXCEED NC-35, CONTRACTOR SHALL PROVIDE SOUND ATENNUATING BLANKETS TO THE TEMPORARY EQUIPMENT ENCLOSURE WITH MIN. THICKNESS OF 2".

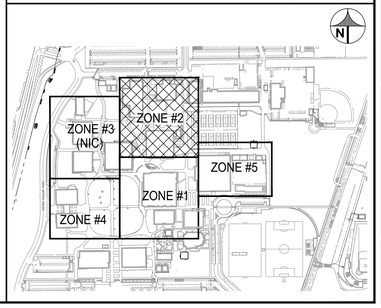
L. MINIMUM DISTANCE BETWEEN DRILLED-CORE HOLES TO BE 2 x WALL THICKNESS. A

M. SEE GENERAL (G-) SHEETS FOR PATH OF TRAVEL, WAYFINDING, TEMPORARY FENCING, EXCAVATION, TRENCHING, SURFACE WORK, AND TEMPORARY EQUIPMENT PAD REQUIREMENTS.

REFERENCE SHEET NOTES

1. PROVIDE TEMPORARY HEATING AND COOLING EQUIPMENT AT EACH BUILDING WITHIN ZONE #2 (B-1400, B-1300, & B-1200). REFER TO M-6.1 FOR TEMPORARY BOILER AND CHILLER EQUIPMENT SCHEDULES. UNLESS OTHERWISE NOTED, TEMPORARY BOILER AND CHILLER SYSTEMS SHALL INCLUDE THE FOLLOWING ITEMS: PUMP, PUMP VFD, AIR VENT, EXPANSION TANK, CHEMICAL POT FEEDERS & TEST PORTS, AND MAKE-UP WATER PROVISIONS.
2. PROVIDE TEMPORARY CHWS&R PIPING FROM TEMPORARY CHW EQUIPMENT TO THE POINTS OF CONNECTION INSIDE THE B-1200 MECHANICAL ROOM. PENETRATION OF TEMPORARY PIPING INTO SPACE SHALL BE THROUGH THE <E> MECHANICAL ROOM DOORWAY. REFER TO SHEET M-4.3 FOR TEMPORARY CHW POINTS OF CONNECTION AND MECH. RM. CHW UPGRADES. COORDINATE WITH COLLEGE FOR SHUT DOWN & SWITCH OVER.
3. PROVIDE TEMPORARY CHWS&R PIPING FROM TEMPORARY CHW EQUIPMENT TO THE POINTS OF CONNECTION AT THE HYDRONIC RISERS OUTSIDE B-1300. REFER TO SHEET M-4.4 FOR TEMPORARY CHW POINTS OF CONNECTION AND MECH. RM. CHW UPGRADES. COORDINATE WITH COLLEGE FOR SHUT DOWN & SWITCH OVER.
4. PROVIDE TEMPORARY CHWS&R PIPING FROM TEMPORARY CHW EQUIPMENT TO THE POINTS OF CONNECTION INSIDE THE B-1400 MECHANICAL ROOM. PENETRATION OF TEMPORARY PIPING INTO SPACE SHALL BE THROUGH THE <E> MECHANICAL ROOM DOORWAY. REFER TO SHEET M-4.5 FOR TEMPORARY CHW POINTS OF CONNECTION AND MECH. RM. CHW UPGRADES. COORDINATE WITH COLLEGE FOR SHUT DOWN & SWITCH OVER.
5. PROVIDE TEMPORARY HHWS&R PIPING FROM TEMPORARY HHW EQUIPMENT TO THE POINTS OF CONNECTION INSIDE THE B-1200 MECHANICAL ROOM. PENETRATION OF TEMPORARY PIPING INTO SPACE SHALL BE THROUGH THE <E> MECHANICAL ROOM DOORWAY. REFER TO G-0.0 & M-4.3 FOR ADDITIONAL INFORMATION. APPLIES TO TEMP. HEATING ONLY. A
6. PROVIDE TEMPORARY HHWS&R PIPING FROM TEMPORARY HHW EQUIPMENT TO THE POINTS OF CONNECTION AT THE HYDRONIC RISERS OUTSIDE B-1300. REFER TO G-0.0 & M-4.4 FOR ADDITIONAL INFORMATION. APPLIES TO TEMP. HEATING ONLY. A
7. PROVIDE TEMPORARY HHWS&R PIPING FROM TEMPORARY HHW EQUIPMENT TO THE POINTS OF CONNECTION INSIDE THE B-1400 MECHANICAL ROOM. PENETRATION OF TEMPORARY PIPING INTO SPACE SHALL BE THROUGH THE <E> MECHANICAL. REFER TO G-0.0 & M-4.5 FOR ADDITIONAL INFORMATION. APPLIES TO TEMP. HEATING ONLY. A
8. IDENTIFY TEMPORARY POINTS OF CONNECTION AT THE <E> UNDERGROUND HHW & CHW TO BYPASS AREA OF WORK. REFER TO G-1.4 FOR TRENCHING AND SURFACE WORK.
9. PROVIDE TEMPORARY CHWS&R AND HHWS&R BYPASS PIPING TO SERVE UNEFFECTED (BY CONSTRUCTION) AREAS OF THE CAMPUS. UTILIZE LINESTOPS OR <E> ISOLATION VALVES TO FACILITATE CONNECTION TO <E> HYDRONIC PIPING. PROVIDE CAPS TO ISOLATE THE "LIVE" HYDRONIC SYSTEM FROM PIPING UNDER CONSTRUCTION WITHIN THE ZONE. REFER TO DETAIL 9/M-5.2 & 3/M-5.5 FOR INSTALLED CONDITIONS. A
10. LOCATE <E> HHWS&R AND CHWS&R PIPING BELOW GRADE. VIF LOCATION FOR NEW VAULT AND EXCAVATE AS NEEDED FOR THE FOOTPRINT OF THE VAULT. REFER TO G-1.4 FOR TRENCHING AND SURFACE WORK.
11. IF PRE-CONSTRUCTION PRESSURE TEST FAILS AT EXISTING SECTIONS OF UNDERGROUND HHWS&R PIPING, REPLACE HHWS&R SECTIONS IDENTIFIED OUTSIDE B-1200 MECH. RM. AND AT <E> EL-3 INCLUDING: FITTINGS, INSULATION, JACKETING, ETC. (BID ALTERNATE #2 & #3) A
12. DEMOLISH INSULATION AND JACKETING AT CHW & HHW HYDRONIC RISERS. DEMOLISH EXISTING VALVES AND SECTIONS OF PIPING TO FACILITATE THE INSTALLATION OF LINE SIZED TEES AND NEW VALVES. SEE DETAILS 5/M-4.3, 5/M-4.4 AND 5/M-4.5 FOR HYDRONIC RISER UPGRADE.
13. PROVIDE TEMPORARY THRUST BLOCK AT CHWS&R BYPASS CONNECTIONS. INSTALL TEMPORARY SUPPORT PIPING AND FLANGE AT BYPASS POC, AND ANCHOR FLANGE TO TEMPORARY THRUST BLOCK. THRUST BLOCK SHALL BE INSTALLED NO MORE THAN 3FT AWAY FROM CHWS&R BYPASS PIPING. REFER TO DETAIL 9/M-5.2 FOR ADDITIONAL INFORMAITON.

KEY PLAN



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REGISTERED PROFESSIONAL ENGINEER
ERIN EMMETT SWEET
No. M40086
EXP. 09-30-2026
MECHANICAL
STATE OF CALIFORNIA
DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE		
MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
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CHECKED BY:	EES
APPROVED BY:	EES

SHEET TITLE

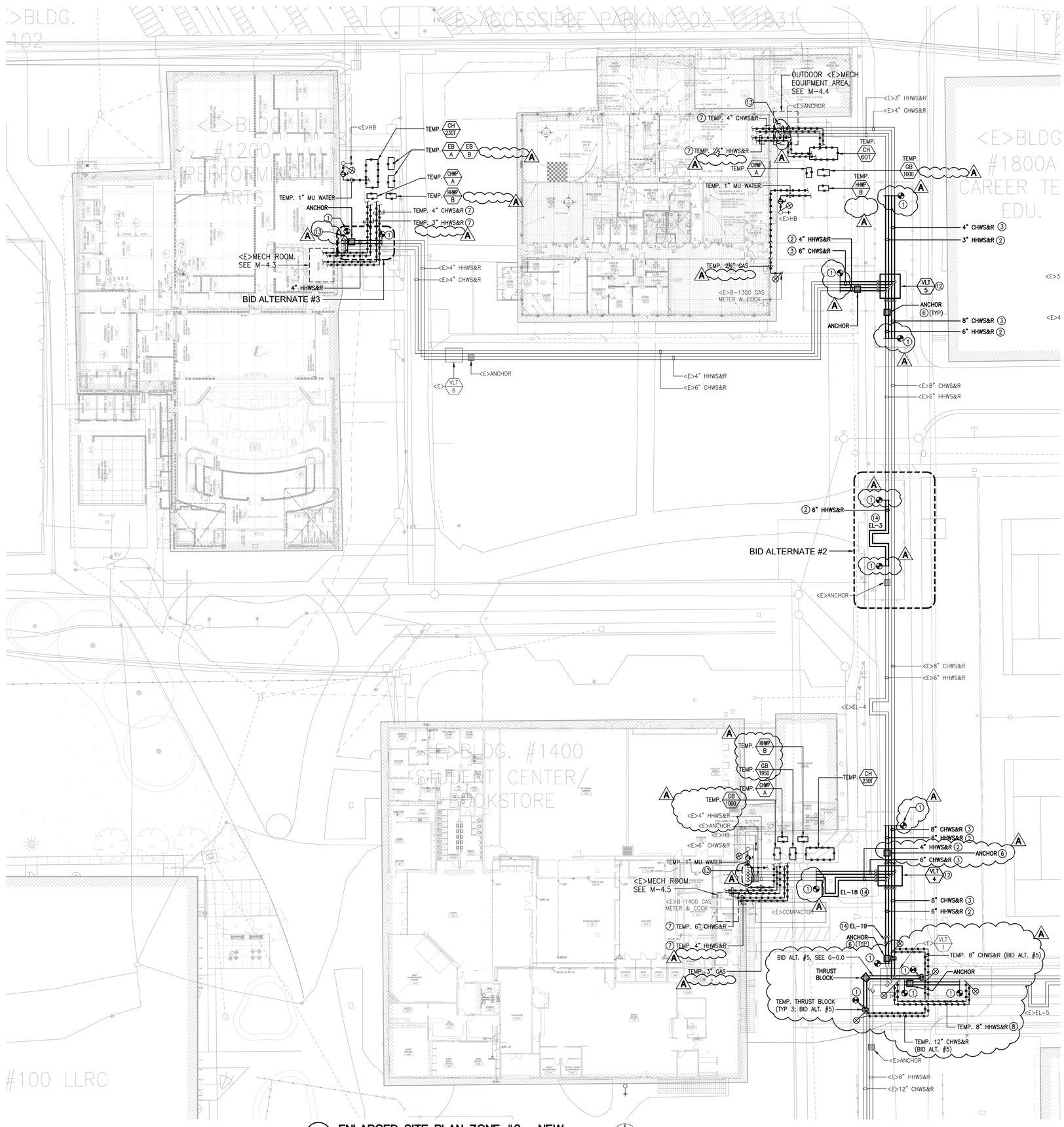
MECHANICAL
ENLARGED SITE PLAN
ZONE #2 (B-1200, B-1300, & B1400)
DEMO & TEMPORARY A

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

MD-1.2
SHEET OF –

M:\AA-PROJECTS\2025\2510-00649-00 Solano CCD, Hydronic Distribution Repairs & Upgrades\03 Drawings\2510-00649MD-1.2.dwg 3/11/2026 7:16 PM Minh Ong

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



1 ENLARGED SITE PLAN ZONE #2 - NEW

SCALE: 1" = 20'-0"

GENERAL SHEET NOTES

A. COORDINATE ALL SHUT DOWNS WITH DISTRICT. NO SYSTEM SHUT DOWNS SHALL OCCUR WITHOUT DISTRICT APPROVAL. SYSTEM SHUT DOWNS SHALL OCCUR OFF HOURS AND SHALL NOT EFFECT CAMPUS OPERATIONS AT ANY GIVEN TIME DURING "OCCUPIED" HOURS. SHUT DOWNS FOR SWITCH OVERS SHALL OCCUR DURING OFF HOURS (WEEKEND AND/OR NIGHT).

B. REFER TO "HYDRONIC SHUT DOWN & SWITCH OVER REQUIREMENTS FOR TEMPORARY SERVICES" ON G-0.1.

C. NOT USED.

D. UNLESS OTHERWISE NOTED, NO BUILDING SHALL BE WITHOUT COOLING OR HEATING SERVICE AT ANY GIVEN TIME. TEMPORARY HEATING/COOLING SYSTEMS MUST BE SERVING THE EFFECTED ZONE BUILDINGS, AND TEMPORARY BYPASSES IN THE SITE HYDRONIC PIPING MUST BE SERVING THE REMAINDER OF CAMPUS PRIOR CONDUCTING FURTHER DEMOLITION OR NEW WORK FOR A DEDICATED ZONE.

E. CONTRACTOR SHALL COMPLY WITH ALL INSPECTION AND TEST REQUIREMENTS RELATED TO UNDERGROUND SITE PIPING REPAIRS AS RELATES TO: WELDING, PRESSURE TESTABLE JOINT CLOSURES, EXCAVATION, PRESSURE TESTING, MANUFACTURER REQUIRED PROCEDURES FOR FIELD INSULATION KITS, FITTING INSULATION KITS, END SEALS, ETC.

F. EXISTING UTILITIES SHALL BE LOCATED BY CONTRACTOR THROUGH THE CONTRACTOR PROVIDED UTILITY LOCATING SERVICE SUBCONTRACTOR. UTILITIES SHALL BE CLEARLY MARKED WITH NON-PERMANENT PAINT WITH DEPTH ESTIMATES PROVIDED BY THE LOCATING SUBCONTRACTOR.

G. REFER TO PROJECT SPECIFICATIONS MANUAL.

H. FIELD INSULATION KITS (PRESSURE TESTABLE AND NON-PRESSURE TESTABLE) FOR DIRECT-BURIED FIELD JOINTS SHALL BE INSTALLED BY COMPANY AND INDIVIDUALS TRAINED ON INSTALLATION REQUIREMENTS OF THE PRE-FABRICATED PIPING SYSTEM MANUFACTURER.

I. NEW SECTIONS OF STEEL PIPING SHALL BE PRESSURE TESTED AND CHEMICALLY TREATED PRIOR TO CONNECTION TO EXISTING PIPING.

J. NO METALIC OR STEEL COMPONENTS SHALL BE EXPOSED TO SOILS IN A DIRECT BURIED SECTION OF PIPING. COUPLINGS, TRANSITION ADAPTERS, SADDLE TEES, FLANGES, NUT AND BOLT SETS SHALL BE ENCASULATED IN LIQUID POUR POLYURETHANE INSULATION AND HDPE HEAT SHRINK JACKETING AND TAPE. THREADED PORTIONS OF BOLTS/RODS SHALL BE WRAPPED IN PLASTIC PRIOR TO APPLICATION OF LIQUID POUR POLYURETHANE INSULATION.

A K. UNDERGROUND THERMAL ENERGY SYSTEM, QUALITY ASSURANCE: UNDERGROUND PIPE MANUFACTURER SHALL PROVIDE ON-SITE TRAINING TO INSTALLERS FOR PROPER ASSEMBLY AND INSTALLATION OF FIELD FABRICATED COMPONENTS AND MATERIALS (PIPING, INSULATION, JACKETING, ETC.). CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING TRAINING FOR INSTALLERS AND PROJECT INSPECTORS. ONLY INDIVIDUALS WHO HAVE COMPLETED THE MANUFACTURER'S TRAINING SHALL BE ALLOWED TO PERFORM INSTALLATION OF UNDERGROUND PRE-FABRICATED PIPING SYSTEMS.

REFERENCE SHEET NOTES

1. IDENTIFY POINTS OF CONNECTION AT EXISTING PIPING AND VERIFY PIPE IS IN SERVICEABLE CONDITION. PIPE WALL THICKNESS SHALL BE NOT LESS THAN 87.5% OF THE NOMINAL THICKNESS FOR A STD SCH 40 STEEL OR PVC PIPE (MEASURED BY CALIBER IN THE FIELD; MIN. 3 LOCATIONS 90-DEG APART) AT THAT SIZE FOR A NEW WELDED JOINT. IF EXISTING PIPE DOES NOT MEET REQUIREMENT, DEMO SECTION OF PIPING AND IDENTIFY NEW POINT OF CONNECTION.

A 2. PROVIDE PRE-FABRICATED/PRE-INSULATED HHWS&R PIPING. ALL WELDS AND EXPOSED BARE PIPE SHALL BE PREPPED, PRIMED & PAINTED AFTER WELDING IS COMPLETE. PROVIDE PRESSURE TESTABLE JOINT CLOSURE KITS AT EACH FIELD JOINT. REFER TO DETAIL 7/M-5.1.

A 3. PROVIDE PRE-FABRICATED/PRE-INSULATED CHWS&R PIPING. PREP AND CLEAN ENDS AND UNIONS FOR SOLVENT WELDED JOINTS. PROVIDE JOINT CLOSURE KITS AT FIELD JOINTS AND INSULATION KITS FOR FITTINGS 6" SIZE AND LESS. SEE G-0.0 FOR ADDITIONAL INFORMATION.

4. NOT USED.

5. PROVIDE THRUST BLOCKS AT ALL FITTINGS AND CHANGES OF DIRECTION FOR PVC HYDRONIC PIPING 8" OR GREATER IN SIZE. ALL NON-SOLVENT WELDED PVC BELL & SPIGOT JOINTS (AT EXISTING, IF DISCOVERED). REFER TO DETAIL 1&2/M-5.2.

6. PROVIDE PRE-FABRICATED/PRE-INSULATED ANCHORS (THERMACOR OR APPROVED EQUAL), INCLUDING FULLY FABRICATED ANCHOR PLATES, WATER SHED RINGS, CORROSION COATING, POLYURETHANE INSULATION, AND JACKETING. COMPLETE WELDED CONNECTION TO PIPING AND PRESSURE TESTABLE JOINT CLOSURE PRIOR TO POURING CONCRETE. ANCHOR PLATES SHALL BE CONCRETE ENCASED, REFER TO DETAIL 8/M-5.1.

7. UPON "PASSED" PRESSURE TEST AND CHEMICAL TREATMENT PROCESS OF THE NEW HHW & CHW SITE PIPING, AND COMPLETED MECHANICAL ROOM UPGRADES, CONDUCT SHUT DOWN AND SWITCH OVER FROM TEMPORARY SYSTEMS (USING INSTALLED VALVES) TO THE COMPLETED HHW & CHW PIPING SYSTEM. REMOVE TEMPORARY HHW & CHW TEMPORARY PIPING, SUPPORTS, ELECTRICAL CONNECTIONS, AND GAS PIPING. REMOVE TEMPORARY MECHANICAL EQUIPMENT AND ENCLOSURE. COORDINATE WITH COLLEGE FOR SHUT DOWN & SWITCH OVER.

8. UPON "PASSED" PRESSURE TEST AND CHEMICAL TREATMENT PROCESS OF THE NEW HHW & CHW SITE PIPING, AND COMPLETED MECHANICAL ROOM UPGRADES, CONDUCT SHUT DOWN AND SWITCH OVER FROM TEMPORARY SYSTEMS TO THE COMPLETED HHW & CHW PIPING SYSTEM. REMOVE TEMPORARY HHW & CHW TEMPORARY BYPASS PIPING AT THE UNDERGROUND SITE PIPING. CUT OUT TEMPORARY ELBOW AND COMPLETE FINAL POINTS OF CONNECTION TO HYDRONIC PIPING, FILL SYSTEM AND VENT AIR FROM BUILDING HHW & CHW SYSTEM HIGH POINTS. COORDINATE WITH COLLEGE FOR SHUT DOWN & SWITCH OVER. RESTORE ALL HARDSCAPE AND LANDSCAPE TO AS FOUND CONDITION (SEE G-1.4).

A 9. HHWS&R PIPE ROOF PENETRATION AND QUICK CONNECT "FOR TEMPORARY SERVICE" SHALL REMAIN. PROVIDE BLIND FLANGE AT CLOSED BUTTERFLY VALVES. APPLIES TO TEMP HEATING ONLY.

A 10. CEILING ACCESS HATCH TO REMAIN. DEMOLISH TEMPORARY LADDER SYSTEM AND PROVIDE PAD LOCKABLE LATCH AT EXTERIOR OF HATCH (FOR FACILITIES USE). REFER TO DETAIL 4/M-5.5 FOR ROOF HATCH DETAIL. APPLIES TO TEMP HEATING ONLY.

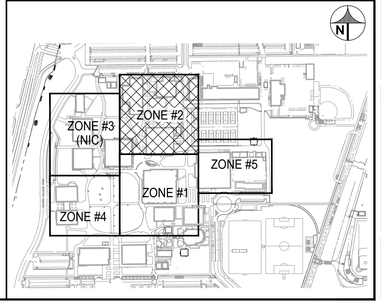
A 11. NOT USED.

A 12. PROVIDE NEW VAULT, REFER TO VAULT DETAIL 8/M-5.2 AND VAULT SCHEDULE ON M-6.1 FOR REQUIRED FEATURES. PRE-FABRICATED/PRE-INSULATED PIPING SHALL TERMINATE A MIN. 9" INSIDE THE VAULT WALLS. REMAINDER OF PIPING SHALL BE FIELD INSTALLED SCH. 40 STEEL PIPING WITH WELDED/FLANGED JOINTS. CHW PVC PIPING SHALL PENETRATE AND REMAIN PVC WITHIN THE VAULT. ALL PENETRATIONS SHALL BE SEALED WITH LINK SEAL PER DETAIL 5/M-5.1. PROVIDE INSULATION AND JACKETING PER SPECIFICATIONS.

13. PROVIDE LINE SIZED TEE AND NEW ISOLATION VALVES AT HYDRONIC RISERS AT THE EXTERIOR OF THE BUILDING. PROVIDE BLIND FLANGE AT "FOR FUTURE" BRANCH CONNECTION. REFER TO DETAIL M-4.1 THROUGH M-4.10.

14. REFER TO EXPANSION LOOP DETAIL 4/M-5.2.

KEY PLAN



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National Strength.
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REGISTERED PROFESSIONAL ENGINEER — JOHN BARRETT GREEN — No. M40086 EXP. 09-30-2026 — MECHANICAL — STATE OF CALIFORNIA

DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE		
MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	EES
APPROVED BY:	EES

SHEET TITLE

MECHANICAL ENLARGED SITE PLAN ZONE #2 (B-1200, B-1300, & B1400) NEW

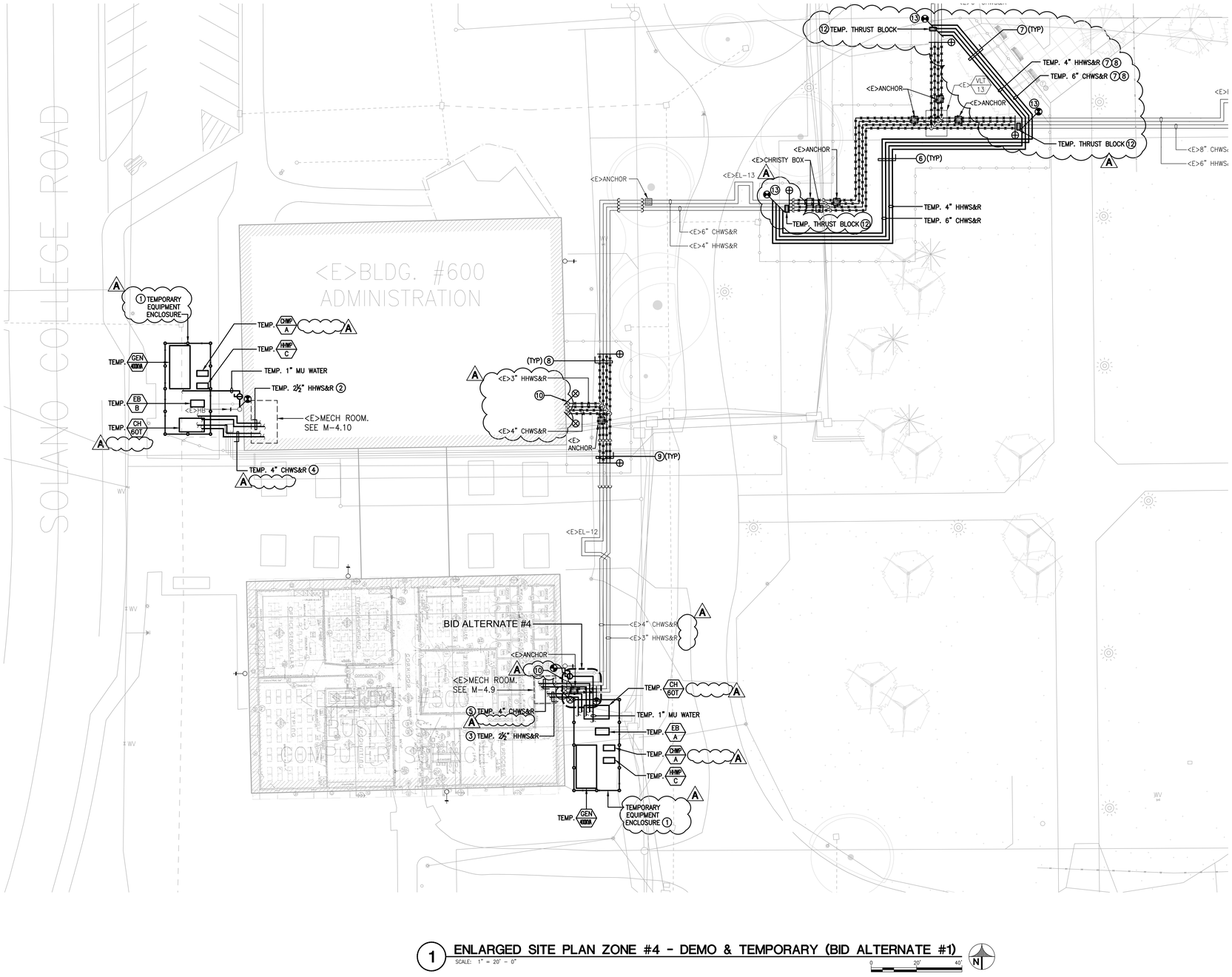
SCALE: AS NOTED

THIS DRAWING IS 30" X 42" AT FULL SIZE

M-1.2

SHEET OF –

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1 ENLARGED SITE PLAN ZONE #4 - DEMO & TEMPORARY (BID ALTERNATE #1)

SCALE: 1" = 20' - 0"

0 20' 40'

GENERAL SHEET NOTES

A. COORDINATE ALL SHUT DOWNS WITH DISTRICT. NO SYSTEM SHUT DOWNS SHALL OCCUR WITHOUT DISTRICT APPROVAL. SYSTEM SHUT DOWNS SHALL OCCUR OFF HOURS AND SHALL NOT EFFECT CAMPUS OPERATIONS AT ANY GIVEN TIME DURING "OCCUPIED" HOURS. SHUT DOWNS FOR SWITCH OVERS SHALL OCCUR DURING OFF HOURS (WEEKEND, HOLIDAY AND/OR NIGHT).

B. REFER TO "HYDRONIC SHUT DOWN & SWITCH OVER REQUIREMENTS FOR TEMPORARY SERVICES" ON G-0.1.

C. NOT USED.

D. UNLESS OTHERWISE NOTED, NO BUILDING SHALL BE WITHOUT COOLING OR HEATING SERVICE AT ANY GIVEN TIME. TEMPORARY HEATING/COOLING SYSTEMS MUST BE SERVING THE EFFECTED ZONE BUILDINGS, AND TEMPORARY BYPASSES IN THE SITE HYDRONIC PIPING MUST BE SERVING THE REMAINDER OF THE CAMPUS PRIMARY CHW & HHW SYSTEM(S) PRIOR TO CONDUCTING FURTHER DEMOLITION OR NEW WORK FOR A DEDICATED ZONE.

E. CONTRACTOR SHALL INCLUDE HAZARDOUS ABATEMENT AND DISPOSAL FOR A MIN. OF FOUR TRANSITE PIPES AT EACH EXCAVATION SITE IN WHICH A NEW VAULT WILL BE INSTALLED. ASSUME A PIPE SIZE OF (2) 12" AND (2) 8" FOR THE TRANSITE PIPING TO BE ABATED, 50 LF TOTAL OF EACH PIPE SIZE.

F. PRIOR TO TRENCHING FOR PIPE OR EXCAVATION FOR VAULTS, EXISTING UTILITIES SHALL BE LOCATED BY CONTRACTOR THROUGH THE CONTRACTOR PROVIDED UTILITY LOCATING SERVICE SUBCONTRACTOR. UTILITIES SHALL BE CLEARLY MARKED WITH NON-PERMANENT PAINT WITH DEPTH ESTIMATES PROVIDED BY THE LOCATING SUBCONTRACTOR. CONTRACTOR TO NOTIFY ENGINEER IF PROPOSED HYDRONIC PIPES CONFLICT WITH CROSSING EXISTING UTILITIES.

G. REFER TO PROJECT SPECIFICATIONS MANUAL.

H. PRIOR TO CONSTRUCTION, ISOLATED SECTIONS ASSOCIATED WITH THE AREAS OF WORK SHALL BE DRAINED TO SANITARY SEWER.

I. CONTRACTOR SHALL TAKE PHOTOGRAPHIC RECORDS OF EXISTING CONDITION AT AREAS OF WORK PRIOR TO CONDUCTING DEMOLITION ACTIVITIES. REFER TO SHEET G-0.1.

J. TEMPORARY EQUIPMENT SHOWN DOES NOT INCLUDE ELECTRICAL OR SERVICE CLEARANCES. THE CONTRACTOR SHALL PROVIDE ELECTRICAL CLEARANCES IN COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND EQUIPMENT SERVICE CLEARANCES PER MANUFACTURER'S INSTALLATION REQUIREMENTS

K. CONTRACTOR TO CONDUCT SOUND PRE-READINGS AT (2) NEAREST CLASSROOMS TO TEMPORARY EQUIPMENT ENCLOSURE. DOCUMENT SOUND LEVELS AND REPORT TO ENGINEER. ONCE TEMPORARY EQUIPMENT IS INSTALLED, TEST SOUND LEVEL AT SAME CLASSROOM(S) WITH TEMPORARY EQUIPMENT ENABLED, AND REPORT TO ENGINEER. IF SOUND LEVELS EXCEED NC-35, CONTRACTOR SHALL PROVIDE SOUND ATENNUATING BLANKETS TO THE TEMPORARY EQUIPMENT ENCLOSURE WITH MIN. THICKNESS OF 2".

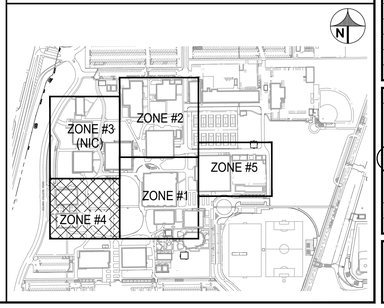
L. MINIMUM DISTANCE BETWEEN DRILLED-CORE HOLES TO BE 2 x WALL THICKNESS.

M. SEE GENERAL (G-) SHEETS FOR PATH OF TRAVEL, WAYFINDING, TEMPORARY FENCING, EXCAVATION, TRENCHING, SURFACE WORK, AND TEMPORARY EQUIPMENT PAD REQUIREMENTS.

REFERENCE SHEET NOTES

1. PROVIDE TEMPORARY HEATING AND COOLING EQUIPMENT AT EACH BUILDING WITHIN ZONE #4 (B-500 & B-600). REFER TO M-6.1 FOR TEMPORARY BOILER AND CHILLER EQUIPMENT SCHEDULES. UNLESS OTHERWISE NOTED, TEMPORARY BOILER AND CHILLER SYSTEMS SHALL INCLUDE THE FOLLOWING ITEMS: PUMP, PUMP VFD, AIR VENT, EXPANSION TANK, CHEMICAL POT FEEDERS & TEST PORTS, AND MAKE-UP WATER PROVISIONS.
2. PROVIDE TEMPORARY HHWS&R PIPING FROM TEMPORARY HHW EQUIPMENT TO THE POINTS OF CONNECTION WITHIN THE B-500 MECHANICAL ROOM. SCAN FOR REBAR AND CORE DRILL THROUGH EXTERIOR CONCRETE WALL FOR THE TEMPORARY HHWS&R PIPING ENTERING THE MECHANICAL ROOM. REFER TO SHEET M-4.9 FOR TEMPORARY HHW POINTS OF CONNECTION AND MECH. RM. HHW UPGRADES. COORDINATE WITH COLLEGE FOR SHUT DOWN & SWITCH OVER.
3. PROVIDE TEMPORARY HHWS&R PIPING FROM TEMPORARY HHW EQUIPMENT TO THE POINTS OF CONNECTION INSIDE THE B-600 MECHANICAL ROOM. PENETRATION OF TEMPORARY PIPING INTO SPACE SHALL BE THROUGH THE <E> MECHANICAL ROOM DOORWAY. REFER TO SHEET M-4.10 FOR TEMPORARY HHW POINTS OF CONNECTION AND MECH. RM. HHW UPGRADES. COORDINATE WITH COLLEGE FOR SHUT DOWN & SWITCH OVER.
4. PROVIDE TEMPORARY CHWS&R PIPING FROM TEMPORARY CHW EQUIPMENT TO THE POINTS OF CONNECTION WITHIN THE B-500 MECHANICAL ROOM. SCAN FOR REBAR AND CORE DRILL THROUGH EXTERIOR CONCRETE WALL FOR THE TEMPORARY CHWS&R PIPING ENTERING THE MECHANICAL ROOM. REFER TO G-0.0 & M-4.9 FOR ADDITIONAL INFORMATION. APPLIES TO TEMP HEATING ONLY.
5. PROVIDE TEMPORARY CHWS&R PIPING FROM TEMPORARY HHW EQUIPMENT TO THE POINTS OF CONNECTION INSIDE THE B-600 MECHANICAL ROOM. PENETRATION OF TEMPORARY PIPING INTO SPACE SHALL BE THROUGH THE <E> MECHANICAL ROOM DOORWAY. REFER TO G-0.0 & M-4.10 FOR ADDITIONAL INFORMATION. APPLIES TO TEMP HEATING ONLY.
6. FOR ZONE #3 WORK (SEE MD-1.3 AND M-1.3), PROVIDE TEMPORARY CHWS&R AND HHWS&R BYPASS PIPING TO SERVE UNEFFECTED (BY CONSTRUCTION) AREAS OF THE CAMPUS. UTILIZE LINESTOPS OR <E> ISOLATION VALVES TO FACILITATE CONNECTION TO <E> HYDRONIC PIPING. PROVIDE CAPS TO ISOLATE THE "LIVE" HYDRONIC SYSTEM FROM PIPING UNDER CONSTRUCTION WITHIN THE ZONE. REFER TO DETAIL 3/M-5.5 FOR INSTALLED CONDITION.
7. FOR ZONE #4 WORK, PROVIDE TEMPORARY CHWS&R AND HHWS&R BYPASS PIPING TO SERVE UNEFFECTED (BY CONSTRUCTION) AREAS OF THE CAMPUS. UTILIZE LINESTOPS OR <E> ISOLATION VALVES TO FACILITATE CONNECTION TO <E> HYDRONIC PIPING. PROVIDE CAPS TO ISOLATE THE "LIVE" HYDRONIC SYSTEM FROM PIPING UNDER CONSTRUCTION WITHIN THE ZONE. REFER TO DETAIL 9/M-5.2 & 3/M-5.5 FOR INSTALLED CONDITIONS.
8. LOCATE <E> HHWS&R AND CHWS&R PIPING BELOW GRADE. VIF LOCATION FOR NEW VAULT AND EXCAVATE AS NEEDED FOR THE FOOTPRINT OF THE VAULT. REFER TO G-1.4 FOR TRENCHING AND SURFACE WORK.
9. LOCATE <E> HHWS&R AND CHWS&R PIPING BELOW GRADE. REFER TO G-1.4 FOR TRENCHING AND SURFACE WORK.
10. DEMOLISH INSULATION AND JACKETING AT CHW & HHW HYDRONIC RISERS. DEMOLISH EXISTING VALVES AND SECTIONS OF PIPING TO FACILITATE THE INSTALLATION OF LINE SIZED TEES AND NEW VALVES. SEE DETAILS 5/M-4.9 AND 5/M-4.10 FOR HYDRONIC RISER UPGRADE.
11. IF PRE-CONSTRUCTION PRESSURE TEST FAILS AT EXISTING SECTIONS OF UNDERGROUND HHWS&R PIPING, REPLACE HHWS&R SECTIONS IDENTIFIED OUTSIDE B-500 MECH. RM. INCLUDING: FITTINGS, INSULATION, JACKETING, ETC. (BID ALTERNATE #4).
12. PROVIDE TEMPORARY THRUST BLOCK AT CHWS&R BYPASS CONNECTIONS. INSTALL TEMPORARY SUPPORT PIPING AND FLANGE AT BYPASS POC, AND ANCHOR FLANGE TO TEMPORARY THRUST BLOCK. THRUST BLOCK SHALL BE INSTALLED NO MORE THAN 3FT AWAY FROM CHWS&R BYPASS PIPING. REFER TO DETAIL 9/M-5.2 FOR ADDITIONAL INFORMATION.
13. IDENTIFY TEMPORARY POINTS OF CONNECTION AT THE <E> UNDERGROUND HHW & CHW TO BYPASS AREA OF WORK. REFER TO G-1.4 FOR TRENCHING AND SURFACE WORK.

KEY PLAN



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REGISTERED PROFESSIONAL ENGINEER
ERIN EMMETT SWEET
No. M40086
EXP. 09-30-2026
MECHANICAL
STATE OF CALIFORNIA

DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE		
MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	EES
APPROVED BY:	EES

SHEET TITLE

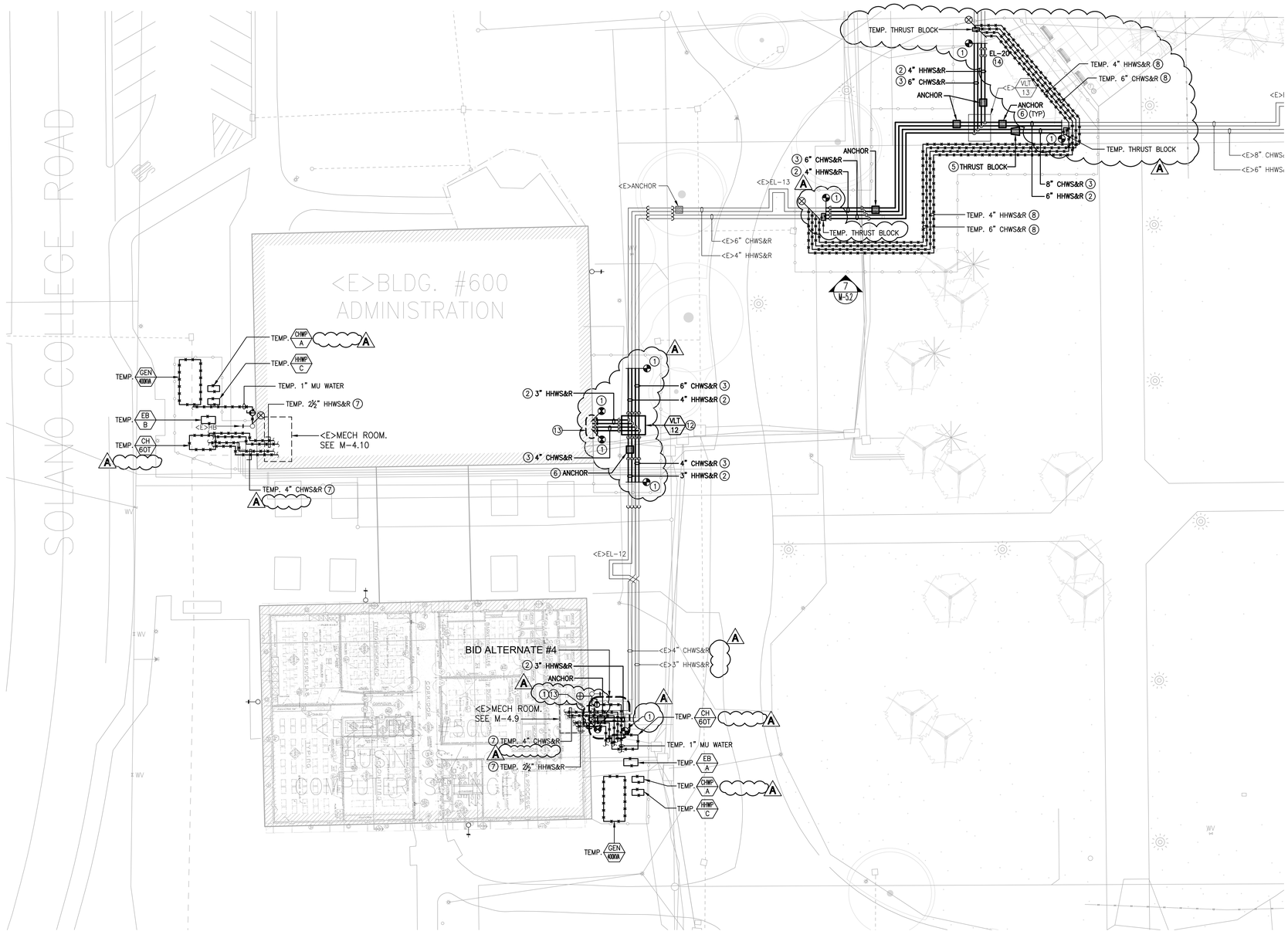
MECHANICAL
ENLARGED SITE PLAN
ZONE #4 (B-500 & B-600)
DEMO & TEMPORARY
(BID ALTERNATE #1) A

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

MD-1.4
SHEET OF –

M:\AA-PROJECTS\2025\2510-00649-00 Solano CCD, Hydronic Distribution Repairs & Upgrades\03 Drawings\2510-00649MD-1.4.dwg 3/11/2026 7:13 PM Minh Ong

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



1 ENLARGED SITE PLAN ZONE #4 - NEW (BID ALTERNATE #1)

SCALE: 1" = 20' - 0"

0 20' 40'

GENERAL SHEET NOTES

A. COORDINATE ALL SHUT DOWNS WITH DISTRICT. NO SYSTEM SHUT DOWNS SHALL OCCUR WITHOUT DISTRICT APPROVAL. SYSTEM SHUT DOWNS SHALL OCCUR OFF HOURS AND SHALL NOT EFFECT CAMPUS OPERATIONS AT ANY GIVEN TIME DURING "OCCUPIED" HOURS. SHUT DOWNS FOR SWITCH OVERS SHALL OCCUR DURING OFF HOURS (WEEKEND AND/OR NIGHT).

B. REFER TO "HYDRONIC SHUT DOWN & SWITCH OVER REQUIREMENTS FOR TEMPORARY SERVICES" ON G-0.1.

C. NOT USED.

D. UNLESS OTHERWISE NOTED, NO BUILDING SHALL BE WITHOUT COOLING OR HEATING SERVICE AT ANY GIVEN TIME. TEMPORARY HEATING/COOLING SYSTEMS MUST BE SERVING THE EFFECTED ZONE BUILDINGS, AND TEMPORARY BYPASSES IN THE SITE HYDRONIC PIPING MUST BE SERVING THE REMAINDER OF CAMPUS PRIOR CONDUCTING FURTHER DEMOLITION OR NEW WORK FOR A DEDICATED ZONE.

E. CONTRACTOR SHALL COMPLY WITH ALL INSPECTION AND TEST REQUIREMENTS RELATED TO UNDERGROUND SITE PIPING REPAIRS AS RELATES TO: WELDING, PRESSURE TESTABLE JOINT CLOSURES, EXCAVATION, PRESSURE TESTING, MANUFACTURER REQUIRED PROCEDURES FOR FIELD INSULATION KITS, FITTING INSULATION KITS, END SEALS, ETC.

F. EXISTING UTILITIES SHALL BE LOCATED BY CONTRACTOR THROUGH THE CONTRACTOR PROVIDED UTILITY LOCATING SERVICE SUBCONTRACTOR. UTILITIES SHALL BE CLEARLY MARKED WITH NON-PERMANENT PAINT WITH DEPTH ESTIMATES PROVIDED BY THE LOCATING SUBCONTRACTOR.

G. REFER TO PROJECT SPECIFICATIONS MANUAL.

H. FIELD INSULATION KITS (PRESSURE TESTABLE AND NON-PRESSURE TESTABLE) FOR DIRECT-BURIED FIELD JOINTS SHALL BE INSTALLED BY COMPANY AND INDIVIDUALS TRAINED ON INSTALLATION REQUIREMENTS OF THE PRE-FABRICATED PIPING SYSTEM MANUFACTURER.

I. NEW SECTIONS OF STEEL PIPING SHALL BE PRESSURE TESTED AND CHEMICALLY TREATED PRIOR TO CONNECTION TO EXISTING PIPING.

J. NO METALIC OR STEEL COMPONENTS SHALL BE EXPOSED TO SOILS IN A DIRECT BURIED SECTION OF PIPING. COUPLINGS, TRANSITION ADAPTERS, SADDLE TEES, FLANGES, NUT AND BOLT SETS SHALL BE ENCASULATED IN LIQUID POUR POLYURETHANE INSULATION AND HDPE HEAT SHRINK JACKETING AND TAPE. THREADED PORTIONS OF BOLTS/RODS SHALL BE WRAPPED IN PLASTIC PRIOR TO APPLICATION OF LIQUID POUR POLYURETHANE INSULATION.

A K. UNDERGROUND THERMAL ENERGY SYSTEM, QUALITY ASSURANCE: UNDERGROUND PIPE MANUFACTURER SHALL PROVIDE ON-SITE TRAINING TO INSTALLERS FOR PROPER ASSEMBLY AND INSTALLATION OF FIELD FABRICATED COMPONENTS AND MATERIALS (PIPING, INSULATION, JACKETING, ETC.). CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING TRAINING FOR INSTALLERS AND PROJECT INSPECTORS. ONLY INDIVIDUALS WHO HAVE COMPLETED THE MANUFACTURER'S TRAINING SHALL BE ALLOWED TO PERFORM INSTALLATION OF UNDERGROUND PRE-FABRICATED PIPING SYSTEMS.

REFERENCE SHEET NOTES

1. IDENTIFY POINTS OF CONNECTION AT EXISTING PIPING AND VERIFY PIPE IS IN SERVICEABLE CONDITION. PIPE WALL THICKNESS SHALL BE NOT LESS THAN 87.5% OF THE NOMINAL THICKNESS FOR A STD SCH. 40 STEEL OR PVC PIPE (MEASURED BY CALIBER IN THE FIELD, MIN. 3 LOCATIONS 90-DEG APART) AT THAT SIZE FOR A NEW WELDED JOINT. IF EXISTING PIPE DOES NOT MEET REQUIREMENT, DEMO SECTION OF PIPING AND IDENTIFY NEW POINT OF CONNECTION.

2. PROVIDE PRE-FABRICATED/PRE-INSULATED HHWS&R PIPING. ALL WELDS AND EXPOSED BARE PIPE SHALL BE PREPPED, PRIMED & PAINTED AFTER WELDING IS COMPLETE. PROVIDE PRESSURE TESTABLE JOINT CLOSURE KITS AT EACH FIELD JOINT. REFER TO DETAIL 7/M-5.1.

A 3. PROVIDE PRE-FABRICATED/PRE-INSULATED CHWS&R PIPING. PREP AND CLEAN ENDS AND UNIONS FOR SOLVENT WELDED JOINTS. PROVIDE JOINT CLOSURE KITS AT FIELD JOINTS AND INSULATION KITS FOR FITTINGS 6" SIZE AND LESS. SEE G-0.0 FOR ADDITIONAL INFORMATION.

4. NOT USED.

5. PROVIDE THRUST BLOCKS AT ALL FITTINGS AND CHANGES OF DIRECTION FOR PVC HYDRONIC PIPING 8" OR GREATER IN SIZE. ALL NON-SOLVENT WELDED PVC BELL & SPIGOT JOINTS (AT EXISTING, IF DISCOVERED). REFER TO DETAIL 1&2/M-5.2.

6. PROVIDE PRE-FABRICATED/PRE-INSULATED ANCHORS (THERMACOR OR APPROVED EQUAL), INCLUDING FULLY FABRICATED ANCHOR PLATES, WATER SHED RINGS, CORROSION COATING, POLYURETHANE INSULATION, AND JACKETING. COMPLETE WELDED CONNECTION TO PIPING AND PRESSURE TESTABLE JOINT CLOSURE PRIOR TO POURING CONCRETE. ANCHOR PLATES SHALL BE CONCRETE ENCASED, REFER TO DETAIL 8/M-5.1.

7. UPON "PASSED" PRESSURE TEST AND CHEMICAL TREATMENT PROCESS OF THE NEW HHW & CHW SITE PIPING, AND COMPLETED MECHANICAL ROOM UPGRADES, CONDUCT SHUT DOWN AND SWITCH OVER FROM TEMPORARY SYSTEMS (USING INSTALLED VALVES) TO THE COMPLETED HHW & CHW PIPING SYSTEM. REMOVE TEMPORARY HHW & CHW TEMPORARY PIPING, SUPPORTS, ELECTRICAL CONNECTIONS, AND GAS PIPING. REMOVE TEMPORARY MECHANICAL EQUIPMENT AND ENCLOSURE. COORDINATE WITH COLLEGE FOR SHUT DOWN & SWITCH OVER.

8. UPON "PASSED" PRESSURE TEST AND CHEMICAL TREATMENT PROCESS OF THE NEW HHW & CHW SITE PIPING, AND COMPLETED MECHANICAL ROOM UPGRADES, CONDUCT SHUT DOWN AND SWITCH OVER FROM TEMPORARY SYSTEMS TO THE COMPLETED HHW & CHW PIPING SYSTEM. REMOVE TEMPORARY HHW & CHW TEMPORARY BYPASS PIPING AT THE UNDERGROUND SITE PIPING. CUT OUT TEMPORARY ELBOW AND COMPLETE FINAL POINTS OF CONNECTION TO HYDRONIC PIPING. FILL SYSTEM AND VENT AIR FROM BUILDING HHW & CHW SYSTEM HIGH POINTS. COORDINATE WITH COLLEGE FOR SHUT DOWN & SWITCH OVER. RESTORE ALL HARDSCAPE AND LANDSCAPE TO AS FOUND CONDITION (SEE G-1.4).

A 9. HHWS&R PIPE ROOF PENETRATION AND QUICK CONNECT "FOR TEMPORARY SERVICE" SHALL REMAIN. PROVIDE BLIND FLANGE AT CLOSED BUTTERFLY VALVES. APPLIES TO TEMP HEATING ONLY.

10. CEILING ACCESS HATCH TO REMAIN. DEMOLISH TEMPORARY LADDER SYSTEM AND PROVIDE PAD LOCKABLE LATCH AT EXTERIOR OF HATCH (FOR FACILITIES USE). REFER TO DETAIL 4/M-5.5 FOR ROOF HATCH DETAIL. APPLIES TO TEMP HEATING ONLY.

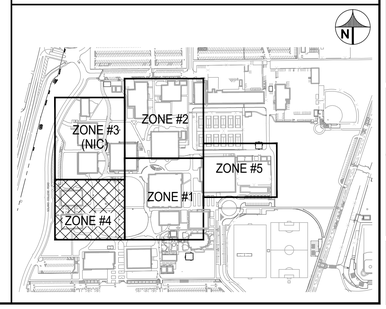
A 11. NOT USED.

A 12. PROVIDE NEW VAULT, REFER TO VAULT DETAIL 8/M-5.2 AND VAULT SCHEDULE ON M-6.1 FOR REQUIRED FEATURES. PRE-FABRICATED/PRE-INSULATED PIPING SHALL TERMINATE A MIN. 9" INSIDE THE VAULT WALLS. REMAINDER OF PIPING SHALL BE FIELD INSTALLED SCH. 40 STEEL PIPING WITH WELDED/FLANGED JOINTS. CHW PVC PIPING SHALL PENETRATE AND REMAIN PVC WITHIN THE VAULT. ALL PENETRATIONS SHALL BE SEALED WITH LINK SEAL PER DETAIL 5/M-5.1. PROVIDE INSULATION AND JACKETING PER SPECIFICATIONS.

13. PROVIDE LINE SIZED TEE AND NEW ISOLATION VALVES AT HYDRONIC RISERS AT THE EXTERIOR OF THE BUILDING. PROVIDE BLIND FLANGE AT "FOR FUTURE" BRANCH CONNECTION. REFER TO DETAIL M-4.1 THROUGH M-4.10.

14. REFER TO EXPANSION LOOP DETAIL 4/M-5.2.

KEY PLAN



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REGISTERED PROFESSIONAL ENGINEER
ERIN EMMETT GREEN
No. M40086
EXP. 09-30-2026
MECHANICAL
STATE OF CALIFORNIA

DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE MARK	DATE	DESCRIPTION
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	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	EES
APPROVED BY:	EES

SHEET TITLE

MECHANICAL ENLARGED SITE PLAN ~~ZONE #4 (B-500 & B-600)~~ NEW (BID ALTERNATE #1) A

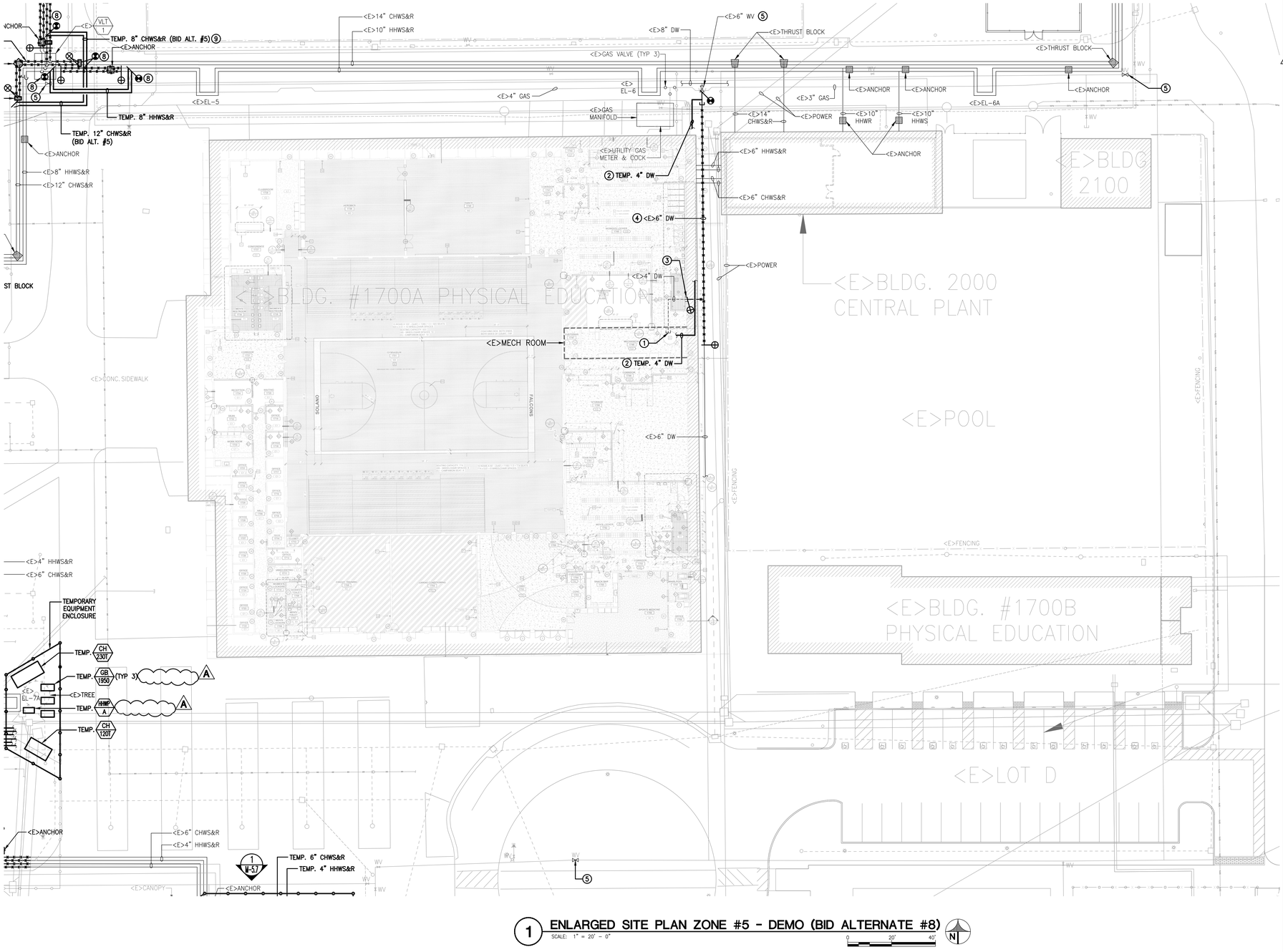
SCALE: AS NOTED

THIS DRAWING IS 30" X 42" AT FULL SIZE

M-1.4

SHEET OF –

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1 ENLARGED SITE PLAN ZONE #5 - DEMO (BID ALTERNATE #8)

SCALE: 1" = 20' - 0"

GENERAL SHEET NOTES

A. COORDINATE ALL SHUT DOWNS WITH DISTRICT. NO SYSTEM SHUT DOWNS SHALL OCCUR WITHOUT DISTRICT APPROVAL. SYSTEM SHUT DOWNS SHALL OCCUR OFF HOURS AND SHALL NOT EFFECT CAMPUS OPERATIONS AT ANY GIVEN TIME DURING "OCCUPIED" HOURS. SHUT DOWNS FOR SWITCH OVERS SHALL OCCUR DURING OFF HOURS (WEEKEND, HOLIDAY AND/OR NIGHT).

B. REFER TO "HYDRONIC SHUT DOWN & SWITCH OVER REQUIREMENTS FOR TEMPORARY SERVICES" ON G-0.1.

C. NOT USED.

D. UNLESS OTHERWISE NOTED, NO BUILDING SHALL BE WITHOUT COOLING OR HEATING SERVICE AT ANY GIVEN TIME. TEMPORARY HEATING/COOLING SYSTEMS MUST BE SERVING THE EFFECTED ZONE BUILDINGS, AND TEMPORARY BYPASSES IN THE SITE HYDRONIC PIPING MUST BE SERVING THE REMAINDER OF THE CAMPUS PRIMARY CHW & HHW SYSTEM(S) PRIOR TO CONDUCTING FURTHER DEMOLITION OR NEW WORK FOR A DEDICATED ZONE.

E. CONTRACTOR SHALL INCLUDE HAZARDOUS ABATEMENT AND DISPOSAL FOR A MIN. OF FOUR TRANSITE PIPES AT EACH EXCAVATION SITE IN WHICH A NEW VAULT WILL BE INSTALLED. ASSUME A PIPE SIZE OF (2) 12" AND (2) 8" FOR THE TRANSITE PIPING TO BE ABATED, 50 LF TOTAL OF EACH PIPE SIZE.

F. PRIOR TO TRENCHING FOR PIPE OR EXCAVATION FOR VAULTS, EXISTING UTILITIES SHALL BE LOCATED BY CONTRACTOR THROUGH THE CONTRACTOR PROVIDED UTILITY LOCATING SERVICE SUBCONTRACTOR. UTILITIES SHALL BE CLEARLY MARKED WITH NON-PERMANENT PAINT WITH DEPTH ESTIMATES PROVIDED BY THE LOCATING SUBCONTRACTOR. CONTRACTOR TO NOTIFY ENGINEER IF PROPOSED HYDRONIC PIPES CONFLICT WITH CROSSING EXISTING UTILITIES.

G. REFER TO PROJECT SPECIFICATIONS MANUAL.

H. PRIOR TO CONSTRUCTION, ISOLATED SECTIONS ASSOCIATED WITH THE AREAS OF WORK SHALL BE DRAINED TO SANITARY SEWER.

I. CONTRACTOR SHALL TAKE PHOTOGRAPHIC RECORDS OF EXISTING CONDITION AT AREAS OF WORK PRIOR TO CONDUCTING DEMOLITION ACTIVITIES. REFER TO SHEET G-0.1.

J. TEMPORARY EQUIPMENT SHOWN DOES NOT INCLUDE ELECTRICAL OR SERVICE CLEARANCES. THE CONTRACTOR SHALL PROVIDE ELECTRICAL CLEARANCES IN COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND EQUIPMENT SERVICE CLEARANCES PER MANUFACTURER'S INSTALLATION REQUIREMENTS

K. CONTRACTOR TO CONDUCT SOUND PRE-READINGS AT (2) NEAREST CLASSROOMS TO TEMPORARY EQUIPMENT ENCLOSURE. DOCUMENT SOUND LEVELS AND REPORT TO ENGINEER. ONCE TEMPORARY EQUIPMENT IS INSTALLED, TEST SOUND LEVEL AT SAME CLASSROOM(S) WITH TEMPORARY EQUIPMENT ENABLED, AND REPORT TO ENGINEER. IF SOUND LEVELS EXCEED NC-35, CONTRACTOR SHALL PROVIDE SOUND ATENNUATING BLANKETS TO THE TEMPORARY EQUIPMENT ENCLOSURE WITH MIN. THICKNESS OF 2".

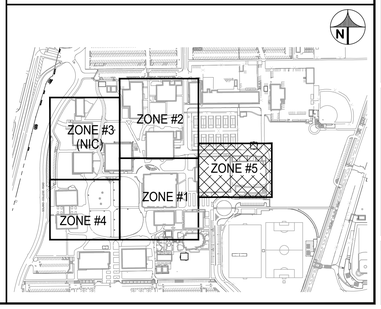
L. MINIMUM DISTANCE BETWEEN DRILLED-CORE HOLES TO BE 2 x WALL THICKNESS.

M. SEE GENERAL (G-) SHEETS FOR PATH OF TRAVEL, WAYFINDING, TEMPORARY FENCING, EXCAVATION, TRENCHING, SURFACE WORK, AND TEMPORARY EQUIPMENT PAD REQUIREMENTS.

REFERENCE SHEET NOTES

1. DEMO <E> RISER PIPE BELOW <E> FINISHED FLOOR. INSERT PLUG INTO <E> PIPE DOWN TO NEAREST CHANGE OF DIRECTION. FILL WITH GROUT AND ABANDON IN PLACE. FINISH GROUT FLUSH TO ADJACENT FINISHED FLOOR.
2. CONDUCT TEMPORARY SHUT DOWN OF B-1700A DOMESTIC WATER AND PROVIDE TEMPORARY DOMESTIC WATER PIPING FROM THE <E> WATER VALVE TO THE <E> RISER WITHIN THE B-1700A MECHANICAL ROOM. CONTRACTOR SHALL ACCOUNT FOR THRUST FORCES AND TEMPORARY THRUST RESTRAINTS (AS NEEDED) FOR TEMPORARY DW PIPING SYSTEM. PRESSURE TEST AND BACTERIAL TEST OF TEMPORARY PIPING SYSTEM SHALL OCCUR DURING OFF-HOURS.
3. FILL WITH GROUT, CAP AND ABANDON IN PLACE.
4. V.I.F. <E> DW ROUTING. ONCE TEMPORARY DW PIPING SYSTEM IS INSTALLED AND TESTED, DEMO DW PIPING THROUGH THE 6"x4" BRANCH TEE SERVING THE 4" WATER MAIN FOR B-1700A.
5. MANIPULATE <E> WATER VALVE TO ISOLATE DW FOR ZONE #5 DW REPLACMENT, TYPICAL IN 4 LOCATIONS.

KEY PLAN



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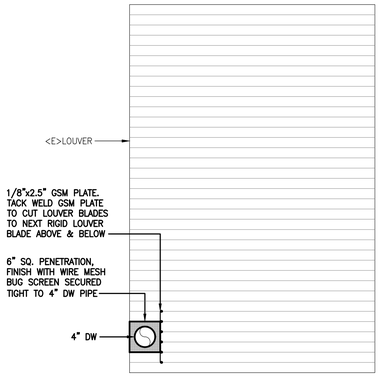
MECHANICAL ENLARGED SITE PLAN ZONE #5 (B-1700A) - DEMO (BID ALTERNATE #8)

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

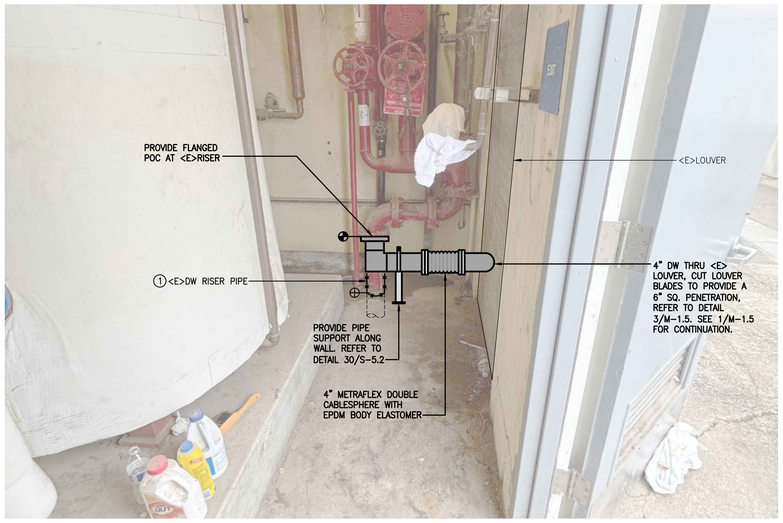
MD-1.5

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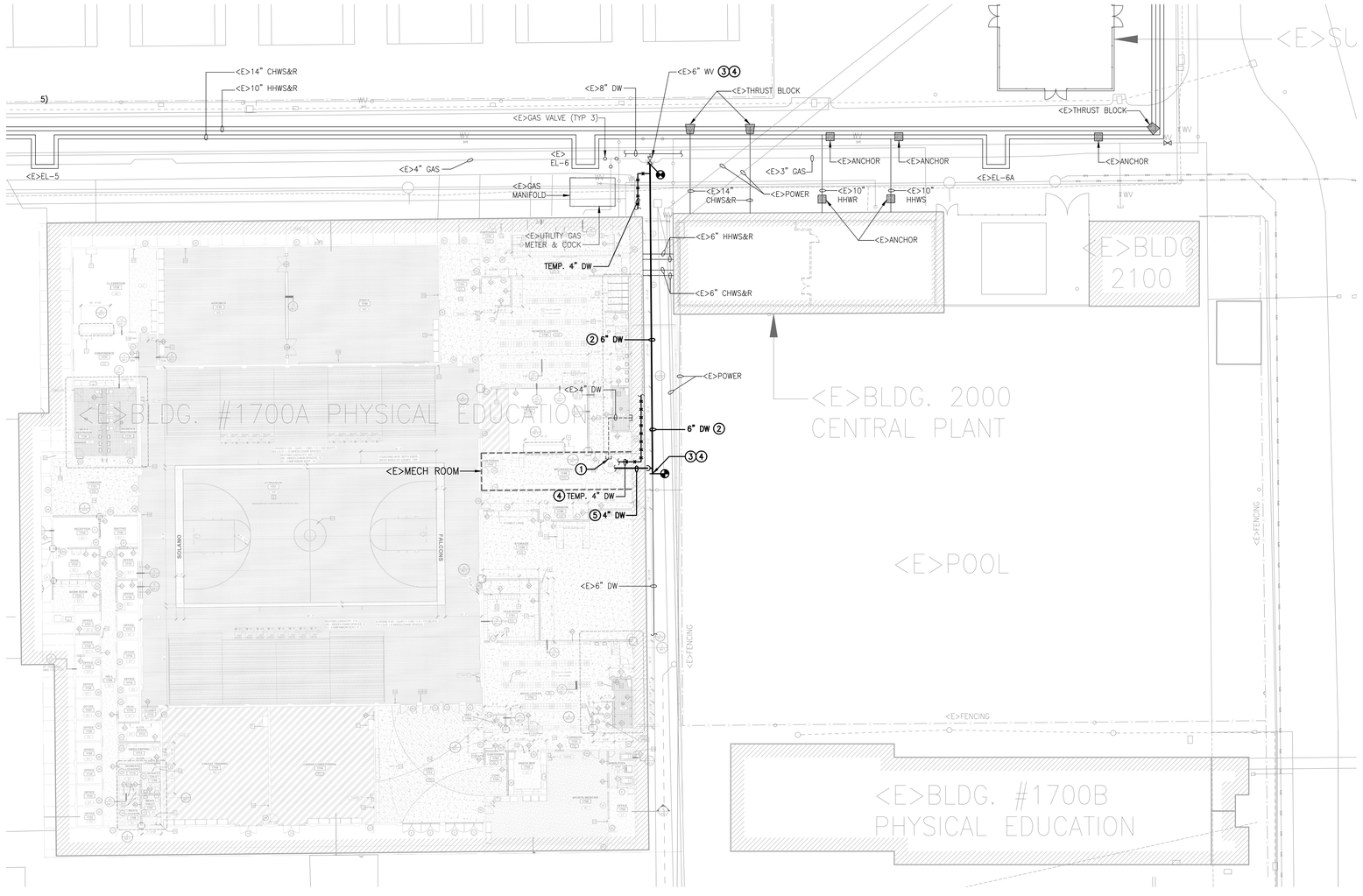
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3 LOUVER PENETRATION (BID ALTERNATE #8)
SCALE: N.T.S.



2 BUILDING 1700A DW REPAIR (BID ALTERNATE #8)
SCALE: N.T.S.



1 ENLARGED SITE PLAN ZONE #5 - NEW (BID ALTERNATE #8)
SCALE: 1" = 20' - 0"

0 20' 40'

GENERAL SHEET NOTES

A. COORDINATE ALL SHUT DOWNS WITH DISTRICT. NO SYSTEM SHUT DOWNS SHALL OCCUR WITHOUT DISTRICT APPROVAL. SYSTEM SHUT DOWNS SHALL OCCUR OFF HOURS AND SHALL NOT EFFECT CAMPUS OPERATIONS AT ANY GIVEN TIME DURING "OCCUPIED" HOURS. SHUT DOWNS FOR SWITCH OVERS SHALL OCCUR DURING OFF HOURS (WEEKEND AND/OR NIGHT).

B. REFER TO "HYDRONIC SHUT DOWN & SWITCH OVER REQUIREMENTS FOR TEMPORARY SERVICES" ON G-0.1.

C. NOT USED.

D. UNLESS OTHERWISE NOTED, NO BUILDING SHALL BE WITHOUT COOLING OR HEATING SERVICE AT ANY GIVEN TIME. TEMPORARY HEATING/COOLING SYSTEMS MUST BE SERVING THE EFFECTED ZONE BUILDINGS, AND TEMPORARY BYPASSES IN THE SITE HYDRONIC PIPING MUST BE SERVING THE REMAINDER OF CAMPUS PRIOR CONDUCTING FURTHER DEMOLITION OR NEW WORK FOR A DEDICATED ZONE.

E. CONTRACTOR SHALL COMPLY WITH ALL INSPECTION AND TEST REQUIREMENTS RELATED TO UNDERGROUND SITE PIPING REPAIRS AS RELATES TO: WELDING, PRESSURE TESTABLE JOINT CLOSURES, EXCAVATION, PRESSURE TESTING, MANUFACTURER REQUIRED PROCEDURES FOR FIELD INSULATION KITS, FITTING INSULATION KITS, END SEALS, ETC.

F. EXISTING UTILITIES SHALL BE LOCATED BY CONTRACTOR THROUGH THE CONTRACTOR PROVIDED UTILITY LOCATING SERVICE SUBCONTRACTOR. UTILITIES SHALL BE CLEARLY MARKED WITH NON-PERMANENT PAINT WITH DEPTH ESTIMATES PROVIDED BY THE LOCATING SUBCONTRACTOR.

G. REFER TO PROJECT SPECIFICATIONS MANUAL.

H. FIELD INSULATION KITS (PRESSURE TESTABLE AND NON-PRESSURE TESTABLE) FOR DIRECT-BURIED FIELD JOINTS SHALL BE INSTALLED BY COMPANY AND INDIVIDUALS TRAINED ON INSTALLATION REQUIREMENTS OF THE PRE-FABRICATED PIPING SYSTEM MANUFACTURER.

I. NEW SECTIONS OF STEEL PIPING SHALL BE PRESSURE TESTED AND CHEMICALLY TREATED PRIOR TO CONNECTION TO EXISTING PIPING.

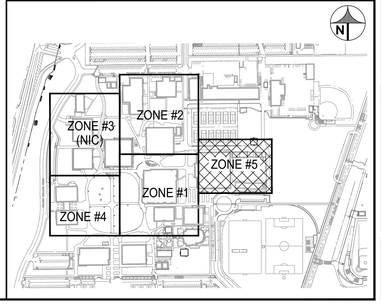
J. NO METALIC OR STEEL COMPONENTS SHALL BE EXPOSED TO SOILS IN A DIRECT BURIED SECTION OF PIPING. COUPLINGS, TRANSITION ADAPTERS, SADDLE TEES, FLANGES, NUT AND BOLT SETS SHALL BE ENCASULATED IN LIQUID POUR POLYURETHANE INSULATION AND HDPE HEAT SHRINK JACKETING AND TAPE. THREADED PORTIONS OF BOLTS/RODS SHALL BE WRAPPED IN PLASTIC PRIOR TO APPLICATION OF LIQUID POUR POLYURETHANE INSULATION.

A K. UNDERGROUND THERMAL ENERGY SYSTEM, QUALITY ASSURANCE: UNDERGROUND PIPE MANUFACTURER SHALL PROVIDE ON-SITE TRAINING TO INSTALLERS FOR PROPER ASSEMBLY AND INSTALLATION OF FIELD FABRICATED COMPONENTS AND MATERIALS (PIPING, INSULATION, JACKETING, ETC.). CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING TRAINING FOR INSTALLERS AND PROJECT INSPECTORS. ONLY INDIVIDUALS WHO HAVE COMPLETED THE MANUFACTURER'S TRAINING SHALL BE ALLOWED TO PERFORM INSTALLATION OF UNDERGROUND PRE-FABRICATED PIPING SYSTEMS.

REFERENCE SHEET NOTES

1. DEMO <E> RISER PIPE 1" MIN. BELOW <E> FINISHED FLOOR. INSERT PLUG INTO <E> PIPE DOWN TO NEAREST CHANGE OF DIRECTION. FILL WITH GROUT AND ABANDON IN PLACE. FINISH GROUT FLUSH TO ADJACENT FINISHED FLOOR.
2. PROVIDE SCH. 40 PVC PIPING, SCH. 80 PVC FITTINGS, WITH SOLVENT WELDED JOINTS.
3. IDENTIFY POINTS OF CONNECTION AT EXISTING PIPING AND VERIFY PIPE (OR VALVE) IS IN GOOD CONDITION FOR CONDITION. IF EXISTING PIPE/VALVE IS DAMAGED, CORRODED, OR OTHERWISE COMPROMISED, DEMO AND REPLACE SECTION OF PIPING (OR VALVE) AND IDENTIFY NEW POINT OF CONNECTION. CONTRACTOR MUST PROVIDE RESTRAINT COUPLINGS (OR THRUST BLOCKS) AT POINT OF CONNECTION TO EXISTING.
4. ONCE NEW PIPING IS INSTALLED CONDUCT TEMPORARY SHUT DOWN OF B-1700A DOMESTIC WATER. DEMO TEMPORARY DW PIPING AND MAKE FINAL CONNECTIONS TO THE "NEW" DW PIPING SYSTEM. PRESSURE TEST AND BACTERIAL TEST UPON COMPLETION OF WORK (OFF-HOURS). TESTS SHALL COMPLY WITH CPC REQUIREMENTS AND "PASS" MUST BE OBSERVED BY AN INSPECTOR.
5. TRANSITION TO STEEL PIPING ABOVE GRADE VIA A PVC VANSTONE FLANGE TO STEEL FLANGE (DISSIMILAR METAL CONNECTIONS ARE NOT ACCEPTABLE). EXTERIOR PVC SHALL BE PAINTED WITH 3 COATS OF UV-RATED PAINT. ONCE PIPING TRANSITIONS TO STEEL ABOVE GRADE, PIPING SHALL PENETRATE THROUGH EXISTING LOUVER (SEE DETAIL 3/M-1.5), CONNECTION TO THE EXISTING RISER. PROVIDE PIPE SUPPORT ALONG WALL PER DETAIL 30/S-5.2. SEE ALSO DETAIL 2/M-1.5.

KEY PLAN



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National Strength.
Local Action.

REGISTERED PROFESSIONAL ENGINEER
ERIN EMMETT GREEN
No. M40086
EXP. 09-30-2026
MECHANICAL
STATE OF CALIFORNIA
DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	EES
APPROVED BY:	EES

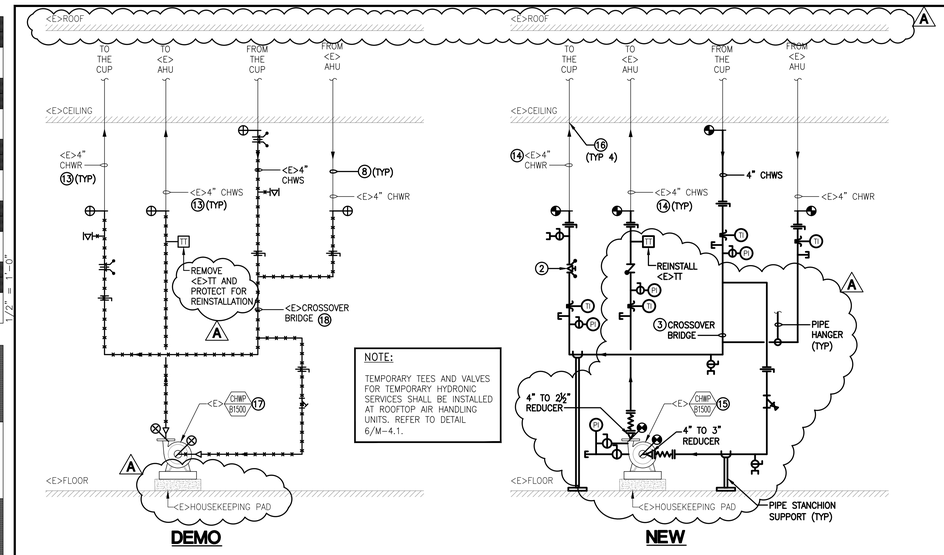
SHEET TITLE

MECHANICAL ENLARGED SITE PLAN ZONE #5 (B-1700A) - NEW (BID ALTERNATE #8)

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

M-1.5
SHEET OF –

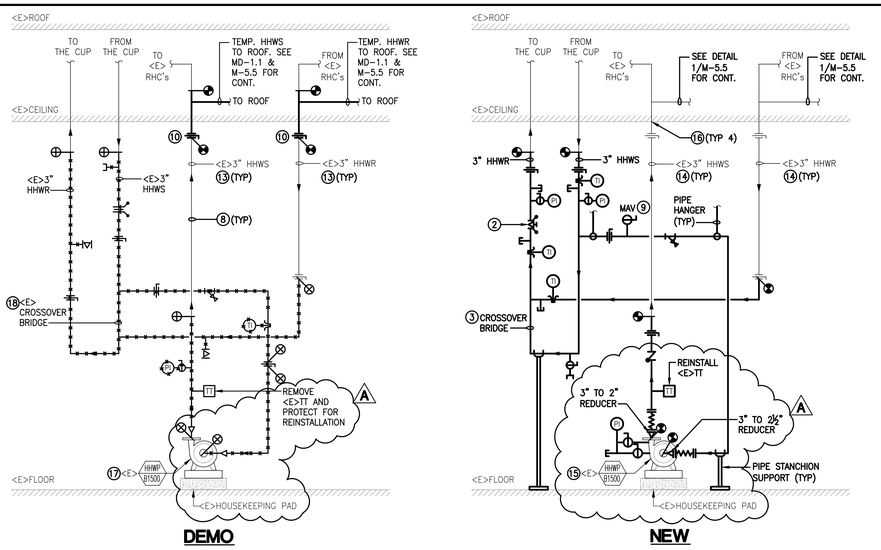
THIS DRAWING IS 30" X 42" AT FULL SIZE. 15" X 21" AT HALF SIZE. © 2015 BY SALAS O'BRIEN ENGINEERS, INC.



NOTE:

TEMPORARY TEES AND VALVES FOR TEMPORARY HYDRONIC SERVICES SHALL BE INSTALLED AT ROOFTOP AIR HANDLING UNITS. REFER TO DETAIL 6/M-4.1.

1 BUILDING 1500 MECHANICAL ROOM - ZONE 1 CHW UPGRADES
SCHEMATIC



2 BUILDING 1500 MECHANICAL ROOM - ZONE 1 HHW UPGRADES
SCHEMATIC

BUILDING 1500 CHW BILL OF MATERIAL				
Quantity	Unit	NPS	Component Description	Notes
13	EA	4"	Butterfly Valves	Required prior to Bldg. Temporary Heating/Cooling service
1	EA	4"	Balancing Valve	
1	EA	4"	Check Valve	Swing type
8	EA	1/4"	Ball Valve	
5	EA	1/4"	Test ports	
1	EA	4"	Strainer	
4	EA	4"	Blind Flange	
4	EA	1/4"	Pressure Indicator	
4	EA	1/4"	Temperature Indicator	Include thermowell
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
5	EA	4"	Sch. 40 Steel 90° elbow	ASTM A234 Wrought Steel
2	EA	4"	Flexible connections	
36	EA	4"	Flanges	ANSI 150
36	EA	4"	Gaskets and bolts kits	
1	EA	4" x 2-1/2"	Concentric Reducer	
1	EA	4" x 3"	Concentric Reducer	
5	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
6	EA	4"	Sch. 40 Steel Line Size Tee	ASTM A234 Wrought Steel; Required prior to Bldg. Temporary Heating/Cooling service
3	EA	4"	Cal-Silicate Inserts	
1	EA	4"	Pipe Hanger Support	
2	EA	4"	Pipe Stanchion Support	

NOTES:

1. BOM IS APPROXIMATE (AND SHALL BE DEEMED THE MIN. NEEDS), CONTRACTOR SHALL BE RESPONSIBLE FOR ANY WELD NECKS, FLANGES, WELD-O-LETS, THERMOWELLS, AND ANY MATERIAL NOT IDENTIFIED ON THE BOM ABOVE THAT ARE DEEMED NECESSARY FOR A COMPLETE AND CODE-COMPLIANT INSTALLATION.
2. THE WORK WITHIN THE MECH. RM. WILL BE DISCOVERY IN NATURE. ONCE INSULATION/JACKETING IS REMOVED, ADDITIONAL COMPONENTS MAY REQUIRE REPLACEMENT BASED ON CONDITION AND PRESENCE OF OXIDATION OR GALVANIC CORROSION.
3. BASE BID SHALL INCLUDE THE QUANTITIES INDICATED, 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.
4. UPON FIELD VERIFICATION AND DISCOVERY EFFORTS, A PCO (AS NEEDED) WILL BE CONSIDERED FOR QUANTITIES OR CAPACITIES ABOVE AND BEYOND THIS BILL OF MATERIALS.
5. REFER TO PROJECT MANUAL FOR EQUIPMENT AND MATERIAL SPECIFICATIONS.

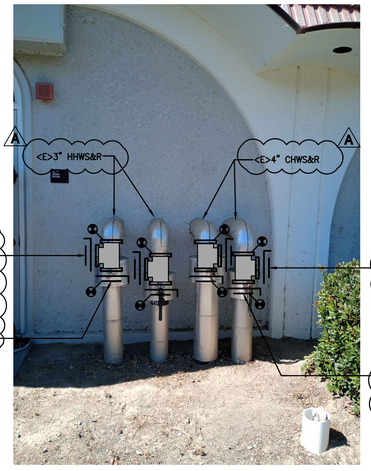
3 CHW UPGRADE BILL OF MATERIAL
SCHEMATIC

BUILDING 1500 HHW BILL OF MATERIAL				
Quantity	Unit	NPS	Component Description	Notes
12	EA	3"	Butterfly Valves	Required prior to Bldg. Temporary Heating/Cooling service
1	EA	3"	Balancing Valve	
1	EA	3"	Check Valve	Swing type
4	EA	1/4"	Ball Valve	
4	EA	1/4"	Test ports	
1	EA	1/4"	Manual Air Vent	
1	EA	3"	Strainer	
4	EA	3"	Blind Flange	
3	EA	1/4"	Pressure Indicator	
3	EA	1/4"	Temperature Indicator	Include thermowell
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
5	EA	3"	Sch. 40 Steel 90° elbow	ASTM A234 Wrought Steel
2	EA	3"	Flexible connections	
34	EA	3"	Flanges	ANSI 150
34	EA	3"	Gaskets and bolt kits	
1	EA	3" x 2"	Concentric Reducer	
1	EA	3" x 2-1/2"	Concentric Reducer	
5	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
6	EA	3"	Sch. 40 Steel Line Size Tee	ASTM A234 Wrought Steel; Required prior to Bldg. Temporary Heating/Cooling service
3	EA	3"	Cal-Silicate Inserts	
1	EA	3"	Pipe Hanger Support	
2	EA	3"	Pipe Stanchion Support	

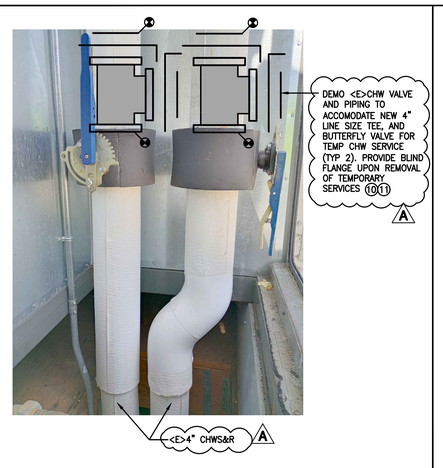
NOTES:

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3. BASE BID SHALL INCLUDE THE QUANTITIES INDICATED, 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.
4. UPON FIELD VERIFICATION AND DISCOVERY EFFORTS, A PCO (AS NEEDED) WILL BE CONSIDERED FOR QUANTITIES OR CAPACITIES ABOVE AND BEYOND THIS BILL OF MATERIALS.
5. REFER TO PROJECT MANUAL FOR EQUIPMENT AND MATERIAL SPECIFICATIONS.

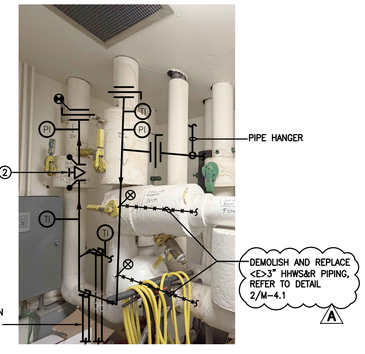
4 HHW UPGRADE BILL OF MATERIAL
SCHEMATIC



5 BUILDING 1500 EXTERIOR HHW & CHW RISER UPGRADE
SCHEMATIC



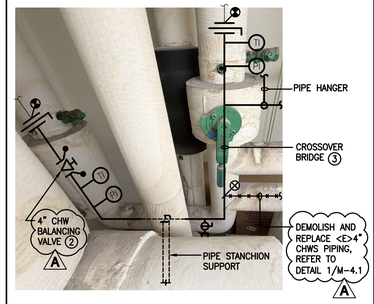
6 BUILDING 1500 ROOFTOP AHU CHW TEMPORARY CONNECTION
SCALE: N.T.S.



NOTE:

SEE 2/M-4.1 FOR CONTINUATION OF "DEMO" AND "NEW" WORK WITHIN THE MECHANICAL ROOM ON THE HHW HYDRONIC SYSTEM.

7 BUILDING 1500 MECHANICAL ROOM HHW CROSS-OVER BRIDGE
SCALE: N.T.S.



NOTE:

SEE 1/M-4.1 FOR CONTINUATION OF "DEMO" AND "NEW" WORK WITHIN THE MECHANICAL ROOM ON THE CHW HYDRONIC SYSTEM.

8 BUILDING 1500 MECHANICAL ROOM CHW CROSS-OVER BRIDGE
SCALE: N.T.S.

GENERAL SHEET NOTES

A. CLEAN, PREP, PRIME AND PAINT ALL EXISTING AND NEW HYDRONIC PIPING WITHIN THE MECHANICAL ROOM. PROVIDE INSULATION, VAPOR BARRIERS (CHW), PVC JACKETING, AND PIPE ID MARKERS WITH FLOW ARROWS.

REFERENCE SHEET NOTES

1. NOT USED.
2. DEMO SECTION OF PIPING AND PROVIDE NEW BALANCING VALVE AT THE HYDRONIC RETURN PIPING OF THE PRIMARY LOOP. BASED ON CHW AND HHW SERVICE REQUIREMENTS OF THE BUILDING AS PRESENTED IN PUMP SCHEDULE IN M-6.1, BALANCE BUILDING PRIMARY LOOPS WITH CHILLER AND BOILER PLANTS OPERATING AT FULL LOAD RESPECTIVELY.
3. 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 DETAILS 7/&8/M-4.1 & 3/M-5.6.
4. NOT USED.
5. AT BUILDING EXTERIOR RISERS, DEMOLISH EXISTING ISOLATION VALVE AND PROVIDE LINE SIZED TEE WITH ISOLATION VALVES AT THE CAMPUS HYDRONIC LOOP SIDE AND AT THE BRANCH PORT OF THE TEE. PROVIDE BLIND FLANGE AT BRANCH PORT (FOR FUTURE SERVICES). SEE DETAIL 5/M-4.1.
6. NOT USED.
7. NOT USED.
8. DEMO ALL INSULATION AND JACKETING AT ISOLATED HYDRONIC PIPING WITHIN THE MECHANICAL ROOM. DETERMINE IF FURTHER DEFERRED MAINTENANCE AND/OR REPLACEMENTS ARE NECESSARY.
9. PROVIDE AIR VENT AT HIGH POINT OF HYDRONIC SUPPLY AND RETURN PIPING (HHW & CHW) WITHIN THE MECHANICAL ROOM.
10. PROVIDE LINE SIZE TEES WITH ISOLATION VALVE(S) FOR TEMP SERVICES AT THE BEGINNING OF THE "DEMO" PHASE TO PROVIDE A POINT OF CONNECTION FOR TEMPORARY EQUIPMENT. FOR B-1500 TEMPORARY CHW SERVICE, REFER TO DETAIL 6/-. FOR B-1500 TEMPORARY HHW SERVICE, THIS SHALL OCCUR IN THE CEILING SPACE FOR HHW, REFER TO DETAIL 1, 2, & 4/M-5.5 FOR ACCESS AND PIPE PENETRATIONS (BID ALTERNATE #1 – ADDITIVE).
11. PROVIDE BLIND FLANGE AND CONNECT TO ISOLATION VALVE AT THE BRANCH PORTION OF THE TEES AFTER "NEW" PHASE IS COMPLETE AND TEMPORARY SERVICES ARE DISCONNECTED.
12. NOT USED.
13. REPLACE EXISTING RUSTED/DEGRADED HYDRONIC PIPING WITHIN MECHANICAL ROOM. PIPING TO BE RETAINED SHALL BE WIRE BRUSHED CLEAN FROM ANY MINOR SURFACE RUST.
14. NOT USED.
15. PROVIDE POST-CONSTRUCTION TAB OF HYDRONIC PUMP(S). REFER TO HYDRONIC PUMP SCHEDULE ON M-6.1 FOR PUMP FLOW (GPM) AND PRESSURE (TDH) DESIGN PARAMETERS.
16. CAULK AND SEAL ALL PENETRATIONS THROUGH WALLS AND CEILINGS. FIRE-RATED ASSEMBLIES SHALL BE CAULKED AND SEALED WITH FIRE STOP CAULK. REFER TO DETAIL 2/M-5.7. PROVIDE ESCUTCHEON PLATES AT ALL PENETRATIONS. REFER TO DETAIL 6/M-5.6.
17. PROVIDE MAINTENANCE INSPECTIONS AT HYDRONIC PUMP(S). INSPECT PUMP FOR LEAKS, VIBRATION, AND IRREGULAR SOUNDS. INSPECT BEARINGS, SEALS, IMPELLER, BUSHINGS, AND SHAFT SLEEVE. RE-GREASE BEARINGS AND VERIFY COUPLINGS, CONNECTIONS, AND PUMP ALIGNMENT. CHECK ALL FASTENERS AND FOUNDATION. PROVIDE MAINTENANCE REPORT, RECOMMENDATIONS, AND ASSOCIATED COSTS & LEAD TIMES TO OWNER AND ENGINEER FOR REVIEW.
18. 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.

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REGISTERED PROFESSIONAL ENGINEER
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STATE OF CALIFORNIA
DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE		
MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	EES
APPROVED BY:	EES

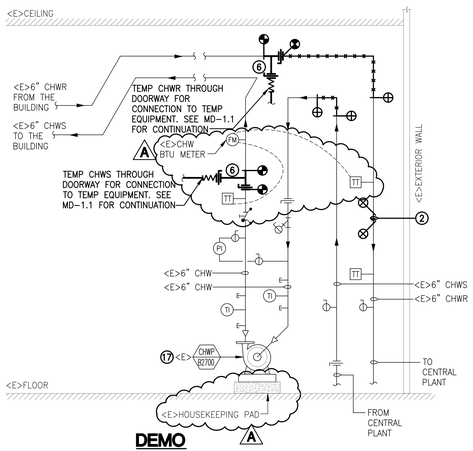
SHEET TITLE

BUILDING 1500 MECHANICAL ROOM ZONE #1: CHW & HHW

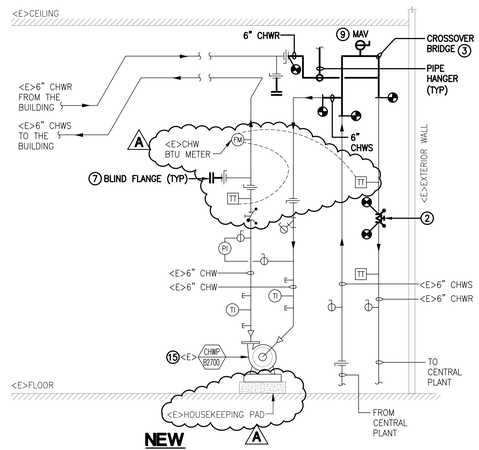
SCALE: AS NOTED
THIS DRAWING IS 30" X 42" AT FULL SIZE

M-4.1
SHEET OF –

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

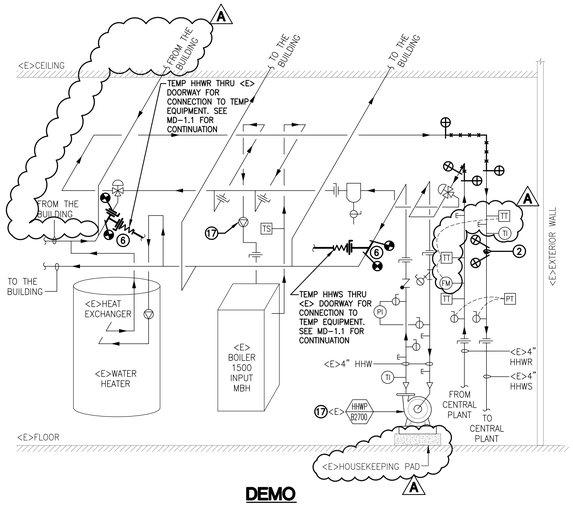


DEMO

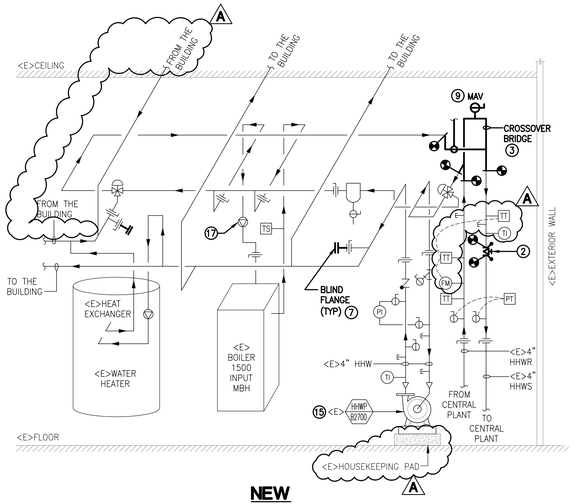


NEW

1 BUILDING 2700 MECHANICAL ROOM - ZONE 1 CHW UPGRADES
SCHEMATIC



DEMO



NEW

2 BUILDING 2700 MECHANICAL ROOM - ZONE 1 HHW UPGRADES
SCHEMATIC

BUILDING 2700 CHW BILL OF MATERIAL				
Quantity	Unit	NPS	Component Description	Notes
8	EA	6"	Butterfly Valves	Required prior to Bldg. Temporary Heating/Cooling service
1	EA	6"	Balancing Valve	
1	EA	1/4"	Manual Air Vent	
4	EA	6"	Blind Flange	
40	LF	6"	Insulation	Rigid glass fiber, includes valves, fittings, & specialties
40	LF	6"	Jacketing	PVC plastic, 10 mil, includes valves, fittings, & specialties
40	LF	6"	Sch. 40 Steel Piping	ASTM A53, Grade B
2	EA	6"	Sch. 40 Steel 90° elbow	ASTM A234 Wrought Steel
18	EA	6"	Flanges	ANSI 150
18	EA	6"	Gaskets and bolts kits	
6	EA	6"	Sch. 40 Steel Line Size Tee	ASTM A234 Wrought Steel; Required prior to Bldg. Temporary Heating/Cooling service
1	EA	6"	Cal-Silicate Inserts	
1	EA	6"	Pipe Hanger Support	

NOTES:

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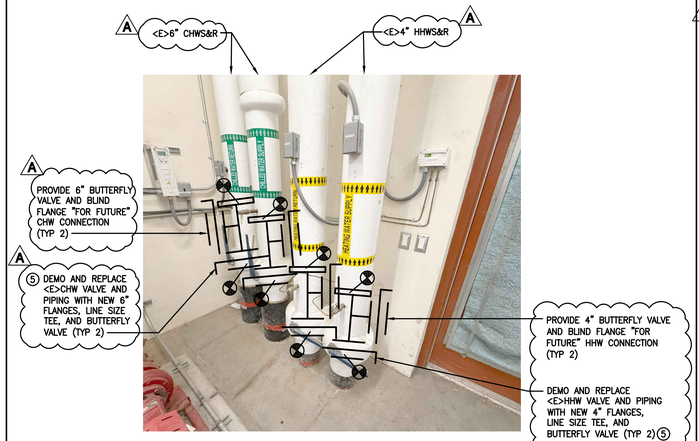
3 BUILDING 2700 MECHANICAL ROOM CHW UPGRADE BILL OF MATERIAL
SCHEMATIC

BUILDING 2700 HHW BILL OF MATERIAL				
Quantity	Unit	NPS	Component Description	Notes
7	EA	4"	Butterfly Valves	Required prior to Bldg. Temporary Heating/Cooling service
1	EA	4"	Balancing Valve	
1	EA	1/4"	Manual Air Vent	
4	EA	4"	Blind Flange	
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
2	EA	4"	Sch. 40 Steel 90° elbow	ASTM A234 Wrought Steel
16	EA	4"	Flanges	ANSI 150
16	EA	4"	Gaskets and bolts kits	
6	EA	4"	Sch. 40 Steel Line Size Tee	ASTM A234 Wrought Steel; Required prior to Bldg. Temporary Heating/Cooling service
1	EA	4"	Cal-Silicate Inserts	
1	EA	4"	Pipe Hanger Support	

NOTES:

1. BOM IS APPROXIMATE (AND SHALL BE DEEMED THE MIN. NEEDS), CONTRACTOR SHALL BE RESPONSIBLE FOR ANY WELD NECKS, FLANGES, WELD-O-LETS, THERMOWELLS, AND ANY MATERIAL NOT IDENTIFIED ON THE BOM ABOVE THAT ARE DEEMED NECESSARY FOR A COMPLETE AND CODE-COMPLIANT INSTALLATION.
2. THE WORK WITHIN THE MECH. RM. WILL BE DISCOVERY IN NATURE. ONCE INSULATION/JACKETING IS REMOVED, ADDITIONAL COMPONENTS MAY REQUIRE REPLACEMENT BASED ON CONDITION AND PRESENCE OF OXIDATION OR GALVANIC CORROSION.
3. BASE BID SHALL INCLUDE THE QUANTITIES INDICATED, 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.
4. UPON FIELD VERIFICATION AND DISCOVERY EFFORTS, A PCO (AS NEEDED) WILL BE CONSIDERED FOR QUANTITIES OR CAPACITIES ABOVE AND BEYOND THIS BILL OF MATERIALS.
5. REFER TO PROJECT MANUAL FOR EQUIPMENT AND MATERIAL SPECIFICATIONS.

4 BUILDING 2700 MECHANICAL ROOM HHW UPGRADE BILL OF MATERIAL
SCHEMATIC



5 BUILDING 2700 INTERIOR HHW & CHW RISER UPGRADE
SCHEMATIC

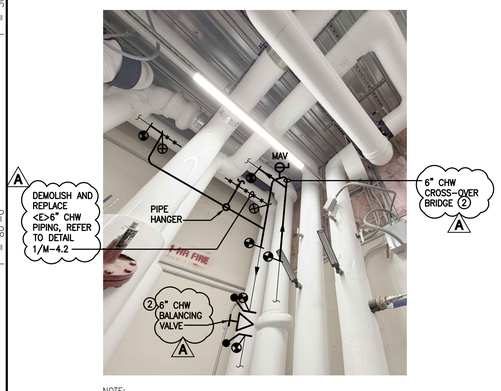
REFERENCE SHEET NOTES

1. NOT USED.
2. DEMO SECTION OF PIPING AND PROVIDE NEW BALANCING VALVE AT THE HYDRONIC RETURN PIPING OF THE PRIMARY LOOP. BASED ON CHW AND HHW SERVICE REQUIREMENTS OF THE BUILDING AS PRESENTED IN PUMP SCHEDULE IN M-6.1, BALANCE BUILDING PRIMARY LOOPS WITH CHILLER AND BOILER PLANTS OPERATING AT FULL LOAD RESPECTIVELY.
3. 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 DETAILS 6&7/M-4.2 & 3/M-5.6.
4. NOT USED.
5. AT BUILDING INTERIOR RISERS, DEMOLISH EXISTING ISOLATION VALVE AND PROVIDE LINE SIZED TEE WITH ISOLATION VALVES AT THE CAMPUS HYDRONIC LOOP SIDE AND AT THE BRANCH PORT OF THE TEE. PROVIDE BLIND FLANGE AT BRANCH PORT (FOR FUTURE SERVICES). SEE DETAIL 5/M-4.2.
6. PROVIDE LINE SIZE TEES WITH ISOLATION VALVE(S) FOR TEMP SERVICES AT THE BEGINNING OF THE "DEMO" PHASE TO PROVIDE A POINT OF CONNECTION FOR TEMPORARY EQUIPMENT. REFER TO DETAIL 8/M-4.2 FOR CHW. REFER TO DETAIL 9/M-4.2 FOR HHW (BID ALT. #1 – ADDITIVE).
7. PROVIDE BLIND FLANGE AND CONNECT TO ISOLATION VALVE AT THE BRANCH PORTION OF THE TEES AFTER "NEW" PHASE IS COMPLETE AND TEMPORARY SERVICES ARE DISCONNECTED.
8. NOT USED.
9. PROVIDE AIR VENT AT HIGH POINT OF HYDRONIC SUPPLY AND RETURN PIPING (HHW & CHW) WITHIN THE MECHANICAL ROOM.
10. NOT USED.
11. NOT USED.
12. NOT USED.
13. NOT USED.
14. NOT USED.

GENERAL SHEET NOTES

A. CLEAN, PREP, PRIME AND PAINT ALL EXISTING AND NEW HYDRONIC PIPING WITHIN THE MECHANICAL ROOM. PROVIDE INSULATION, VAPOR BARRIERS (CHW), PVC JACKETING, AND PIPE ID MARKERS WITH FLOW ARROWS.

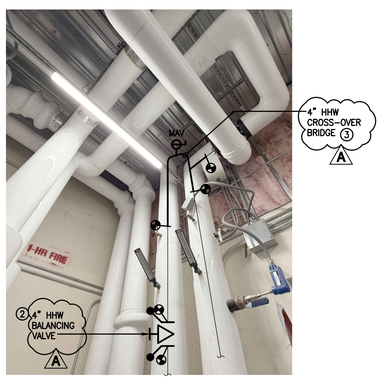
15. PROVIDE POST-CONSTRUCTION TAB OF HYDRONIC PUMP(S), REFER TO HYDRONIC PUMP SCHEDULE ON M-6.1 FOR PUMP FLOW (GPM) AND PRESSURE (TDH) DESIGN PARAMETERS.
16. NOT USED.
17. PROVIDE MAINTENANCE INSPECTIONS AT HYDRONIC PUMP(S). INSPECT PUMP FOR LEAKS, VIBRATION, AND IRREGULAR SOUNDS. INSPECT BEARINGS, SEALS, IMPELLER, BUSHINGS, AND SHAFT SLEEVE. RE-GREASE BEARINGS AND VERIFY COUPLINGS, CONNECTIONS, AND PUMP ALIGNMENT. CHECK ALL FASTENERS AND FOUNDATION. PROVIDE MAINTENANCE REPORT, RECOMMENDATIONS, AND ASSOCIATED COSTS & LEAD TIMES TO OWNER AND ENGINEER FOR REVIEW.



NOTE:

SEE 1/M-4.2 FOR CONTINUATION OF "DEMO" AND "NEW" WORK WITHIN THE MECHANICAL ROOM ON THE CHW HYDRONIC SYSTEM.

6 BUILDING 2700 MECHANICAL ROOM CHW CROSS-OVER BRIDGE
SCALE: N.T.S.



NOTE:

SEE 2/M-4.2 FOR CONTINUATION OF "DEMO" AND "NEW" WORK WITHIN THE MECHANICAL ROOM ON THE HHW HYDRONIC SYSTEM.

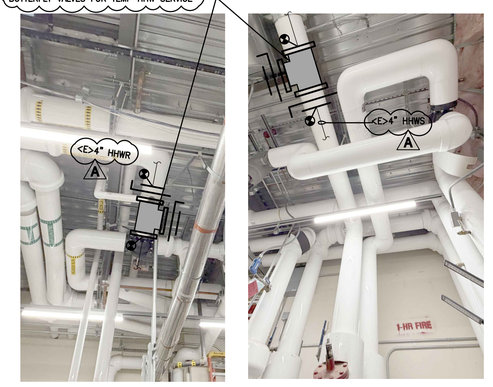
7 BUILDING 2700 MECHANICAL ROOM HHW CROSS-OVER BRIDGE
SCALE: N.T.S.



NOTE:

SEE 1/M-4.2 FOR CONTINUATION OF "DEMO" AND "NEW" WORK WITHIN THE MECHANICAL ROOM ON THE CHW HYDRONIC SYSTEM.

8 BUILDING 2700 MECHANICAL ROOM CHW TEMP. EQUIPMENT CONNECTION
SCALE: N.T.S.



NOTE:

SEE 2/M-4.2 FOR CONTINUATION OF "DEMO" AND "NEW" WORK WITHIN THE MECHANICAL ROOM ON THE HHW HYDRONIC SYSTEM.

9 BUILDING 2700 MECHANICAL ROOM HHW TEMP. EQUIPMENT CONNECTION
SCALE: N.T.S.

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National Strength.
Local Action.

REGISTERED PROFESSIONAL ENGINEER
ERIN EMMETT SPRIGG
No. M40086
EXP. 09-30-2026
MECHANICAL
STATE OF CALIFORNIA
DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE

MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	EES
APPROVED BY:	EES

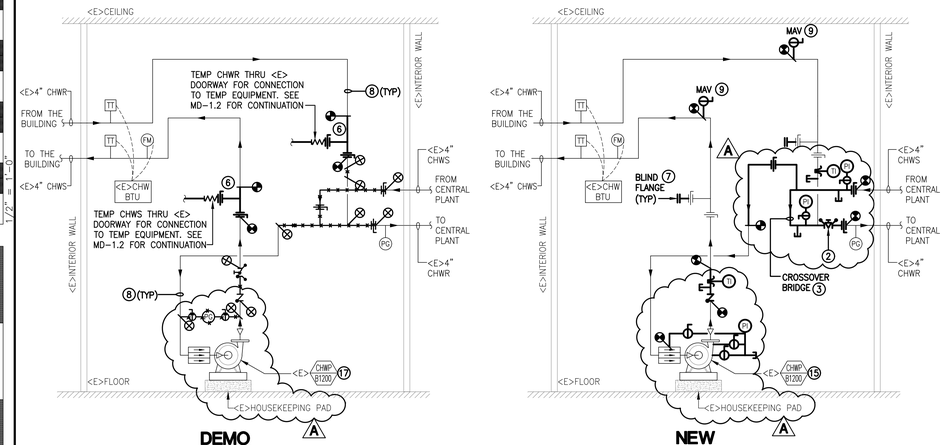
SHEET TITLE

BUILDING 2700 MECHANICAL ROOM ZONE #1: CHW & HHW

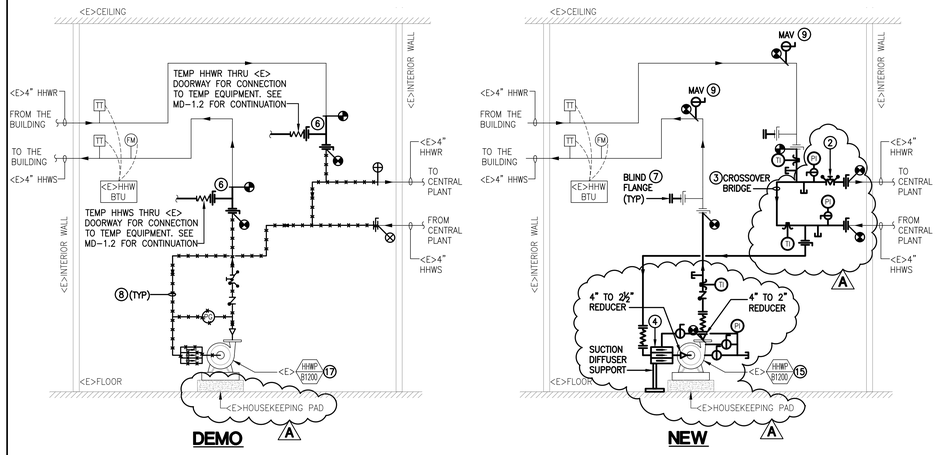
SCALE: AS NOTED
THIS DRAWING IS 30" X 42" AT FULL SIZE

M-4.2
SHEET OF –

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



1 BUILDING 1200 MECHANICAL ROOM - ZONE 2 CHW UPGRADES
SCHEMATIC



2 BUILDING 1200 MECHANICAL ROOM - ZONE 2 HHW UPGRADES
SCHEMATIC

BUILDING 1200 CHW BILL OF MATERIAL

Quantity	Unit	NPS	Component Description	Notes
11	EA	4"	Butterfly Valves	Required prior to Bldg. Temporary Heating/Cooling
1	EA	4"	Balancing Valve	
1	EA	4"	Check Valve	Swing type
5	EA	1/4"	Ball Valve	
5	EA	1/4"	Test ports	
2	EA	1/4"	Manual Air Vent	
4	EA	4"	Blind Flange	
3	EA	1/4"	Pressure Indicator	
2	EA	1/4"	Temperature Indicator	Include thermowell
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
1	EA	4"	Sch. 40 Steel 90° elbow	ASTM A234 Wrought Steel
26	EA	4"	Flanges	ANSI 150
26	EA	4"	Gaskets and bolts kits	
5	LF	1/4"	Sch. 40 Steel Piping	ASTM A53, Grade B
3	EA	1/4"	Sch. 40 Steel Tee	ASTM B16.3 Malleable iron screwed
1	EA	1/4"	Sch. 40 Steel 90° Elbow	ASTM B16.3 Malleable iron screwed
6	EA	4"	Sch. 40 Steel Line Size Tee	ASTM A234 Wrought Steel; Required prior to Bldg. Temporary Heating/Cooling service
1	EA	4"	Cal-Silicate Inserts	
1	EA	4"	Pipe Stanchion support	

NOTES:

1. BOM IS APPROXIMATE (AND SHALL BE DEEMED THE MIN. NEEDS), CONTRACTOR SHALL BE RESPONSIBLE FOR ANY WELD NECKS, FLANGES, WELD-O-LETS, THERMOWELLS, AND ANY MATERIAL NOT IDENTIFIED ON THE BOM ABOVE THAT ARE DEEMED NECESSARY FOR A COMPLETE AND CODE-COMPLIANT INSTALLATION.
2. THE WORK WITHIN THE MECH. RM. WILL BE DISCOVERY IN NATURE. ONCE INSULATION/JACKETING IS REMOVED, ADDITIONAL COMPONENTS MAY REQUIRE REPLACEMENT BASED ON CONDITION AND PRESENCE OF OXIDATION OR GALVANIC CORROSION.
3. BASE BID SHALL INCLUDE THE QUANTITIES INDICATED, 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.
4. UPON FIELD VERIFICATION AND DISCOVERY EFFORTS, A PCO (AS NEEDED) WILL BE CONSIDERED FOR QUANTITIES OR CAPACITIES ABOVE AND BEYOND THIS BILL OF MATERIALS.
5. REFER TO PROJECT MANUAL FOR EQUIPMENT AND MATERIAL SPECIFICATIONS.

3 BUILDING 1200 MECHANICAL ROOM CHW UPGRADE BILL OF MATERIAL
SCHEMATIC

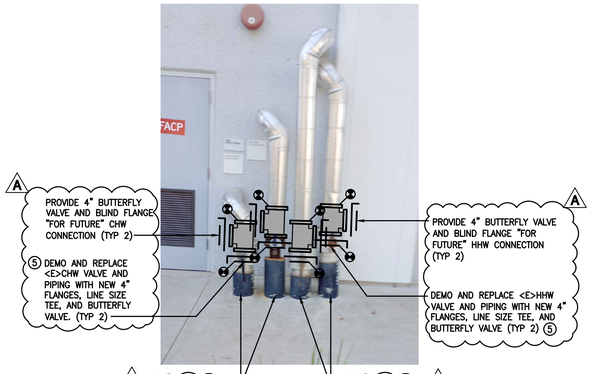
BUILDING 1200 HHW BILL OF MATERIAL

Quantity	Unit	NPS	Component Description	Notes
11	EA	4"	Butterfly Valves	Required prior to Bldg. Temporary Heating/Cooling
1	EA	4"	Balancing Valve	
1	EA	4"	Check Valve	Swing type
5	EA	1/4"	Ball Valve	
5	EA	1/4"	Test ports	
2	EA	1/4"	Manual Air Vent	
4	EA	4"	Blind Flange	
1	EA	4"	Suction Diffuser	Flanged Union
3	EA	1/4"	Pressure Indicator	
3	EA	1/4"	Temperature Indicator	Include thermowell
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
5	EA	4"	Sch. 40 Steel 90° elbow	ASTM A234 Wrought Steel
2	EA	4"	Flexible connections	
32	EA	4"	Flanges	ANSI 150
32	EA	4"	Gaskets and bolts kits	
5	LF	1/4"	Sch. 40 Steel Piping	ASTM A53, Grade B
1	EA	4" x 2"	Concentric Reducer	
1	EA	4" x 2-1/2"	Concentric Reducer	
3	EA	1/4"	Sch. 40 Steel Tee	ASTM B16.3 Malleable iron screwed
1	EA	1/4"	Sch. 40 Steel 90° Elbow	ASTM B16.3 Malleable iron screwed
6	EA	4"	Sch. 40 Steel Line Size Tee	ASTM A234 Wrought Steel; Required prior to Bldg. Temporary Heating/Cooling service
1	EA	4"	Cal-Silicate Inserts	
1	EA	4"	Pipe Stanchion support	

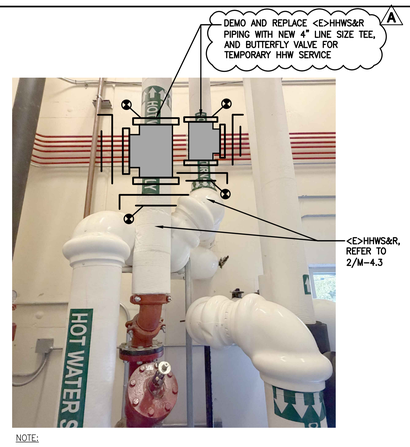
NOTES:

1. BOM IS APPROXIMATE (AND SHALL BE DEEMED THE MIN. NEEDS), CONTRACTOR SHALL BE RESPONSIBLE FOR ANY WELD NECKS, FLANGES, WELD-O-LETS, THERMOWELLS, AND ANY MATERIAL NOT IDENTIFIED ON THE BOM ABOVE THAT ARE DEEMED NECESSARY FOR A COMPLETE AND CODE-COMPLIANT INSTALLATION.
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4. UPON FIELD VERIFICATION AND DISCOVERY EFFORTS, A PCO (AS NEEDED) WILL BE CONSIDERED FOR QUANTITIES OR CAPACITIES ABOVE AND BEYOND THIS BILL OF MATERIALS.
5. REFER TO PROJECT MANUAL FOR EQUIPMENT AND MATERIAL SPECIFICATIONS.

4 BUILDING 1200 MECHANICAL ROOM HHW UPGRADE BILL OF MATERIAL
SCHEMATIC



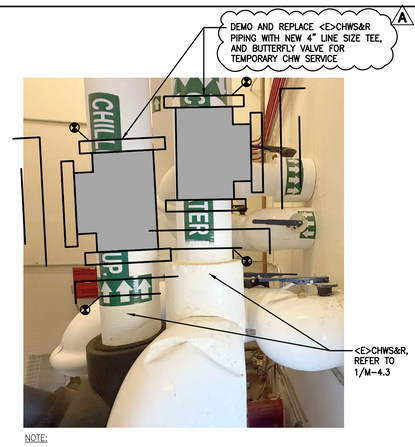
5 BUILDING 1200 EXTERIOR HHW & CHW RISER UPGRADE
SCHEMATIC



NOTE:

SEE 2/M-4.3 FOR CONTINUATION OF "DEMO" AND "NEW" WORK WITHIN THE MECHANICAL ROOM ON THE HHW HYDRONIC SYSTEM.

6 BUILDING 1200 MECHANICAL ROOM HHW TEMP. EQUIPMENT CONNECTION
SCHEMATIC



NOTE:

SEE 1/M-4.3 FOR CONTINUATION OF "DEMO" AND "NEW" WORK WITHIN THE MECHANICAL ROOM ON THE CHW HYDRONIC SYSTEM.

7 BUILDING 1200 MECHANICAL ROOM CHW TEMP EQUIPMENT CONNECTION
SCHEMATIC

A GENERAL SHEET NOTES

A. CLEAN, PREP, PRIME AND PAINT ALL EXISTING AND NEW HYDRONIC PIPING WITHIN THE MECHANICAL ROOM. PROVIDE INSULATION, VAPOR BARRIERS (CHW), PVC JACKETING, AND PIPE ID MARKERS WITH FLOW ARROWS.

REFERENCE SHEET NOTES

1. NOT USED.
2. DEMO SECTION OF PIPING AND PROVIDE NEW BALANCING VALVE AT THE HYDRONIC RETURN PIPING OF THE PRIMARY LOOP. BASED ON CHW AND HHW SERVICE REQUIREMENTS OF THE BUILDING AS PRESENTED IN PUMP SCHEDULE IN M-6.1, BALANCE BUILDING PRIMARY LOOPS WITH CHILLER AND BOILER PLANTS OPERATING AT FULL LOAD RESPECTIVELY.
3. 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 3/M-5.6.
4. PROVIDE SUCTION DIFFUSER AT PUMP. REFER TO M-6.1 FOR SIZING.
5. AT BUILDING EXTERIOR RISERS, DEMOLISH EXISTING ISOLATION VALVE AND PROVIDE LINE SIZED TEE WITH AN ISOLATION VALVE AT THE CAMPUS HYDRONIC LOOP SIDE OF THE TEE AND ADD ANOTHER ISOLATION VALVE AT THE BRANCH PORT OF THE TEE. PROVIDE BLIND FLANGE AT BRANCH PORT (FOR TEMPORARY SERVICES). SEE DETAIL 5/M-4.3.
6. PROVIDE LINE SIZE TEES WITH ISOLATION VALVE(S) FOR TEMP SERVICES AT THE BEGINNING OF THE "DEMO" PHASE TO PROVIDE A POINT OF CONNECTION FOR TEMPORARY EQUIPMENT. REFER TO DETAIL 7/M-4.3 FOR CHW. REFER TO DETAIL 6/M-4.3 FOR HHW (BID ALT. #5 – ADDITIVE).
7. PROVIDE BLIND FLANGE AND CONNECT TO ISOLATION VALVE AT THE BRANCH PORTION OF THE TEES AFTER "NEW" PHASE IS COMPLETE AND TEMPORARY SERVICES ARE DISCONNECTED.
8. DEMO ALL INSULATION AND JACKETING AT ISOLATED HYDRONIC PIPING WITHIN THE MECHANICAL ROOM. DETERMINE IF FURTHER DEFERRED MAINTENANCE AND/OR REPLACEMENTS ARE NECESSARY. CONTRACTOR TO PROVIDE PCO IF ADDITIONAL DEFERRED MAINTENANCE IS REQUIRED BEYOND WHAT IS INDICATED HEREIN.
9. PROVIDE AIR VENT AT HIGH POINT OF HYDRONIC SUPPLY AND RETURN PIPING (HHW & CHW) WITHIN THE MECHANICAL ROOM.
10. NOT USED.
11. NOT USED.
12. NOT USED.
13. NOT USED.
14. NOT USED.
15. PROVIDE POST-CONSTRUCTION TAB OF HYDRONIC PUMP(S), REFER TO HYDRONIC PUMP SCHEDULE ON M-6.1 FOR PUMP FLOW (GPM) AND PRESSURE (TDH) DESIGN PARAMETERS.
16. NOT USED.
17. PROVIDE MAINTENANCE INSPECTIONS AT HYDRONIC PUMP(S). INSPECT PUMP FOR LEAKS, VIBRATION, AND IRREGULAR SOUNDS. INSPECT BEARINGS, SEALS, IMPELLER, BUSHINGS, AND SHAFT SLEEVE. RE-GREASE BEARINGS AND VERIFY COUPLINGS, CONNECTIONS, AND PUMP ALIGNMENT. CHECK ALL FASTENERS AND FOUNDATION. PROVIDE MAINTENANCE REPORT, RECOMMENDATIONS, AND ASSOCIATED COSTS & LEAD TIMES TO OWNER AND ENGINEER FOR REVIEW.

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National Strength.
Local Action.

REGISTERED PROFESSIONAL ENGINEER
ERIN EMMETT GREEN
No. M40086
EXP. 09-30-2026
MECHANICAL
STATE OF CALIFORNIA
DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE		
MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	EES
APPROVED BY:	EES

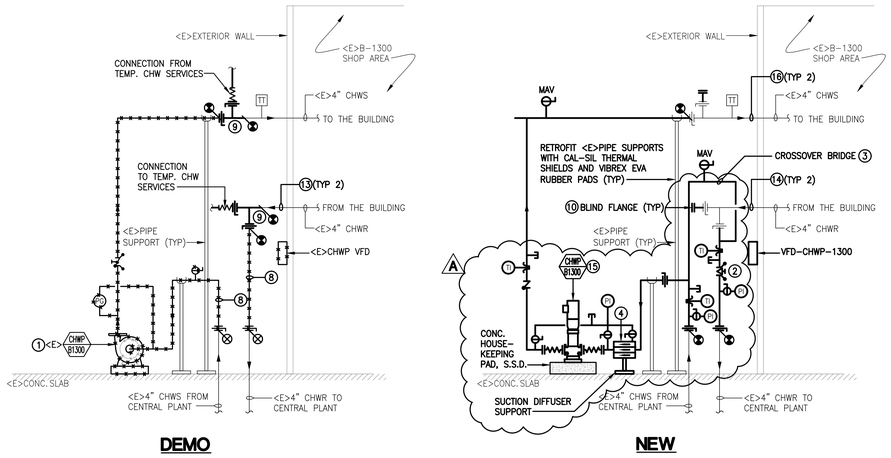
SHEET TITLE

BUILDING 1200 MECHANICAL ROOM ZONE #2: CHW & HHW

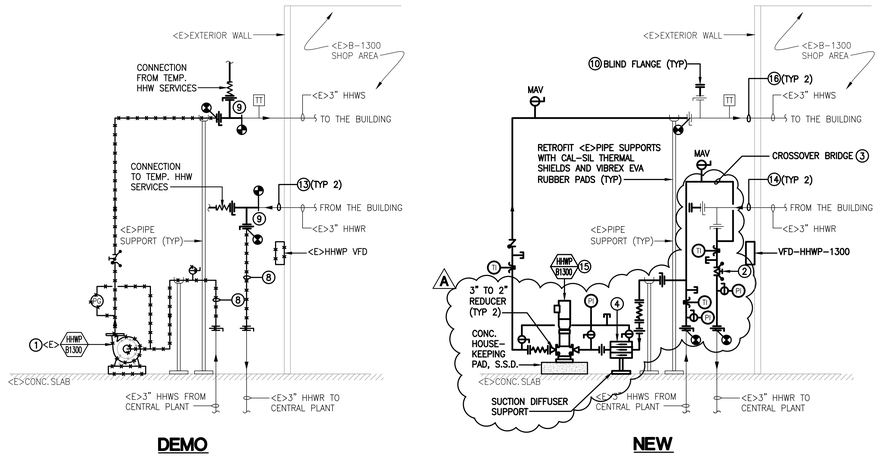
SCALE: AS NOTED
THIS DRAWING IS 30" X 42" AT FULL SIZE

M-4.3
SHEET OF –

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



1 BUILDING 1300 MECHANICAL ROOM - ZONE 2 CHW UPGRADES
SCHEMATIC



2 BUILDING 1300 MECHANICAL ROOM - ZONE 2 HHW UPGRADES
SCHEMATIC

BUILDING 1300 CHW BILL OF MATERIAL

Quantity	Unit	NPS	Component Description	Notes
9	EA	4"	Butterfly Valves	Required prior to Bldg. Temporary Heating/Cooling service
1	EA	4"	Balancing Valve	
1	EA	4"	Check Valve	Swing type
5	EA	1/4"	Ball Valve	
4	EA	1/4"	Test ports	
2	EA	1/4"	Manual Air Vent	
4	EA	4"	Blind Flange	
1	EA	4"	Suction Diffuser	Threaded union
3	EA	1/4"	Pressure Indicator	
3	EA	1/4"	Temperature Indicator	Include thermowell
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
6	EA	4"	Sch. 40 Steel 90° elbow	ASTM A234 Wrought Steel
2	EA	4"	Flexible connections	
28	EA	4"	Flanges	ANSI 150
28	EA	4"	Gaskets and bolts kits	
5	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	1/4"	Sch. 40 Steel 90° Elbow	ASTM B16.3 Malleable iron screwed
6	EA	4"	Sch. 40 Steel Line Size Tee	ASTM A234 Wrought Steel; Required prior to Bldg. Temporary Heating/Cooling service
1	EA	3"	CHW Pump	Multi-Stage Vertical Pump, see M-6.1
1	EA	-	CHW Pump VFD	See M-6.1
2	EA	4"	Cal-Silicate Inserts	
2	EA	4"	Pipe Stanchion support	

NOTES:

1. BOM IS APPROXIMATE (AND SHALL BE DEEMED THE MIN. NEEDS), CONTRACTOR SHALL BE RESPONSIBLE FOR ANY WELD NECKS, FLANGES, WELD-O-LETS, THERMOWELLS, AND ANY MATERIAL NOT IDENTIFIED ON THE BOM ABOVE THAT ARE DEEMED NECESSARY FOR A COMPLETE AND CODE-COMPLIANT INSTALLATION.
2. THE WORK WITHIN THE MECH. RM. WILL BE DISCOVERY IN NATURE. ONCE INSULATION/JACKETING IS REMOVED, ADDITIONAL COMPONENTS MAY REQUIRE REPLACEMENT BASED ON CONDITION AND PRESENCE OF OXIDATION OR GALVANIC CORROSION.
3. BASE BID SHALL INCLUDE THE QUANTITIES INDICATED, 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.
4. UPON FIELD VERIFICATION AND DISCOVERY EFFORTS, A PCO (AS NEEDED) WILL BE CONSIDERED FOR QUANTITIES OR CAPACITIES ABOVE AND BEYOND THIS BILL OF MATERIALS.
5. REFER TO PROJECT MANUAL FOR EQUIPMENT AND MATERIAL SPECIFICATIONS.

3 BUILDING 1300 MECHANICAL ROOM CHW UPGRADE BILL OF MATERIAL
SCHEMATIC

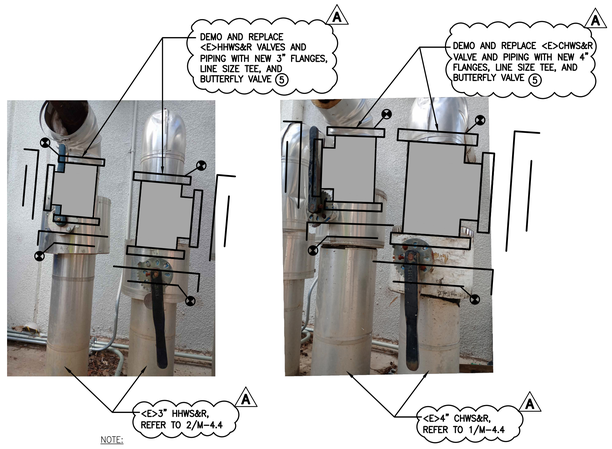
BUILDING 1300 HHW BILL OF MATERIAL

Quantity	Unit	NPS	Component Description	Notes
9	EA	3"	Butterfly Valves	Required prior to Bldg. Temporary Heating/Cooling service
1	EA	3"	Balancing Valve	
1	EA	3"	Check Valve	Swing type
5	EA	1/4"	Ball Valve	
4	EA	1/4"	Test ports	
2	EA	1/4"	Manual Air Vent	
4	EA	3"	Blind Flange	
1	EA	3"	Suction Diffuser	Threaded union
3	EA	1/4"	Pressure Indicator	
3	EA	1/4"	Temperature Indicator	Include thermowell
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
6	EA	3"	Sch. 40 Steel 90° elbow	ASTM A234 Wrought Steel
2	EA	3"	Flexible connections	
28	EA	3"	Flanges	ANSI 150
28	EA	3"	Gaskets and bolts kits	
2	EA	3"x2"	Concentric Reducer	
5	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	1/4"	Sch. 40 Steel 90° Elbow	ASTM B16.3 Malleable iron screwed
6	EA	3"	Sch. 40 Steel Line Size Tee	ASTM A234 Wrought Steel; Required prior to Bldg. Temporary Heating/Cooling service
1	EA	3"	HHW Pump	Multi-Stage Vertical Pump, see M-6.1
1	EA	-	HHW Pump VFD	See M-6.1
2	EA	3"	Cal-Silicate Inserts	
2	EA	3"	Pipe Stanchion support	

NOTES:

1. BOM IS APPROXIMATE (AND SHALL BE DEEMED THE MIN. NEEDS), CONTRACTOR SHALL BE RESPONSIBLE FOR ANY WELD NECKS, FLANGES, WELD-O-LETS, THERMOWELLS, AND ANY MATERIAL NOT IDENTIFIED ON THE BOM ABOVE THAT ARE DEEMED NECESSARY FOR A COMPLETE AND CODE-COMPLIANT INSTALLATION.
2. THE WORK WITHIN THE MECH. RM. WILL BE DISCOVERY IN NATURE. ONCE INSULATION/JACKETING IS REMOVED, ADDITIONAL COMPONENTS MAY REQUIRE REPLACEMENT BASED ON CONDITION AND PRESENCE OF OXIDATION OR GALVANIC CORROSION.
3. BASE BID SHALL INCLUDE THE QUANTITIES INDICATED, 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.
4. UPON FIELD VERIFICATION AND DISCOVERY EFFORTS, A PCO (AS NEEDED) WILL BE CONSIDERED FOR QUANTITIES OR CAPACITIES ABOVE AND BEYOND THIS BILL OF MATERIALS.
5. REFER TO PROJECT MANUAL FOR EQUIPMENT AND MATERIAL SPECIFICATIONS.

4 BUILDING 1300 MECHANICAL ROOM HHW UPGRADE BILL OF MATERIAL
SCHEMATIC



NOTE:

SEE 1&2/M-4.4 FOR CONTINUATION OF "DEMO" AND "NEW" WORK WITHIN THE MECHANICAL ROOM ON THE CHW & HHW HYDRONIC SYSTEM.

5 BUILDING 1300 EXTERIOR HHW & CHW RISER UPGRADE
SCHEMATIC

GENERAL SHEET NOTES

A. CLEAN, PREP, PRIME AND PAINT ALL EXISTING AND NEW HYDRONIC PIPING WITHIN THE MECHANICAL ROOM. PROVIDE INSULATION, VAPOR BARRIERS (CHW), PVC JACKETING, AND PIPE ID MARKERS WITH FLOW ARROWS.

REFERENCE SHEET NOTES

1. DEMO EXISTING HYDRONIC PUMP INCLUDING ANCHORS, PUMP BASE, POWER TO VFD OR MOTOR STARTER, PUMP VFD (SEE M-6.1), AND SPECIALTIES AS INDICATED.
2. DEMO SECTION OF PIPING AND PROVIDE NEW BALANCING VALVE AT THE HYDRONIC RETURN PIPING OF THE PRIMARY LOOP. BASED ON CHW AND HHW SERVICE REQUIREMENTS OF THE BUILDING AS PRESENTED IN PUMP SCHEDULE IN M-6.1, BALANCE BUILDING PRIMARY LOOPS WITH CHILLER AND BOILER PLANTS, OPERATING AT FULL LOAD RESPECTIVELY.
3. 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 3/M-5.6.
4. PROVIDE SUCTION DIFFUSER AT PUMP, REFER TO M-6.1 FOR SIZING.
5. AT BUILDING EXTERIOR RISERS, DEMOLISH EXISTING ISOLATION VALVE AND PROVIDE LINE SIZED TEE WITH AN ISOLATION VALVE AT THE CAMPUS HYDRONIC LOOP SIDE OF THE TEE AND ADD ANOTHER ISOLATION VALVE AT THE BRANCH PORT OF THE TEE. PROVIDE BLIND FLANGE AT BRANCH PORT (FOR TEMPORARY SERVICES). SEE DETAIL 5/M-4.4.
6. NOT USED.
7. NOT USED.
8. DEMO ALL INSULATION AND JACKETING AT ISOLATED HYDRONIC PIPING WITHIN THE MECHANICAL ROOM. DETERMINE IF FURTHER DEFERRED MAINTENANCE AND/OR REPLACEMENTS ARE NECESSARY.
9. PROVIDE LINE SIZE TEES WITH ISOLATION VALVE(S) FOR TEMP SERVICES AT THE BEGINNING OF THE "DEMO" PHASE TO PROVIDE A POINT OF CONNECTION FOR TEMPORARY EQUIPMENT. (BID ALT. #5 – ADDITIVE FOR HHW).
10. PROVIDE BLIND FLANGE AND CONNECT TO ISOLATION VALVE AT THE BRANCH PORTION OF THE TEES AFTER "NEW" PHASE IS COMPLETE AND TEMPORARY SERVICES ARE DISCONNECTED.
11. NOT USED.
12. NOT USED.
13. REPLACE EXISTING RUSTED/DEGRADED HYDRONIC PIPING WITHIN MECHANICAL ROOM. PIPING TO BE RETAINED SHALL BE WIRE BRUSHED CLEAN FROM ANY MINOR SURFACE RUST.
14. NOT USED.
15. PROVIDE POST-CONSTRUCTION TAB OF HYDRONIC PUMP(S), REFER TO HYDRONIC PUMP SCHEDULE ON M-6.1 FOR PUMP FLOW (GPM) AND PRESSURE (TDH) DESIGN PARAMETERS.
16. CAULK AND SEAL ALL PENETRATIONS THROUGH WALLS AND CEILINGS. FIRE-RATED ASSEMBLIES SHALL BE CAULKED AND SEALED WITH FIRE STOP CAULK. REFER TO DETAIL 2/M-5.7. PROVIDE ESCUTCHEON PLATES AT ALL PENETRATIONS. REFER TO DETAIL 6/M-5.6.
17. NOT USED.

Salas O'Brien
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305 South 11th Street
San Jose, California 95112-2218
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WWW.SALASOBRIEN.COM
National Strength.
Local Action.

REGISTERED PROFESSIONAL ENGINEER — ERIN EMMETT SPRING — No. M40086 — EXP. 09-30-2026 — MECHANICAL — STATE OF CALIFORNIA

DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE		
MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	EES
APPROVED BY:	EES

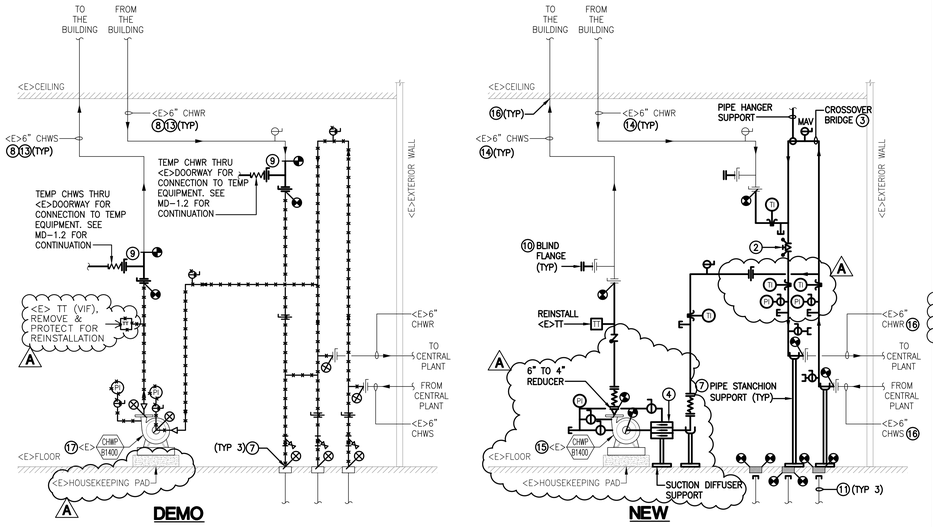
SHEET TITLE

BUILDING 1300 MECHANICAL ROOM ZONE #2: CHW & HHW

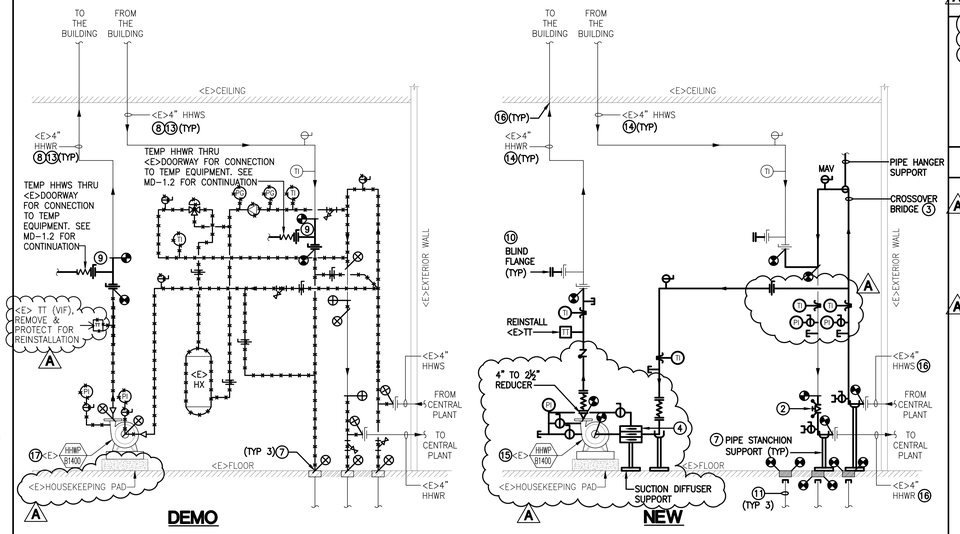
SCALE: AS NOTED
THIS DRAWING IS 30" X 42" AT FULL SIZE

M-4.4
SHEET OF –

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



1 BUILDING 1400 MECHANICAL ROOM - ZONE 2 CHW UPGRADES
SCHEMATIC



2 BUILDING 1400 MECHANICAL ROOM - ZONE 2 HHW UPGRADES
SCHEMATIC

BUILDING 1400 CHW BILL OF MATERIAL				
Quantity	Unit	NPS	Component Description	Notes
9	EA	6"	Butterfly Valves	Required prior to Bldg. Temporary Heating/Cooling service
1	EA	6"	Balancing Valve	
1	EA	6"	Check Valve	Swing type
7	EA	1/4"	Ball Valve	
4	EA	1/4"	Test ports	
2	EA	1/4"	Manual Air Vent	
4	EA	6"	Blind Flange	
1	EA	6"	Suction Diffuser	Threaded union
3	EA	1/4"	Pressure Indicator	
4	EA	1/4"	Temperature Indicator	Include thermowell
40	LF	6"	Insulation	Rigid glass fiber, includes valves, fittings, & specialties
40	LF	6"	Jacketing	PVC plastic, 10 mil, includes valves, fittings, & specialties
40	LF	6"	Sch. 40 Steel Piping	ASTM A53, Grade B
6	EA	6"	Sch. 40 Steel 90° elbow	ASTM A234 Wrought Steel
2	EA	6"	Flexible connections	
28	EA	6"	Flanges	ANSI 150
28	EA	6"	Gaskets and bolts kits	
1	EA	6"x4"	Concentric Reducer	VIF connections to <E> Pump
1	EA	6"x5"	Concentric Reducer	VIF connections to <E> Pump
5	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
1	EA	1/4"	Sch. 40 Steel 90° Elbow	ASTM B16.3 Malleable iron screwed
6	EA	6"	Sch. 40 Steel Line Size Tee	ASTM A234 Wrought Steel; Required prior to Bldg. Temporary Heating/Cooling service
4	EA	6"	Cal-Silicate Inserts	
1	EA	6"	Pipe hanger	
3	EA	6"	Pipe Stanchion support	

NOTES:

1. BOM IS APPROXIMATE (AND SHALL BE DEEMED THE MIN. NEEDS), CONTRACTOR SHALL BE RESPONSIBLE FOR ANY WELD NECKS, FLANGES, WELD-O-LETS, THERMOWELLS, AND ANY MATERIAL NOT IDENTIFIED ON THE BOM ABOVE THAT ARE DEEMED NECESSARY FOR A COMPLETE AND CODE-COMPLIANT INSTALLATION.
2. THE WORK WITHIN THE MECH. RM. WILL BE DISCOVERY IN NATURE. ONCE INSULATION/JACKETING IS REMOVED, ADDITIONAL COMPONENTS MAY REQUIRE REPLACEMENT BASED ON CONDITION AND PRESENCE OF OXIDATION OR GALVANIC CORROSION.
3. BASE BID SHALL INCLUDE THE QUANTITIES INDICATED, 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.
4. UPON FIELD VERIFICATION AND DISCOVERY EFFORTS, A PCO (AS NEEDED) WILL BE CONSIDERED FOR QUANTITIES OR CAPACITIES ABOVE AND BEYOND THIS BILL OF MATERIALS.
5. REFER TO PROJECT MANUAL FOR EQUIPMENT AND MATERIAL SPECIFICATIONS.

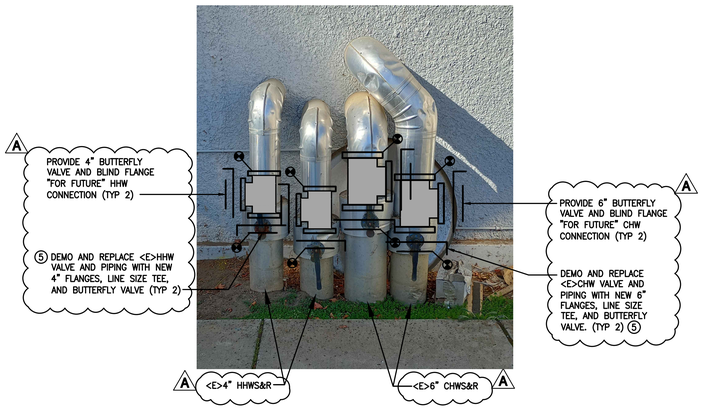
3 BUILDING 1400 MECHANICAL ROOM CHW UPGRADE BILL OF MATERIAL
SCHEMATIC

BUILDING 1400 HHW BILL OF MATERIAL				
Quantity	Unit	NPS	Component Description	Notes
9	EA	4"	Butterfly Valves	Required prior to Bldg. Temporary Heating/Cooling service
1	EA	4"	Balancing Valve	
1	EA	4"	Check Valve	Swing type
7	EA	1/4"	Ball Valve	
3	EA	1/4"	Test ports	
2	EA	1/4"	Manual Air Vent	
4	EA	4"	Blind Flange	
1	EA	4"	Suction Diffuser	Flanged Union
3	EA	1/4"	Pressure Indicator	
4	EA	1/4"	Temperature Indicator	Include thermowell
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
7	EA	4"	Sch. 40 Steel 90° elbow	ASTM A234 Wrought Steel
2	EA	4"	Flexible connections	
28	EA	4"	Flanges	ANSI 150
28	EA	4"	Gaskets and bolts kits	
1	EA	4"x2-1/2"	Concentric Reducer	VIF connections to <E> Pump
1	EA	4"x3"	Concentric Reducer	VIF connections to <E> Pump
5	LF	1/4"	Sch. 40 Steel Piping	ASTM A53, Grade B
3	EA	1/4"	Sch. 40 Steel Tee	ASTM B16.3 Malleable iron screwed
1	EA	1/4"	Sch. 40 Steel 90° Elbow	ASTM B16.3 Malleable iron screwed
6	EA	4"	Sch. 40 Steel Line Size Tee	ASTM A234 Wrought Steel; Required prior to Bldg. Temporary Heating/Cooling service
4	EA	4"	Cal-Silicate Inserts	
1	EA	4"	Pipe Hanger Support	
3	EA	4"	Pipe Stanchion Support	

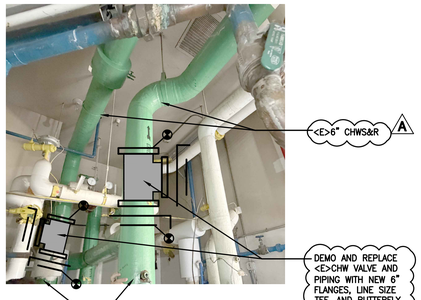
NOTES:

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3. BASE BID SHALL INCLUDE THE QUANTITIES INDICATED, 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.
4. UPON FIELD VERIFICATION AND DISCOVERY EFFORTS, A PCO (AS NEEDED) WILL BE CONSIDERED FOR QUANTITIES OR CAPACITIES ABOVE AND BEYOND THIS BILL OF MATERIALS.
5. REFER TO PROJECT MANUAL FOR EQUIPMENT AND MATERIAL SPECIFICATIONS.

4 BUILDING 1400 MECHANICAL ROOM HHW UPGRADE BILL OF MATERIAL
SCHEMATIC



5 BUILDING 1400 EXTERIOR HHW & CHW RISER UPGRADE
SCHEMATIC



NOTE:

SEE 1/M-4.5 FOR CONTINUATION OF "DEMO" AND "NEW" WORK WITHIN THE MECHANICAL ROOM ON THE CHW HYDRONIC SYSTEM.

6 BUILDING 1400 MECHANICAL ROOM CHW TEMP EQUIPMENT CONNECTION
SCHEMATIC

GENERAL SHEET NOTES

A. CLEAN, PREP, PRIME AND PAINT ALL EXISTING AND NEW HYDRONIC PIPING WITHIN THE MECHANICAL ROOM. PROVIDE INSULATION, VAPOR BARRIERS (CHW), PVC JACKETING, AND PIPE ID MARKERS WITH FLOW ARROWS.

REFERENCE SHEET NOTES

1. NOT USED.
2. DEMO SECTION OF PIPING AND PROVIDE NEW BALANCING VALVE AT THE HYDRONIC RETURN PIPING OF THE PRIMARY LOOP. BASED ON CHW AND HHW SERVICE REQUIREMENTS OF THE BUILDING AS PRESENTED IN PUMP SCHEDULE IN M-6.1, BALANCE BUILDING PRIMARY LOOPS WITH CHILLER AND BOILER PLANTS OPERATING AT FULL LOAD RESPECTIVELY.
3. 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 3/M-5.6.
4. PROVIDE SUCTION DIFFUSER AT PUMP. REFER TO M-6.1 FOR SIZING.
5. AT BUILDING EXTERIOR RISERS, DEMOLISH EXISTING ISOLATION VALVE AND PROVIDE LINE SIZED TEE WITH AN ISOLATION VALVE AT THE CAMPUS HYDRONIC LOOP SIDE OF THE TEE AND ADD ANOTHER ISOLATION VALVE AT THE BRANCH PORT OF THE TEE. PROVIDE BLIND FLANGE AT BRANCH PORT (FOR TEMPORARY SERVICES). SEE DETAIL 5/M-4.5.
6. NOT USED.
7. DEMO <E> RISER PIPE TO FLOOR, FINISHING FLUSH TO <E> FINISHED FLOOR SURFACE. PLUG AND FILL WITH GROUT. EXISTING DOMESTIC WATER PIPING SHALL BE CAPPED AND ABANDONED IN PLACE. PROVIDE PIPE SUPPORTS IN-KIND PER DETAIL 30/S-5.2.
8. DEMO ALL INSULATION AND JACKETING AT ISOLATED HYDRONIC PIPING WITHIN THE MECHANICAL ROOM. DETERMINE IF FURTHER DEFERRED MAINTENANCE AND/OR REPLACEMENTS ARE NECESSARY.
9. PROVIDE LINE SIZE TEES WITH ISOLATION VALVE(S) FOR TEMP SERVICES AT THE BEGINNING OF THE "DEMO" PHASE TO PROVIDE A POINT OF CONNECTION FOR TEMPORARY EQUIPMENT. REFER TO DETAIL 6/M-4.5 FOR CHW. (BID ALT. #5 - ADDITIVE FOR HHW).
10. PROVIDE BLIND FLANGE AND CONNECT TO ISOLATION VALVE AT THE BRANCH PORTION OF THE TEES AFTER "NEW" PHASE IS COMPLETE AND TEMPORARY SERVICES ARE DISCONNECTED.
11. PLUG THE INNER DIAMETER OF THE ABANDONED PIPES, FILL ANCHOR HOLES AND OPENINGS WITH GROUT AND FINISH FLUSH TO MATCH EXISTING CONCRETE SLAB.
12. NOT USED.
13. REPLACE EXISTING RUSTED/DEGRADED HYDRONIC PIPING WITHIN MECHANICAL ROOM. PIPING TO BE RETAINED SHALL BE WIRE BRUSHED CLEAN FROM ANY MINOR SURFACE RUST.
14. NOT USED.
15. PROVIDE POST-CONSTRUCTION TAB OF HYDRONIC PUMP(S). REFER TO HYDRONIC PUMP SCHEDULE ON M-6.1 FOR PUMP FLOW (GPM) AND PRESSURE (TDH) DESIGN PARAMETERS.
16. CAULK AND SEAL ALL PENETRATIONS THROUGH WALLS AND CEILINGS. FIRE-RATED ASSEMBLIES SHALL BE CAULKED AND SEALED WITH FIRE STOP CAULK. REFER TO DETAIL 2/M-5.7. PROVIDE ESCUTCHEON PLATES AT ALL PENETRATIONS. REFER TO DETAIL 6/M-5.6.
17. PROVIDE MAINTENANCE INSPECTIONS AT HYDRONIC PUMP(S). INSPECT PUMP FOR LEAKS, VIBRATION, AND IRREGULAR SOUNDS. INSPECT BEARINGS, SEALS, IMPELLER, BUSHINGS, AND SHAFT SLEEVE. RE-GREASE BEARINGS AND VERIFY COUPLINGS, CONNECTIONS, AND PUMP ALIGNMENT. CHECK ALL FASTENERS AND FOUNDATION. PROVIDE MAINTENANCE REPORT, RECOMMENDATIONS, AND ASSOCIATED COSTS & LEAD TIMES TO OWNER AND ENGINEER FOR REVIEW.

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WWW.SALASOBRIEN.COM
National Strength.
Local Action.

REGISTERED PROFESSIONAL ENGINEER
ERIN EMMETT SWEET
No. M40086
EXP. 09-30-2026
MECHANICAL
STATE OF CALIFORNIA
DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE		
MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

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DATE:	03/11/26
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CHECKED BY:	EES
APPROVED BY:	EES

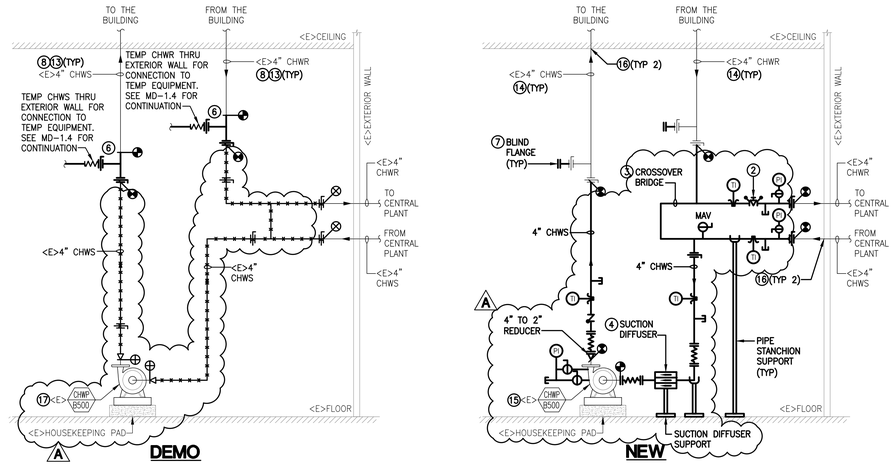
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BUILDING 1400 MECHANICAL ROOM ZONE #2: CHW & HHW

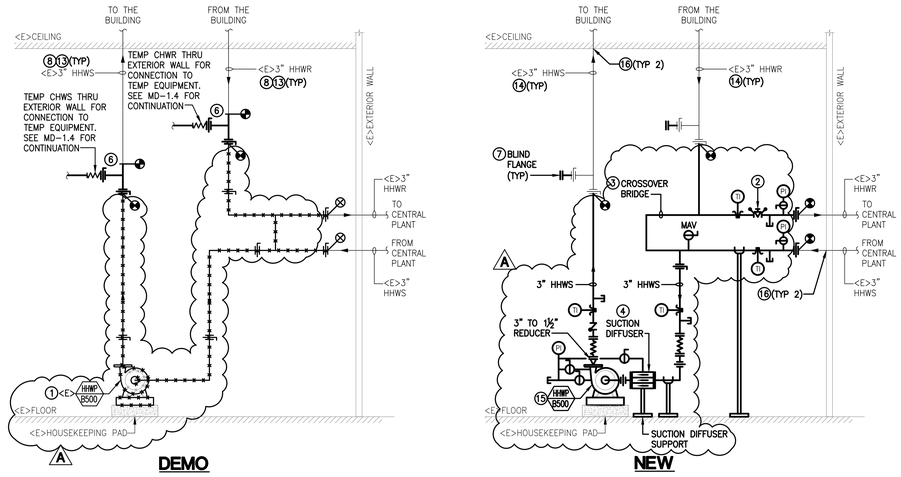
SCALE: AS NOTED
THIS DRAWING IS 30" X 42" AT FULL SIZE

M-4.5
SHEET OF –

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



1 BUILDING 500 MECHANICAL ROOM - ZONE 4 CHW UPGRADES
SCHEMATIC



2 BUILDING 500 MECHANICAL ROOM - ZONE 4 HHW UPGRADES
SCHEMATIC

GENERAL SHEET NOTES

A. CLEAN, PREP, PRIME AND PAINT ALL EXISTING AND NEW HYDRONIC PIPING WITHIN THE MECHANICAL ROOM. PROVIDE INSULATION, VAPOR BARRIERS (CHW), PVC JACKETING, AND PIPE ID MARKERS WITH FLOW ARROWS.

REFERENCE SHEET NOTES

1. DEMO AND REPLACE HYDRONIC PUMP INCLUDING ANCHORS, PUMP BASE, POWER TO VFD OR MOTOR STARTER, AND SPECIALTIES AS INDICATED. REFER TO BUILDING HYYDRONIC PUMP SCHEDULE ON M-6.1.
2. DEMO SECTION OF PIPING AND PROVIDE NEW BALANCING VALVE AT THE HYDRONIC RETURN PIPING OF THE PRIMARY LOOP. BASED ON CHW AND HHW SERVICE REQUIREMENTS OF THE BUILDING AS PRESENTED IN PUMP SCHEDULE IN M-6.1, 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-6.1 FOR SIZING.
5. AT BUILDING EXTERIOR RISERS, DEMOLISH EXISTING ISOLATION VALVE AND PROVIDE LINE SIZED TEE WITH AN ISOLATION VALVE AT THE CAMPUS HYDRONIC LOOP SIDE OF THE TEE AND ADD ANOTHER ISOLATION VALVE AT THE BRANCH PORT OF THE TEE. PROVIDE BLIND FLANGE AT BRANCH PORT (FOR TEMPORARY SERVICES). SEE DETAIL 5/M-4.9.
6. PROVIDE LINE SIZE TEES WITH ISOLATION VALVE(S) FOR TEMP SERVICES AT THE BEGINNING OF THE "DEMO" PHASE TO PROVIDE A POINT OF CONNECTION FOR TEMPORARY EQUIPMENT. REFER TO DETAIL 10/M-4.9 FOR CHW (BID ALT. #7 – ADDITIVE). REFER TO DETAIL 9/M-4.9 FOR HHW.
7. PROVIDE BLIND FLANGE AND CONNECT TO ISOLATION VALVE AT THE BRANCH PORTION OF THE TEES AFTER "NEW" PHASE IS COMPLETE AND TEMPORARY SERVICES ARE DISCONNECTED.
8. DEMO ALL INSULATION AND JACKETING AT ISOLATED HYDRONIC PIPING WITHIN THE MECHANICAL ROOM. DETERMINE IF FURTHER DEFERRED MAINTENANCE AND/OR REPLACEMENTS ARE NECESSARY.
9. NOT USED.
10. NOT USED.
11. NOT USED.
12. NOT USED.
13. REPLACE EXISTING RUSTED/DEGRADED HYDRONIC PIPING WITHIN MECHANICAL ROOM. PIPING TO BE RETAINED SHALL BE WIRE BRUSHED CLEAN FROM ANY MINOR SURFACE RUST.
14. NOT USED.
15. PROVIDE POST-CONSTRUCTION TAB OF HYDRONIC PUMP(S), REFER TO HYDRONIC PUMP SCHEDULE ON M-6.1 FOR PUMP FLOW (GPM) AND PRESSURE (TDH) DESIGN PARAMETERS.
16. CAULK AND SEAL ALL PENETRATIONS THROUGH WALLS AND CEILINGS. FIRE-RATED ASSEMBLIES SHALL BE CAULKED AND SEALED WITH FIRE STOP CAULK. REFER TO DETAIL 2/M-5.7. PROVIDE ESCUTCHEON PLATES AT ALL PENETRATIONS. REFER TO DETAIL 6/M-5.6.
17. PROVIDE MAINTENANCE INSPECTIONS AT HYDRONIC PUMP(S). INSPECT PUMP FOR LEAKS, VIBRATION, AND IRREGULAR SOUNDS. INSPECT BEARINGS, SEALS, IMPELLER, BUSHINGS, AND SHAFT SLEEVE. RE-GREASE BEARINGS AND VERIFY COUPLINGS, CONNECTIONS, AND PUMP ALIGNMENT. CHECK ALL FASTENERS AND FOUNDATION. PROVIDE MAINTENANCE REPORT, RECOMMENDATIONS, AND ASSOCIATED COSTS & LEAD TIMES TO OWNER AND ENGINEER FOR REVIEW.

BUILDING 500 CHW BILL OF MATERIAL				
Quantity	Unit	NPS	Component Description	Notes
11	EA	4"	Butterfly Valves	Required prior to Bldg. Temporary Heating/Cooling service
1	EA	4"	Balancing Valve	
1	EA	4"	Check Valve	Swing type
4	EA	1/4"	Ball Valve	
5	EA	1/4"	Test ports	
1	EA	1/4"	Manual Air Vent	
4	EA	4"	Blind Flange	
3	EA	1/4"	Pressure Indicator	
4	EA	1/4"	Temperature Indicator	Include thermowell
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
6	EA	4"	Sch. 40 Steel 90° elbow	ASTM A234 Wrought Steel
1	EA	4"x2-1/2"	Suction Diffuser	Refer to Pump Schedule on M-6.1
2	EA	4"	Flexible connections	
32	EA	4"	Flanges	ANSI 150
32	EA	4"	Gaskets and bolts kits	
1	EA	4"x2"	Concentric Reducer	VIF connections to <E> Pump
5	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
6	EA	4"	Sch. 40 Steel Line Size Tee	ASTM A234 Wrought Steel; Required prior to Bldg. Temporary Heating/Cooling service
2	EA	4"	Cal-Silicate Inserts	
2	EA	4"	Pipe Stanchion support	

NOTES:

1. BOM IS APPROXIMATE (AND SHALL BE DEEMED THE MIN. NEEDS). CONTRACTOR SHALL BE RESPONSIBLE FOR ANY WELD NECKS, FLANGES, WELD-O-LETS, THERMOWELLS, AND ANY MATERIAL NOT IDENTIFIED ON THE BOM ABOVE THAT ARE DEEMED NECESSARY FOR A COMPLETE AND CODE-COMPLIANT INSTALLATION.
2. THE WORK WITHIN THE MECH. RM. WILL BE DISCOVERY IN NATURE. ONCE INSULATION/JACKETING IS REMOVED, ADDITIONAL COMPONENTS MAY REQUIRE REPLACEMENT BASED ON CONDITION AND PRESENCE OF OXIDATION OR GALVANIC CORROSION.
3. BASE BID SHALL INCLUDE THE QUANTITIES INDICATED, 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.
4. UPON FIELD VERIFICATION AND DISCOVERY EFFORTS, A PCO (AS NEEDED) WILL BE CONSIDERED FOR QUANTITIES OR CAPACITIES ABOVE AND BEYOND THIS BILL OF MATERIALS.
5. REFER TO PROJECT MANUAL FOR EQUIPMENT AND MATERIAL SPECIFICATIONS.

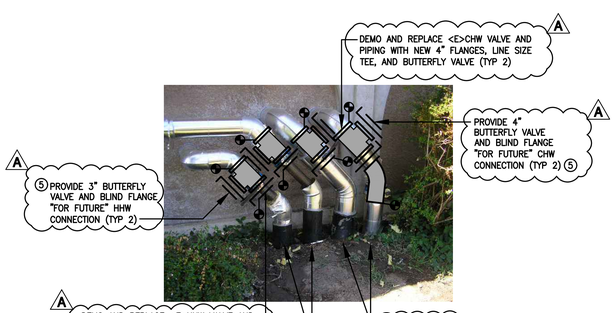
3 BUILDING 500 MECHANICAL ROOM CHW UPGRADE BILL OF MATERIAL
SCHEMATIC

BUILDING 500 HHW BILL OF MATERIAL				
Quantity	Unit	NPS	Component Description	Notes
11	EA	3"	Butterfly Valves	Required prior to Bldg. Temporary Heating/Cooling service
1	EA	3"	Balancing Valve	
1	EA	3"	Check Valve	Swing type
5	EA	1/4"	Ball Valve	
1	EA	1/4"	Test ports	
4	EA	3"	Manual Air Vent	
3	EA	1/4"	Blind Flange	
4	EA	1/4"	Pressure Indicator	
40	LF	3"	Temperature Indicator	Include thermowell
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
6	EA	3"	Sch. 40 Steel 90° elbow	ASTM A234 Wrought Steel
1	EA	3"x2"	Suction Diffuser	Threaded union, refer to Pump Schedule on M-6.1
2	EA	3"	Flexible connections	
32	EA	3"	Flanges	ANSI 150
32	EA	3"	Gaskets and bolts kits	
1	EA	3"x1-1/2"	Concentric Reducer	VIF connections to Pump
5	LF	1/4"	Sch. 40 Steel Piping	ASTM A53, Grade B
3	EA	1/4"	Sch. 40 Steel Tee	ASTM B16.3 Malleable iron screwed
3	EA	1/4"	Sch. 40 Steel 90° elbow	ASTM B16.3 Malleable iron screwed
6	EA	3"	Sch. 40 Steel Line Size Tee	ASTM A234 Wrought Steel; Required prior to Bldg. Temporary Heating/Cooling service
2	EA	3"	Cal-Silicate Inserts	
2	EA	3"	Pipe Stanchion support	

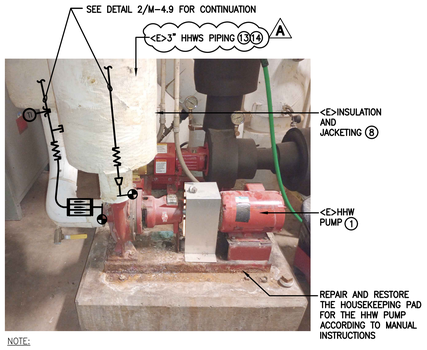
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4 BUILDING 500 MECHANICAL ROOM HHW UPGRADE BILL OF MATERIAL
SCHEMATIC



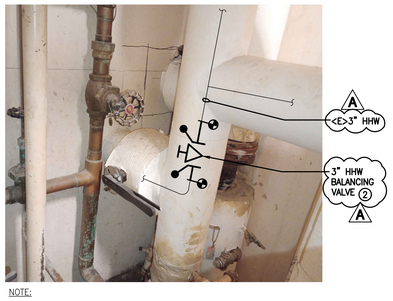
5 BUILDING 500 EXTERIOR HHW & CHW RISER UPGRADE
SCHEMATIC



NOTE:

SEE 2/M-4.9 FOR CONTINUATION OF "DEMO" AND "NEW" WORK WITHIN THE MECHANICAL ROOM ON THE HHW HYDRONIC SYSTEM.

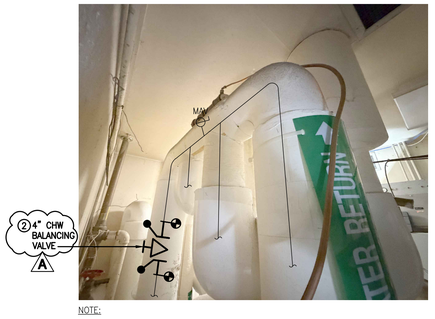
6 BUILDING 500 MECHANICAL ROOM HHW PUMP REPLACEMENT
SCHEMATIC



NOTE:

SEE 2/M-4.9 FOR CONTINUATION OF "DEMO" AND "NEW" WORK WITHIN THE MECHANICAL ROOM ON THE HHW HYDRONIC SYSTEM.

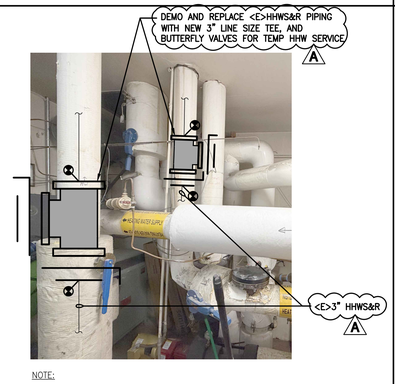
7 BUILDING 500 MECHANICAL ROOM HHW CROSS-OVER BRIDGE
SCHEMATIC



NOTE:

SEE 1/M-4.9 FOR CONTINUATION OF "DEMO" AND "NEW" WORK WITHIN THE MECHANICAL ROOM ON THE CHW HYDRONIC SYSTEM.

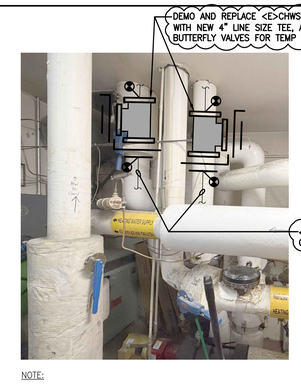
8 BUILDING 500 MECHANICAL ROOM CHW CROSS-OVER BRIDGE
SCHEMATIC



NOTE:

SEE 2/M-4.9 FOR CONTINUATION OF "DEMO" AND "NEW" WORK WITHIN THE MECHANICAL ROOM ON THE HHW HYDRONIC SYSTEM.

9 BUILDING 500 MECHANICAL ROOM HHW TEMP. EQUIPMENT CONNECTION
SCHEMATIC



NOTE:

SEE 1/M-4.9 FOR CONTINUATION OF "DEMO" AND "NEW" WORK WITHIN THE MECHANICAL ROOM ON THE CHW HYDRONIC SYSTEM.

10 BUILDING 500 MECHANICAL ROOM CHW TEMP. EQUIPMENT CONNECTION
SCHEMATIC

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.



DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE		
MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	EES
APPROVED BY:	EES

SHEET TITLE

BUILDING 500 MECHANICAL ROOM ZONE #4: CHW & HHW (BID ALTERNATE #1) A

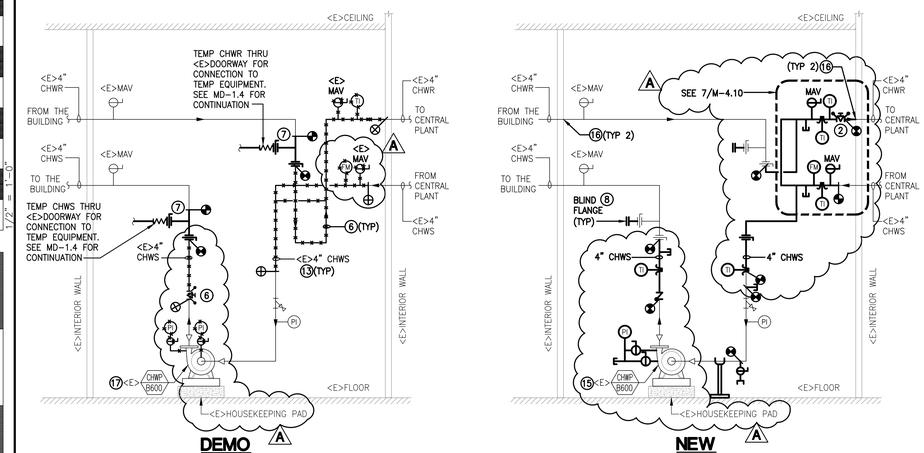
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THIS DRAWING IS 30" X 42" AT FULL SIZE

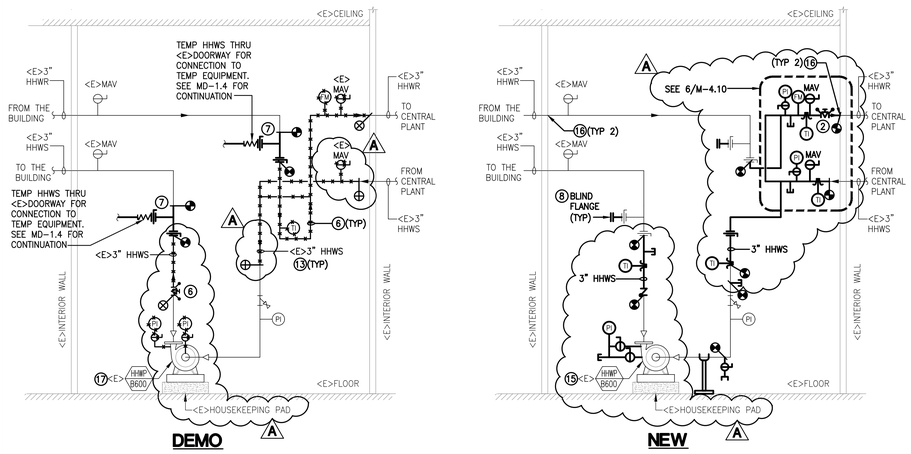
M-4.9

SHEET OF –

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



1 BUILDING 600 MECHANICAL ROOM - ZONE 4 CHW UPGRADES
SCHEMATIC



2 BUILDING 600 MECHANICAL ROOM - ZONE 4 HHW UPGRADES
SCHEMATIC

BUILDING 600 CHW BILL OF MATERIAL

Quantity	Unit	NPS	Component Description	Notes
9	EA	4"	Butterfly Valves	Required prior to Bldg. Temporary Heating/Cooling service
1	EA	4"	Balancing Valve	
1	EA	4"	Check Valve	Swing type
2	EA	1/4"	Ball Valve	
5	EA	1/4"	Test ports	
4	EA	3"	Blind Flange	
1	EA	1/4"	Pressure Indicator	
4	EA	1/4"	Temperature Indicator	Include thermowell
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
5	EA	4"	Sch. 40 Steel 90° elbow	ASTM A234 Wrought Steel
2	EA	4"	Flexible connections	
26	EA	4"	Flanges	ANSI 150
26	EA	4"	Gaskets and bolts kits	
5	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
6	EA	4"	Sch. 40 Steel Line Size Tee	ASTM A234 Wrought Steel; Required prior to Bldg. Temporary Heating/Cooling service
1	EA	3"	Cal-Silicate Inserts	
1	EA	4"	Pipe Stanchion support	

NOTES:

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3 BUILDING 600 MECHANICAL ROOM CHW UPGRADE BILL OF MATERIAL
SCHEMATIC

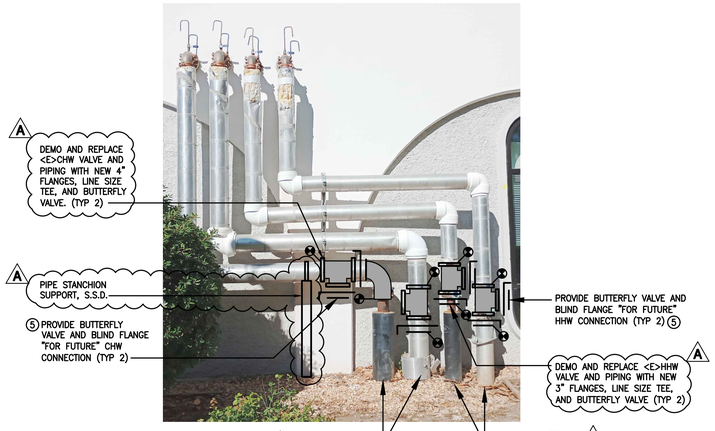
BUILDING 600 HHW BILL OF MATERIAL

Quantity	Unit	NPS	Component Description	Notes
9	EA	3"	Butterfly Valves	Required prior to Bldg. Temporary Heating/Cooling service
1	EA	3"	Balancing Valve	
1	EA	3"	Check Valve	Swing type
4	EA	1/4"	Ball Valve	
5	EA	1/4"	Test ports	
1	EA	1/4"	Manual Air Vent	
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1	EA	3"	Cal-Silicate Inserts	
1	EA	3"	Pipe Stanchion support	

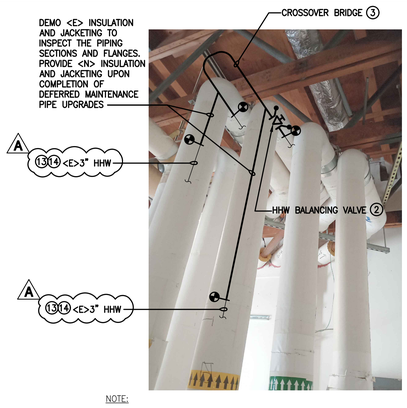
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4 BUILDING 600 MECHANICAL ROOM HHW UPGRADE BILL OF MATERIAL
SCHEMATIC



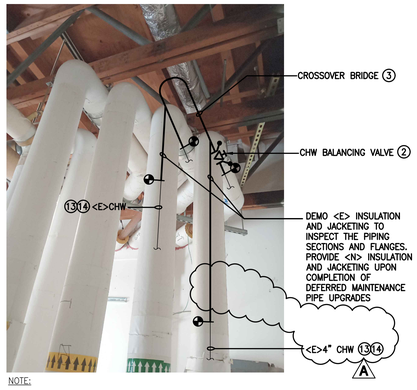
5 BUILDING 600 EXTERIOR HHW & CHW RISER UPGRADE
SCHEMATIC



NOTE:

SEE 2/M-4.10 FOR CONTINUATION OF "DEMO" AND "NEW" WORK WITHIN THE MECHANICAL ROOM ON THE HHW HYDRONIC SYSTEM.

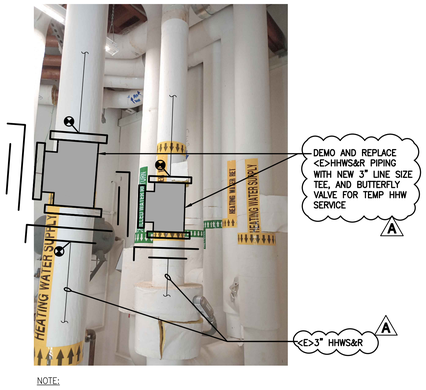
6 BUILDING 600 MECHANICAL ROOM HHW CROSS-OVER BRIDGE
SCHEMATIC



NOTE:

SEE 1/M-4.10 FOR CONTINUATION OF "DEMO" AND "NEW" WORK WITHIN THE MECHANICAL ROOM ON THE CHW HYDRONIC SYSTEM.

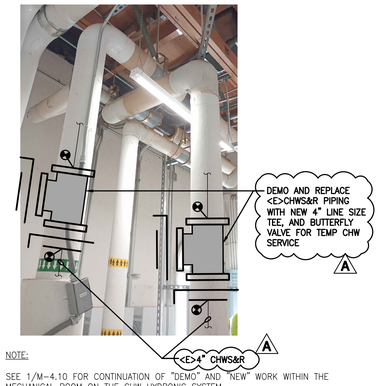
7 BUILDING 600 MECHANICAL ROOM CHW CROSS-OVER BRIDGE
SCHEMATIC



NOTE:

SEE 2/M-4.10 FOR CONTINUATION OF "DEMO" AND "NEW" WORK WITHIN THE MECHANICAL ROOM ON THE HHW HYDRONIC SYSTEM.

8 BUILDING 600 MECHANICAL ROOM HHW TEMP EQUIPMENT CONNECTION
SCHEMATIC



NOTE:

SEE 1/M-4.10 FOR CONTINUATION OF "DEMO" AND "NEW" WORK WITHIN THE MECHANICAL ROOM ON THE CHW HYDRONIC SYSTEM.

9 BUILDING 600 MECHANICAL ROOM CHW TEMP EQUIPMENT CONNECTION
SCHEMATIC

A GENERAL SHEET NOTES

A. CLEAN, PREP, PRIME AND PAINT ALL EXISTING AND NEW HYDRONIC PIPING WITHIN THE MECHANICAL ROOM. PROVIDE INSULATION, VAPOR BARRIERS (CHW), PVC JACKETING, AND PIPE ID MARKERS WITH FLOW ARROWS.

REFERENCE SHEET NOTES

1. NOT USED.
2. DEMO SECTION OF PIPING AND PROVIDE NEW BALANCING VALVE AT THE HYDRONIC RETURN PIPING OF THE PRIMARY LOOP. BASED ON CHW AND HHW SERVICE REQUIREMENTS OF THE BUILDING AS PRESENTED IN PUMP SCHEDULE IN M-6.1, BALANCE BUILDING PRIMARY LOOPS WITH CHILLER AND BOILER PLANTS OPERATING AT FULL LOAD RESPECTIVELY.
3. 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 DETAILS 6&7/M-4.10 & 3/M-5.6.
4. NOT USED.
5. AT BUILDING EXTERIOR RISERS, DEMOLISH EXISTING ISOLATION VALVE AND PROVIDE LINE SIZED TEE WITH AN ISOLATION VALVE AT THE CAMPUS HYDRONIC LOOP SIDE OF THE TEE AND ADD ANOTHER ISOLATION VALVE AT THE BRANCH PORT OF THE TEE. PROVIDE BLIND FLANGE AT BRANCH PORT (FOR TEMPORARY SERVICES). SEE DETAIL 5/M-4.10.
6. DEMO EXISTING DISSIMILAR METAL CONNECTIONS. PROVIDE DIELECTRIC FITTING TO INSULATE DISSIMILAR METAL CONNECTIONS AND PROTECT FROM GALVANIC CORROSION.
7. PROVIDE LINE SIZE TEES WITH ISOLATION VALVE(S) FOR TEMP SERVICES AT THE BEGINNING OF THE "DEMO" PHASE TO PROVIDE A POINT OF CONNECTION FOR TEMPORARY EQUIPMENT. REFER TO DETAIL 9/M-4.10 FOR CHW (BID ALT. #7 – ADDITIVE). REFER TO DETAIL 8/M-4.10 FOR HHW.
8. PROVIDE BLIND FLANGE AND CONNECT TO ISOLATION VALVE AT THE BRANCH PORTION OF THE TEES AFTER "NEW" PHASE IS COMPLETE AND TEMPORARY SERVICES ARE DISCONNECTED.
9. NOT USED.
10. NOT USED.
11. NOT USED.
12. NOT USED.
13. REPLACE EXISTING RUSTED/DEGRADED HYDRONIC PIPING WITHIN MECHANICAL ROOM. PIPING TO BE RETAINED SHALL BE WIRE BRUSHED CLEAN FROM ANY MINOR SURFACE RUST.
14. NOT USED.
15. PROVIDE POST-CONSTRUCTION TAB OF HYDRONIC PUMP(S), REFER TO HYDRONIC PUMP SCHEDULE ON M-6.1 FOR PUMP FLOW (GPM) AND PRESSURE (TDH) DESIGN PARAMETERS.
16. CAULK AND SEAL ALL PENETRATIONS THROUGH WALLS AND CEILINGS. FIRE-RATED ASSEMBLIES SHALL BE CAULKED AND SEALED WITH FIRE STOP CAULK. REFER TO DETAIL 2/M-5.7. PROVIDE ESCUTCHEON PLATES AT ALL PENETRATIONS. REFER TO DETAIL 6/M-5.6.
17. PROVIDE MAINTENANCE INSPECTIONS AT HYDRONIC PUMP(S). INSPECT PUMP FOR LEAKS, VIBRATION, AND IRREGULAR SOUNDS. INSPECT BEARINGS, SEALS, IMPELLER, BUSHINGS, AND SHAFT SLEEVE. RE-GREASE BEARINGS AND VERIFY COUPLINGS, CONNECTIONS, AND PUMP ALIGNMENT. CHECK ALL FASTENERS AND FOUNDATION. PROVIDE MAINTENANCE REPORT, RECOMMENDATIONS, AND ASSOCIATED COSTS & LEAD TIMES TO OWNER AND ENGINEER FOR REVIEW.

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

REGISTERED PROFESSIONAL ENGINEER
JOHN BARRETT SWIFT
No. M40086
EXP. 09-30-2026
MECHANICAL
STATE OF CALIFORNIA
DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE		
MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	EES
APPROVED BY:	EES

SHEET TITLE

BUILDING 600 MECHANICAL ROOM ZONE #4: CHW & HHW (BID ALTERNATE #1) A

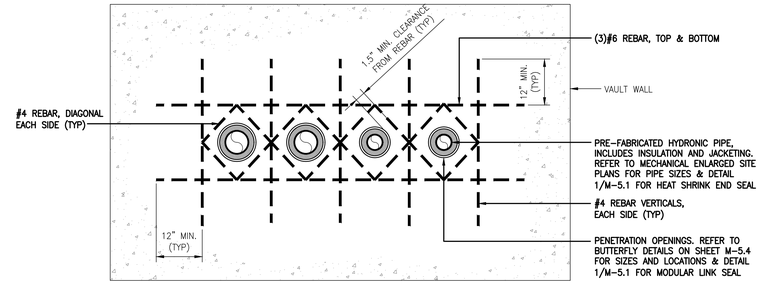
SCALE: AS NOTED

THIS DRAWING IS 30" X 42" AT FULL SIZE

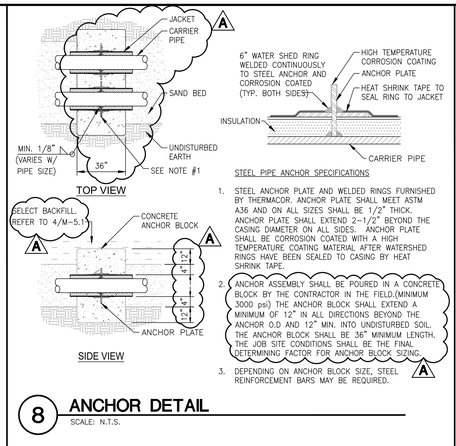
M-4.10

SHEET OF –

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



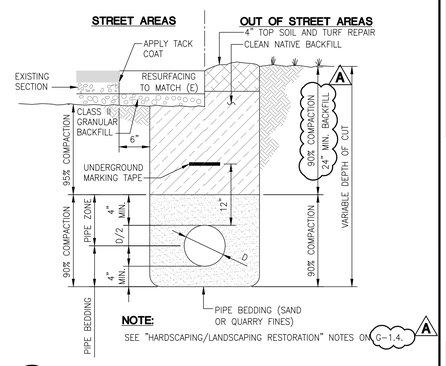
12 TYPICAL VAULT WALL PENETRATION REINFORCEMENT
SCALE: 3/4" = 1' - 0"



STEEL PIPE ANCHOR SPECIFICATIONS

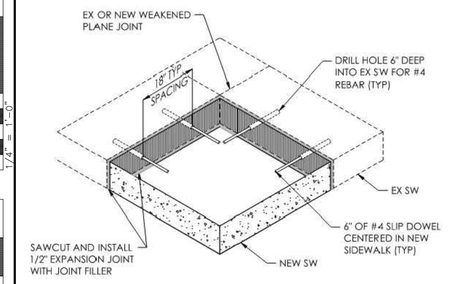
1. STEEL ANCHOR PLATE AND WELDED RINGS FURNISHED BY THERMACOR. ANCHOR PLATE SHALL MEET ASTM A36 AND ON ALL SIZES SHALL BE 1/2" THICK. ANCHOR PLATE SHALL EXTEND 2-1/2" BEYOND THE CASING DIAMETER ON ALL SIDES. ANCHOR PLATE SHALL BE CORROSION COATED WITH A HIGH TEMPERATURE COATING MATERIAL AFTER WATERSHED RINGS HAVE BEEN SEALED TO CASING BY HEAT SHRINK TAPE.
2. ANCHOR ASSEMBLY SHALL BE POURED IN A CONCRETE BLOCK BY THE CONTRACTOR IN THE FIELD.(MINIMUM 3000 psi) THE ANCHOR BLOCK SHALL EXTEND A MINIMUM OF 12" IN ALL DIRECTIONS BEYOND THE ANCHOR O.D AND 12" MIN. INTO UNDISTURBED SOIL. THE ANCHOR BLOCK SHALL BE 36" MINIMUM LENGTH. THE JOB SITE CONDITIONS SHALL BE THE FINAL DETERMINING FACTOR FOR ANCHOR BLOCK SIZING.
3. DEPENDING ON ANCHOR BLOCK SIZE, STEEL REINFORCEMENT BARS MAY BE REQUIRED.

8 ANCHOR DETAIL
SCALE: N.T.S.



NOTE:
SEE "HARDSCAPING/LANDSCAPING RESTORATION" NOTES ON G-1.4.

4 PIPE BEDDING & BACKFILL
SCALE: N.T.S.



12 SIDEWALK CONNECTION DETAIL
SCALE: N.T.S.

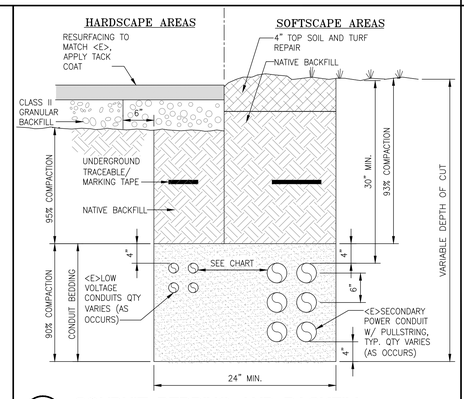
MINIMUM CLEARANCE REQUIREMENTS (INCHES)

	PC	SC	G	TEL	TV	LV	W
PRIMARY CONDUIT (OVER 600V) (PC)	–	60	60	60	60	60	60
SECONDARY POWER CONDUIT (SC)	60	–	12	12	12	12	36
GAS (G)	60	12	–	12	12	12	36
TELEPHONE (TEL)	60	12	12	–	2	2	36
CATV (TV)	60	12	12	2	–	2	36
OTHER LOW VOLTAGE (LV)	60	12	12	2	2	–	36
WET UTILITIES (W)	60	36	36	36	36	36	–

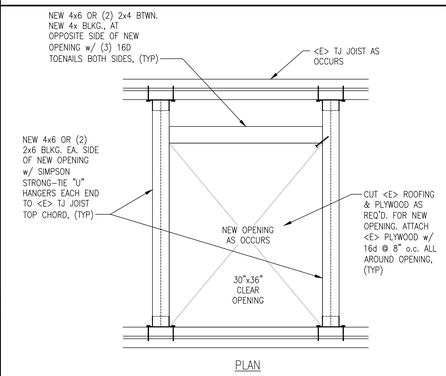
TABLE ONLY APPLIES TO CONDUITS AFTER THE UTILITY POINT OF CONNECTION.

NOTES:
1. UTILITY OWNED AND END-USER CONDUITS AND TRENCH SHALL NOT BE COMBINED.
2. PROVIDE 12" SEPARATION WHEN CROSSING "WET" UTILITIES.

11 UG UTILITY CLEARANCE REQUIREMENTS
SCALE: N.T.S.



10 CONDUIT BEDDING AND BACKFILL
SCALE: N.T.S.



PLAN

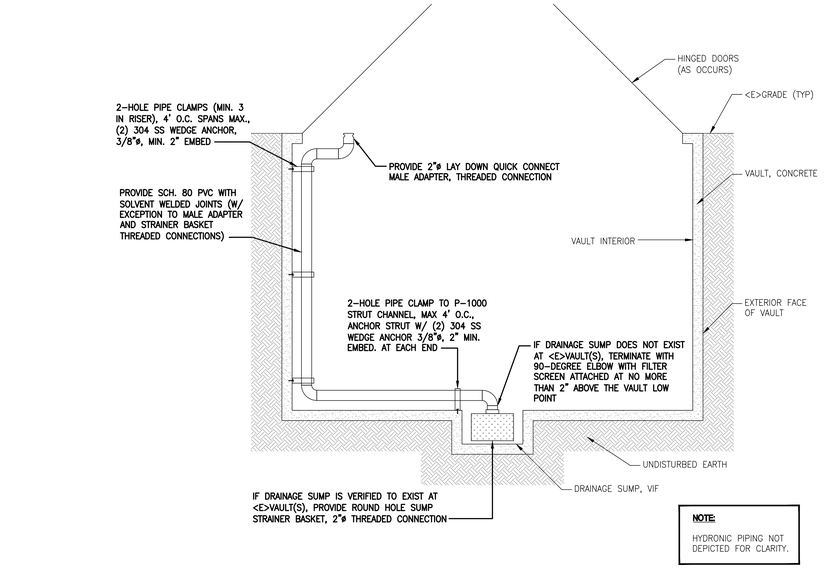
6 ROOF HATCH FRAMING DETAIL
SCALE: N.T.S.

TABLE I: RECOMMENDED ASPHALT/CONCRETE PAVEMENT SECTIONS

TRAFFIC CONDITION	ASPHALT PAVEMENT (INCHES)	CONCRETE PAVEMENT (INCHES)	CLASS 2 AGGREGATE BASE (INCHES)	TOTAL THICKNESS (INCHES)
PEDESTRIAN/LIGHT TRUCK (T.I. = 4.5)	3.0 –	– 4.0	8.0 6.0	11.0 10.0
FIRE TRUCK TRAFFIC (T.I. = 6.0)	6.0 –	– 7.0	15.0 12.0	21.0 19.0

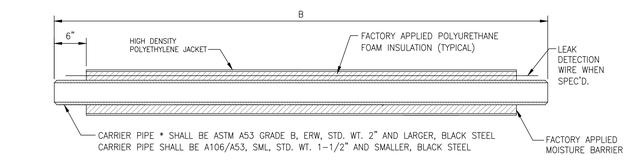
NOTE:
HOLES RESULTING FROM THE REMOVAL OF UNDERGROUND OBSTRUCTIONS (SUCH AS OLD CONCRETE FOOTINGS, ABANDONED UTILITIES OR TREE ROOT BULBS) THAT EXTEND BELOW THE PLANNED FINISHED GRADE SHALL BE CLEARED OF LOOSE SOIL AND DEBRIS, AND BACKFILLED WITH SUITABLE MATERIAL COMPACTED TO AT LEAST 95 PERCENT RELATIVE COMPACTION AS DETERMINED BY ASTM TEST DESIGNATION D1557.

3 TABLE I : ASPHALT/CONCRETE PAVEMENT SECTIONS
SCALE: N.T.S.



NOTE:
HYDRONIC PIPING NOT DEPICTED FOR CLARITY.

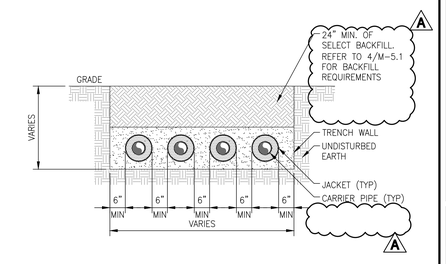
9 VAULT SUMP QUICK CONNECTION (TYP OF 8 NEW VAULTS & 2 <E> VAULTS)
SCALE: N.T.S.



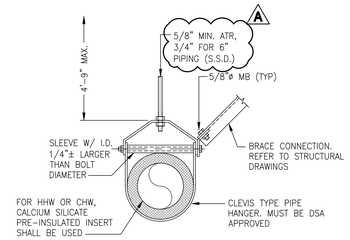
PIPE SIZE	JACKET SIZE	INSULATION THICKNESS	WEIGHT PER FOOT
2"	6.68"	1.35"	4.60
2-1/2"	6.68"	1.75"	7.05
3"	8.68"	2.5"	9.17
4"	8.68"	1.94"	12.45
6"	10.85"	1.95"	22.43
8"	12.85"	1.95"	31.95
10"	16.10"	2.5"	44.13
12"	18.23"	2.5"	54.14
14"	18.28"	1.86"	72.56

NOTES:
1. DIMENSION "B" SHALL BE AS REQUIRED TO SUIT FIELD CONDITIONS/INSTALLATION MEANS AND METHODS.
2. STD. WT. IS THE SAME AS SCHEDULE 40 THRU 10" PIPE SIZE.
3. SEE 2/M-5.1 FOR TRENCH DETAIL. A

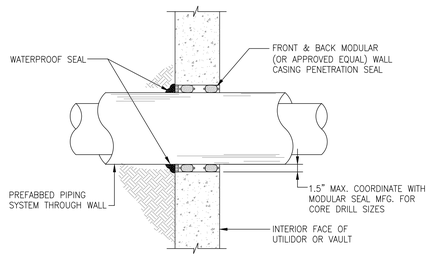
7 TYPICAL PRE-FABRICATED HHWS&R PIPING SECTION
SCALE: N.T.S.



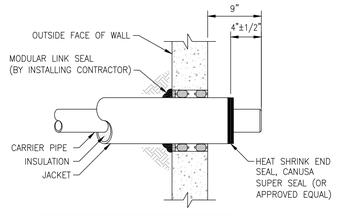
2 TYPICAL TRENCH DETAIL
SCALE: N.T.S.



5 TYPICAL CLEVIS HANGER
SCALE: N.T.S.



1 TYPICAL VAULT WALL PENETRATION DETAIL
SCALE: N.T.S.



NOTE:
FOR SYSTEMS WHICH ARE ANCHORED, A MECHANICAL COMPRESSIVE SEAL ASSEMBLY CAN BE UTILIZED FOR WATERPROOFING THE WALL PENETRATION.

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

REGISTERED PROFESSIONAL ENGINEER — JOHN EMMETT GIBBS — No. M40086 EXP. 09-30-2026 — MECHANICAL — STATE OF CALIFORNIA

DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE		
MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

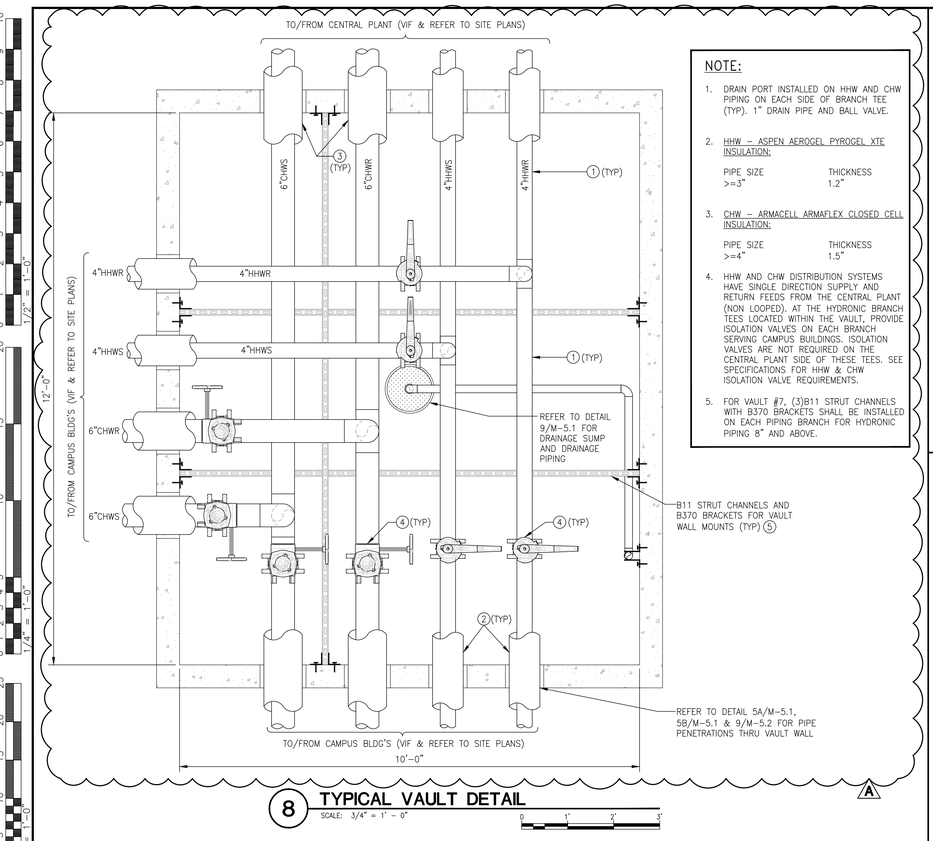
SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	EES
APPROVED BY:	EES

SHEET TITLE
MECHANICAL DETAILS

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

M-5.1
SHEET OF –

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



NOTE:

1. DRAIN PORT INSTALLED ON HHW AND CHW PIPING ON EACH SIDE OF BRANCH TEE (TYP). 1" DRAIN PIPE AND BALL VALVE.
2. HHW – ASPEN AEROGEL PYROGEL XTE INSULATION:

PIPE SIZE	THICKNESS
>=3"	1.2"

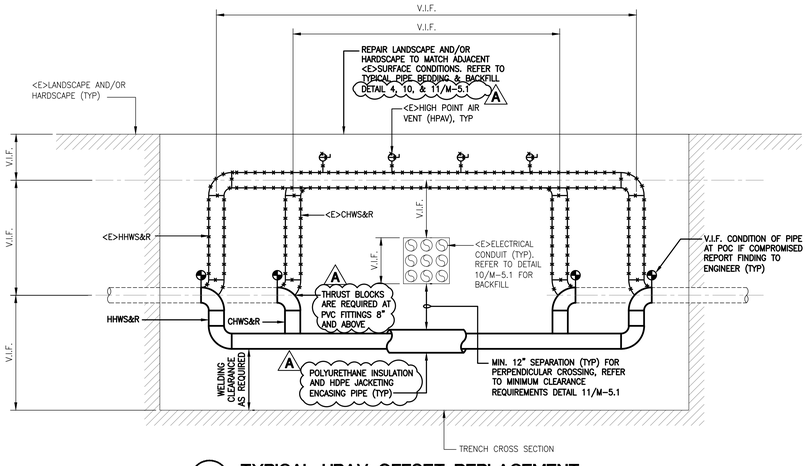
3. CHW – ARMACELL ARMAFLEX CLOSED CELL INSULATION:

PIPE SIZE	THICKNESS
>=4"	1.5"

4. HHW AND CHW DISTRIBUTION SYSTEMS HAVE SINGLE DIRECTION SUPPLY AND RETURN FEEDS FROM THE CENTRAL PLANT (NON LOOPED). AT THE HYDRONIC BRANCH TEES LOCATED WITHIN THE VAULT, PROVIDE ISOLATION VALVES ON EACH BRANCH SERVING CAMPUS BUILDINGS. ISOLATION VALVES ARE NOT REQUIRED ON THE CENTRAL PLANT SIDE OF THESE TEES. SEE SPECIFICATIONS FOR HHW & CHW ISOLATION VALVE REQUIREMENTS.
5. FOR VAULT #7, (3)B11 STRUT CHANNELS WITH B370 BRACKETS SHALL BE INSTALLED ON EACH PIPING BRANCH FOR HYDRONIC PIPING 8" AND ABOVE.

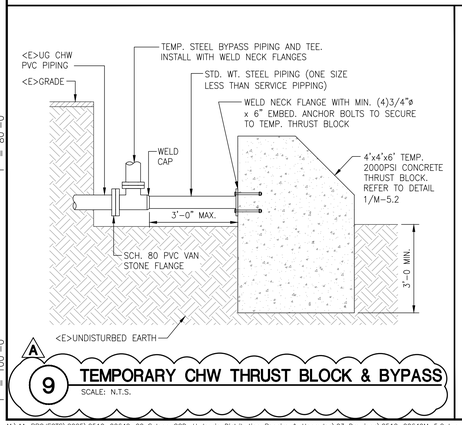
8 TYPICAL VAULT DETAIL

SCALE: 3/4" = 1'-0"



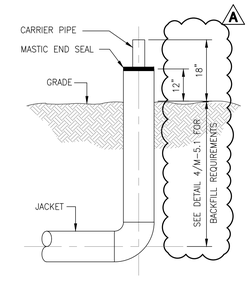
7 TYPICAL HPAV OFFSET REPLACEMENT

SCALE: N.T.S.



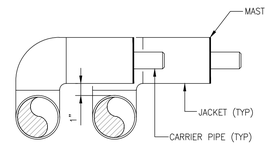
9 TEMPORARY CHW THRUST BLOCK & BYPASS

SCALE: N.T.S.



6 RISER DETAIL

SCALE: N.T.S.



NOTE:

CROSSOVER PIPING TO HAVE APPROX. 1" CLEARANCE BETWEEN JACKETS.

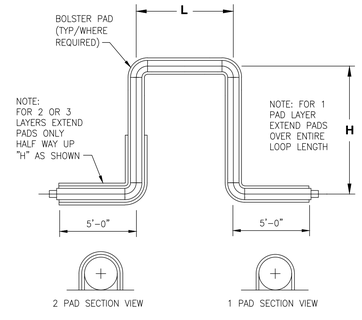
5 CROSSOVER DETAIL

SCALE: N.T.S.

EXPANSION LOOP SCHEDULE

LOOP NO.	SERVICE	JACKET SIZE	TOTAL EXP.	DIMENSIONS H	DIMENSIONS W	BOLSTER LAYERS
3	**6" HWS**	**10.85"**	**1.72"**	**9'-0"**	**6'-6"**	**1**
	6" HWR	10.85"	1.72"	9'-0"	9'-6"	1
<E>4	6" HWS	10.85"	1.39"	9'-0"	6'-6"	1
	6" HWR	10.85"	1.39"	9'-0"	9'-6"	1
<E>5	10" HWS	16.14"	2.27"	13'-0"	6'-6"	2
	10" HWR	16.14"	2.27"	13'-0"	10'-6"	2
<E>6	10" HWS	16.14"	1.98"	11'-0"	5'-6"	1
	10" HWR	16.14"	1.98"	11'-0"	9'-6"	1
<E>6A	4" HWS	8.68"	1.19"	7'-0"	4'-4"	1
	4" HWR	8.68"	1.19"	7'-0"	7'-6"	1
<E>7	8" HWS	14.12"	1.89"	9'-0"	4'-6"	1
	8" HWR	14.12"	1.89"	9'-0"	8'-0"	1
<E>7A	4" HWS	8.68"	2.36"	9'-0"	4'-6"	2
	4" HWR	8.68"	2.36"	9'-0"	8'-0"	2
<E>7B	3" HWS	6.68"	0.86	4'-4"	4'-4"	1
	3" HWR	6.68"	0.86	4'-4"	7'-6"	1
<E>8	6" HWS	10.85"	2.69"	11'-0"	10'-0"	2
	6" HWR	10.85"	2.69"	11'-0"	6'-6"	2
<E>9	8" HWS	14.12"	3.07"	15"-0"	11'-0"	2
	8" HWR	14.12"	3.07"	15"-0"	7'-6"	2
<E>10	6" HWS	10.85"	1.66"	9'-0"	9'-6"	1
	6" HWR	10.85"	1.66"	9'-0"	6'-6"	1
<E>11	6" HWS	10.85"	1.36"	9'-0"	9'-6"	1
	6" HWR	10.85"	1.36"	9'-0"	6'-6"	1
<E>12	4" HWS	8.68"	0.89"	5'-0"	7'-6"	1
	4" HWR	8.68"	0.89"	5'-0"	4'-4"	1
<E>13	4" HWS	8.68"	1.17"	7'-0"	7'-6"	1
	4" HWR	8.68"	1.17"	7'-0"	4'-4"	1
<E>14	4" HWS	8.68"	2.17"	9'-0"	7'-6"	2
	4" HWR	8.68"	2.17"	9'-0"	4'-6"	2
<E>15	4" HWS	8.68"	2.17"	7'-0" 12'-0"	8'-0"	2
	4" HWR	8.68"	2.17"	7'-0" 12'-0"	5'-0"	2
<E>16	4" HWS	8.68"	3.70"	11'-0"	8'-6"	2
	4" HWR	8.68"	3.70"	11'-0"	5'-6"	2
<E>17	4" HWS	8.68"	3.54"	12'-0"	10'-0"	2
	4" HWR	8.68"	3.54"	12'-0"	6'-0"	2
18	**4" HWS**	**8.68"**	**0.80"**	**6'-0"**	**4'-4"**	**1**
	4" HWR	**8.68"**	**0.80"**	**6'-0"**	**7'-6"**	**1**
19	**6" HWS**	**10.85"**	**0.62"**	**5'-0"**	**2'-6"**	**1**
	6" HWR	**10.85"**	**0.62"**	**5'-0"**	**2'-6"**	**1**
20	**4" HWS**	**8.68"**	**1.01"**	**5'-4"**	**2'-6"**	**1**
	4" HWR	**8.68"**	**1.01"**	**5'-4"**	**2'-6"**	**1**

SHEET M-1.2
SHEET M-1.1
SHEET M-1.4
SHEET M-1.3
SHEET M-1.2
SHEET M-1.4



4 EXPANSION LOOP

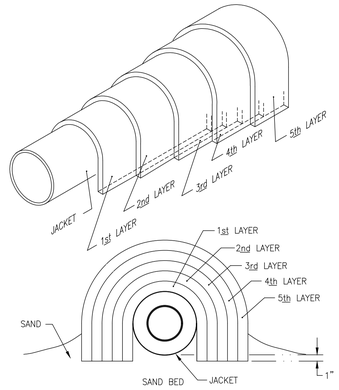
SCALE: N.T.S.

INSTALLATION INSTRUCTIONS: EXPANSION BOLSTERS (HDPE JACKET)

PROCEDURE:

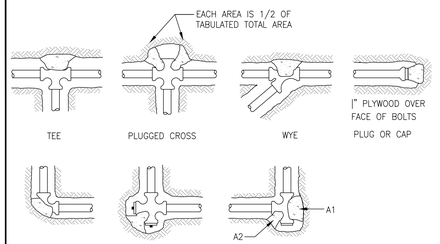
1. EXPANSION BOLSTER MATERIAL IS SUPPLIED IN PRECUT PADS: 41" WIDE x 1" THICK x PRECUT LENGTH.
2. USE APPROPRIATE PADS FOR EACH ELBOW OR EXPANSION LOOP AS PER THE INSTALLATION INSTRUCTIONS PROVIDED BY MFR.
3. WRAP BOLSTER AROUND JACKET HOLDING IT IN PLACE WITH BEDDING SAND. BE CERTAIN THAT THE BOLSTER FITS SNUG AROUND JACKET.
4. BUILD THE PADS TO THE REQUIRED LENGTH AND NUMBER OF LAYERS BY BUTTING PADS IN LONG SEGMENTS AND LAYERING AS REQUIRED BY THE SHOP DRAWINGS.

HDPE JACKET OD (INCHES)	WRAPAROUND DIMENSION PER LAYER (INCHES) FIRST LAYER	SECOND LAYER	THIRD LAYER	FOURTH LAYER	FIFTH LAYER
5.40	17	20	23	27	31
6.68	20	23	27	31	34
8.68	26	30	33	36	39
10.85	32	35	39	42	45
12.85	38	41	44	47	50
14.1	41	45	48	50	53
16.1	46	49	52	55	58
18.2	49	52	55	60	64
20.28	57	60	63	66	70
22.2	61	66	71	77	82
24.38	67	72	77	82	87
28.25	77	82	87	92	97



3 EXPANSION BOLSTER

SCALE: N.T.S.



NOTES:

1. CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2. KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES.
3. THE REQUIRED THRUST BEARING AREAS FOR SPECIAL CONNECTIONS ARE SHOWN ENCIRCLED ON THE PLANS; e.g. (15) INDICATES 15 SQUARE FEET BEARING AREA REQUIRED.
4. IF NOT SHOWN ON PLANS REQUIRED BEARING AREAS AT FITTING SHALL BE AS INDICATED BELOW, ADJUSTED IF NECESSARY TO CONFORM TO THE TEST PRESSURE(S) AND ALLOWABLE SOIL BEARING STRESS(ES) A
5. BEARING AREAS AND SPECIAL BLOCKING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER BEARING AREAS AND BLOCKING DETAILS SHOWN ON THIS STANDARD DETAIL.

FITTING SIZE	BEARING AREA OF THRUST BLOCKS IN SQ. FT. TEE, WYE, PLUG, OR CAP	90° BEND PLUGGED CROSS	TEE PLUGGED ON RUN A1	TEE PLUGGED ON RUN A2	45° BEND	22.5° BEND	11.25° BEND
4	1.0	1.4	1.9	1.4	1.0	--	--
6	2.1	3.0	4.3	3.0	1.6	1.0	--
8	3.8	5.3	7.6	5.4	2.9	1.5	1.0
10	5.9	8.4	11.8	8.4	4.6	2.4	1.2
12	8.5	12.0	17.0	12.0	6.6	3.4	1.7
14	11.5	16.3	23.0	16.3	8.9	4.6	2.3
16	15.0	21.3	30.0	21.3	11.6	6.0	3.0
18	19.0	27.0	38.0	27.0	14.6	7.6	3.8
20	23.5	33.3	47.0	33.3	18.1	9.4	4.7
24	34.0	48.0	68.0	48.0	26.2	13.6	6.8

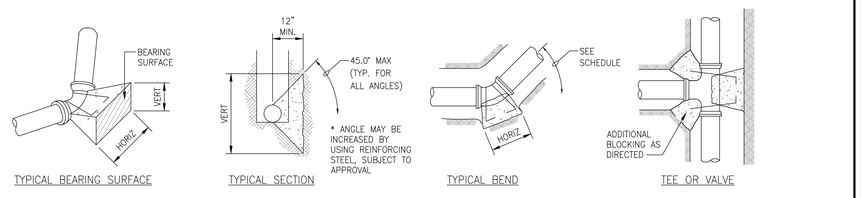
NOTE:

ABOVE BEARING AREAS BASED ON TEST PRESSURE OF 150 P.S.I. AND AN ALLOWABLE SOIL BEARING STRESS OF 2,000 POUNDS PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION: BEARING AREA = (TEST PRESSURE/150) X (2000/SOIL BEARING STRESS) X (TABLE VALUE).

PLUMBING VERSION 2: 2000 PSF 150 PSIG

2 THRUST BLOCK

SCALE: N.T.S.



NOTES:

1. THRUST BLOCK BEARING AREA BASED ON ALLOWABLE SOIL BEARING VALUE OF 1500 psf PRESSURE AND 225 psi LINE PRESSURE WITH 3'-0" COVER MINIMUM. FOR BEARING = 1000 psf, 1.5 X AREA SHOWN
   FOR BEARING = 500 psf, 3.0 X AREA SHOWN
2. ALL THRUST BLOCKS SHALL BE 2,000 PSI CONCRETE AND PLACED AGAINST UNDISTURBED SOIL.
3. STRAPS TO BE #4 REBARS EMBEDDED IN THRUST BLOCK TO A DEPTH EQUAL TO 3/4 OF PIPE DIAMETER. STRAP BEND EQUALS 1/2 PIPE DIAMETER.
4. CONCRETE SHALL NOT EXTEND ONTO FLANGE OR ADJOINING PIPE.
5. JOINTS AND FACE OF PLUGS TO BE KEPT CLEAR OF CONCRETE.
6. WRAP EXPOSED PORTION OF BARS AND 2" INTO CONCRETE WITH HALF LAPPED, 10 MIL PVC TAPE.
7. WHEN CLEARANCES TO OTHER FACILITIES OR UTILITIES DO NOT ALLOW THE USE OF THRUST BLOCK, RESTRAINED PIPE SHALL BE USED.
8. THRUST BLOCKS ON CROSSES SHALL BE USED ONLY WHEN THERE IS A 8-STUB-OUT ON ONE OR MORE SIDES, OR WHEN THERE IS ADJOINING UNRESTRAINED LENGTHS OF VALVES.

MINIMUM SIZE OF THRUST BLOCK BEARING SURFACE

PIPE SIZE	11 1/4° BEND HORIZ.	VERT.	22 1/2° BEND HORIZ.	VERT.	45° BEND HORIZ.	VERT.	90° BEND HORIZ.	VERT.	TEE HORIZ.	VERT.	END CAP HORIZ.	VERT.
4"	1'-6"	0'-9"	1'-6"	0'-9"	1'-6"	1'-0"	2'-3"	1'-3"	1'-6"	1'-0"	1'-6"	1'-6"
6"	2'-6"	1'-0"	2'-6"	1'-0"	3'-6"	1'-6"	4'-6"	2'-3"	4'-0"	2'-0"	2'-6"	1'-9"
8"	3'-0"	1'-6"	3'-0"	1'-6"	4'-3"	2'-3"	5'-6"	3'-0"	5'-0"	2'-6"	3'-9"	2'-0"
10"	3'-9"	1'-9"	3'-9"	1'-9"	5'-0"	2'-9"	7'-0"	3'-6"	5'-6"	3'-3"	4'-6"	2'-6"
12"	4'-3"	2'-3"	4'-3"	2'-3"	5'-6"	3'-6"	8'-3"	4'-0"	7'-0"	3'-6"	5'-3"	3'-0"

PLUMBING VERSION 1: 1500 PSF 225 PSIG

1 THRUST BLOCK

SCALE: N.T.S.

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National **Strength.**
Local **Action.**

REGISTERED PROFESSIONAL ENGINEER
JOHN BARRETT SWIFT
No. M40086
EXP. 09-30-2026
MECHANICAL
STATE OF CALIFORNIA

DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SHEET TITLE

MECHANICAL DETAILS

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

M-5.2

SHEET OF –

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



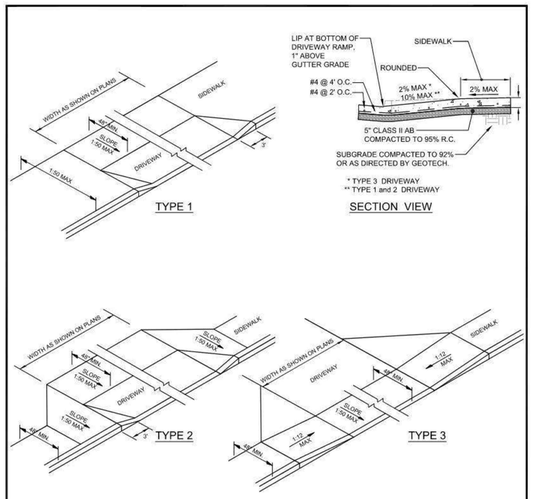
NOTE:

A REFER TO DISTRICT STANDARDS FOR ASPHALT PAVEMENT SECTION, SUBGRADE PREPARATION AND OTHER REQUIREMENTS.

Rev.	Date		SOLANO COMMUNITY COLLEGE DISTRICT	ASPHALT PAVEMENT EDGE DETAIL
		CSW ST2 ENGINEERING GROUP / SOLANO COMMUNITY COLLEGE	STANDARD DETAILS	DWG. NO. 135 — January 2014

8 ASPHALT PAVEMENT EDGE

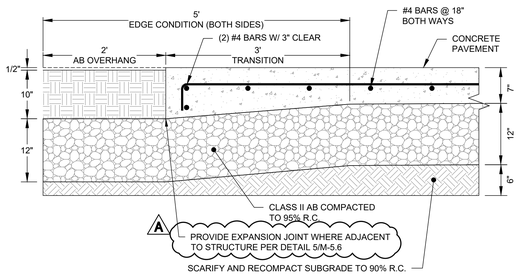
SCALE: N.T.S.



Rev.	Date		SOLANO COMMUNITY COLLEGE DISTRICT	DRIVEWAY APPROACH
		CSW ST2 ENGINEERING GROUP / SOLANO COMMUNITY COLLEGE	STANDARD DETAILS	DWG. NO. 125 — January 2014

6 DRIVEWAY APPROACH

SCALE: N.T.S.

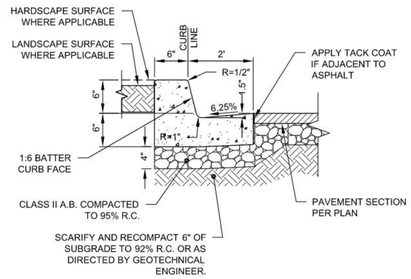


NOTES:

1. PAVEMENT SECTIONS ARE BASED ON RECOMMENDATIONS FROM THE PROJECT GEOTECHNICAL REPORT.
2. ALL TREAD SURFACES TO BE SLIP RESISTANT, LIGHT BROOM FINISH.
3. A REFER TO SHEET G-1.4 FOR EXPANSION JOINTS AND LOCATION OF CONTROL JOINTS, UNLESS OTHERWISE NOTED ON PLANS.
4. CONCRETE COMPRESSIVE STRENGTH TO BE 4500 PSI OR GREATER (FLEXURAL STRENGTH OF 625 PSI OR GREATER)

4 CONCRETE VEHICULAR PAVEMENT

SCALE: N.T.S.



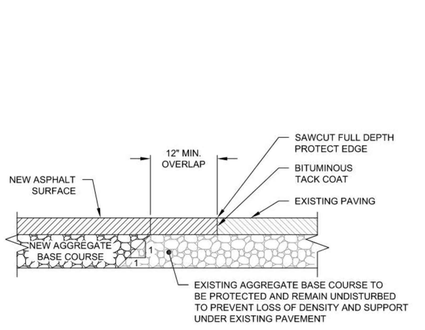
NOTES:

1. WHERE CONCRETE WALK IS ADJACENT TO CURB, PROVIDE ISOLATION JOINT BETWEEN WALK AND BACK OF CURB.
2. CONTROL JOINTS CONSISTING OF 1" DEEP SCORES SHALL BE PLACED AT 10' INTERVALS O.C. - ALL SIDES EXCEPT BOTTOM.
3. WHERE WALK IS ADJACENT TO CURB, THE JOINTS SHALL ALIGN WITH THE JOINTS IN THE CURB.

Rev.	Date		SOLANO COMMUNITY COLLEGE DISTRICT	CONCRETE CURB AND GUTTER
		CSW ST2 ENGINEERING GROUP / SOLANO COMMUNITY COLLEGE	STANDARD DETAILS	DWG. NO. 105 — January 2014

2 CONCRETE CURB AND GUTTER

SCALE: N.T.S.



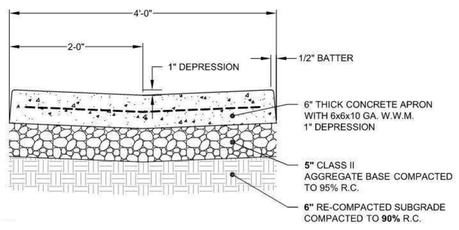
NOTE:

A REFER TO DISTRICT STANDARDS FOR ASPHALT PAVEMENT SECTION, SUBGRADE PREPARATION AND OTHER REQUIREMENTS.

Rev.	Date		SOLANO COMMUNITY COLLEGE DISTRICT	ASPHALT PAVEMENT CONFORM
		CSW ST2 ENGINEERING GROUP / SOLANO COMMUNITY COLLEGE	STANDARD DETAILS	DWG. NO. 130 — January 2014

7 ASPHALT PAVEMENT CONFORM

SCALE: N.T.S.



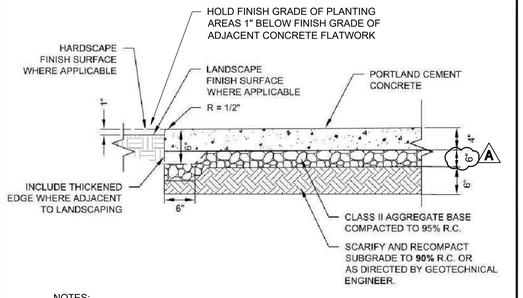
NOTES:

1. CONCRETE SHALL BE CLASS "B" (5 SACK) WITH 1" AGGREGATE.
2. NO CONCRETE SHALL BE PLACED PRIOR TO FORM INSPECTION.
3. ASPHALT CONCRETE SHALL BE 1/4" HIGH AT EDGE OF CONCRETE.
4. REFER TO DETAIL 4/M-5.6 FOR CONTROL JOINTS.
5. REFER TO DETAIL 5/M-5.6 FOR EXPANSION JOINTS.

Rev.	Date		SOLANO COMMUNITY COLLEGE DISTRICT	CONCRETE VALLEY GUTTER
		CSW ST2 ENGINEERING GROUP / SOLANO COMMUNITY COLLEGE	STANDARD DETAILS	DWG. NO. 120 — January 2014

5 CONCRETE VALLEY GUTTER

SCALE: N.T.S.



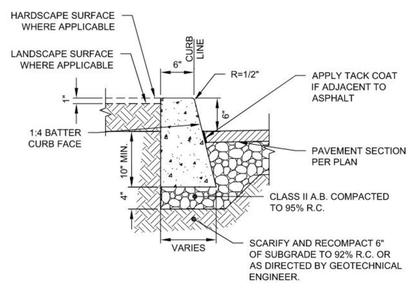
NOTES:

1. ALL TREAD SURFACES SHALL BE SLIP RESISTANT.
2. A REFER TO DISTRICT STANDARDS FOR COLOR, PATTERN, TEXTURE, AND FINISH.
3. REFER TO DETAIL 4/M-5.6 FOR CONTROL JOINTS.
4. REFER TO DETAIL 5/M-5.6 FOR EXPANSION JOINTS.

Rev.	Date		SOLANO COMMUNITY COLLEGE DISTRICT	CONCRETE PEDESTRIAN WALKWAY
		CSW ST2 ENGINEERING GROUP / SOLANO COMMUNITY COLLEGE	STANDARD DETAILS	DWG. NO. 110 — January 2014

3 CONCRETE PEDESTRIAN WALKWAY

SCALE: N.T.S.



NOTES:

1. WHERE CONCRETE WALK IS ADJACENT TO CURB, PROVIDE ISOLATION JOINT BETWEEN WALK AND BACK OF CURB.
2. CONTROL JOINTS CONSISTING OF 1" DEEP SCORES SHALL BE PLACED AT 10' INTERVALS O.C. - ALL SIDES EXCEPT BOTTOM.
3. WHERE WALK IS ADJACENT TO CURB, THE JOINTS SHALL ALIGN WITH THE JOINTS IN THE CURB.

Rev.	Date		SOLANO COMMUNITY COLLEGE DISTRICT	CONCRETE CURB
		CSW ST2 ENGINEERING GROUP / SOLANO COMMUNITY COLLEGE	STANDARD DETAILS	DWG. NO. 100 — January 2014

1 CONCRETE CURB

SCALE: N.T.S.

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REGISTERED PROFESSIONAL ENGINEER — ERIN EMMETT SWEENEY — No. M40086 EXP. 09-30-2026 — MECHANICAL — STATE OF CALIFORNIA

DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE		
MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	EES
APPROVED BY:	EES

SHEET TITLE

MECHANICAL DETAILS

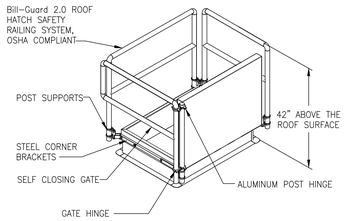
SCALE: AS NOTED

THIS DRAWING IS 30" X 42" AT FULL SIZE

M-5.3

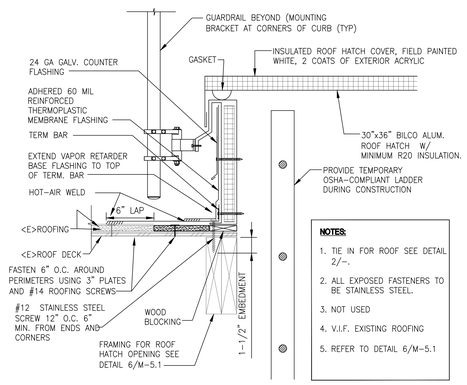
SHEET OF –

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NOTES:

1. V.I.F. CEILING SPACE AND TEMPORARY HYDRONIC POINTS OF CONNECTION PRIOR TO CUTTING ROOF.
2. PROVIDE TEMPORARY PLYWOOD BOARDS FOR TEMPORARY LANDING AT <E>CEILING JOISTS.
3. PROVIDE TEMPORARY LADDER TO FACILITATE ACCESS TO CEILING SPACE FOR TEMPORARY HYDRONIC CONNECTIONS.



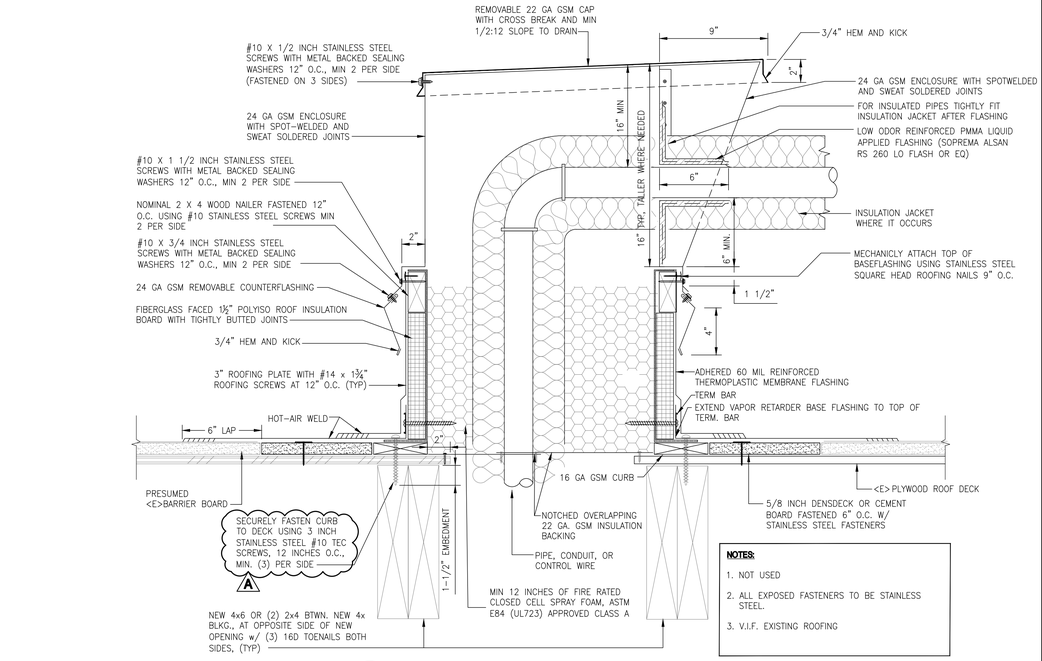
SECTION VIEW

NOTES:

1. TIE IN FOR ROOF SEE DETAIL 2/-.
2. ALL EXPOSED FASTENERS TO BE STAINLESS STEEL.
3. NOT USED
4. V.I.F. EXISTING ROOFING
5. REFER TO DETAIL 6/M-5.1

4 ROOF HATCH WITH GUARDRAIL AND GATE SYSTEM

SCALE: N.T.S.

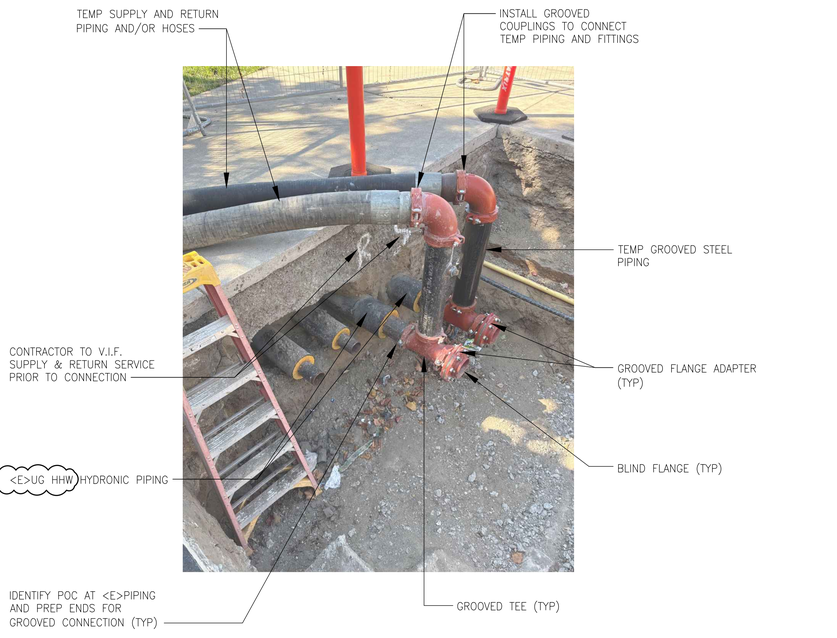


NOTES:

1. NOT USED
2. ALL EXPOSED FASTENERS TO BE STAINLESS STEEL.
3. V.I.F. EXISTING ROOFING

2 MECHANICAL EQUIPMENT CURB - SECTION VIEW

SCALE: N.T.S.

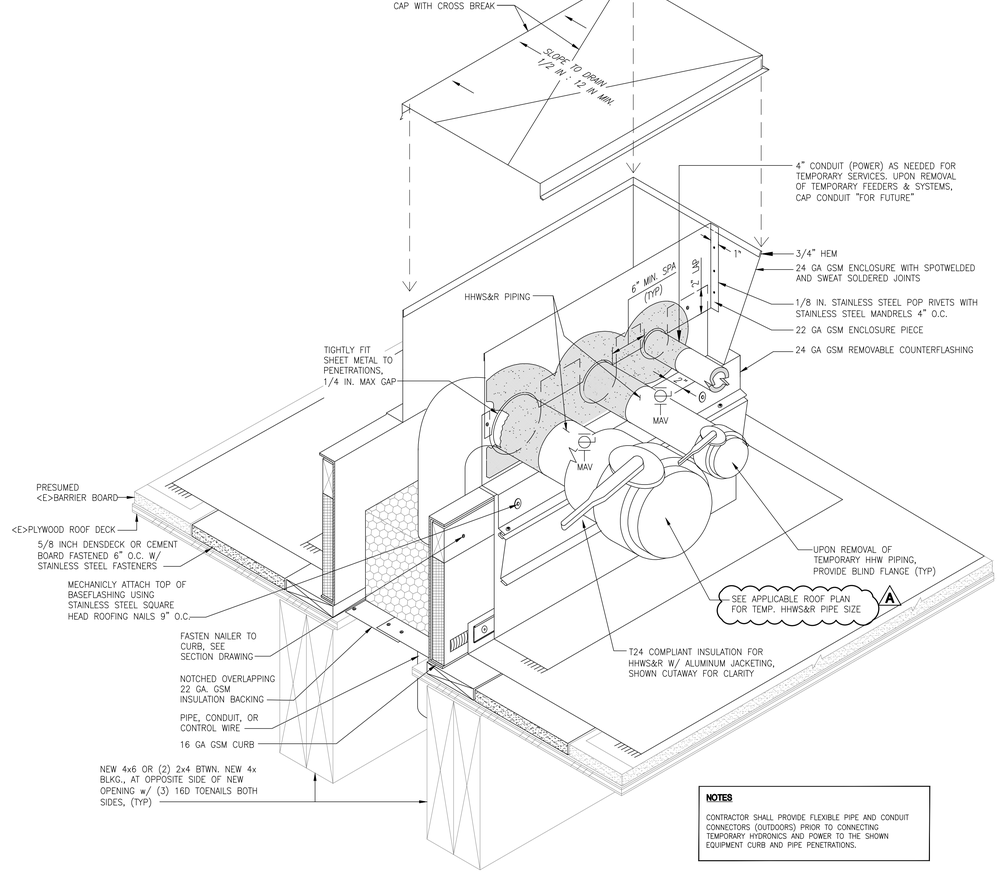


NOTE:

UPON COMPLETION OF WORK AND REMOVAL OF TEMPORARY SERVICES, CUT OUT GROOVES FROM <E>PIPING AND PREP FOR WELDS TO NEW PIPING.

3 TEMPORARY HHW BYPASS FOR UNDERGROUND SITE PIPING

SCALE: N.T.S.



NOTES

CONTRACTOR SHALL PROVIDE FLEXIBLE PIPE AND CONDUIT CONNECTORS (OUTDOORS) PRIOR TO CONNECTING TEMPORARY HYDRONICS AND POWER TO THE SHOWN EQUIPMENT CURB AND PIPE PENETRATIONS.

1 MECHANICAL EQUIPMENT CURB - ISO VIEW

SCALE: N.T.S.

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REGISTERED PROFESSIONAL ENGINEER — ERIN EMMETT SPRING — No. M40086 EXP. 09-30-2026 — MECHANICAL — STATE OF CALIFORNIA

DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE		
MARK	DATE	DESCRIPTION
	10/03/25	100% SD
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	11/12/25	PROGRESS SET
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A	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	EES
APPROVED BY:	EES

SHEET TITLE

MECHANICAL DETAILS

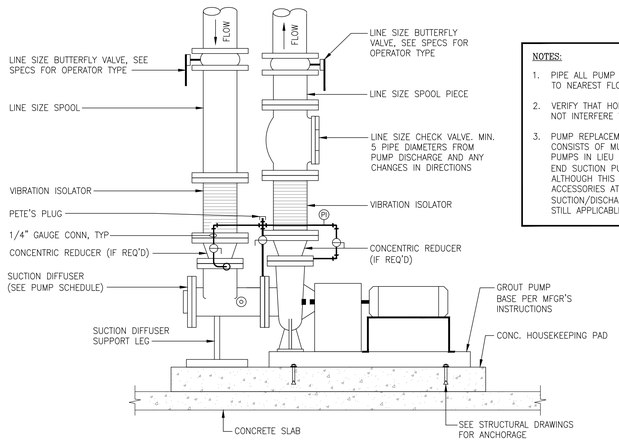
SCALE: AS NOTED

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M-5.5

SHEET OF –

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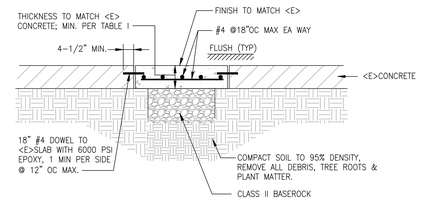
NOTES:

1. PIPE ALL PUMP SEAL & PAN DRAINS TO NEAREST FLOOR DRAIN.
2. VERIFY THAT HOLES FOR ANCHORS WILL NOT INTERFERE WITH PAD REBAR.
3. PUMP REPLACEMENT AT BLDG. 1300 CONSISTS OF MULTI-STAGE VERTICAL PUMPS IN LIEU OF A BASE-MOUNTED END SUCTION PUMP (AS INDICATED). ALTHOUGH THIS IS THE CASE, THE ACCESSORIES AT THE SUCTION/DISCHARGE OF THE PUMP ARE STILL APPLICABLE.

A

10 TYPICAL PUMP ELEVATION

SCALE: N.T.S.



NOTES:

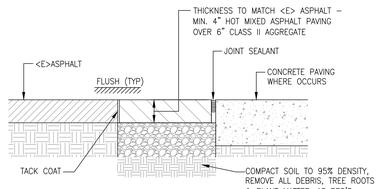
1. COORDINATE TRENCHING WITH MECHANICAL & ELECTRICAL
2. 2% MAX SLOPE CROSS SLOPE AT PATH OF TRAVEL AND 5% MAX RUNNING SLOPE ALONG PATH OF TRAVEL
3. DO NOT GRIND CONCRETE TO LEVEL SURFACES.
4. SEE TABLE 1 & NOTE ON 3/M-5.1.

9 CONCRETE PATCH

SCALE: N.T.S.

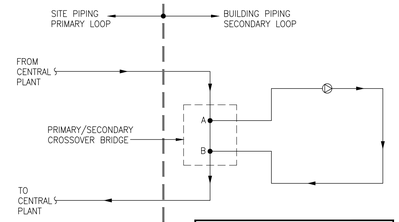
NOTES:

1. PATCH, REPAIR, REBUILD MUST MATCH EXISTING BUILT UP. MUST REBUILD TRENCH TO MATCH EXISTING BASE/SPECIFICATION. SEE TABLE 3/M-5.1.



8 ASPHALT PATCH

SCALE: N.T.S.

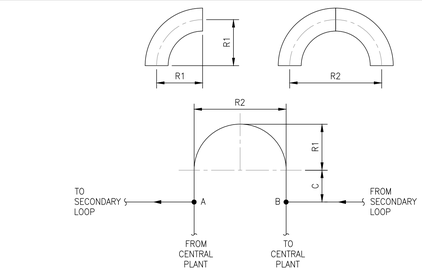


NOTE:

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

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

3A - CROSSOVER BRIDGE AT STRAIGHT PIPING



NOTES:

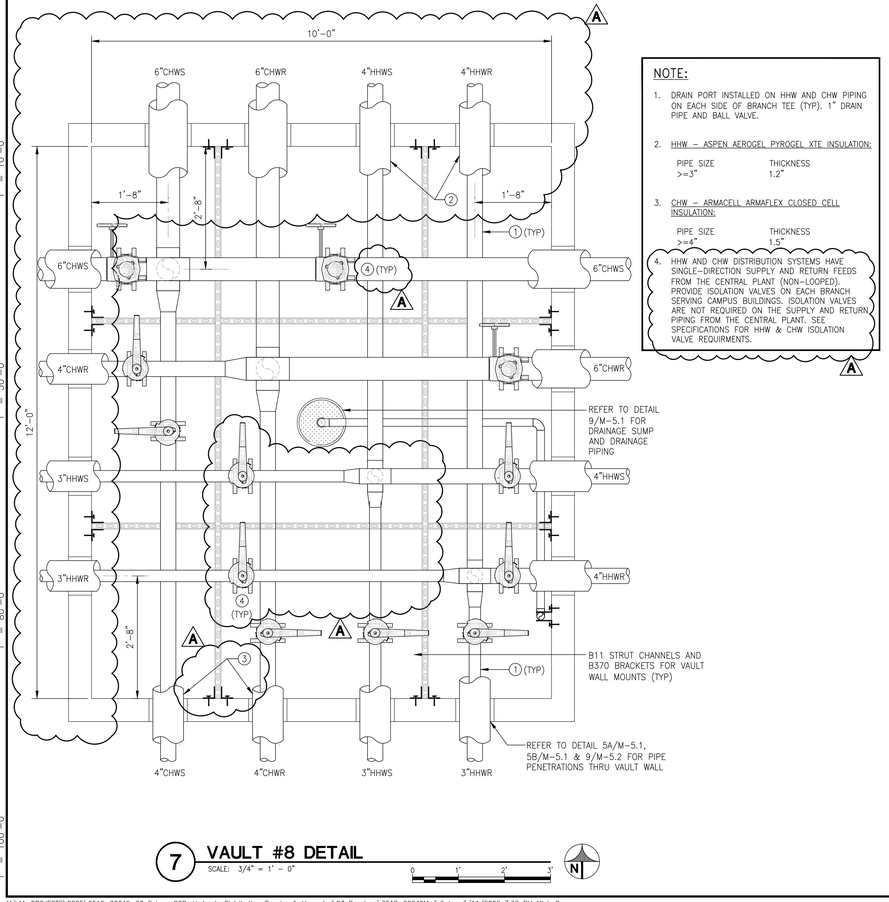
1. THE DIMENSION BETWEEN "A" AND "B" OF THE CROSSOVER BRIDGE SHALL BE 7 PIPE DIAMETERS. SECONDARY-TO-PRIMARY LOOP CONNECTIONS SHALL BE WELDED.
2. U-BEND FITTING IS ACCEPTABLE IN LIEU OF 2 90-DEG LONG RADIUS ELBOWS.

PRIMARY LOOP NPS (IN)	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 TEE (IN) (C)	DISTANCE FROM A TO B (IN)
2.5	3.75	7.5	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

3B - CROSSOVER BRIDGE WITH 180° LONG RADIUS FITTING

3 CROSSOVER BRIDGE DETAIL

SCALE: N.T.S.



NOTE:

1. DRAIN PORT INSTALLED ON HHW AND CHW PIPING ON EACH SIDE OF BRANCH TEE (TYP). 1" DRAIN PIPE AND BALL VALVE.
2. HHW – ASPEN AEROGEL PYROGEL XTE INSULATION:

PIPE SIZE	THICKNESS
>=3"	1.2"

3. CHW – ARMACELL ARMAFLEX CLOSED CELL INSULATION:

PIPE SIZE	THICKNESS
>=4"	1.5"

4. HHW AND CHW DISTRIBUTION SYSTEMS HAVE SINGLE-DIRECTION SUPPLY AND RETURN FEEDS FROM THE CENTRAL PLANT (NON-LOOPED). PROVIDE ISOLATION VALVES ON EACH BRANCH SERVING CAMPUS BUILDINGS. ISOLATION VALVES ARE NOT REQUIRED ON THE SUPPLY AND RETURN PIPING FROM THE CENTRAL PLANT. SEE SPECIFICATIONS FOR HHW & CHW ISOLATION VALVE REQUIRMENTS.

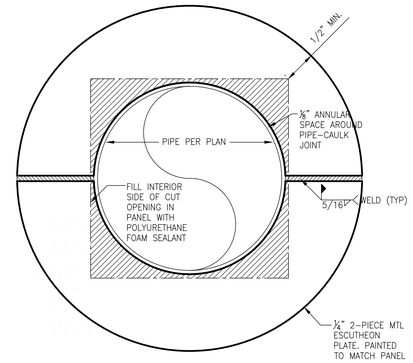
A

7 VAULT #8 DETAIL

SCALE: 3/4" = 1'-0"

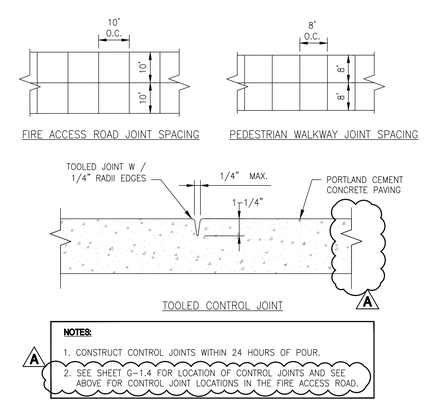
0 1' 2' 3'

N



6 ESCUTCHEON PLATE DETAIL

SCALE: N.T.S.



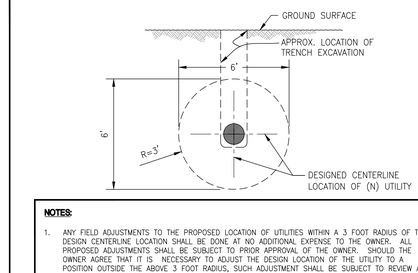
NOTES:

1. CONSTRUCT CONTROL JOINTS WITHIN 24 HOURS OF POUR.
2. SEE SHEET G-1.4 FOR LOCATION OF CONTROL JOINTS AND SEE ABOVE FOR CONTROL JOINT LOCATIONS IN THE FIRE ACCESS ROAD.

A

4 CONTROL JOINTS FOR CONCRETE PAVEMENT

SCALE: N.T.S.

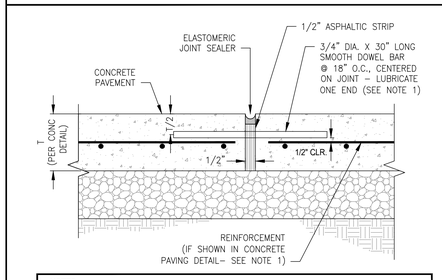


NOTES:

1. ANY FIELD ADJUSTMENTS TO THE PROPOSED LOCATION OF UTILITIES WITHIN A 3 FOOT RADIUS OF THE DESIGN CENTERLINE LOCATION SHALL BE DONE AT NO ADDITIONAL EXPENSE TO THE OWNER. ALL PROPOSED ADJUSTMENTS SHALL BE SUBJECT TO PRIOR APPROVAL OF THE OWNER. SHOULD THE OWNER AGREE THAT IT IS NECESSARY TO ADJUST THE DESIGN LOCATION OF THE UTILITY TO A POSITION OUTSIDE THE ABOVE 3 FOOT RADIUS, SUCH ADJUSTMENT SHALL BE SUBJECT TO REVIEW AS AN ITEM OF EXTRA EXPENSE.
2. IF IT IS NECESSARY TO RELOCATE (E) UTILITIES IN ORDER TO ALLOW THE UTILITY TO BE INSTALLED WITHIN A 3 FOOT RADIUS OF ITS DESIGNED CENTERLINE, THEN SUCH RELOCATION OF (E) UTILITIES SHALL BE PAID FOR AS AN ITEM OF EXTRA EXPENSE. ANY SUCH RELOCATION SHALL BE SUBJECT TO PRIOR APPROVAL OF THE OWNER.
3. IN AREAS WHERE SHORING IS NOT REQUIRED AS PER THE LINE PROFILE DRAWINGS, THE MAXIMUM DEPTH OF TRENCHING TO AVOID OBSTACLES WITHOUT ADDITIONAL COST SHALL BE 5' BELOW GRADE. IN AREAS WHERE SHORING IS REQUIRED TO MEET DESIGN GRADE, THE LINE MAY BE ADJUSTED AN ADDITIONAL 3' BELOW THAT SHOWN WITH NO INCREASE IN COST.

2 TYPICAL ADJUSTMENT CRITERIA

SCALE: N.T.S.

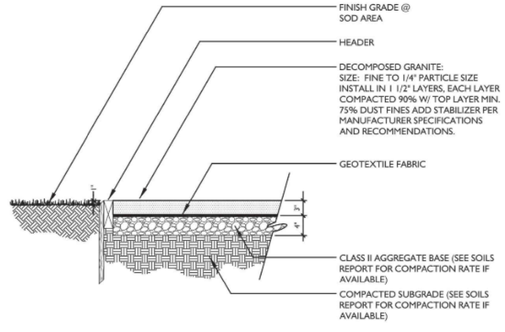


NOTES:

1. FOR UN-REINFORCED PAVEMENT SECTIONS, DOWEL MAY BE ELIMINATED.
2. REFER TO APPROPRIATE CONCRETE PAVEMENT DETAILS FOR THICKNESS OF PAVEMENT, AGGREGATE BASE, COMPACTION REQUIREMENTS AND SUBGRADE PREPARATION.
3. EXPANSION JOINTS TO BE INSTALLED IF ADJACENT TO A BUILDING OR STRUCTURE.
4. EXPASION JOINTS TO BE INSTALLED AT 20' O.C. ALONG FIRE ACCESS ROAD. FOR PEDESTRIAN WALKWAYS, USE 16'.
5. ALL EXPOSED FASTENERS TO BE STAINLESS STEEL.

5 EXPANSION JOINT FOR CONCRETE PAVEMENT

SCALE: N.T.S.



1 DECOMPOSED GRANITE PAVING

SCALE: N.T.S.

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

REGISTERED PROFESSIONAL ENGINEER
JOHN BARRETT SWIRE
No. M40086
EXP. 09-30-2026
MECHANICAL
STATE OF CALIFORNIA

DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE		
MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	EES
APPROVED BY:	EES

SHEET TITLE

MECHANICAL DETAILS

SCALE: AS NOTED

THIS DRAWING IS 30" X 42" AT FULL SIZE

M-5.6

SHEET OF –

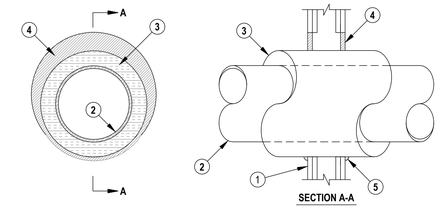
THIS DRAWING IS 30" X 42" AT FULL SIZE, 15" X 21" AT HALF SIZE. © 2015 BY SALAS O'BRIEN ENGINEERS, INC.

1/2" = 1'-0"
1/4" = 1'-0"
1/8" = 1'-0"
1" = 10'-0"
1" = 30'-0"
1" = 80'-0"
1" = 100'-0"

Classified by Underwriters Laboratories Inc. to UL 1479 and CAN/ULC-S115

System No. W-L-5029

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings — 1, 2 and 3 Hr (See Items 1, 3 and 4)	F Ratings — 1, 2 and 3 Hr (See Items 1, 3 and 4)
T Ratings — 0, 1/2, 1 and 1-1/4 Hr (See Item 3)	FT Ratings — 0, 1/2, 1 and 1-1/4 Hr (See Item 3)
L Rating At Ambient — 4 CFM/Sq Ft	FH Ratings — 1, 2 and 3 Hr (See Items 1, 2 and 4)
L Rating At 400 F — Less Than 1 CFM/Sq Ft	FTH Ratings — 0, 1/2, 1 and 1-1/4 Hr (See Item 3)
	L Rating At Ambient — 4 CFM/Sq Ft
	L Rating At 400 F — Less Than 1 CFM/Sq Ft



SECTION A-A

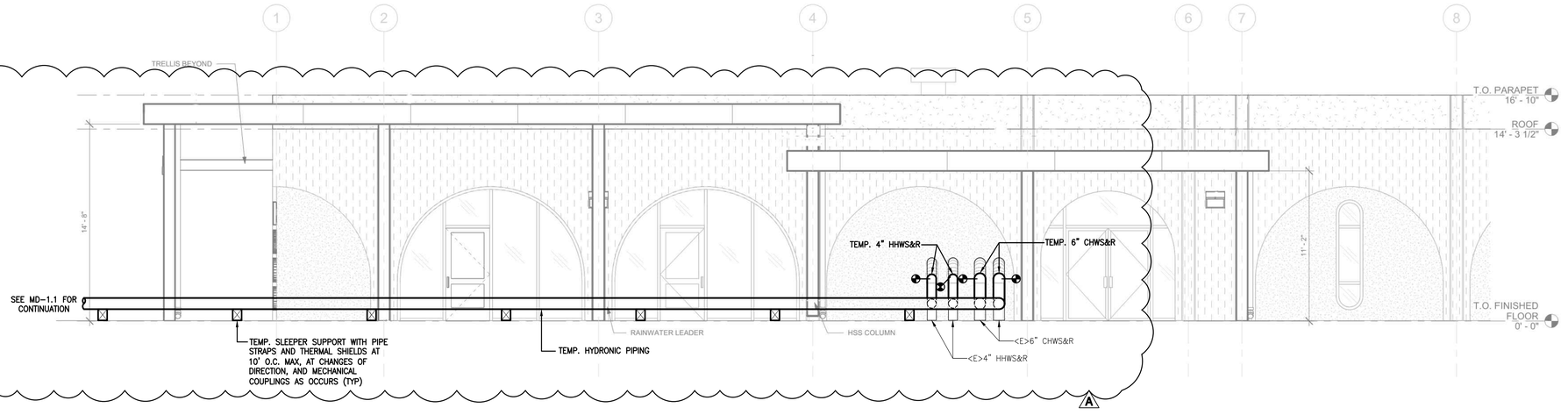
1. Wall Assembly — The 1, 2 or 3 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction 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 firestop 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 firestop 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 firestop 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 firestop 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 lap tape. Transverse joints secured with metal fasteners or with butt 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 Material 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 firestop 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-One Sealant or FS-ONE 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.

Hilti Firestop Systems

2 PIPE PENETRATION

SCALE: N.T.S.



1 BUILDING 1600 CANOPY NORTH ELEVATION

SCALE: 1/4" = 1' - 0"

0 4' 8'

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

REGISTERED PROFESSIONAL ENGINEER
ERIN EMMETT SWENSEN
No. M40086
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MECHANICAL
STATE OF CALIFORNIA

DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE

MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	EES
APPROVED BY:	EES

SHEET TITLE

MECHANICAL DETAILS

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

M-5.7

SHEET OF –

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VAULT SCHEDULE

VAULT TAG	MANUFACTURER	INSIDE CLEAR DIMENSIONS (FT) L	W	H	WALL THICKNESS (IN)	LID TYPE	LOAD LEVELS CLASS (MIN.)	TRAFFIC RATING	NOTES
<E>VLT-1	-	-	-	-	-	MANHOLE	-	-	8
<E>VLT-2	-	-	-	-	-	HATCH	-	-	8
<E>VLT-3	-	-	-	-	-	HATCH	-	-	8
VLT-4	**JENSEN**	**12**	**10**	**6**	**8**	**HATCH**	**5**	**HL93**	**1-10**
VLT-5	**JENSEN**	**12**	**10**	**6**	**8**	**HATCH**	**5**	**HL93**	**1-10**
<E>VLT-6	-	-	-	-	-	HATCH	-	-	8
VLT-7	**JENSEN**	**12**	**10**	**6**	**8**	**HATCH**	**5**	**HL93**	**1-10**
VLT-8	**JENSEN**	**12**	**10**	**6**	**8**	**HATCH**	**5**	**HL93**	**1-10**
VLT-9	**JENSEN**	**12**	**10**	**6**	**8**	**HATCH**	**5**	**HL93**	**1-10**
<E>VLT-10	-	-	-	-	-	HATCH	-	-	8
<E>VLT-11	-	-	-	-	-	HATCH	-	-	8
VLT-12	**JENSEN**	**10**	**8**	**6**	**8**	**HATCH**	**5**	**HL93**	**1-10, 12**
<E>VLT-13	-	-	-	-	-	MANHOLE	-	-	8
VLT-14	**JENSEN**	**10**	**8**	**6**	**8**	**HATCH**	**5**	**HL93**	**1-11**
VLT-15	**JENSEN**	**10**	**8**	**6**	**8**	**HATCH**	**5**	**HL93**	**1-11**
<E>VLT-16	-	-	-	-	-	HATCH	-	-	**8, 11**

NOTES:
1) PROVIDE AND INSTALL 12" SQ. (MIN.) VAULT SUMP.
2) PROVIDE HATCH DOORS WITH 8' X 6' OPENING SIZE
3) ACCESS LID SHALL BE COMPLIANT WITH ASTM STANDARD C1802
4) PROVIDE AND INSTALL 8' X 6' X 12" HATCH RISER
5) REFER TO M-1.1, M-1.2, M-1.3, AND M-1.4 FOR VAULT LOCATIONS AND SPECIFIC VAULT TAG # SYSTEM.
6) PROVIDE ENGRAVED TAG AT VAULT LID INDICATING "HYDRONICS - " FOLLOWED BY THE VAULT TAG "VLT-#". LETTERING SHALL BE A MINIMUM 1" IN SIZE. TAGS SHALL BE WELDED TO VAULT LIDS OR ENGRAVED BY FACTORY.
7) DESIGNED ASTM C857
8) COMPLY WITH STAMPED AND SEALED SUBMITTAL CALCULATIONS AND DESIGN, BY ENGINEER.
9) LOCKEFORD PLANT 6000 PSI CONCRETE MIX DESIGN
10) PRECAST BASE SECTION, 7/8" PULLING IRON 100008599 LOCATED IN WALLS OR FLOOR, FOAM BLOCKOUTS (FIELD GROUT IN UNUSED AREAS), GROUND ROD HOLE, P75 LIFTING, 100003073 SUMP PAN, HEAVIEST PICK 43,399/LBS 8" WALLS AND BASE
11) NOT IN CONTRACT
12) BID ALTERNATE #1

VFD SCHEDULE

BLDG	MARK	MOTOR DATA HP	FLA	Volts	DRIVE DATA Product ID	HP	FLA	Volts	VOLTAGE/ PHASE/ FREQ	BYPASS	WEIGHT (LBS)	ANCHORAGE DETAIL	NOTES
1300	**VFD-HHWP-1300**	**1.5**	**3**	**460 VAC**	**ACH580-BCR-03A0-4+B058+F267**	**1.5**	**3**	**480 VAC**	**480/3/60**	**YES**	**134**	**11/S-5.1**	**1 - 6**
1300	**VFD-CHWP-1300**	**2**	**3.4**	**460 VAC**	**ACH580-BCR-03A5-4+B058+F267**	**2**	**3.5**	**480 VAC**	**480/3/60**	**YES**	**134**	**11/S-5.1**	**1 - 6**

NOTES:
1.) ABB VFD SHALL HAVE PAD-LOCKABLE CIRCUIT BREAKER (DISCONNECT)
2.) ABB VFD SHALL HAVE DIRECT COMMUNICATION TO CONTROL SYSTEM VIA BACNET INTERFACE CARD
3.) WARRANTY SHALL BE 3 YEARS
4.) FACTORY START-UP AND TRAINING SHALL BE INCLUDED
5.) VFD SHALL RESTART AUTOMATICALLY AFTER POWER OUTAGE
6.) PROVIDE NEMA 4 ENCLOSURE

BUILDING HYDRONIC PUMP SCHEDULE

BUILDING	ROOM NR.	HHW/CHW SERVICE	MAKE	MODEL	SIZE	IN/OUT CONN.	GPM	TDH (Ft.)	HP	RPM	VOLT/PH/ HERTZ	OPER. WEIGHT (LBS)	SUCTION DIFFUSER DIMENSION (Sys. X Pump)	SUCTION DIFFUSER MAKE/MODEL	CHECK VLV.	ANCHORAGE DETAIL	NOTES
B-500	525	**HHWP**	**BELL & GOSSETT**	**E-1510**	**1.5AD**	**2" x 1-1/2"**	**74**	**35**	**1.5**	**1800**	**460/3/60**	**130**	**3" x 2"**	**B&G DB-3X**	**3"**	**10/S-5.1, 22/S-5.1**	**1, 2, 3, 6, 7, 8, 14, 16, 17**
B-600	55	<E> CHWP	BELL & GOSSETT	E-1510	2AD	2-1/2" x 2"	105	40	2	1800	460/3/60	-	4" x 2-1/2"	B&G EC-3X	4"	-	3, 4, 14, 16, 17
		<E> HHWP	BELL & GOSSETT	E-1510	1.25BC	1-1/2" x 1-1/4"	30	60	2	1750	460/3/60	-	-	-	3"	-	4, 15, 16, 17
		<E> CHWP	BELL & GOSSETT	E-1510	2BD	2-1/2" x 2"	76	60	5	1750	460/3/60	-	-	-	4"	-	4, 15, 16, 17
B-700	742	<E> HHWP	BELL & GOSSETT	E-1510	1.25AD	1-1/2" x 1-1/4"	55	50	2	1800	460/3/60	-	-	-	-	-	3, 4, 6, 7, 8
		<E> CHWP	BELL & GOSSETT	E-1510	2.5AC	3" x 2-1/2"	150	45	3	1800	460/3/60	-	-	-	-	-	4
B-800	810	<E> HHWP	BELL & GOSSETT	E-1510	1.5AD	2" x 1-1/2"	74	35	1.5	1800	460/3/60	-	-	-	-	-	3, 4, 7, 8
		<E> CHWP	BELL & GOSSETT	E-1510	-	-	125	35	-	-	-	-	-	-	-	-	4
B-900	ROOFTOP	<E> HHWP	BELL & GOSSETT	E 80	1.5X7	1-1/2" x 1-1/2"	43	45	2	1760	460/3/60	-	-	-	-	-	4
		<E> CHWP	BELL & GOSSETT	E 90	2AB	2" x 2"	-	-	2	1800	460/3/60	-	-	-	-	-	4
B-1200	1248	<E> HHWP	BELL & GOSSETT	E-1510	2BD	2-1/2" x 2"	115	70	5	1750	460/3/60	-	4" x 2-1/2"	B&G EC-3X	4"	-	3, 4, 6, 11, 17
		<E> CHWP	BELL & GOSSETT	E-1510	2.5BB	3" x 2-1/2"	294	74	10	1750	460/3/60	-	-	-	4"	-	4, 11, 17
B-1300	PATIO WOOD KILN	**HHWP**	**BELL & GOSSETT**	**e-SV**	**22SV**	**2" x 2"**	**58**	**24**	**0.75**	**1750**	**460/3/60**	**67**	**3" x 2"**	**B&G DB-3X**	**3"**	**16/S-5.1**	**1, 2, 3, 5, 6, 7, 12, 17**
		CHWP	**BELL & GOSSETT**	**e-SV**	**46SV**	**3" x 3"**	**138**	**36**	**2**	**1800**	**460/3/60**	**269**	**4" x 3"**	**B&G ED-3X**	**4"**	**16/S-5.1**	**1, 2, 3, 5, 6, 12, 17**
B-1400	1430	<E> HHWP	BELL & GOSSETT	E-1510	2.5BB	3" x 2-1/2"	170	60	5	1800	460/3/60	-	4" x 3"	B&G ED-3X	4"	-	3, 4, 6, 13, 17
		<E> CHWP	BELL & GOSSETT	E-1510	4BD	5" x 4"	400	50	7.5	1800	460/3/60	-	6" x 5"	B&G GF-3X	6"	-	3, 4, 6, 13, 17
B-1500	1518	<E> HHWP	BELL & GOSSETT	E-1510	1.5AD	2" x 1-1/2"	40	45	1.5	1800	460/3/60	-	-	-	3"	-	4, 6, 9, 17
		<E> CHWP	BELL & GOSSETT	E-1510	2.5AC	3" x 2-1/2"	110	40	2	1800	460/3/60	-	-	-	4"	-	4, 6, 9, 17
B-1600	1658	<E> HHWP	BELL & GOSSETT	E-1510	1.25BC	1-1/2" x 1-1/4"	80	52	3	1800	460/3/60	140	-	-	-	-	3, 4, 6, 7, 8
		<E> CHWP	BELL & GOSSETT	E-1510	2BD	2-1/2" x 2"	170	50	5	1800	460/3/60	-	-	-	-	-	3, 4, 6, 7, 8
B-2700	2772	<E>HHWP-S1	BELL & GOSSETT	E-1510	3AD	4" x 3"	270	40	5	1750	460/3/60	295	-	-	-	-	1, 2, 3, 4
		<E>HHWR (CIRC. PUMP)-P1	BELL & GOSSETT	-	-	-	-	-	-	-	-	-	-	-	-	-	4
		<E>DHW-P2	BELL & GOSSETT	-	-	-	-	-	-	-	-	-	-	-	-	-	4
		<E> CHWP	BELL & GOSSETT	E-1510	5A	6" x 5"	545	30	7.5	1800	460/3/60	-	-	-	-	-	4, 10

NOTES:
1) TUNGSTEN CARBIDE SEALS
2) TEFC 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 REMAIN
5) MOUNT PUMPS ONTO COMMON INERTA BASE. MAKE/MODEL: VIBREX RMSBI-SR3200 OR ACCEPTABLE EQUAL. INSTALL PER MANUFACTURER'S INSTRUCTIONS.
6) PROVIDE LINE SIZED FLEXIBLE PIPE CONNECTORS AT PUMP SUCTION AND DISCHARGE.
7) PROVIDE THREADED PIPE UNIONS WHEN FITTINGS OR EQUIPMENT (SUCH AS SUCTION DIFFUSER AND/OR PUMPS) ARE MANUFACTURED FOR NPT CONNECTIONS (SIZE 2-1/2" AND BELOW)
8) PROVIDE CONCENTRIC REDUCER
9) REFER TO SHEET M-4.1 FOR BUILDING 1500 HYDRONIC PUMPS
10) REFER TO SHEET M-4.2 FOR BUILDING 2700 HYDRONIC PUMPS
11) REFER TO SHEET M-4.3 FOR BUILDING 1200 HYDRONIC PUMPS
12) REFER TO SHEET M-4.4 FOR BUILDING 1300 HYDRONIC PUMPS
13) REFER TO SHEET M-4.5 FOR BUILDING 1400 HYDRONIC PUMPS
14) REFER TO SHEET M-4.9 FOR BUILDING 500 HYDRONIC PUMPS
15) REFER TO SHEET M-4.10 FOR BUILDING 600 HYDRONIC PUMPS
16) BID ALTERNATE #1
17) PROVIDE SWING CHECK VALVE AT DISCHARGE SIDE OF PUMP. INSTALL PER MANUFACTURER'S INSTALLATION REQUIREMENTS AND COMPLY WITH STRAIGHT LENGTH REQUIREMENTS.

TEMPORARY CHILLER SCHEDULE

MARK	SERVICE	NOM. TONS	EVAPORATOR GPM DESIGN	GPM MAX	EWT (F)	LWT (F)	IN/OUT CONN. (IN)	CONDENSER FANS NO.	HP EA	COMPRESSOR NO.	HP EA	REF. TYPE	REF. CHG. (LBS)	ON-BOARD PUMP GPM	TDH (FT)	HP	ELECTRICAL DATA (PUMP NOT INCLUDED) VOLT/PH/ HERTZ	UNIT KW	FLA (AMPS)	OPER. WEIGHT (LBS)	ANCHORAGE DETAIL	NOTES
(TEMP) CH-60T	B-500, B-600, B-1200, B-1300, B-1400 & B-1500	60	144	216	55	45	4" / 4"	6	1.0	4	15	R-22	135	*REFER TO TEMP. PUMP SCHEDULE*			480/3/60	180	113	8,215	9/S-5.3, 11/S-5.3	1 - 8, 10 - 12
(TEMP) CH-100T	B-1600 & B-2700	100	240	346	55	45	4" / 4"	8	1.3	4	40	R454B	162	350	90	15	460/3/60	300	207	12,580	9/S-5.3, 11/S-5.3	1 - 9, 11, 12
(TEMP) CH-200T	B-1200, B-1400 & B-2700	200	400	720	55	45	4" / 4"	10	1.5	4 + 2	50 + 40	R454B	126	600	100	25	460/3/60	600	436	15,300	9/S-5.3, 11/S-5.3	1 - 9, 11, 12

NOTES:
1) PROVIDE TEMPORARY COMPRESSION-EXPANSION TANK, MIN. 150 GALLONS CHARGED TO TEMPORARY FILL PRESSURE.
2) PROVIDE MAKE UP WATER PROVISIONS SUCH AS BFP, METER AND PRESSURE REGULATOR AT A MINIMUM. CONTRACTOR TO PROVIDE TEMPORARY MAKE-UP WATER PIPING FILL PRESSURE SHALL BE REGULATED TO 25 PSIG.
3) PROVIDE TEMPORARY AIR BLEEDING PROVISIONS AT HIGH POINTS.
4) PROVIDE TEMPORARY WATER TREATMENT SYSTEM COMPLETE WITH TEST PORTS AND 5-GALLON CHEMICAL POT FEEDER.
5) PROVIDE TEMPORARY CONTROLS COMPLETE WITH USER INTERFACE CONTROL PANEL
6) PROVIDE TEMPORARY STRAINER AT EQUIPMENT, OR AT TEMPORARY PUMP.
7) CONTRACTOR RESPONSIBLE FOR TEMPORARY PIPING, SUPPORTS, ISOLATION VALVES, ETC. TO FACILIATE A COMPLETE AND FUNCTIONAL TEMPORARY CHILLER SYSTEM FOR EACH BUILDING.
8) PROVIDE TEMPORARY ELECTRICAL FEEDERS. CONTRACTOR SHALL FIELD VERIFY AND COORDINATE WITH ELECTRICAL SHEETS AND TEMPORARY EQUIPMENT LOCATIONS FOR REQUIRED TEMPORARY FEEDER LENGTHS AND SIZES IN COMPLIANCE WITH NEC.
9) PROVIDE ON-BOARD TEMPORARY PUMP WITH LIKE-SIZED (HP) VFD. REFER TO BUIDLING HYDRONIC PUMP SCHEDULE FOR TEMPORARY CHW/HHW PUMP GPM AND TDH REQUIREMENTS FOR EACH BLDG. SYSTEM SHALL BE BALANCED FOR EACH BUILDING SYSTEM.
10) PROVIDE TEMPORARY PUMP FOR 60T CHILLER. REFER TO TEMPORARY PUMP SCHEDULE.
11) DETAIL 9/S-5.3 IS APPLICABLE TO ANCHORING TEMPORARY EQUIPMENT TO A.C. PAVING AND GRADE SURFACES ONLY.
12) DETAIL 11/S-5.3 IS APPLICABLE TO ANCHORING TEMPORARY EQUIPMENT TO CONCRETE SURACES.

TEMPORARY GAS BOILER SCHEDULE

MARK	SERVICE	INPUT (MBH)	OUTPUT (MBH)	EFF. (%)	HEATING HOT WATER GPM	EWT (F)	LWT (F)	WPD (FT)	IN/OUT CONN. (IN)	NATURAL GAS FLUE DIA. (IN)	GAS TRAIN SIZE (IN)	MIN. GAS PRESS. (IN. W.C.)	MAX. GAS PRESS. (IN. W.C.)	OPER. WEIGHT (LBS)	ANCHORAGE DETAIL	NOTES
(TEMP) GB-1950	B-1400 & B-2700	1,950	1,658	85.0%	165	160	180	7.70	2.5" / 2.5"	12"	2"	5	14"	2,020	9/S-5.3, 11/S-5.3	1 - 15
(TEMP) GB-1000	B-1300 & B-1400	1,000	850	85.0%	85	160	180	3.44	2.5" / 2.5"	10"	2"	5	14"	1,400	11/S-5.3	1 - 15

NOTES:
1) PROVIDE TEMPORARY COMPRESSION-EXPANSION TANK(S). B-2700 REQUIRES A TOTAL VOLUME OF 1,600 GALLONS, WHILE THE OTHER BUILDINGS LISTED REQUIRE 750 GALLONS.
2) PROVIDE MAKE UP WATER PROVISIONS SUCH AS BFP, METER AND PRESSURE REGULATOR AT A MINIMUM. CONTRACTOR TO PROVIDE TEMPORARY MAKE-UP WATER PIPING. FILL PRESSURE SHALL BE REGULATED TO 25 PSIG.
3) PROVIDE TEMPORARY AIR BLEEDING PROVISIONS AT HIGH POINTS.
4) PROVIDE TEMPORARY WATER TREATMENT SYSTEM COMPLETE WITH TEST PORTS AND 5-GALLON CHEMICAL POT FEEDER.
5) PROVIDE TEMPORARY CONTROLS COMPLETE WITH USER INTERFACE CONTROL PANEL.
6) PROVIDE TEMPORARY STRAINER AT EQUIPMENT, OR AT TEMPORARY PUMP.
7) PROVIDE TEMPORARY PUMP WITH LIKE-SIZED (HP) VFD. REFER TO TEMPORARY PUMP SCHEDULE FOR TEMPORARY PUMP GPM AND TDH REQUIREMENTS. SYSTEM SHALL BE BALANCED FOR EACH BUILDING SYSTEM.
8) PROVIDE TEMPORARY SAFETY CONTROLS FOR PRESSURE RELIEF, HIGH TEMPERATURE LIMIT, FLOW SWITCH, AND OTHER ALARMS.
9) PROVIDE TEMPORARY FLUE WITH RAIN CAP TERMINATED NO LESS THAN 7'-0" FROM THE BASE OF THE UNIT. TERMINATION SHALL BE NO LESS THAN 10 FT. HORIZONTALLY FROM WALKWAYS AND BUILDING OPENINGS.
10) PROVIDE TEMPORARY NATURAL GAS TRAIN, TEMPORARY GAS PIPING (SEE PLANS), AND A POUNDS-INCHES PRESSURE REGULATOR.
11) PROVIDE TEMPORARY CONDENSATE HANDLING AND NEUTRALIZATION SYSTEM AS NEEDED. PROVIDE TEMPORARY PVC PIPE TO THE NEAREST SANITARY SEWER DRAIN.
12) CONTRACTOR RESPONSIBLE FOR TEMPORARY PIPING, SUPPORTS, ISOLATION VALVES, ETC. TO FACILIATE A COMPLETE AND FUNCTIONAL TEMPORARY BOILER SYSTEM FOR EACH BUILDING.
13) PROVIDE TEMPORARY ELECTRICAL FEEDERS. CONTRACTOR SHALL FIELD VERIFY AND COORDINATE WITH ELECTRICAL SHEETS AND TEMPORARY EQUIPMENT LOCATIONS FOR REQUIRED TEMPORARY FEEDER LENGTHS AND SIZES IN COMPLIANCE WITH NEC.
14) DETAIL 9/S-5.3 IS APPLICABLE TO ANCHORING TEMPORARY EQUIPMENT TO A.C. PAVING AND GRADE SURFACES ONLY.
15) DETAIL 11/S-5.3 IS APPLICABLE TO ANCHORING TEMPORARY EQUIPMENT TO CONCRETE SURACES.

ELECTRIC BOILER SCHEDULE

MARK	MAKE	MODEL	SERVICE	INPUT (kW)	OUTPUT (MBH)	GPM	EWT (F)	LWT (F)	IN/OUT CONN. (IN)	ELECTRICAL EFF. (%)	ELECTRICAL VOLT/PH/ HERTZ	ELECTRICAL FLA	OPER. WEIGHT (LBS)	ANCHORAGE DETAIL	NOTES
EB-A	LATTNER	300-LW-480-3	B-500, B-1200, B-1500	300	1,014	101	160	180	2.5" / 2.5"	99.0%	460/3/60	361	2,400	9/S-5.3	1 - 12
EB-B	LATTNER	300-LW-480-3	B-600, B-1200, B-1600	300	1,014	101	160	180	2.5" / 2.5"	99.0%	460/3/60	361	2,400	9/S-5.3, 11/S-5.3	1 - 12

NOTES:
1) ELECTRIC BOILERS SHALL BE PURCHASED AND USED FOR TEMPORARY HHW SERVICES. CONTRACTOR SHALL INCLUDE RIGGING AND MOBILIZATION RELATED TO RELOCATING BOILERS BETWEEN BUILDINGS. ALL OTHER ACCESSORIES SHALL BE PROVIDED (ASSUMED TO BE RENTAL EQUIPMENT) FOR COMPLETE FUNCTIONAL TEMPORARY SERVICE. OWNERSHIP SHALL BE TRANFERRED TO COLLEGE UPON COMPLETION OF THE PROJECT.
2) PROVIDE TEMPORARY COMPRESSION-EXPANSION TANK(S). BUILDINGS LISTED REQUIRE 750 GALLONS MINIMUM.
3) PROVIDE MAKE UP WATER PROVISIONS SUCH AS BFP, METER AND PRESSURE REGULATOR AT A MINIMUM. CONTRACTOR TO PROVIDE TEMPORARY MAKE-UP WATER PIPING. FILL PRESSURE SHALL BE REGULATED TO 25 PSIG
4) PROVIDE TEMPORARY AIR BLEEDING PROVISIONS AT HIGH POINTS.
5) PROVIDE TEMPORARY WATER TREATMENT SYSTEM COMPLETE WITH TEST PORTS AND 5-GALLON CHEMICAL POT FEEDER.
6) PROVIDE TEMPORARY CONTROLS COMPLETE WITH USER INTERFACE CONTROL PANEL
7) PROVIDE TEMPORARY STRAINER AT EQUIPMENT, OR AT TEMPORARY PUMP.
8) PROVIDE TEMPORARY PUMP WITH LIKE-SIZED (HP) VFD. REFER TO TEMPORARY PUMP SCHEDULE FOR TEMPORARY PUMP GPM AND TDH REQUIREMENTS. SYSTEM SHALL BE BALANCED FOR EACH BUILDING SYSTEM.
9) PROVIDE TEMPORARY SAFETY CONTROLS FOR PRESSURE RELIEF, HIGH TEMPERATURE LIMIT, FLOW SWITCH, AND OTHER ALARMS.
10) CONTRACTOR RESPONSIBLE FOR TEMPORARY PIPING, SUPPORTS, ISOLATION VALVES, ETC. TO FACILIATE A COMPLETE AND FUNCTIONAL TEMPORARY BOILER SYSTEM FOR EACH BUILDING.
11) PROVIDE TEMPORARY ELECTRICAL FEEDERS. CONTRACTOR SHALL FIELD VERIFY AND COORDINATE WITH ELECTRICAL SHEETS AND TEMPORARY EQUIPMENT LOCATIONS FOR REQUIRED TEMPORARY FEEDER LENGTHS
12) DETAIL 9/S-5.3 IS APPLICABLE TO ANCHORING TEMPORARY EQUIPMENT TO A.C. PAVING AND GRADE SURFACES ONLY.

TEMPORARY PUMP SCHEDULE

MARK	SERVICE	GPM	TDH (Ft.)	HP	RPM	VOLT/PH/ HERTZ	OPER. WEIGHT (LBS)	ANCHORAGE DETAIL	NOTES
(TEMP) CHWP-A	**B-500, B-600, B-1200, B-1300, B-1400 & B-1500**	**250**	**75**	**7.5**	**1800**	**480/3/60**	**1,000**	**9/S-5.3, 11/S-5.3**	**1 - 7**
(TEMP) HHWP-A	**B-2700**	**600**	**130**	**40**	**1800**	**480/3/60**	**2,235**	**9/S-5.3**	**1 - 5, 7**
(TEMP) HHWP-B	**B-1200 & B-1400**	**250**	**75**	**7.5**	**1800**	**480/3/60**	**1,000**	**9/S-5.3, 11/S-5.3**	**1 - 7**
(TEMP) HHWP-C	**EB-A, EB-B, B-500, B-600, B-1300, B-1500 & B-1600**	**125**	**75**	**7.5**	**1800**	**480/3/60**	**1,000**	**9/S-5.3, 11/S-5.3**	**1 - 7**

NOTES:
1) PROVIDE TEMPORARY PUMP WITH LIKE-SIZED (HP) VFD.
2) PROVIDE BALANCING VALVE AT DISCHARGE SIDE OF PUMP.
3) PROVIDE TEST, ADJUSTMENT, AND BALANCE FOR EACH TEMPORARY PUMP AT EACH BUILDING. REFER TO BUIDLING HYDRONIC PUMP SCHEDULE FOR TEMPORARY CHW/HHW PUMP GPM AND TDH REQUIREMENTS FOR EACH BLDG.
4) PROVIDE TEMPORARY ELECTRICAL FEEDERS. CONTRACTOR SHALL FIELD VERIFY AND COORDINATE WITH ELECTRICAL SHEETS AND TEMPORARY EQUIPMENT LOCATIONS FOR REQUIRED TEMPORARY FEEDER LENGTHS AND SIZES IN COMPLIANCE WITH NEC.
5) PROVIDE CHECK VALVE IF MORE THAN ONE PUMP IS MANIFOLDED TOGETHER FOR TEMPORARY SERVICES.
6) DETAIL 9/S-5.3 IS APPLICABLE TO ANCHORING TEMPORARY EQUIPMENT TO A.C. PAVING AND GRADE SURFACES ONLY.
7) DETAIL 11/S-5.3 IS APPLICABLE TO ANCHORING TEMPORARY EQUIPMENT TO CONCRETE SURACES.

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National Strength.
Local Action.

REGISTERED PROFESSIONAL ENGINEER — ERIN EMMETT GREEN — No. M40086 — EXP. 09-30-2026 — MECHANICAL — STATE OF CALIFORNIA

DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE

MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

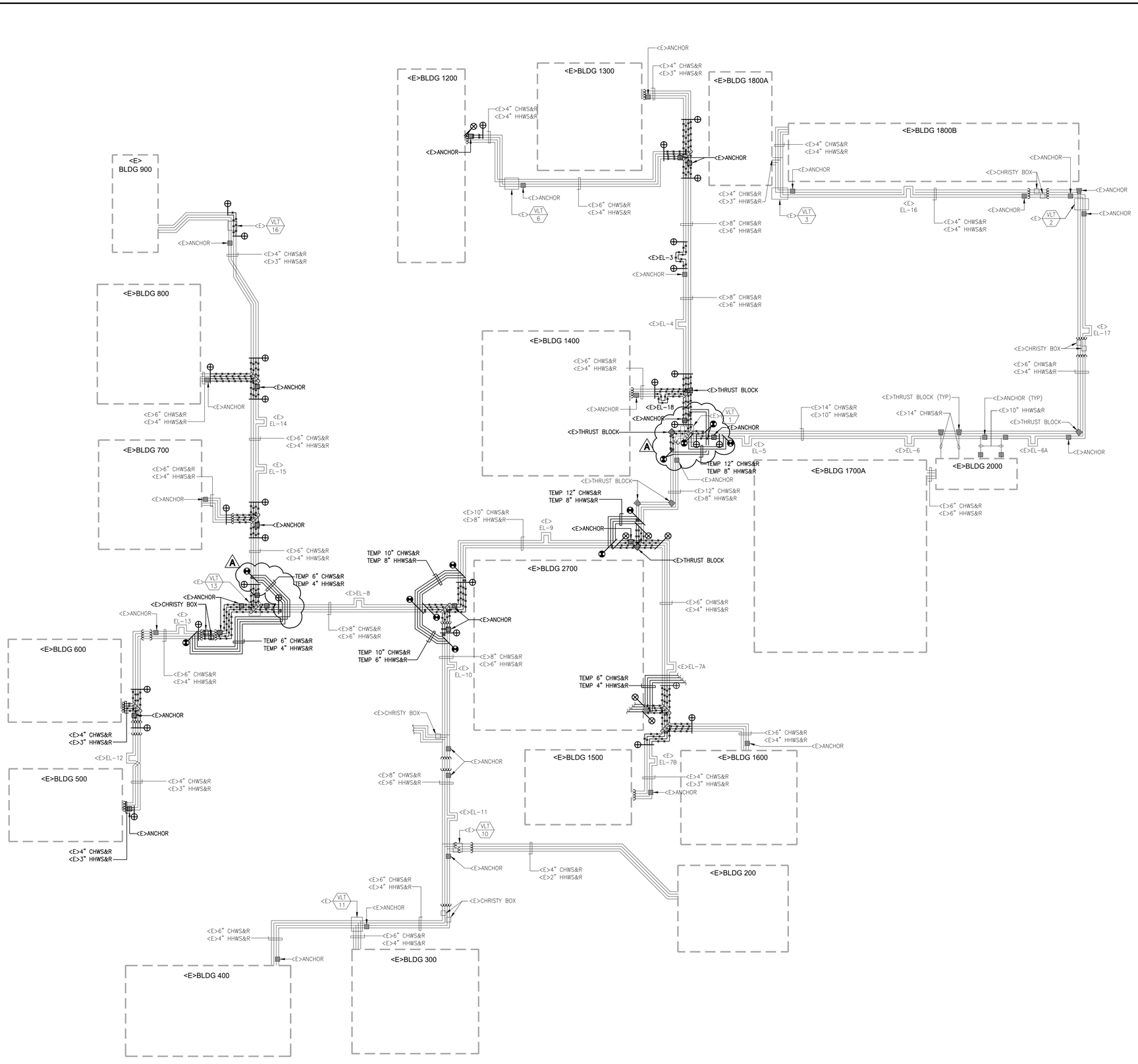
SOBE PROJECT NO: 2510-00649
DATE: 03/11/26
DRAWN BY:
CHECKED BY: EES
APPROVED BY: EES

SHEET TITLE
MECHANICAL SCHEDULES

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

M-6.1
SHEET OF –

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1 PRIMARY HYDRONIC PIPING SYSTEM SCHEMATIC - DEMO
SCHEMATIC

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REGISTERED PROFESSIONAL ENGINEER
MINH SHERWIN ONG
No. M40086
EXP. 09-30-2026
MECHANICAL
STATE OF CALIFORNIA
DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

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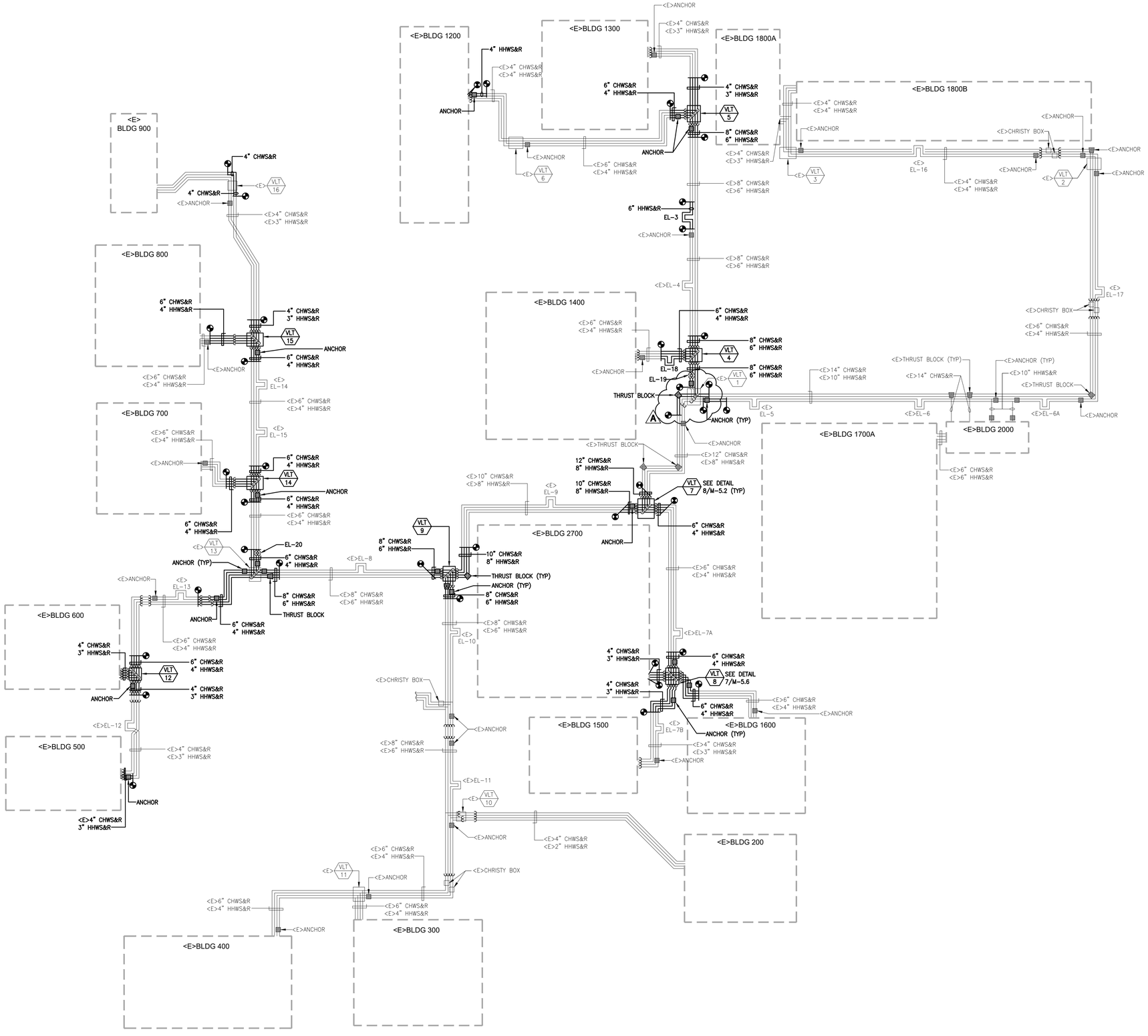
SHEET TITLE

MECHANICAL
PRIMARY HYDRONIC PIPING SYSTEM SCHEMATIC - DEMO

SCALE: AS NOTED
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MD-7.1
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1 PRIMARY HYDRONIC PIPING SYSTEM SCHEMATIC - NEW

SCHEMATIC

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REGISTERED PROFESSIONAL ENGINEER
JOHN BARRETT SWIFT
No. M40086
EXP. 09-30-2026
MECHANICAL
STATE OF CALIFORNIA

DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

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MECHANICAL
PRIMARY HYDRONIC PIPING SYSTEM SCHEMATIC - NEW

SCALE: AS NOTED
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M-7.1
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1/2" = 1'-0" 1/4" = 1'-0" 1/8" = 1'-0" 1" = 10'-0" 1" = 30'-0" 1" = 80'-0" 1" = 100'-0"

DEMOLITION NOTES

1. REMOVE EXISTING EQUIPMENT IN CONFLICT WITH NEW CONDITIONS. REMOVE ALL WIRE NOT IN SERVICE AND FROM ABANDONED RACEWAYS. PROTECT EXISTING CIRCUITING PASSING THROUGH DEMOLITION AREAS. EXTEND AND/OR RELOCATE AS NECESSARY.
2. ALL ABANDONED EQUIPMENT INCLUDING LIGHT, RECEPTACLES, DATA, FIRE ALARM, ETC., SHALL BE COVERED WITH BLANK METAL PLATES AND PAINTED TO MATCH THE ADJACENT FINISH OF SURROUNDING WALLS OR CEILING TO THE SATISFACTION OF THE ARCHITECT/OWNER.
3. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO DISCONNECT AND REMOVE ALL EXISTING ELECTRICAL EQUIPMENT AFFECTED BY THE PROJECT. THIS INCLUDES REROUTING OR THE EXTENSION OF EXISTING CONDUIT AND FEEDER WHERE NECESSARY TO MAINTAIN OPERATIONAL OF ANY EXISTING EQUIPMENT.
4. CIRCUIT NUMBERS AND CONDUIT HOMERUNS SHOWN ON THESE DRAWINGS WERE TAKEN FROM EXISTING RECORD DRAWINGS. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO VERIFY EXISTING CIRCUITING AND CONDUIT HOMERUNS. ADJUST CIRCUIT NUMBERS ACCORDING TO THE ACTUAL CONDITIONS.
5. WHERE EXISTING CONDUIT IS TO BE ABANDONED OR DEMOLISHED, THE CONDUIT SHALL BE REMOVED IF IT IS EXPOSED, IN A CRAWL SPACE OR IN AN ACCESSIBLE CEILING. ABANDONED OR DEMOLISHED CONDUIT FEEDS UP THROUGH THE FLOOR SHALL BE CUT OFF AND PLUGGED FLUSH WITH THE FLOOR.
6. ALL ELECTRICAL EQUIPMENT INCLUDING LIGHT, RECEPTACLE, DATA, FIRE ALARM, ETC., THAT ARE TO BE REMOVED, SHALL BE REMOVED COMPLETELY, INCLUDING CONDUIT AND WIRING BACK TO THE LAST DEVICE REMAINING IN SERVICE, OR SOURCE.
7. EXISTING CIRCUITS WHICH ARE REMOVED AND NOT REUSED SHALL BE IDENTIFIED ON THE PANEL SCHEDULE AS "SPARE".
8. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE OWNER PRIOR TO REMOVAL OF EXISTING ELECTRICAL EQUIPMENT AND TURN OVER REMOVED EQUIPMENT THAT THE OWNER REQUESTS IN AN "AS-FOUND" CONDITION.
9. ALL DEMOLITION WORK SHOWN, IF ANY, WAS PREPARED FOR THE CONVENIENCE OF THE CONTRACTOR. NO REPRESENTATION HAS BEEN MADE THAT ALL ITEMS THAT MAY REQUIRE DEMOLITION HAVE BEEN SHOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CAREFULLY EXAMINE THE SITE AND THE CONTRACT DOCUMENTS AND TO PERFORM ALL DEMOLITION AND RECONSTRUCTION WHICH MAY BE REQUIRED FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK.
10. WHEN CALLED FOR, OR SCOPE OF WORK REQUIRES ELECTRICAL EQUIPMENT TO BE REMOVED, ALL CONDUIT, WIRE, BOXES, HANGERS, ETC. SHALL BE REMOVED COMPLETELY. ALL OPENINGS SHALL BE PATCHED, SEALED AND PAINTED TO MATCH THE ADJACENT FINISH.

ANCHORAGE NOTE

APPLICABLE CODE: 2022 CBC

MEP COMPONENT ANCHORAGE NOTE:

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA-APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTION 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26, AND 30:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G., HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE NOR BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVING A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.

B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

BRACING NOTE

APPLICABLE CODE: 2022 CBC PER IR 16-13

MEP DISTRIBUTION SYSTEM BRACING NOTE FOR PIPING, DUCTWORK, AND ELECTRICAL CONDUIT:

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7 SECTION 13.3 AS DEFINED IN ASCE 7 SECTIONS 13.6.5, 13.6.6, 13.6.7, AND 13.6.8; AND 2022 CBC SECTIONS 1617A.1.24, 1617A.1.25, AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEMS ARE AS NOTED BELOW. THE MEP DESIGN PROFESSIONAL ENGINEER RESPONSIBLE FOR CONTENT ON THESE SHEETS HAS VERIFIED THAT THE DESIGN METHODS IDENTIFIED BELOW ARE IN ACCORDANCE WITH DSA IR 16-13.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP ☐ MD ☐ PP ☐ E ☒ OPTION 1: PROJECT-SPECIFIC DESIGN

MP ☐ MD ☐ PP ☐ E ☐ OPTION 2: DESIGN BASED ON OSHPD OPM, WITHIN PROJECT SUBMITTAL

MP ☐ MD ☐ PP ☐ E ☐ OPTION 3: DESIGN BASED ON OSHPD OPM, DEFERRED SUBMITTAL

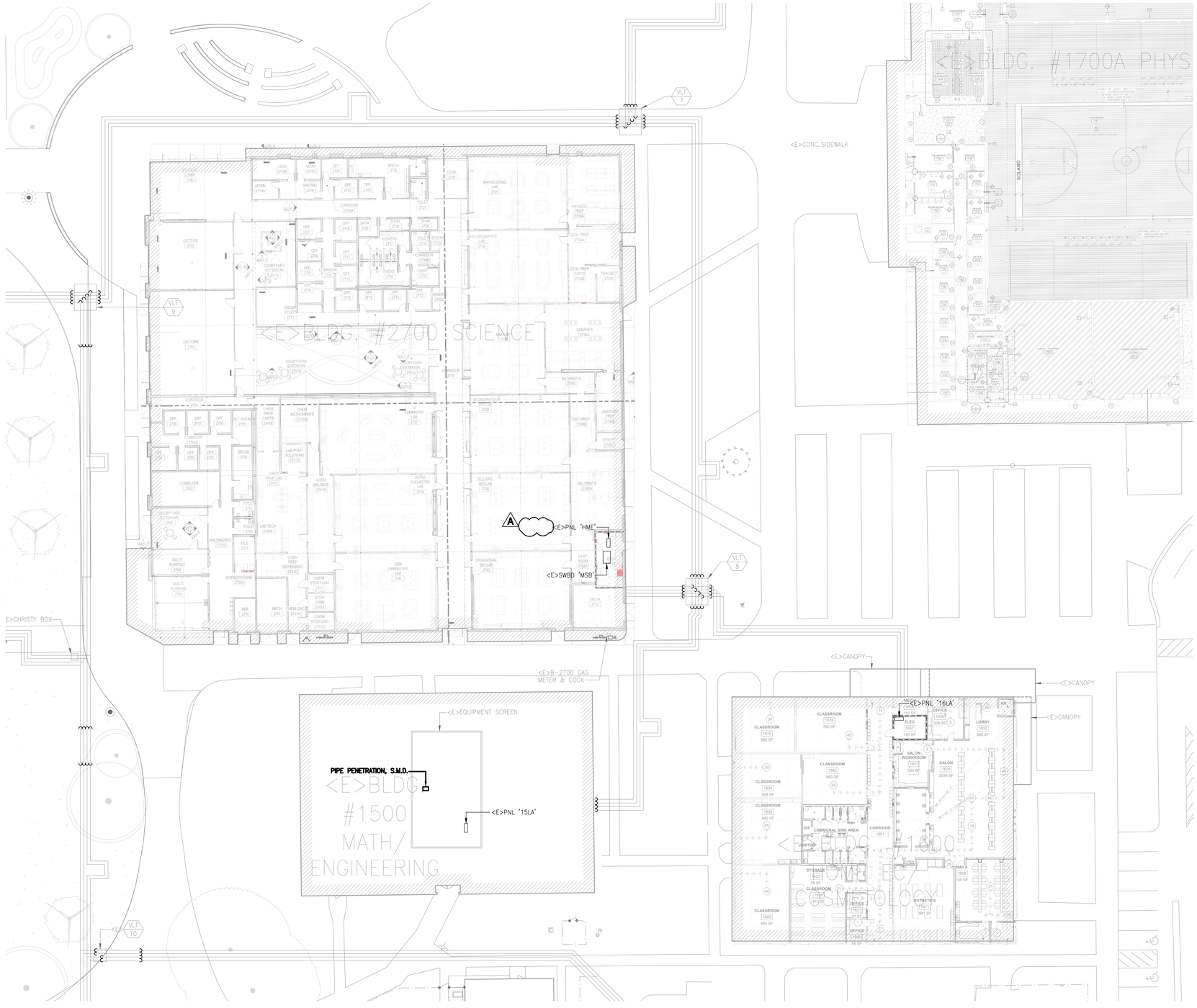
GENERAL NOTES

1. CONTRACTOR IS RESPONSIBLE TO OBTAIN A COMPLETE SET OF CONTRACT DOCUMENTS, ADDENDA, DRAWINGS, AND SPECIFICATIONS. PRIOR TO SUBMITTING PROPOSAL, CONTRACTOR SHALL EXAMINE ARCHITECTURAL, STRUCTURAL AND MECHANICAL CONSTRUCTION DRAWINGS AND SPECIFICATIONS AND SHALL HAVE VISITED THE CONSTRUCTION SITE. HE/SHE SHALL BE FAMILIAR WITH THE EXISTING CONDITIONS UNDER WHICH HE/SHE 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 HIS/HER PART. DETERMINE THE SEQUENCE OF CONSTRUCTION THROUGHOUT THE PROJECT, INCLUDING TEMPORARY FACILITIES AND CONNECTIONS REQUIRED FOR THE DURATION OF THE PROJECT.
2. ALL TEMPORARY CONNECTIONS SHALL BE CONSIDERED 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.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PERSONS AND PROPERTY AND SHALL PROVIDE INSURANCE COVERAGE AS NECESSARY FOR LIABILITY, PERSONAL, AND PROPERTY DAMAGE, TO FULLY PROTECT THE OWNER, ARCHITECT, AND ENGINEER FROM ANY AND ALL CLAIMS RESULTING FROM THIS WORK.
4. THE CONTRACTOR SHALL PROVIDE TO THE ARCHITECT A CONSTRUCTION SCHEDULE OF ALL ELECTRICAL WORK. THE CONSTRUCTION SCHEDULE SHALL IDENTIFY ALL SIGNIFICANT MILESTONES WITH COMPLETION DATES.
5. THE CONTRACTOR SHALL MAINTAIN RECORD DRAWINGS AT THE PROJECT SITE INDICATING ALL MODIFICATIONS TO ELECTRICAL SYSTEMS. THE CONTRACTOR SHALL, AT THE CONCLUSION OF THE PROJECT, PROVIDE A SET OF REPRODUCIBLE (AUTOCAD), ACCURATE AND NEAT "AS-BUILT" DRAWINGS ACCEPTABLE TO THE ARCHITECT.
6. THESE DRAWINGS DO NOT REPRESENT THE EXACT LOCATIONS, SIZES OR EXTENT OF UTILITIES ON SITE. CONTRACTOR SHALL TAKE STANDARD PRECAUTIONS FOR WORK IN EXISTING FACILITIES.
7. EXISTING ELECTRICAL WIRING WHICH WILL NOT BE MADE OBSOLETE AND WHICH WILL BE DISTURBED DUE TO CONSTRUCTION CHANGES REQUIRED BY THIS CONTRACT SHALL BE RESTORED TO OPERATING CONDITION, AS REQUIRED AND/OR DIRECTED. WHERE REQUIRED, SHOWN AND/OR DIRECTED, OUTLETS AND CONDUIT RUNS SHALL BE RELOCATED. IN SOME CASES IT MAY BE NECESSARY TO EXTEND CONDUITS AND PULL IN NEW WIRING OR INSTALL JUNCTION BOXES AND SPLICE IN NEW WIRING OR REPLACE OLD WIRING WITH NEW.
8. CERTAIN REMODELING OF ELECTRICAL FACILITIES WILL BE REQUIRED IN THE EXISTING BUILDING. EXISTING CONDUIT RUNS ARE GENERALLY NOT SHOWN, ALTHOUGH A FULL ATTEMPT HAS BEEN MADE TO SHOW SOME EXISTING CONDITIONS, OF WHICH INFORMATION HAS BEEN TAKEN FROM EXISTING RECORD DRAWINGS AND/OR LIMITED FIELD INVESTIGATIONS. THE DRAWINGS SHOWING LOCATION OF EXISTING EQUIPMENT, OUTLETS, FIXTURES, ETC., ARE APPROXIMATE ONLY (CONTRACTOR TO FIELD VERIFY).
9. ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BE LISTED AND LABELED BY A NATIONALLY RECOGNIZED TESTING LABORATORY AND SHALL BE INSTALLED AS PER LISTING OR LABELING (IE. MAXIMUM FUSE SIZE MEANS FUSE PROTECTION IS REQUIRED).
10. ALL ELECTRICAL EQUIPMENT AND INSTALLATION SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:
    a. AMERICAN STANDARD ASSOCIATION (ASA)
    b. AMERICAN NATIONAL STANDARD INSTITUTE (ANSI)
    c. AMERICAN SOCIETY OF TESTING MATERIALS (ASTM)
    d. CALIFORNIA CODE OF REGULATIONS TITLE 24 (CCR)
    e. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
    f. INSULATED POWER CABLE ENGINEERS ASSOCIATIONS (IPCEA)
    g. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATIONS (NEMA)
    h. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
    i. ALL LOCAL CODE HAVING JURISDICTION
11. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES, INSPECTIONS AND INCIDENTAL COSTS NECESSARY FOR EXECUTION AND COMPLETION OF ELECTRICAL WORK, INCLUDING ALL CHARGES BY STATE, COUNTY AND LOCAL GOVERNMENTAL AGENCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR THE ELECTRICAL UTILITY SYSTEM SHUT-DOWNS AND START-UP. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION REQUIRED WITH OTHER AGENCIES AND UTILITY COMPANIES.
12. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL CROSSINGS ON NEW UTILITIES WITH THAT OF EXISTING ON SITE AND IN ADJACENT PROPERTIES. NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS OR DISCREPANCIES FROM THIS PLAN.
13. CONTRACTOR SHALL COORDINATE HIS/HER WORK WITH OTHER TRADE ON SITE. ANY COST TO PERFORM WORK TO ACCOMPLISH SAID COORDINATION WHICH DIFFERS FROM THE WORK AS SHOWN ON THE DRAWINGS SHALL BE INCURRED BY THE CONTRACTOR. ANY DISCREPANCIES, AMBIGUITIES OR CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT DURING BID TIME FOR CLARIFICATIONS. ANY SUCH CONFLICTS NOT CLARIFIED PRIOR TO BID SHALL BE SUBJECT TO THE INTERPRETATION OF THE ARCHITECT/ENGINEER AT NO ADDITIONAL COST TO THE OWNER.
14. COORDINATE WITH OTHER TRADES AS TO THE EXACT LOCATION OF THEIR RESPECTIVE EQUIPMENT. PROVIDE POWER AND CONNECTION TO MOTORS AND EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS AS INDICATED ON ELECTRICAL DRAWINGS AND DRAWINGS OF OTHER TRADES. CONTRACTOR SHALL REVIEW DRAWINGS OF OTHER TRADES FOR CONTROL DIAGRAMS, SIZE AND LOCATION OF EQUIPMENT. DISCONNECT SWITCHES, STARTERS, AND CONDUITS FOR CONTROL WIRING FOR MECHANICAL AND PLUMBING EQUIPMENT SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING MANUFACTURER'S SHOP DRAWINGS PRIOR TO ROUGHING IN ALL CONDUITS TO THIS EQUIPMENT.
15. BEFORE ROUGH-IN, VERIFY ALL MOUNTING HEIGHTS AND EXACT LOCATIONS FOR ALL EQUIPMENT, ELECTRICAL CONNECTIONS, STUB-UPS, RECEPTACLES, OUTLETS, CONDUIT RUNS, ETC. WITH ARCHITECT AND OWNER. PLACE DEVICES LOCATED ABOVE COUNTERS, SHELVING, ETC. AND IN BATHROOMS SO AS NOT TO CONFLICT WITH EDGES OF WAINSCOTING, COUNTER SPLASH, SHELVING, ETC. ARCHITECTURAL DRAWINGS SHALL GOVERN. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOCATIONS OF ELECTRICAL DEVICES
16. MOUNTING HEIGHTS OF ALL CONTROL DEVICES TO BE USED BY OCCUPANT OF THE ROOM OR AREA SHALL BE MOUNTED AT THE FOLLOWING HEIGHTS:
    RECEPTACLES OUTLETS : +18" (TO BOTTOM OF OUTLETS)
    TELEPHONE/TV/DATA OUTLETS : +18" (TO BOTTOM OF OUTLETS)
    LIGHT SWITCHES : +44" (TO HIGHEST OPERABLE PART)
    OUTLETS ABOVE COUNTER : +44" (TO HIGHEST OPERABLE PART)
    MOUNTING HEIGHTS OF ALL DEVICES AND EQUIPMENT ARE FROM FINISHED FLOOR TO LOCATION OF DEVICE AS NOTED. EQUIPMENT INSTALLED IN LOCATIONS NOT APPROVED BY THE ARCHITECT SHALL BE RELOCATED AS DIRECTED BY THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.
17. COORDINATE ALL OUTLET BOX INSTALLATION WITH ARCHITECTURAL WALL FINISH SCHEDULES. SPACE BETWEEN FACEPLATE AND DEVICE BOX SHALL NOT EXCEED 1/8".
18. FOR RENOVATION WORK, THE CONTRACTOR SHALL CONCEAL ALL WORK WHERE POSSIBLE. ALL EXPOSED RACEWAY AND BOXES IN OCCUPIED AREAS OR ON EXTERIOR WALLS SHALL BE PAINTED TO MATCH ADJACENT FINISHES.
19. 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 ELECTRICAL WORK UNDER THE TERMS OF THIS SPECIFICATION. CLOSE ALL OPENINGS, REPAIR ALL SURFACES, ETC., AS REQUIRED.
20. SEAL ALL CONDUIT PENETRATIONS THROUGH FIRE RATED WALLS AND CEILINGS. FURNISH AND INSTALL FIRE RATED BACKBOXES AS REQUIRED, MAINTAINING FIRE RATING OF CEILING OR WALLS WHERE RECESSED ELECTRIC EQUIPMENT SUCH AS LIGHT FIXTURES, SWITCHES, RECEPTACLES, PANEL, ETC. ARE INSTALLED IN RATED WALL OR CEILINGS. PENETRATIONS OF FIRE RATED WALLS, CEILINGS, OR FLOORS SHALL COMPLY WITH CBC CHAPTER 7 (714) REQUIREMENTS. CONDUIT PENETRATIONS THAT ARE NOT STUBBED-OUT INSIDE THE WALL SHALL MEET F AND T RATING. ALL FIRE PROOFING METHODS SHALL BE UL APPROVED.
21. ALL EXTERIOR EQUIPMENT SHALL BE NEMA 3R RATED. ALL WALL PENETRATIONS TO EXTERIOR WALLS SHALL BE SEALED WATER TIGHT.
22. PULLING TAPES: ALL RACEWAY WITHOUT CABLE OR WIRE SHALL BE INSTALLED WITH A MINIMUM 1100 LBS. STRENGTH TEST POLYESTER PULLING TAPE. PULLING TAPES SHALL BE DETECTABLE MULE-TAPE WITH SEQUENTIAL FOOTAGE MARKING.
23. RUN NO MORE THAN 3 CURRENT CARRYING CONDUCTORS IN ANY WIREWAY UNLESS DE-RATING IS APPROVED BY ENGINEER OR SHOWN ON DRAWINGS.
24. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE COPPER, #10 AWG MINIMUM, RATED FOR 600V, THHN/THWN, 75 DEGREE CELSIUS. ALL CONDUCTORS SHALL BE STRANDED, SOFT DRAWN ANNEALED COPPER WIRE 98% CONDUCTIVITY, BEARING THE UL LABEL. SYSTEM VOLTAGE SHALL BE IDENTIFIED AS TO VOLTAGE AND PHASE CONNECTIONS BY MEANS OF COLOR IMPREGNATED INSULATION OR APPROVED COLORED MARKING TAPE.
25. WHERE MULTI-HOMERUNS ARE INDICATED ON DRAWINGS INDICATING THE SAME CIRCUIT NUMBER, PROVIDE A JUNCTION BOX ABOVE THE ACCESSIBLE CEILING AND ROUTE ONE SET OF WIRES TO THE CIRCUIT BREAKER.
26. REFER TO THE SINGLE LINE DIAGRAM FOR THE CONDUIT AND CONDUCTOR SIZES HOMERUN TO ELECTRICAL PANELS. CONDUIT RUNS MAY NOT BE SHOWN ON DRAWINGS, BUT ARE PART OF THIS CONTRACT.
27. ALL CONDUIT RUNS INCLUDING STRAIGHT FEEDER AND BRANCH CIRCUIT SHALL BE PROVIDED WITH SUFFICIENT PULL BOXES OR JUNCTION BOXES TO LIMIT THE MAXIMUM LENGTH OF ANY SINGLE CABLE PULL TO 100 FEET. PULL BOXES SHALL BE SIZED PER CODE OR AS INDICATED ON DRAWINGS. LOCATIONS SHALL BE DETERMINED IN THE FIELD OR AS INDICATED ON THE DRAWINGS.
28. FINAL CONNECTIONS TO ALL EQUIPMENT SHALL BE PER MANUFACTURER'S APPROVED WIRING DIAGRAMS, DETAILS, AND INSTRUCTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MATERIAL AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.
29. DO NOT COMBINE DIFFERENT SYSTEM VOLTAGES IN SAME CONDUIT (EG., 120/208V VS. 277/480V), UNLESS APPROVED BY ENGINEER OR SHOWN ON DRAWINGS.
30. ELECTRICAL SYSTEMS SHALL BE INSTALLED FOR FINAL INSPECTIONS. PROVIDE NEUTRAL TEST AND PROOF OF TORQUE DURING FINAL INSPECTION FOR ALL UNITS. FINAL TERMINATIONS OF CONDUCTORS TO ELECTRICAL EQUIPMENT AND DEVICES SHALL BE TORQUE WRENCH TIGHTENED TO THE MANUFACTURER'S RECOMMENDED SPECIFICATION, NO EXCEPTION.
31. CIRCUIT BREAKER TERMINALS IN SWITCHBOARDS AND LOAD CENTER SHALL BE UL LISTED AND APPROVED FOR USE WITH COPPER 75 DEGREE CELSIUS CONDUCTORS.
32. SIZES OF BREAKERS, SWITCHES, FUSES AND FEEDERS ARE BASED ON DESIGNED EQUIPMENT SIZES. THESE SIZES SHALL BE ADJUSTED TO SATISFY REQUIREMENTS OF ACTUAL INSTALLED OR SUBSTITUTE EQUIPMENT. UP SIZING OR DOWNSIZING OF FEEDERS SHALL BE PROVIDED WITHOUT ADDITIONAL COST TO THE OWNER.
33. AS REQUIRED ALL OVERSIZED FEEDERS THAT WERE ADJUSTED IN SIZE TO COMPENSATE FOR VOLTAGE DROP SHALL BE PROVIDED WITH ADAPTER LUGS OR SPLICE BOX. ADAPTER LUGS SHALL BE PROVIDED IF SIZE IS AVAILABLE. OTHERWISE PROVIDE CABLE SPLICES IN THE SPLICE BOX TO REDUCE CABLES TO THE MAXIMUM SIZE THAT THE BREAKER LUGS CAN ACCOMMODATE.
34. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAW-CUTTING, TRENCHING, BACKFILLING, COMPACTION AND PATCHING OF CONCRETE AND ASPHALT AS REQUIRED TO COMPLETE WORK. USE EXTREME CAUTION WHEN TRENCHING NEAR EXISTING UNDERGROUND UTILITY LINES. CONTRACTOR SHALL PROVIDE ALL REQUIRED CUTTING, PATCHING, PAINTING, AND REPAIRS NECESSARY TO RESTORE DAMAGED SURFACES TO EQUAL OR BETTER THAN ORIGINAL CONDITIONS EXISTING AT THE START OF WORK.
35. ALL ELECTRICAL EQUIPMENT SHALL BE BRACED OR ANCHORED TO RESIST HORIZONTAL FORCE ACTING IN ANY DIRECTION IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST EDITION OF ASCE7.
36. ALL INTERIOR AND ABOVE GRADE EXTERIOR CONDUIT INSTALLATION SHALL BE RIGID GALVANIZED STEEL, UNLESS EXCEPTED BY NOTE 37 BELOW.
37. ELECTRICAL METALLIC TUBING (EMT) MAY BE USED IN THE FOLLOWING CONDITIONS: INTERIOR APPLICATIONS, SMALLER THAN 2" TRADE SIZE DIAMETER AND INSTALLED EIGHT (8) FEET FROM FINISHED FLOOR OR HIGHER, OR INTERIOR APPLICATIONS, SMALLER THAN 2" TRADE SIZE DIAMETER AND ENTERING A PANEL FROM ABOVE.
38. CONNECTIONS TO VIBRATING EQUIPMENT (MOTOR, TRANSFORMER ENCLOSURE, ETC.) AND SEISMIC SEPARATIONS SHALL BE PROVIDED WITH LIQUID-TIGHT FLEXIBLE STEEL CONDUIT WITH WATERTIGHT CONNECTORS. MAXIMUM LENGTH OF CONDUIT SHALL BE SIX FEET, UNLESS OTHERWISE NOTED.
39. POLYVINYL CHLORIDE (PVC) SCHEDULE 40 MAY BE INSTALLED BENEATH SLAB AND UNDERGROUND INSTALLATION. INSTALL PVC COATED RIGID STEEL CONDUIT FOR TRANSITION FROM UNDERGROUND TO ABOVE GRADE INSTALLATION.
40. CONTRACTOR SHALL PROVIDE TERMINATIONS FOR ALL DATA/VOICE CABLES INDICATED AT OUTLET LOCATIONS INDICATED ON DRAWINGS.
41. CONTRACTOR SHALL PROVIDE AND INSTALL ACCESS PANELS IN NON-ACCESSIBLE CEILINGS WHERE REQUIRED TO ACCESS ELECTRICAL EQUIPMENT IN CEILING SPACE. ACCESS DOORS SHALL HAVE FIRE RATING EQUAL TO THE CEILING ASSEMBLY IN WHICH THEY ARE INSTALLED.
42. ALL FIRE LIFE SAFETY EQUIPMENT, SUCH AS FIRE ALARM CONTROL PANEL AND REMOTE POWER SUPPLIES SHALL BE PROVIDED WITH DEDICATED CIRCUITS. IDENTIFY CIRCUIT DESIGNATION AND PROVIDE PERMANENT LABELING, "FIRE ALARM CIRCUIT" ON ELECTRICAL PANEL. PROVIDE LOCKABLE CIRCUIT BREAKER.
43. CONTROL CONDUIT FOR ENERGY/BUILDING MANAGEMENT SYSTEM (E/BMS) SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
44. ROUTE CONDUIT PARALLEL AND PERPENDICULAR TO WALLS AND ADJACENT PIPING. ARRANGE CONDUIT TO MAINTAIN HEADROOM AND TO PRESENT A NEAT APPEARANCE.
45. WHEN A DISCREPANCY IN QUANTITY OR SIZE OF CONDUIT, WIRE, EQUIPMENT, CIRCUIT BREAKERS, ETC., ARISES ON THE DRAWINGS OR SPECIFICATIONS, CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL REQUIRED BY THE MOST STRINGENT CONDITIONS NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS TO PROVIDE A COMPLETE AND OPERABLE SYSTEM, OR AS DIRECTED BY ENGINEER.
46. FOR SMALL AC MOTORS NOT HAVING BUILT-IN THERMAL OVERLOAD PROTECTION, PROVIDE MANUAL MOTOR STARTERS WITH OVERLOAD HEATER ELEMENTS SIZED PER MANUFACTURER'S RECOMMENDATION. FOR SMALL AC MOTORS WITH BUILT-IN THERMAL OVERLOAD PROTECTION, PROVIDE A HORSEPOWER RATED TOGGLE DISCONNECT SWITCH.
47. DISCONNECT SAFETY SWITCHES SHALL BE HEAVY DUTY AND BE RATED FOR THE NUMBER OF POLES, VOLTAGE, CURRENT AND HORSEPOWER RATING AS REQUIRED. PROVIDE FUSE PROTECTION BASED ON THE MOTOR NAMEPLATE RATINGS.
48. PROVIDE PERMANENT IDENTIFICATION (NAMEPLATES) FOR ALL ELECTRICAL PANELS, SWITCHBOARDS, MOTOR CONTROL CENTERS, DISCONNECT SWITCHES, TRANSFORMERS, TERMINAL CABINETS, ETC.
49. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO VERIFY TYPE OF CEILING SYSTEMS AND TO FURNISH APPROVED LIGHTING FIXTURES OF THE TYPE REQUIRED FOR MOUNTING IN SUBJECT CEILING. PROVIDE ALL NECESSARY MOUNTING KIT/HARDWARE TO PROVIDE A COMPLETE WORKING LIGHTING SYSTEM.
50. ALL FINAL ELECTRICAL CONNECTIONS TO OWNER FURNISHED EQUIPMENT SHALL BE MADE BY THE ELECTRICAL CONTRACTOR.
51. ALL SPLICES AND TERMINALS SHALL BE COMPRESSION TYPE, OF SEAMLESS PURE COPPER, TIN PLATED, LONG BARREL, INSPECTION WINDOW, TERMINALS WITH TWO-HOLE PAD (WITH NEMA DRILLING). CLEAN ALL SURFACES AND INSTALL WITH OXIDE INHIBITING COMPOUND BURNDY PENETROX-E OR EQUAL. APPLY COMPOUND BETWEEN BUS BAR AND LUG PAD AND BETWEEN CONDUCTOR AND LUG BARREL. INSTALL COMPRESSION CONNECTORS WITH A FULLY CIRCUMFERENTIAL COMPRESSION DIE BURNDY HYPRESS OR EQUAL.
52. LABEL ALL CONDUIT WHERE IT BEGINS, AND WHERE IT TERMINATES INTO A BOX, PANEL, DEVICE, LOAD, OR DISCONNECT. CONDUIT SHALL BE LABELED EVERY 30 FEET OR LESS. CONDUIT SHALL BE LABELED WHERE IT PENETRATES ANY WALL OR FLOOR. LABEL SHALL BE PERMANENT PRINTED LABELS (DESCRIBING SOURCE, CIRCUIT, AND LOAD) LEGIBLE FROM FLOOR WHERE POSSIBLE (STANDING POSITION).
53. CONTRACTOR'S FAILURE TO ORDER OR RELEASE ORDER FOR MATERIALS AND/OR EQUIPMENT WILL NOT BE ACCEPTED AS A REASON TO SUBSTITUTE ALTERNATE MATERIALS, EQUIPMENT OR INSTALLATION METHODS.
54. PROVIDE ARC-FLASH HAZARD WARNING LABELS ON ALL AFFECTED ELECTRICAL EQUIPMENT, INCLUDING SWITCHBOARDS, PANEL BOARDS, INDUSTRIAL CONTROL PANELS, METER SOCKET ENCLOSURES, AND MOTOR CONTROL CENTERS. MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS. LABEL SHALL BE FACTORY PRE-PRINTED OR MACHINE-PRINTED SELF-ADHESIVE VINYL MATERIAL; UV, CHEMICAL, WATER, HEAT AND ABRASION RESISTANT; PRODUCED USING MATERIALS RECOGNIZED BY UL 969. MINIMUM SIZE: 3.5 BY 5 INCHES.
55. UNLESS OTHERWISE NOTED, ARRANGE, PAY FOR, COORDINATE AND PROVIDE ALL PERMITS NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM.
56. ALL WORK IS <N> UNLESS OTHERWISE NOTED.
57. ELECTRICAL CONDUCTORS SERVING EQUIPMENT SUPPLIED BY POWER CONVERSION EQUIPMENT AS PART OF A VARIABLE FREQUENCY DRIVE (VFD) SYSTEM AND/OR A SERVO DRIVE SYSTEM SHALL HAVE THERMOSET INSULATION TYPE XHHW, OR XHHW-2

SYMBOLS & ABBREVIATIONS

EXTENT OF DEMOLITION
NEW TO EXISTING CONNECTION
1 WORK ITEM (ELECTRICAL)
1/E-ST DETAIL DESIGNATION — DETAIL NUMBER / DRAWING NUMBER (IF BLANK, SAME SHEET)
CT 1 EQUIPMENT DESIGNATION — EQUIPMENT TYPE / EQUIPMENT NUMBER
1/E-ST SECTION DESIGNATION — SECTION NUMBER / DRAWING NUMBER (IF BLANK, SAME SHEET)
EXISTING CONDUIT
NEW CONDUIT
CONDUIT TO BE DEMOLISHED
PANEL BOARD/TERMINAL CABINET – FLUSH/SURFACE MOUNTED
BRANCH CIRCUIT WIRING IN CONDUIT CONCEALED IN CEILING SPACE OR WHERE POSSIBLE, EXPOSED ON ROOF OR BUILDING EXTERIOR.
BRANCH CIRCUIT WIRING IN CONDUIT CONCEALED UNDER FLOOR, UNDERGROUND OR WHERE POSSIBLE.
BRANCH CIRCUIT HOME RUN TO PANEL. CONCEALED IN CEILING SPACE OR WHERE POSSIBLE. *= PANEL BOARD & CIRCUIT #
EXISTING DEVICES, CONDUITS, WIRES, ETC TO REMAIN
NEW (BOLD) DEVICES, CONDUITS, WIRES, ETC.
CONDUIT UP
CONDUIT DOWN
WALL MOUNTED DUPLEX RECEPTACLE 20A, 125V, 3WG, NEMA 5-20R, +18"AFF
C WALL MOUNTED DUPLEX CONTROL RECEPTACLE
WP GFI DUPLEX GFI RECEPTACLE, WEATHERPROOF, 20A, 165V, 3WG, NEMA 5-20R, GFI
WALL-MOUNTED DOUBLE DUPLEX RECEPTACLE 20A, 125V, 3WG, (2) NEMA 5-20R, +18" UON
SPECIAL RECEPTACLE (TYPE AND CONFIGURATION AS NOTED)
(1) RJ-45 DATA OUTLET
(1) RJ-11 VOICE OUTLET W/ FACE PLATE
(1) RJ-45 DATA OUTLET – CEILING
CEILING-MOUNTED DUPLEX RECEPTACLE 20A, 125V, 3

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. CONTRACTOR TO PROVIDE HEAVY DUTY CABLE PROTECTOR AT PARKING & DRIVE AISLE WITH SLIP RESISTANT ADA ACCESSIBILITY PEDESTRIAN RAMP. PROVIDE COMPLETE MODULAR DESIGN WITH INTERLOCKING 'T' SYSTEM, END CAPS AND END RAILS FOR ALL AREAS OF WORK. WHEN TEMPORARY CABLES CROSS FIRE ACCESS LANES, PROTECTION SHALL BE RATED FOR 32,000 LBS. PER AXLE. WHEN TEMPORARY CABLES CROSS ACCESSIBLE PATHS OF TRAVEL, PROTECTION SHALL MEET CODE REQUIRED SLOPES AND ELEVATION CHANGES.

B. WHEN PENETRATING INTO EXISTING ELECTRICAL EQUIPMENT OR ENCLOSURES, ALL PENETRATIONS SHALL BE SEALED AND PROTECTED AS NEEDED.

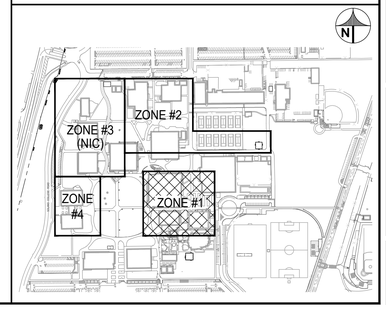
C. WHEN TEMPORARY POWER IS REMOVED, ALL EQUIPMENT, BUILDING, AND SITE CONDITIONS SHALL BE RETURNED TO THE SAME CONDITIONS AS THEY WERE PRIOR TO CONSTRUCTION.

D. TEMPORARY POWER CABLE TO BE TYPE DLO OR TYPE W SIZED FOR EQUIPMENT LOAD BEING SERVED.

REFERENCE SHEET NOTES

1. NOT USED. (A)

KEY PLAN



1 **ENLARGED SITE PLAN ZONE #1 - NEW**
SCALE: 1" = 20' - 0"

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

REGISTERED PROFESSIONAL ENGINEER — HIRAM L. KING — No. E20539 — ELECTRICAL — STATE OF CALIFORNIA
DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	HK
APPROVED BY:	HK

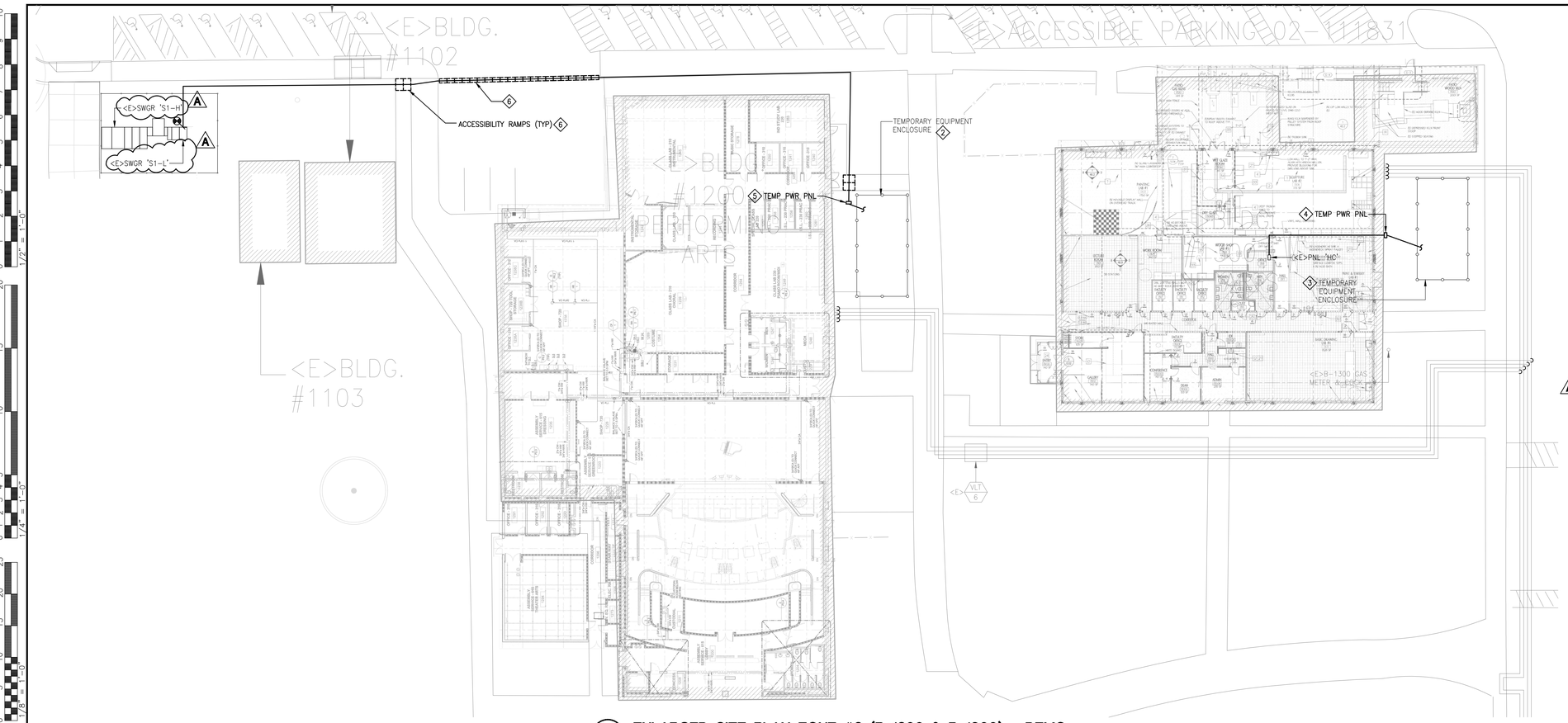
SHEET TITLE

ELECTRICAL
ENLARGED SITE PLAN
ZONE #1 (B-1500, B-1600, & B-2700) NEW

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

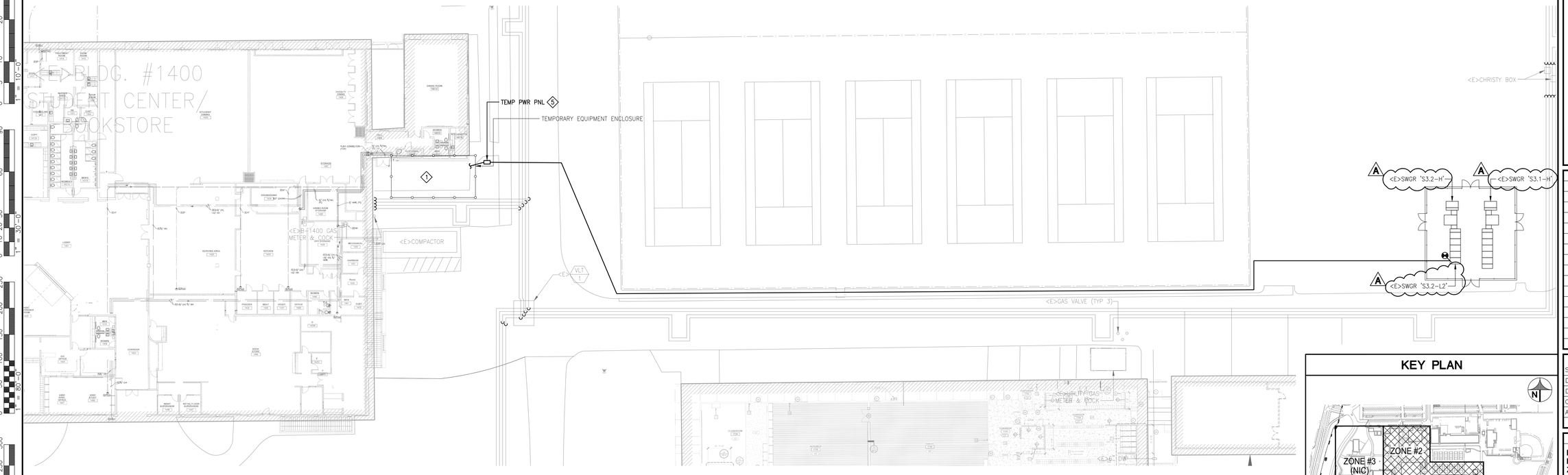
E-1.1
SHEET OF –

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2 ENLARGED SITE PLAN ZONE #2 (B-1200 & B-1300) - DEMO

SCALE: 1" = 20' - 0"



1 ENLARGED SITE PLAN ZONE #2 (B-1400) - DEMO

SCALE: 1" = 20' - 0"

GENERAL SHEET NOTES

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B. WHEN PENETRATING INTO EXISTING ELECTRICAL EQUIPMENT OR ENCLOSURES, ALL PENETRATIONS SHALL BE SEALED AND PROTECTED AS NEEDED.

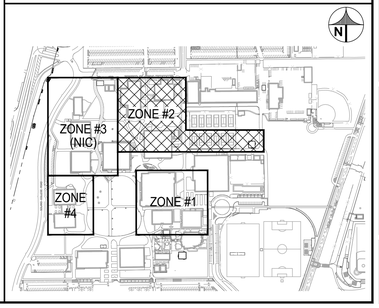
C. WHEN TEMPORARY POWER IS REMOVED, ALL EQUIPMENT, BUILDING, AND SITE CONDITIONS SHALL BE RETURNED TO THE SAME CONDITIONS AS THEY WERE PRIOR TO CONSTRUCTION.

D. TEMPORARY POWER CABLE TO BE TYPE DLO OR TYPE W SIZED FOR EQUIPMENT LOAD BEING SERVED.

REFERENCE SHEET NOTES

1. PROVIDE POWER TO TEMPORARY MECHANICAL EQUIPMENT VIA A TEMPORARY POWER DISTRIBUTION PANEL CONNECTED TO THE EXISTING SWITCHGEAR "S3.2-L2" LOCATED AT SUBSTATION 3.
2. PROVIDE POWER TO TEMPORARY MECHANICAL EQUIPMENT VIA A TEMPORARY POWER DISTRIBUTION PANEL CONNECTED TO THE EXISTING SWITCHGEAR "S1-L" LOCATED AT SUBSTATION 1.
3. PROVIDE POWER TO TEMPORARY MECHANICAL EQUIPMENT VIA A TEMPORARY POWER DISTRIBUTION PANEL CONNECTED TO THE EXISTING MAIN PANEL IN THE BUILDING BEING SERVED.
4. MOUNT PANEL ON FREESTANDING STRUCTURE. REFER TO DETAIL 4/E-5.1. STRUCTURE TO BE DEMOLISHED AND REMOVED AFTER COMPLETION OF WORK.
5. MOUNT PANEL ON FREESTANDING STRUCTURE. REFER TO DETAIL 3/E-5.1. STRUCTURE TO BE DEMOLISHED AND REMOVED AFTER COMPLETION OF WORK.
6. CABLE PROTECTORS. REFER TO DETAIL 5/E-5.1.

KEY PLAN



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REGISTERED PROFESSIONAL ENGINEER
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HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE

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SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	HK
APPROVED BY:	HK

SHEET TITLE

ELECTRICAL
ENLARGED SITE PLAN
ZONE #2 (B-1200, B-1300, & B-1400)
DEMO

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

ED-1.2

SHEET OF –

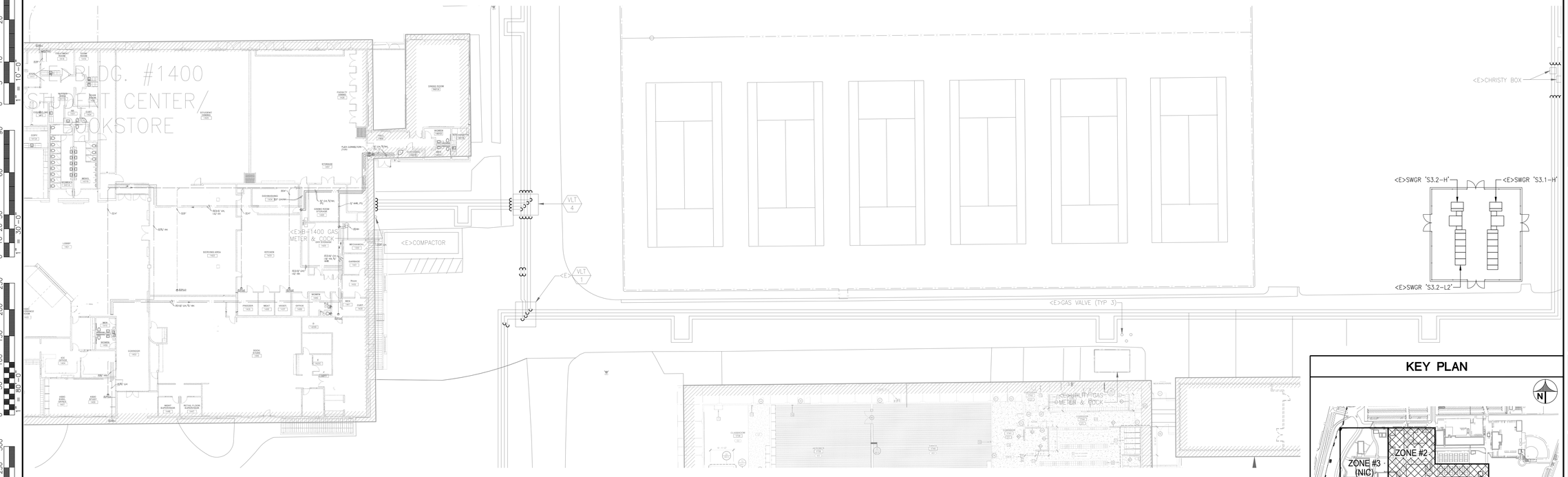
THIS DRAWING IS 30" X 42" AT FULL SIZE. 15" X 21" AT HALF SIZE. © 2015 BY SALAS O'BRIEN ENGINEERS, INC.



2 ENLARGED SITE PLAN ZONE #2 (B-1200 & B-1300) - NEW

SCALE: 1" = 20' - 0"

0 20' 40'



1 ENLARGED SITE PLAN ZONE #2 (B-1400) - NEW

SCALE: 1" = 20' - 0"

0 20' 40'

GENERAL SHEET NOTES

A. CONTRACTOR TO PROVIDE HEAVY DUTY CABLE PROTECTOR AT PARKING & DRIVE AISLE WITH SLIP RESISTANT ADA ACCESSIBILITY PEDESTRIAN RAMP. PROVIDE COMPLETE MODULAR DESIGN WITH INTERLOCKING 'T' SYSTEM, END CAPS AND END RAILS FOR ALL AREAS OF WORK. WHEN TEMPORARY CABLES CROSS FIRE ACCESS LANES, PROTECTION SHALL BE RATED FOR 32,000 LBS. PER AXLE. WHEN TEMPORARY CABLES CROSS ACCESSIBLE PATHS OF TRAVEL, PROTECTION SHALL MEET CODE REQUIRED SLOPES AND ELEVATION CHANGES.

B. WHEN PENETRATING INTO EXISTING ELECTRICAL EQUIPMENT OR ENCLOSURES, ALL PENETRATIONS SHALL BE SEALED AND PROTECTED AS NEEDED.

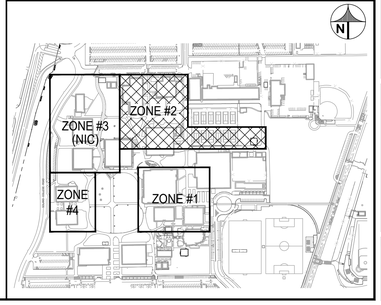
C. WHEN TEMPORARY POWER IS REMOVED, ALL EQUIPMENT, BUILDING, AND SITE CONDITIONS SHALL BE RETURNED TO THE SAME CONDITIONS AS THEY WERE PRIOR TO CONSTRUCTION.

D. TEMPORARY POWER CABLE TO BE TYPE DLO OR TYPE W SIZED FOR EQUIPMENT LOAD BEING SERVED.

REFERENCE SHEET NOTES

1. EXISTING CHWP, HHWP, AND ASSOCIATED VFDS TO BE REPLACED WITH NEW. INTERCEPT AND EXTEND EXISTING FEEDERS AS NECESSARY TO CONNECT TO NEW PUMPS.

KEY PLAN



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National **Strength.** Local **Action.**

REGISTERED PROFESSIONAL ENGINEER
HOANH L. KYNE
No. E20539
ELECTRICAL
STATE OF CALIFORNIA

DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE		
MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
A	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	
CHECKED BY:	HK
APPROVED BY:	HK

SHEET TITLE

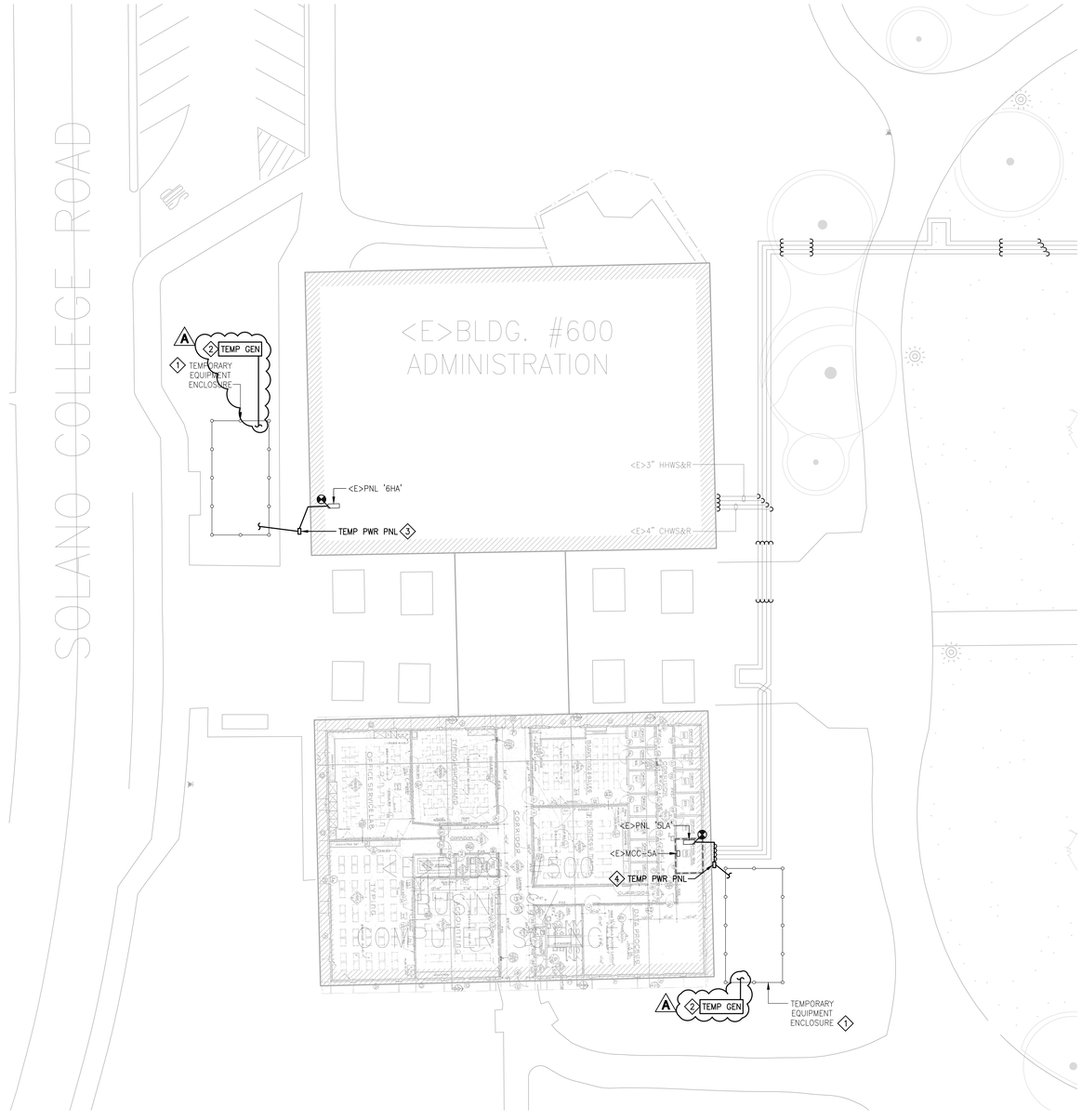
ELECTRICAL
ENLARGED SITE PLAN
ZONE #2 (B-1200, B-1300, & B-1400) NEW

SCALE: AS NOTED
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E-1.2

SHEET OF –

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1 ENLARGED SITE PLAN ZONE #4 - DEMO (BID ALTERNATE #1)
SCALE: 1" = 20' - 0"

GENERAL SHEET NOTES

A. CONTRACTOR TO PROVIDE HEAVY DUTY CABLE PROTECTOR AT PARKING & DRIVE AISLE WITH SLIP RESISTANT ADA ACCESSIBILITY PEDESTRIAN RAMP. PROVIDE COMPLETE MODULAR DESIGN WITH INTERLOCKING 'T' SYSTEM, END CAPS AND END RAILS FOR ALL AREAS OF WORK. WHEN TEMPORARY CABLES CROSS FIRE ACCESS LANES, PROTECTION SHALL BE RATED FOR 32,000 LBS. PER AXLE. WHEN TEMPORARY CABLES CROSS ACCESSIBLE PATHS OF TRAVEL, PROTECTION SHALL MEET CODE REQUIRED SLOPES AND ELEVATION CHANGES.

B. WHEN PENETRATING INTO EXISTING ELECTRICAL EQUIPMENT OR ENCLOSURES, ALL PENETRATIONS SHALL BE SEALED AND PROTECTED AS NEEDED.

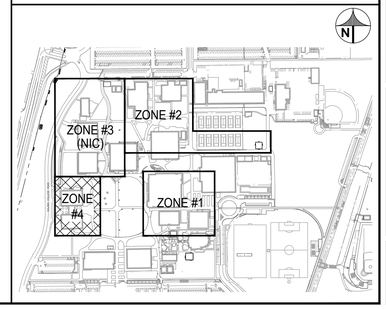
C. WHEN TEMPORARY POWER IS REMOVED, ALL EQUIPMENT, BUILDING, AND SITE CONDITIONS SHALL BE RETURNED TO THE SAME CONDITIONS AS THEY WERE PRIOR TO CONSTRUCTION.

D. TEMPORARY POWER CABLE TO BE TYPE DLO OR TYPE W SIZED FOR EQUIPMENT LOAD BEING SERVED.

REFERENCE SHEET NOTES

1. PROVIDE POWER TO TEMPORARY MECHANICAL EQUIPMENT. CHILLER AND CHILLED WATER PUMP SHALL BE FED BY A TEMPORARY POWER DISTRIBUTION PANEL CONNECTED TO THE EXISTING MAIN PANEL IN THE BUILDING BEING SERVED. BOILER AND HOT WATER PUMP SHALL BE FED BY A TEMPORARY GENERATOR SIZED FOR THE EXPECTED LOADS. A
2. 400KVA, 480V, 3-PHASE, 4-WIRE PORTABLE GENERATOR. GENERATOR TO BE REFUELED AS NEEDED TO MAINTAIN RUNTIME OF 16 HOURS PER DAY, 5 DAYS A WEEK, FOR THE DURATION OF WORK AT THE BUILDING. GENERATOR TO BE SKID MOUNTED AND SECURED PER DETAIL 9/S-5.3. A
3. MOUNT PANEL ON FREESTANDING STRUCTURE. REFER TO DETAIL 4/E-5.1. STRUCTURE TO BE DEMOLISHED AND REMOVED AFTER COMPLETION OF WORK.
4. MOUNT PANEL ON FREESTANDING STRUCTURE. REFER TO DETAIL 3/E-5.1. STRUCTURE TO BE DEMOLISHED AND REMOVED AFTER COMPLETION OF WORK.

KEY PLAN



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Local Action.

REGISTERED PROFESSIONAL ENGINEER
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No. E20530
ELECTRICAL
STATE OF CALIFORNIA
DATE SIGNED: 03/11/26

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
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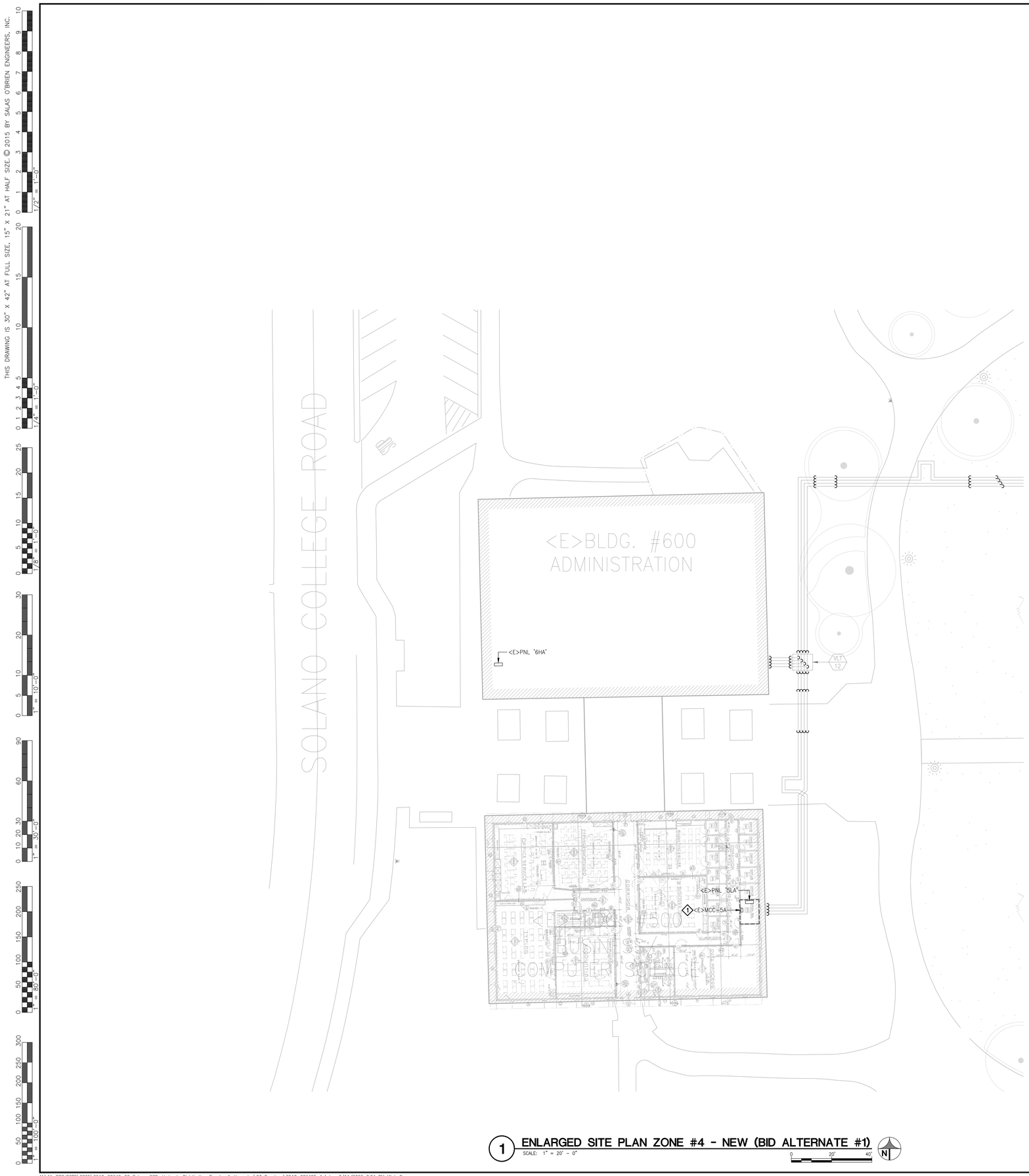
SHEET TITLE

ELECTRICAL ENLARGED SITE PLAN ZONE #4 (B-500 & B-600) DEMO (BID ALTERNATE #1) A

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

ED-1.4
SHEET OF –

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



1 ENLARGED SITE PLAN ZONE #4 - NEW (BID ALTERNATE #1)
SCALE: 1" = 20' - 0"

GENERAL SHEET NOTES

A. CONTRACTOR TO PROVIDE HEAVY DUTY CABLE PROTECTOR AT PARKING & DRIVE AISLE WITH SLIP RESISTANT ADA ACCESSIBILITY PEDESTRIAN RAMP. PROVIDE COMPLETE MODULAR DESIGN WITH INTERLOCKING 'T' SYSTEM, END CAPS AND END RAILS FOR ALL AREAS OF WORK. WHEN TEMPORARY CABLES CROSS FIRE ACCESS LANES, PROTECTION SHALL BE RATED FOR 32,000 LBS. PER AXLE. WHEN TEMPORARY CABLES CROSS ACCESSIBLE PATHS OF TRAVEL, PROTECTION SHALL MEET CODE REQUIRED SLOPES AND ELEVATION CHANGES.

B. WHEN PENETRATING INTO EXISTING ELECTRICAL EQUIPMENT OR ENCLOSURES, ALL PENETRATIONS SHALL BE SEALED AND PROTECTED AS NEEDED.

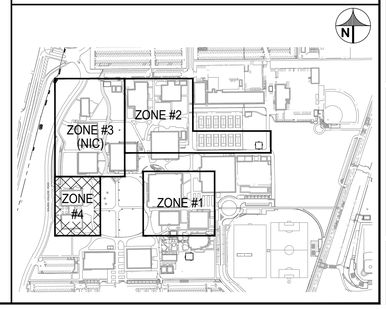
C. WHEN TEMPORARY POWER IS REMOVED, ALL EQUIPMENT, BUILDING, AND SITE CONDITIONS SHALL BE RETURNED TO THE SAME CONDITIONS AS THEY WERE PRIOR TO CONSTRUCTION.

D. TEMPORARY POWER CABLE TO BE TYPE DLO OR TYPE W SIZED FOR EQUIPMENT LOAD BEING SERVED.

REFERENCE SHEET NOTES

1. EXISTING HHWP TO BE REPLACED WITH NEW. INTERCEPT AND EXTEND EXISTING FEEDER AS NECESSARY TO CONNECT TO NEW PUMP.

KEY PLAN



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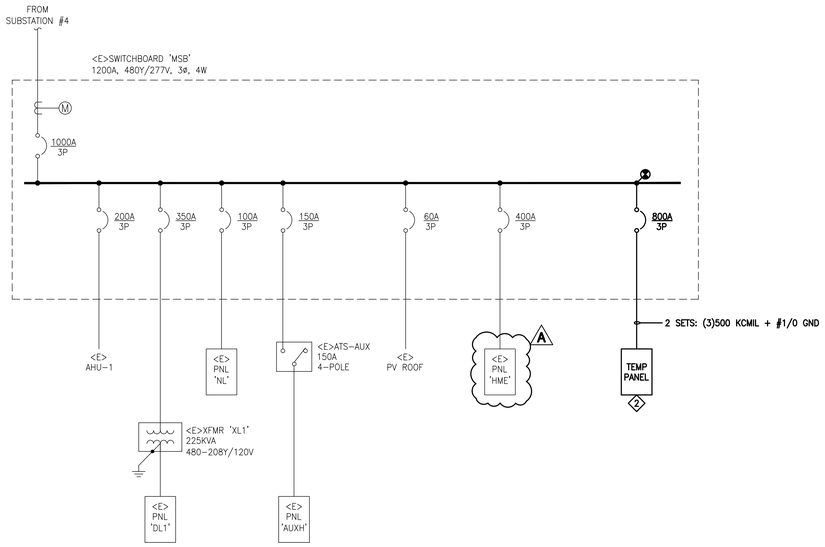
ELECTRICAL ENLARGED SITE PLAN ZONE #4 (B-500 & B-600) NEW (BID ALTERNATE #1) A

SCALE: AS NOTED
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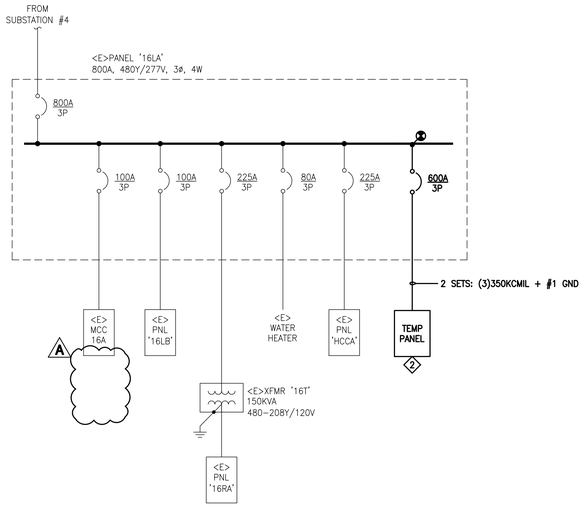
E-1.4

SHEET OF –

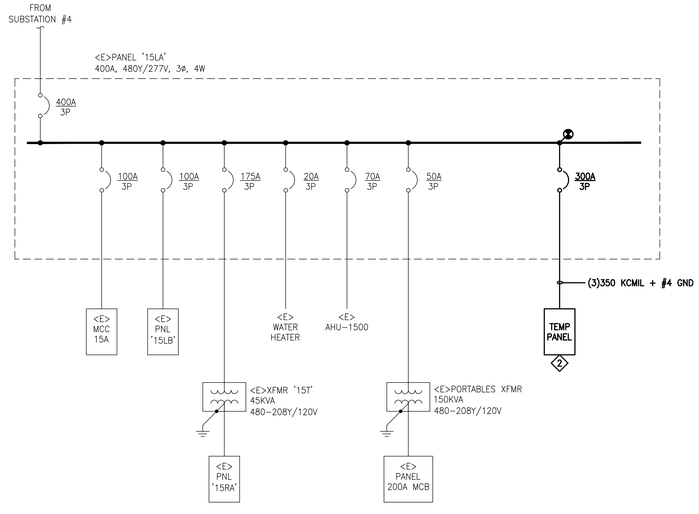
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3 SINGLE LINE DIAGRAM - BUILDING 2700
SCHEMATIC



2 SINGLE LINE DIAGRAM - BUILDING 1600
SCHEMATIC



1 SINGLE LINE DIAGRAM - BUILDING 1500
SCHEMATIC

GENERAL SHEET NOTES

A. TEMPORARY POWER CABLE TO BE TYPE DLO OR TYPE W SIZED FOR EQUIPMENT LOAD BEING SERVED.

REFERENCE SHEET NOTES

1. NOT USED. (A)
2. PROVIDE TEMPORARY POWER DISTRIBUTION PANEL. PANEL, CABLES, AND BREAKER TO BE REMOVED WHEN WORK IS COMPLETED.

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DSA APPL #02-123745

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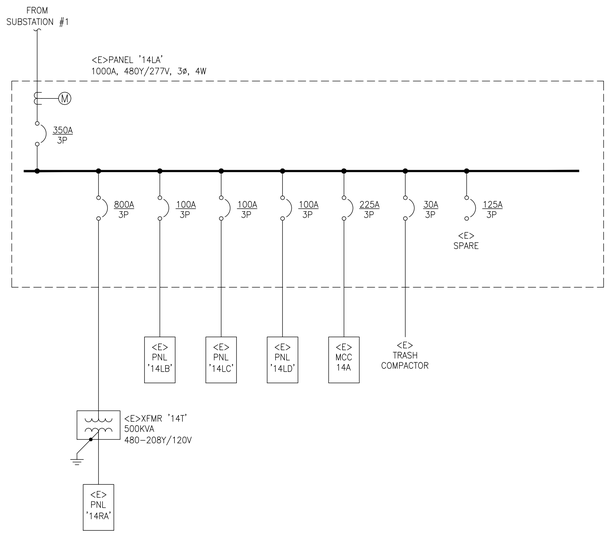
SHEET TITLE

ELECTRICAL SINGLE LINE DIAGRAM ZONE #1

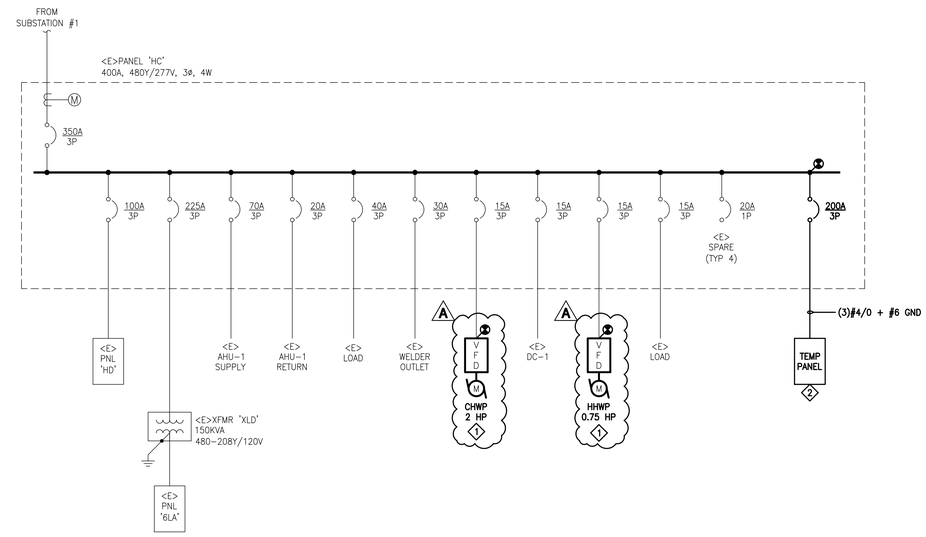
SCALE: AS NOTED
THIS DRAWING IS 30" X 42" AT FULL SIZE

E-7.1
SHEET OF –

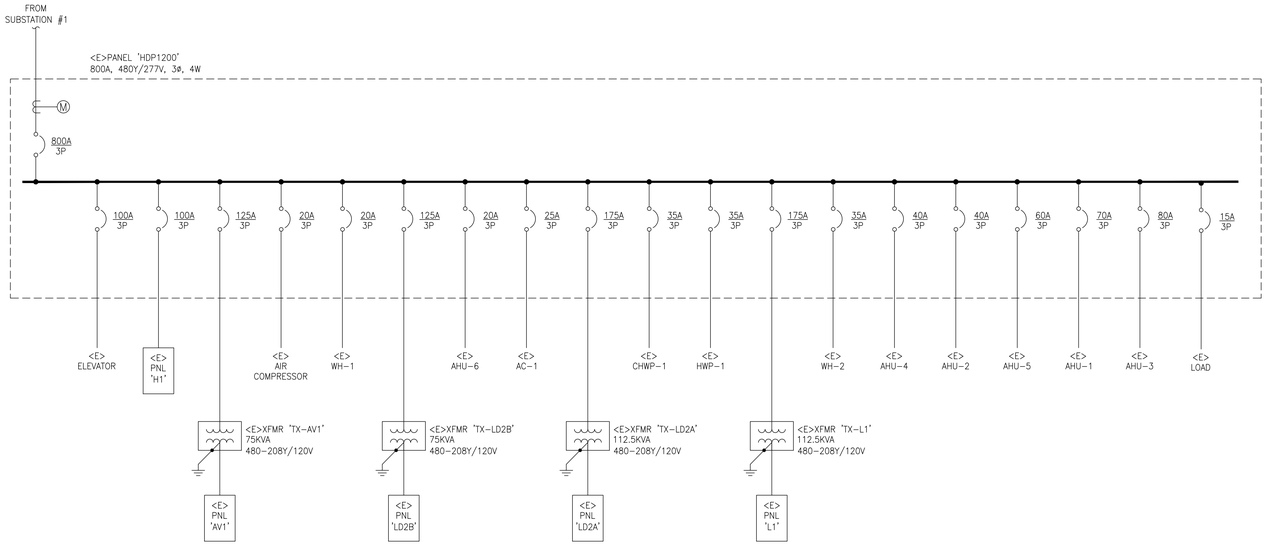
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3 SINGLE LINE DIAGRAM - BUILDING 1400
SCHEMATIC



2 SINGLE LINE DIAGRAM - BUILDING 1300
SCHEMATIC



1 SINGLE LINE DIAGRAM - BUILDING 1200
SCHEMATIC

GENERAL SHEET NOTES

A. TEMPORARY POWER CABLE TO BE TYPE DLO OR TYPE W SIZED FOR EQUIPMENT LOAD BEING SERVED.

REFERENCE SHEET NOTES

1. INTERCEPT AND EXTEND EXISTING FEEDERS AS NECESSARY TO CONNECT TO NEW PUMPS AND VFDS. (A)
2. PROVIDE TEMPORARY POWER DISTRIBUTION PANEL. PANEL, CABLES, AND BREAKER TO BE REMOVED WHEN WORK IS COMPLETED.

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REGISTERED PROFESSIONAL ENGINEER
HUNG L. KING
No. E20530
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STATE OF CALIFORNIA
DATE SIGNED: 03/11/26

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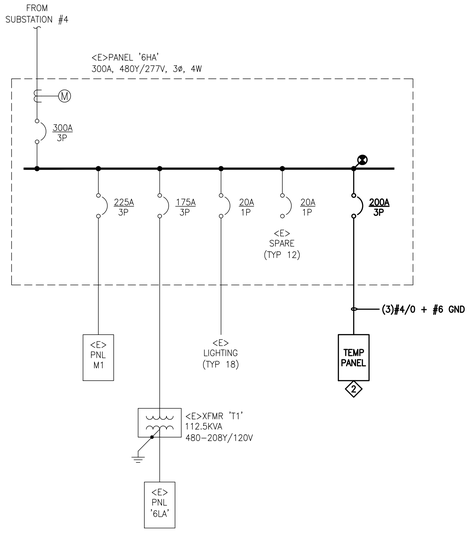
SHEET TITLE

ELECTRICAL SINGLE LINE DIAGRAM ZONE #2

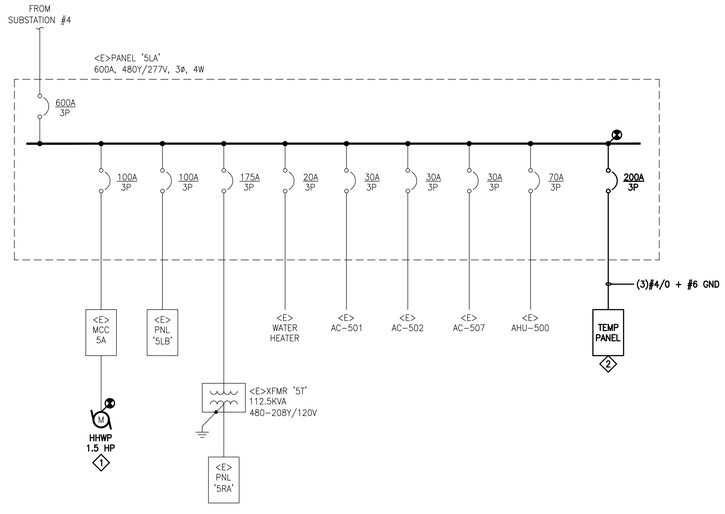
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E-7.2
SHEET OF –

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2 SINGLE LINE DIAGRAM - BUILDING 600
SCHEMATIC



1 SINGLE LINE DIAGRAM - BUILDING 500
SCHEMATIC

GENERAL SHEET NOTES

A. TEMPORARY POWER CABLE TO BE TYPE DLO OR TYPE W SIZED FOR EQUIPMENT LOAD BEING SERVED.

REFERENCE SHEET NOTES

1. INTERCEPT AND EXTEND EXISTING FEEDERS AS NECESSARY TO CONNECT TO NEW PUMPS.
2. PROVIDE TEMPORARY POWER DISTRIBUTION PANEL. PANEL, CABLES, AND BREAKER TO BE REMOVED WHEN WORK IS COMPLETED.

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SHEET TITLE

ELECTRICAL SINGLE LINE DIAGRAM ZONE #4 (BID ALTERNATE #1) A

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

E-7.4
SHEET OF –

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1/2" = 1'-0" | 1/4" = 1'-0" | 1/8" = 1'-0" | 1" = 10'-0" | 1" = 30'-0" | 1" = 80'-0" | 1" = 100'-0"

GENERAL

1. ALL CONSTRUCTION SHALL COMPLY WITH THE PROVISIONS OF THE 2022 CALIFORNIA BUILDING CODE (CBC), TITLE 24, PART 2, VOLUMES 1–2 (2021 INTERNATIONAL BUILDING CODE (IBC) WITH 2022 CALIFORNIA AMENDMENTS, INCLUDING SECTIONS AND 'A' CHAPTERS PERTAINING TO DSA-SS).

2. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER FOR DIRECTION PRIOR TO PROCEEDING.

3. DETAILS OF CONSTRUCTION ARE TYPICAL, UNLESS NOTED OTHERWISE, AND SHALL APPLY AT ALL LOCATIONS OF SIMILAR CONSTRUCTION. TYPICAL DETAILS ARE NOT CUT AT EVERY APPLICABLE LOCATION ON THE PLANS.

4. DO NOT SCALE DRAWINGS FOR DIMENSIONAL INFORMATION.

5. SHORING, TEMPORARY BRACING AND OTHER METHODS AND MEANS OF CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR, AND IS NOT INCLUDED IN THE SCOPE OF THE STRUCTURAL DRAWINGS.

6. THE FOLLOWING NOTES ARE FOR GENERAL MATERIAL GRADES AND PROCEDURES. SEE SPECIFICATIONS AND REMAINDER OF DRAWINGS FOR COMPLETE REQUIREMENTS. ITEMS NOTED IN PLANS, SECTIONS AND DETAILS TAKE PRECEDENCE OVER GENERAL NOTES.

7. LOADS:
   - A) LIVE:
     - ROOF: 20 PSF (REDUCIBLE)
   - B) WIND:
     - EXPOSURE C, 95 MPH BASIC WIND SPEED
     - DIRECTIONAL PROCEDURE
   - C) SEISMIC:
     - BUILDING RISK CATEGORY II
     - EQUIVALENT LATERAL FORCE PROCEDURE (ASCE 7–16 SECTION 12.8)
     - LATITUDE: 38.2361, LONGITUDE: −122.1192
     - SEISMIC DESIGN CATEGORY (SDC) D
     - SITE CLASS D
     - S_S=1.532, S_1=0.600; F_a=1.200, F_v=1.500;
     - S_{MS}=1.838, S_{M1}=0.900; S_{DS}=1.226, S_{D1}=0.600
     - IMPORTANCE FACTOR: I_p=1.00
     - C_s=2.5, R_s=6.0 (AIR–SIDE HVAC – WORST–CASE)
     - C_s=1.0, R_s=2.5 (WET–SIDE HVAC & PUMPS)
     - C_s=2.5, R_s=2.0 (SPRING ISOLATED UNITS)
     - C_s=0.613 (STRENGTH), 0.438 (ALLOWABLE) (WALL–MOUNTED UNITS)
     - C_s=0.368 (STRENGTH), 0.263 (ALLOWABLE) (GRADE–MOUNTED UNITS w/o ISOLATORS)
     - C_s=0.613 (STRENGTH), 0.438 (ALLOWABLE) (GRADE–MOUNTED UNITS w/ ISOLATORS)
     - C_s=0.245 (STRENGTH), 0.175 (ALLOWABLE STRESS) (VERTICAL FORCE).
   - D) WOOD FRAMING:
     - ROOF FRAMING DESIGNED FOR (1) RE–ROOFING.
     - LOAD DURATION FACTOR (C_D) USED, WITH SHORT–TERM INCREASES.
     - REPETITIVE MEMBER STRESSES NOT USED.
   - E) LOAD COMBINATIONS FOR DESIGN:
     - CONCRETE: PER ASCE 7 SECTION 2.3 FOR STRENGTH DESIGN.
     - FOUNDATIONS: PER CBC SECTION 1605A.2 FOR ALLOWABLE STRESS DESIGN.
     - ALL OTHERS: PER ASCE 7 SECTION 2.4 FOR ALLOWABLE STRESS DESIGN.

DSA SUPPLEMENTARY CONDITIONS

1. THE FOLLOWING INFORMATION FROM THE 2022 CALIFORNIA ADMINISTRATIVE CODE (CAC), TITLE 24, PART 1, C.C.R., SHALL BE INCLUDED IN THE CONTRACT DOCUMENTS.

2. ALL ADDENDA AS PER CAC SECTION 4–338(b), SHALL BE SIGNED BY ARCHITECT OR ENGINEER IN GENERAL RESPONSIBLE CHARGE AND BY ARCHITECT, STRUCTURAL ENGINEER OR DELEGATED PROFESSIONAL ENGINEER, AND APPROVED BY DSA.

3. ALL CONSTRUCTION CHANGE DOCUMENTS (CCD) AS PER CAC SECTION 4–338(c), MUST BE SIGNED BY ALL OF THE FOLLOWING:
   - A) ARCHITECT OR ENGINEER IN GENERAL RESPONSIBLE CHARGE,
   - B) STRUCTURAL ENGINEER (WHEN APPLICABLE),
   - C) DELEGATED PROFESSIONAL ENGINEER (WHEN APPLICABLE).

4. ALL SUBSTITUTIONS AFFECTING DSA REGULATED ITEMS SHALL BE CONSIDERED AS A CONSTRUCTION CHANGE OR ADDENDA, AND SHALL BE APPROVED BY DSA PRIOR TO FABRICATION AND INSTALLATION (CAC SECTIONS 4–338(b) AND 4–338(c), DSA IR A–6). SUBSTITUTIONS SHALL BE FOR ANY MATERIAL, SYSTEM OR PRODUCT THAT WOULD OTHERWISE BE REGULATED BY DSA.

5. PROJECT INSPECTOR AND TESTING LAB MUST BE EMPLOYED BY THE OWNER AND APPROVED BY ALL OF THE FOLLOWING:
   - A) ARCHITECT OR ENGINEER IN GENERAL RESPONSIBLE CHARGE,
   - B) STRUCTURAL ENGINEER (WHEN APPLICABLE),
   - C) DSA.

6. CONTRACTOR SHALL SUBMIT VERIFIED REPORT PER CAC SECTIONS 4–336 AND 4–343(c).

7. ADMINISTRATION OF CONSTRUCTION PER 2025 CALIFORNIA ADMINISTRATIVE CODE (CAC), TITLE 24, PART 1, C.C.R.
   - A) DUTIES OF ARCHITECT, STRUCTURAL ENGINEER, OR PROFESSIONAL ENGINEER PER CAC SECTIONS 4–333(a) AND 4–341,
   - B) DUTIES OF PROJECT INSPECTOR PER CAC SECTIONS 4–333(b) AND 4–342,
   - C) DUTIES OF CONTRACTOR PER CAC SECTION 4–343,
   - D) VERIFIED REPORTS PER CAC SECTION 4–336.

8. A COPY OF PART 1 THROUGH 5 OF TITLE 24 SHALL BE KEPT AND AVAILABLE IN THE FIELD DURING CONSTRUCTION. PROJECT SHALL COMPLY WITH PARTS 1 THROUGH 6 AND 9 OF TITLE 24.

9. DSA SHALL BE NOTIFIED ON START OF CONSTRUCTION PER CAC SECTION 4–331.

10. SUPERVISION BY DSA PER CAC SECTION 4–334.

11. DSA IS NOT SUBJECT TO ARBITRATION.

12. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT WORK OF THE ADDITION, ALTERATION, REHABILITATION OR RECONSTRUCTION PROPOSED IS TO BE IN ACCORDANCE WITH CAC SECTION 4–317(c). SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON–COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE DSA APPROVED DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS, A CONSTRUCTION CHANGE DOCUMENT, OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED REPAIR WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE REPAIR WORK.

STRUCTURAL CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO CHAPTER 19A OF THE 2019 CALIFORNIA BUILDING CODE (CBC) AND 2014 ACI STANDARD 318 AND ASTM C94, SPECIFICATION FOR READY–MIX CONCRETE. CEMENT SHALL BE PORTLAND CEMENT TYPE II AND SHALL COMPLY WITH ASTM C150. CALCIUM CHLORIDE SHALL NOT BE USED. COARSE AND FINE AGGREGATE SHALL COMPLY WITH ASTM C33. CONCRETE MIX DESIGNS SHALL BE SUBMITTED TO AND APPROVED BY TESTING AGENCY PRIOR TO ORDERING CONCRETE.

2. ALL STRUCTURAL CONCRETE MIXES SHALL HAVE MIN. FIVE (5) SACKS CEMENT PER CU. YARD AND MAX. WATER–TO–CEMENT RATIO OF 0.60. CONCRETE MIX PROPERTIES SHALL BE AS FOLLOWS:
   - A) FOUNDATION PADS & CONCRETE WALLS:
     - 28–DAY COMP. STRENGTH: 3,000 PSI
     - LARGE AGGREGATE SIZE: 1/2" – 1"
     - MAX. SLUMP: 4"
     - DENSITY: 145 – 150 PCF (NORMAL WEIGHT, HARD ROCK AGGREGATE)
     - EXPOSURE CLASS: C0, S1 (ACI 318 TABLE 19.3.1.1)

3. STEEL REINFORCING BARS SHALL CONFORM TO ASTM A615, GR. 60 U.N.O. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.

4. CURING COMPOUND SHALL BE APPROVED BY ENGINEER, AND APPLIED PER MANUFACTURER'S RECOMMENDATIONS.

5. REINFORCING STEEL SHALL BE CONTINUOUS WHERE POSSIBLE. SPLICE WITH CONTACT LAP–SPLICES. STAGGER ALL SPLICES. SPLICE LENGTHS SHALL BE 57 BAR–DIAMETERS MINIMUM. WELDED WIRE FABRIC SHALL BE LAPPED TWO (2) FULL SQUARES, BUT NOT LESS THAN 12".

6. WELDING OF REINFORCING SHALL NOT BE ALLOWED.

GEOTECHNICAL & FOUNDATIONS

1. GEOTECHNICAL REPORT NOT PROVIDED. FOUNDATIONS DESIGNED IN ACCORDANCE WITH MINIMUM PRESUMPTIVE LOAD–BEARING CRITERIA PER CBC §1806A. CRITERIA USED FOR FOUNDATION DESIGN:

   C) ALLOWABLE SOIL PRESSURES USED FOR FOUNDATION DESIGN:
   - DEAD PLUS LIVE LOAD: 1500 PSF
   - TOTAL LOAD W/ SEISMIC OR WIND: 2000 PSF w/ 1/3 INCREASE FOR SHORT TERM LOADING.
   - (NOTE: INCREASED ALLOWABLE BEARING PRESSURE IS PERMITTED ONLY WHEN USING ALTERNATIVE ALLOWABLE STRESS DESIGN LOAD COMBINATIONS THAT INCLUDE WIND OR SEISMIC EFFECTS)

POST–INSTALLED ANCHORS & DOWELS

A. GENERAL – APPLICABLE TO ALL ANCHORS AND DOWELS:

1. ANCHORS SHALL BE INSTALLED ONLY WHERE SPECIFIED ON DRAWINGS, PER MANUFACTURER'S INSTRUCTIONS, USING MANUFACTURER'S EQUIPMENT, WHERE APPLICABLE. INSTALLER SHALL HAVE ON SITE A COPY OF MANUFACTURER'S INSTALLATION INSTRUCTIONS AND ICC–ES OR IAPMO–UES REPORT.

2. ANCHORS SHALL BE INSTALLED ONLY INTO CURED CONCRETE OR MASONRY GROUT THAT HAS ATTAINED THE MIN. DESIGN COMPRESSIVE STRENGTH AT MIN. 28 DAY AGE, EXCEPT AS NOTED BELOW FOR ADHESIVE ANCHORS. IF INSTALLATION OF ANCHORS INTO CONCRETE OR MASONRY ELEMENTS PRIOR TO 28–DAY AGE IS ANTICIPATED, CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO INSTALLATION IN ORDER TO ALLOW SPECIFYING PROVISIONS FOR SUCH. PROVISIONS MAY INCLUDE COMPRESSION TEST CYLINDERS BE FIELD–CURED IN CONDITIONS MATCHING SUBJECT CONCRETE OR MASONRY ELEMENTS, PLUS USE OF CEMENT TYPES AND/OR ADMIXTURES IN MIX DESIGNS TO PROVIDE THE REQUIRED COMPRESSIVE STRENGTHS AT ANTICIPATED AGES LESS THAN 28 DAYS. INSTALLATION OF ANCHORS INTO CONCRETE OR MASONRY GROUT BEFORE CURING FOR 28 DAYS WILL NOT BE APPROVED WITHOUT THESE PROVISIONS BEING SPECIFIED, AND MET BY CONTRACTOR.

3. WHERE POST–INSTALLED ANCHORS ARE USED TO MITIGATE OMITTED OR MISPLACED CAST–IN–PLACE ANCHORS, ADDED SPECIAL INSPECTION AND TESTING COSTS ASSOCIATED WITH THE POST–INSTALLED ANCHORS WILL BE PAID FOR BY THE DISTRICT, HOWEVER, SUCH COSTS WILL BE BACK–CHARGED TO THE CONTRACTOR.

4. PRIOR TO DRILLING HOLES FOR ANY POST–INSTALLED ANCHORS INTO NEW OR EXISTING CONCRETE OR MASONRY, ALL REINFORCING BARS IN AREA OF NEW ANCHORAGE HOLES SHALL BE LOCATED WITH PACHOMETER OR OTHER SUITABLE DEVICE AND CLEARLY MARKED IN THE FIELD. NEW ANCHORS SHALL BE INSTALLED NOT LESS THAN 1" CLEAR FROM REINFORCING. WHERE REINFORCING BARS CANNOT BE LOCATED, CARE SHALL BE TAKEN WHILE DRILLING HOLES SO THAT REINFORCING BARS ARE NOT CUT OR DAMAGED AND HOLES SHALL BE REPAIRED & RELOCATED AS REQUIRED. USE OF DRILLS WITH GROUND FAULT INTERRUPTERS (GFI) IS RECOMMENDED.

5. PROVIDE TESTING AND INSPECTIONS OF ANCHOR INSTALLATIONS PER TESTING AND SPECIAL INSPECTION NOTES, THIS SHEET.

6. ANCHORS OTHER THAN THOSE SPECIFIED BELOW MAY BE USED ONLY WHEN CURRENT ICC–ES OR IAPMO–UES REPORT FOR SUCH IS SUBMITTED FOR REVIEW AND APPROVAL IN WRITING. ANCHORS SHALL NOT BE INSTALLED UNTIL ANCHORS ARE APPROVED BY STRUCTURAL ENGINEER AND DSA, AND TEST LOADS ARE DETERMINED AND ISSUED.

7. ANCHORS IN CONTACT WITH PRESERVATIVE–TREATED AND FIRE–RETARDANT–TREATED WOOD SHALL BE OF HOT–DIPPED ZINC–COATED GALVANIZED STEEL OR STAINLESS STEEL. ANCHORS EXPOSED TO WEATHER OR REQUIRED TO BE CORROSION RESISTANT SHALL BE OF HOT–DIPPED ZINC–COATED GALVANIZED STEEL OR STAINLESS STEEL.

B. EXPANSION ANCHORS:

1. EXPANSION ANCHORS SHALL BE WEDGE TYPE ANCHORS ONLY AND SHALL HAVE ICC–ES OR IAPMO–UES APPROVAL, INCLUDING APPROVAL FOR RESISTANCE TO SEISMIC AND WIND LOADS, PASSING ICC–ES CRITERIA AC193 (CONCRETE) & ACO1 (MASONRY). USE ONE OF THE FOLLOWING ICC–ES OR IAPMO–UES APPROVED SYSTEMS:
   - CONCRETE:
     - a) HILTI KWIK BOLT TZ2 (ESR–4266). **(TYP. ANCHOR SPECIFIED U.N.O.)**
     - b) SIMPSON STRONG–BOLT 2 ANCHORS (ESR–3037),
     - c) DEWALT/POWERS POWER–STUD+ SD2, SD4 & SD6 ANCHORS (ESR–2502).
   - MASONRY:
     - a) HILTI KWIK BOLT TZ2 (ESR–4561). **(TYP. ANCHOR SPECIFIED U.N.O.)**
     - b) SIMPSON STRONG–BOLT 2 ANCHORS (ER–240),
     - c) ITW RED HEAD TRUBOLT+ WEDGE ANCHORS (ESR–4058).

NOTE: OTHER EXPANSION ANCHORS MAY BE USED ONLY WHEN ICC–ES OR IAPMO–UES REPORT FOR SUCH IS SUBMITTED TO AND APPROVED BY ENGINEER AND DSA AND TEST LOADS ARE DETERMINED AND ISSUED.

2. EXPANSION ANCHORS SHALL HAVE EMBEDMENT NOT LESS THAN EIGHT (8) ANCHOR DIAMETERS, OR AS OTHERWISE SPECIFIED IN DETAILS. TORQUE ANCHORS DURING INSTALLATION TO THE RECOMMENDED INSTALLATION TORQUE VALUES SPECIFIED IN MANUFACTURER'S ICC–ES OR IAPMO–UES REPORT.

C. CHEMICAL ADHESIVE ANCHORS AND DOWELS:

1. ALL THREADED RODS AND REBAR DOWELS INSTALLED IN HARDENED CONCRETE OR MASONRY GROUT WITH "ADHESIVE" SHALL BE A TWO–PART NOZZLE–MIXED ICC–ES OR IAPMO–UES APPROVED CHEMICAL ADHESIVE SYSTEM, PASSING ICC–ES CRITERIA AC308 (CONCRETE) & AC58 (MASONRY). USE ONE OF THE FOLLOWING ICC–ES OR IAPMO–UES APPROVED SYSTEMS:
   - CONCRETE:
     - a) HILTI "HIT–RE 500–V3" ADHESIVE ANCHOR SYSTEM (ESR–3814), **(SPECIFIED U.N.O.)**
     - b) SIMPSON "SET–3G" ADHESIVE ANCHOR SYSTEM (ESR–4057),
     - c) DEWALT/POWERS "PURE110+" ADHESIVE ANCHOR SYSTEM (ESR–3298),
     - d) ITW RED HEAD "CB+" ADHESIVE ANCHOR SYSTEM (ESR–4046).
   - MASONRY:
     - a) HILTI "HIT" SYSTEM WITH HY–270 ADHESIVE (ESR–4143),**(SPECIFIED U.N.O.)**
     - b) SIMPSON "SET–3G" ADHESIVE ANCHOR SYSTEM (ESR–4844),
     - c) DEWALT/POWERS "AC100+ GOLD" ADHESIVE ANCHOR SYSTEM (ESR–3200).

NOTE: OTHER CHEMICAL ADHESIVE ANCHOR SYSTEMS MAY BE USED ONLY WHEN ICC–ES OR IAPMO–UES REPORT FOR SUCH IS SUBMITTED TO AND APPROVED BY ENGINEER AND DSA AND TEST LOADS ARE DETERMINED AND ISSUED.

2. ANCHORS SHALL BE INSTALLED ONLY INTO CURED CONCRETE OR MASONRY GROUT OF MIN. 21 DAY AGE. IF INSTALLATION OF ANCHORS INTO CONCRETE OR MASONRY ELEMENTS PRIOR TO 21–DAY AGE IS ANTICIPATED, CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO INSTALLATION FOR DIRECTION.

3. INSTALLATION OF CHEMICAL ADHESIVE ANCHORS IN HORIZONTAL OR OVERHEAD APPLICATIONS SHALL BE INSTALLED BY AN ACI/CSRI CERTIFIED ADHESIVE ANCHOR INSTALLER.

4. HOLES SHALL BE DRILLED 1/8" TO 1/4" LARGER IN DIAMETER THAN ROD OR BAR OUTER DIAMETER, AS SPECIFIED IN ICC–ES OR IAPMO–UES REPORT.

5. BARS/RODS SHALL HAVE EMBEDMENT IN ADHESIVE NOT LESS THAN TEN (10) NOMINAL BAR/ROD DIAMETERS IN CONCRETE AND NINE (9) NOMINAL BAR/ROD DIAMETERS IN MASONRY, OR AS OTHERWISE SPECIFIED IN DETAILS.

6. INSTALLATION TORQUE FOR ALL ANCHORS SHALL BE REDUCED ACCORDING TO MANUFACTURER'S RECOMMENDATION DUE TO THE VICINITY OF ANCHOR TO EDGE OF CONCRETE.

7. THE BOND STRESSES AS SPECIFIED IN ICC–ES OR IAPMO–UES REPORT SHALL BE BASED ON LONG TERM ELEVATED TEMPERATURES OF NOT LESS THAN 110 DEGREES F.

STRUCTURAL STEEL

1. ALL STEEL AND MISC. IRON SHALL BE FABRICATED AND ERECTED IN CONFORMANCE WITH AISC 360 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS.

2. STEEL MATERIAL SHALL BE AS FOLLOWS:
   - PLATES, CHANNELS & ANGLES: ASTM A36 UNLESS NOTED OTHERWISE
   - MACHINE BOLTS (M.B.): ASTM A307 GRADE A, A563 FOR NUTS, F844 FOR WASHERS
   - THREADED RODS: ASTM A307 OR A36 (MAY BE THREADED FOR ENTIRE LENGTH)

3. MINIMUM SPACING OF ALL BOLTS, 7/8"ø AND SMALLER IN STEEL SHALL BE 3" o.c. AND THE MINIMUM EDGE DISTANCE FROM CENTERLINE OF HOLE TO EDGE OF PLATE OR MEMBER SHALL BE 1–1/2", UNLESS NOTED OTHERWISE ON DRAWINGS. WHERE HOLES ARE INSTALLED THROUGH FLANGES OF "W" OR SIMILAR SHAPES, THE BOLT GAGE SHALL BE AS RECOMMENDED BY AISC.

4. HOLES FOR BOLTS IN STEEL SHALL BE 1/16" MAXIMUM LARGER IN DIAMETER THAN BOLTS. HOLES FOR ANCHOR BOLTS SHALL NOT BE MORE THAN 1/8" LARGER FOR A.B.'S UP TO 1"ø. ALL HOLES SHALL BE DRILLED OR PUNCHED. BURNING OF HOLES IS NOT ALLOWED, WHETHER IN FIELD OR SHOP.

5. BEVELED WASHERS SHALL BE USED WHEN THE SURFACE AGAINST WHICH BOLT HEAD OR NUT BEARS IS SLOPED MORE THAN 1:20. BEVELED WASHERS SHALL BE SQUARE OR RECTANGULAR.

6. WASHERS THAT COVER ENTIRE SLOT SHALL BE USED OVER SMALL SLOTTED HOLES. PLATE WASHERS THAT COVER ENTIRE SLOT SHALL BE USED OVER LONG–SLOTTED HOLES.

8. ALL STRUCTURAL STEEL IN EXTERIOR SPACES OR EXPOSED TO VIEW IN INTERIOR SPACES SHALL BE PAINTED WITH TWO (2) COATS OF ALKYD RED OXIDE PRIMER, COMPLYING WITH SSPC–PAINT 25 OR U.S. FEDERAL SPEC TT–P–645, WITH MIN. DRY THICKNESS OF 2 MILS. SEE ARCHITECTURAL SPECS FOR FINISH PAINTING. STRUCTURAL STEEL IN ENCLOSED SPACES AND NOT EXPOSED TO WEATHER NEED NOT BE PAINTED OR PRIMED UNLESS NOTED OTHERWISE. STEEL TO BE EMBEDDED IN CONCRETE SHALL NOT BE PAINTED.

9. ALL NON–PAINTED STEEL FASTENERS EXPOSED TO WEATHER OR IN UNENCLOSED SPACES SHALL BE HOT–DIPPED GALVANIZED, UNLESS NOTED OTHERWISE. GALVANIZED BOLTS AND NUTS SHALL BE PROVIDED BY SAME MANUFACTURER.

10. ALL STRUCTURAL STEEL SPECIFIED ON DRAWINGS TO BE GALVANIZED SHALL BE HOT–DIPPED ZINC GALVANIZED WITH MIN. 1.8 OZ./SQ. FT. ON ALL SURFACES. GALVANIZING SHALL BE TOUCHED UP AT FIELD–WELDED CONNECTIONS, FIELD–DRILLED HOLES, OR FIELD–CUT EDGES WITH A HIGH–ZINC DUST–CONTENT PAINT.

CHANNEL STRUTS & SYSTEMS

1. ALL CHANNEL STRUTS, ASSOCIATED FIXTURES, BRACKETS AND FASTENERS SHALL BE AS MANUFACTURED BY UNISTRUT CORPORATION, OR APPROVED EQUIVALENT.

2. CHANNEL STRUTS SHALL BE P1000 OR P1001; 12 GA. x 1–5/8" SQ. PRE–GALVANIZED CHANNELS. WHERE STRUTS ARE TO BE PRE–DRILLED, USE 'HS' PRE–DRILLED STRUTS (9/16"ø ROUND HOLES @ 1–7/8" o.c. USE OF STRUTS WITH SLOTTED HOLES IS NOT ALLOWED).

3. ALL BOLTS, NUTS & WASHERS THROUGH STRUTS SHALL BE 1/2"ø ASTM A576, GR. 1015, ELECTRO GALVANIZED PER ASTM B633, AS MFRD. BY UNISTRUT. NUTS FOR BOLTS THROUGH OPEN SIDE OF CHANNEL SHALL BE P1010 NUTS. ALL NUTS SHALL BE TORQUED TO 50 – 65 FT–LBS. NON–UNISTRUT BOLTS & NUTS SHALL BE ASTM A307, H.D. GALVANIZED. ALL BOLTS, NUTS & WASHERS EXPOSED TO WEATHER SHALL BE HOT–DIPPED GALVANIZED.

4. ALL FIXTURES & BRACKETS SHALL BE INSTALLED WITH ALL HOLES FILLED w/ 1/2"ø FASTENERS UNLESS NOTED OTHERWISE. DRILL 9/16"ø HOLES IN CLOSED SIDES OF CHANNELS WHERE NECESSARY, AT CENTERLINE OF STRUT.

WOOD

1. ALL WOOD FRAMING SHALL CONFORM TO CHAPTER 23 OF THE 2022 CALIFORNIA BUILDING CODE (CBC), INCLUDING SECTIONS PERTAINING TO DSA–SS.

2. ALL FRAMING LUMBER, UNLESS SPECIFIED OTHERWISE ON DRAWINGS, SHALL BE DOUGLAS FIR–LARCH, WITH STRESS GRADES AS FOLLOWS:
   - 2x JOISTS OR BLOCKING: NO. 1
   - PLYWOOD SHEATHING: ALL SHEATHING SHALL BE APA–RATED C–D SHEATHING AND SHALL HAVE EXTERIOR GLUE. SEE PLANS/SCHEDULES FOR THICKNESS AND GRADES.

ALL SOLID SAWN LUMBER SHALL HAVE A MOISTURE CONTENT OF NOT GREATER THAN 19% AT THE TIME OF INSTALLATION.

3. ALL NAILS SHALL BE COMMON WIRE TYPE. ALL NAILS INSTALLED IN PRESSURE–TREATED MEMBERS OR EXPOSED TO WEATHER SHALL BE HOT–DIPPED GALVANIZED STEEL. WHERE NAILS TEND TO SPLIT FRAMING, HOLES SHALL BE PRE–BORED.

4. UNLESS SPECIFIED OTHERWISE, BOLTS AND THREADED RODS THROUGH WOOD MEMBERS SHALL CONFORM TO ASTM A307 OR A36.

5. ALL BOLT HOLES IN WOOD SHALL BE DRILLED 1/32" OVERSIZE. THE LENGTH OF THE THREADED PORTION SHALL BE SUCH THAT THE THREADS DO NOT BEAR AGAINST THE WOOD. OVERSIZE HOLES WILL NOT BE ALLOWED.

6. HEAVY CUT STEEL WASHERS SHALL BE PROVIDED BETWEEN BOLT HEADS/NUTS AND WOOD.

7. PREDRILL LAG SCREW HOLES WITH BIT SIZE 40% TO 70% OF THE SHANK DIAMETER FOR THE THREADED PORTION. DRILL THE LEAD HOLE FOR THE SHANK THE SAME DIAMETER AND LENGTH AS THE SHANK. LAGS SHALL BE SCREWED, NOT DRIVEN, INTO PLACE.

8. NAILS THROUGH PLYWOOD SHEATHING SHALL BE 3/8" OR 1/2" FROM PLYWOOD EDGES INTO 2x OR 3x FRAMING, RESPECTIVELY. ALL NAILS THAT SPLIT OR MISS FRAMING SHALL BE REMOVED AND RENAILED.

9. FASTENERS IN CONTACT WITH PRESERVATIVE–TREATED AND FIRE–RETARDANT–TREATED WOOD SHALL BE OF HOT–DIPPED ZINC–COATED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE OR COPPER. FASTENERS FOR WOOD FOUNDATIONS SHALL BE AS REQUIRED PER AF&PA PERMANENT WOOD FOUNDATIONS. FASTENERS EXPOSED TO WEATHER OR REQUIRED TO BE CORROSION RESISTANT SHALL BE OF HOT–DIPPED ZINC–COATED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE OR COPPER.

10. ALL PRESSURE–PRESERVATIVE TREATED WOOD THAT IS RIPPED, NOTCHED, BORED OR CUT SHALL BE FIELD–TREATED.

TESTING AND SPECIAL INSPECTIONS

1. GENERAL
   - A) ALL TESTS AND SPECIAL INSPECTIONS SHALL CONFORM TO APPLICABLE REQUIREMENTS OF 2022 CALIFORNIA BUILDING CODE (CBC) SECTION 1701A AND APPROVED FORM DSA–103, "LISTING OF STRUCTURAL TESTS AND SPECIAL INSPECTIONS."
   - B) ALL TESTS OF MATERIALS AND TESTING LABORATORY SHALL BE IN ACCORDANCE WITH 2025 CALIFORNIA ADMINISTRATIVE CODE (CAC) SECTION 4–335.
   - C) THE OWNER SHALL EMPLOY AND PAY THE INSPECTION/TESTING LABORATORY. COSTS OF RE–TESTING MAY BE BACK–CHARGED TO THE CONTRACTOR.
   - D) INSPECTOR SHALL BE APPROVED BY DSA. INSPECTIONS SHALL BE IN ACCORDANCE WITH CAC SECTION 4–333(b), AND THE DUTY OF THE INSPECTOR SHALL BE IN ACCORDANCE WITH CAC SECTION 4–342.
   - E) COPIES OF ALL TEST/INSPECTION REPORTS SHALL BE SUBMITTED TO ARCHITECT, STRUCTURAL ENGINEER, PROJECT INSPECTOR. AND DSA–SS.

2. FOUNDATIONS (DRILLED PIERS, FOOTINGS, GRADE BEAMS), WALLS AND SLABS–ON–GRADE:
   - A) NOTIFY ENGINEER AND PROJECT INSPECTOR 48 HOURS BEFORE CONCRETE IS TO BE PLACED OR FORMS CLOSED TO ALLOW FOR INSPECTION OF EXCAVATIONS AND REINFORCING PLACEMENT.
   - B) SPECIAL INSPECTION IS REQUIRED PER CBC SECTION 1705A.3, 1705A.6 AND 1705A.8.
   - C) THE TESTING AGENCY SHALL PERFORM THE FOLLOWING:
     - REVIEW ALL CONCRETE MIX DESIGNS. ALL DESIGNS SHALL BE SUBMITTED TO AND APPROVED BY TESTING AGENCY PRIOR TO ORDERING CONCRETE.
     - FOR EACH CONCRETE MIX PLACED, AGENCY SHALL CAST (4) TEST CYLINDERS IN ACCORDANCE WITH ASTM C31 FOR EACH 50 CUBIC YARDS OR 2000 SQUARE FEET, OR FRACTION THEREOF, OF CONCRETE PLACED EACH DAY, AND TRANSPORT CYLINDERS TO LAB. TEST CYLINDERS IN ACCORDANCE WITH ASTM C39. TEST (1) CYLINDER AT 7 DAYS AND (2) CYLINDERS AT 28 DAYS. HOLD LAST TEST CYLINDER FOR 60 DAYS.
     - INSPECT FINAL PLACEMENT OF ALL REINFORCING AND STEEL EMBEDS AS INDICATED ON DETAILS PRIOR TO CONCRETE PLACEMENT.
     - CONTINUOUS INSPECTION OF CONCRETE PLACEMENT.

3. POST–INSTALLED ANCHORS IN CONCRETE AND CONCRETE MASONRY:
   - A) GENERAL – APPLICABLE TO ALL ANCHORS AND DOWELS:
     - 1) ALL EXPANSION ANCHORS, SCREW ANCHORS AND ADHESIVE ANCHOR SYSTEMS USED SHALL HAVE ICC–ES OR IAPMO–UES APPROVAL.
     - 2) PERIODIC SPECIAL INSPECTION IS REQUIRED FOR ALL ANCHORS.
   - B) EXPANSION ANCHORS IN CONCRETE & MASONRY:
     - 1) PULL–TEST OR TORQUE–TEST 100% OF ANCHORS EXCEPT AS NOTED; PULL–TEST OR TORQUE–TEST 10% OF SILL PLATE ANCHOR BOLTS AND 50% OR ALTERNATE ANCHORS FOR EQUIPMENT ANCHORAGE AND IN NON–STRUCTURAL APPLICATIONS.
     - 2) PULL–TEST LOAD VALUES SPECIFIED BELOW ARE BASED ON (1–1/4) TIMES THE MAXIMUM DESIGN TENSION STRENGTHS AS PROVIDED IN THE ICC–ES REPORT FOR HILTI KWIK–BOLT TZ2 (ESR–4266) IN CONCRETE, IN ACCORDANCE WITH CBC SECTION 1910A.5.4, AND (2) TIMES THE MAXIMUM ALLOWABLE TENSION LOADS AS PROVIDED IN THE ICC–ES REPORT FOR HILTI KWIK–BOLT TZ2 (ESR–4561) IN MASONRY.
     - 3) PULL–TEST ANCHORS IN TENSION WITH CALIBRATED HYDRAULIC RAM TO VALUES SPECIFIED BELOW.

ANCHOR NOMINAL DIAMETER	EMBEDMENT (CONC./MASONRY)	CONC. TENSION TEST LOAD (LBS.)	MASONRY TENSION TEST LOAD (LBS.)
3/8"	2½" / 3"	1905	1180*(790**)
½"	3¼" / 3¾"*(3¼"**)	4050	1280*(970**)
5/8"	4½" / 4½"*(4½"**)	5525	1880*(1730**)
¾"	5½" / 5½"	7150	2770*

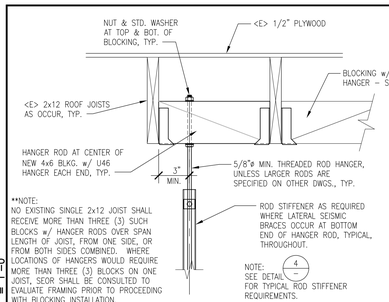
CONC. INSTALLATION TORQUE (FT.–LBS.)	CMU INSTALLATION TORQUE (FT.–LBS.)	ANCHOR DIAMETER
30(C.S. & S.S.)	15(C.S. & S.S.)	3/8"ø
50(C.S.) & 40(S.S.)	25(C.S.) & 15(S.S.)	1/2"ø
40(C.S.) & 60(S.S.)	30(C.S.) & 35(S.S.)	5/8"ø
110(C.S.) & 125(S.S.)	50(C.S. & S.S.)	3/4"ø

* – AT ANCHOR INSTALLED IN THE FACE OF GROUT–FILLED MASONRY
** – AT ANCHOR INSTALLED IN THE TOP OF GROUT–FILLED MASONRY
*** – INSTALLATION TORQUE FOR STAINLESS STEEL ANCHORS

   - 4) ALTERNATIVELY, TORQUE–TEST ANCHORS WITH CALIBRATED TORQUE WRENCH TO VALUES SPECIFIED IN MANUFACTURER'S ICC–ES OR IAPMO–UES REPORT FOR RECOMMENDED INSTALLATION TORQUE WITHIN 1/4 TURN OF THE NUT FOR 3/8"ø SLEEVE ANCHOR ONLY AND WITHIN 1/2 TURN OF THE NUT FOR ALL OTHER ANCHORS.

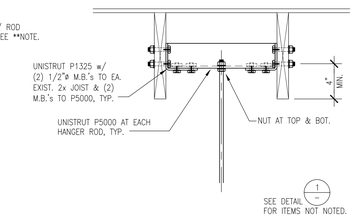
C) RODS & DOWELS WITH CHEMICAL ADHESIVE IN CONCRETE & MASONRY:
   - 1) PULL–TESTING OF RODS INSTALLED IN CHEMICAL ADHESIVE IS REQUIRED FOR ALL ANCHORS. TESTING OF REBAR USED ONLY AS SHEAR DOWELS ACROSS COLD JOINTS IN SLABS–ON–GRADE, WHERE SLAB IS NOT PART OF THE LATERAL FORCE–RESISTING SYSTEM, IS NOT REQUIRED.
   - 2) PULL–TEST LOAD VALUES SPECIFIED BELOW ARE BASED ON (1–1/4) TIMES THE MAXIMUM DESIGN TENSION STRENGTHS AS PROVIDED IN THE ICC–ES REPORT FOR HILTI HIT–RE 500–V3 (ESR–3814) IN CONCRETE, IN ACCORDANCE WITH CBC SECTION 1910A.5.4, AND (2) TIMES THE MAXIMUM ALLOWABLE TEN

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



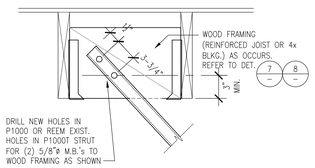
1 HANGER ROD TO WOOD FRAMING

SCALE: 1-1/2"=1' 0"



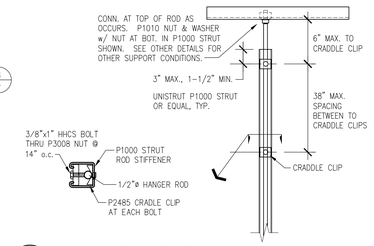
2 HANGER ROD TO WOOD FRAMING

SCALE: 1-1/2"=1' 0"



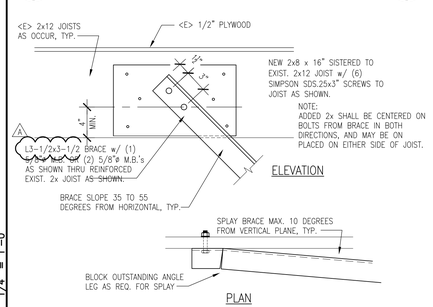
3 UNISTRUT BRACE CONN. TO WOOD

SCALE: 1-1/2"=1' 0"



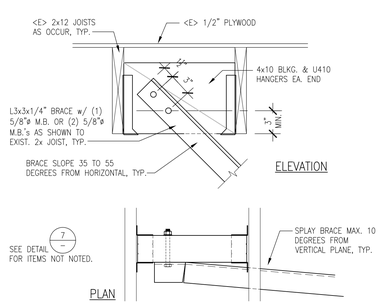
4 TYP. HANGER ROD STIFFENER

SCALE: 1-1/2"=1' 0"



7 BRACE TO WOOD FRAMING - PAR. TO JOISTS

SCALE: 1-1/2"=1' 0"



8 BRACE TO WOOD FRAMING - PERP. TO JOISTS

SCALE: 1"=1' 0"

PIPE/CONDUIT SUPPORT AND LATERAL BRACING

A. HANGER RODS:

1. VERTICAL HANGER RODS SHALL BE 5/8" ø ASTM A36, A307 OR F1554 GR. 36 THREADED ROD. SEE MECHANICAL DRAWINGS FOR CONNECTION OF HANGER ROD TO PIPE CLEVIS/CLAMP BEING SUPPORTED. SEE **NOTE AT DETAIL 1/SS.2 FOR LIMITATIONS ON NUMBER OF HANGER RODS SUPPORTED SUPPORTED BY INDIVIDUAL JOISTS.
2. HANGER RODS SHALL BE SLOPED NOT MORE THAN 5% FROM VERTICAL (1H:20V).
3. HANGER RODS SHALL BE ATTACHED TO FRAMING AT ROOF LEVEL PER DETAILS 1 THROUGH 2 ON SS.2 AS APPROPRIATE ACCORDING TO WHERE TOP OF ROD OCCURS RELATIVE TO SPECIFIC FRAMING MEMBERS.
4. WHERE LATERAL BRACES OCCUR AT BOTTOM OF HANGER RODS, RODS SHALL HAVE CONTIGUOUS STIFFENERS PER DETAIL 4/SS.2.

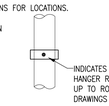
B. LATERAL BRACES:

1. LATERAL BRACES SHALL BE ONE OF THE FOLLOWING:
   - ASTM A36 L3-1/2"x3-1/2"x1/4" – OUTSTANDING ANGLE LEGS SHALL OCCUR AT TOP SIDE OF SLOPED BRACES
   - UNISTRUT P1000 OR P1000T OR EQUIVALENT; 1-5/8" SQ. X 12 GA. CHANNEL STRUT
2. CONNECTIONS OF LATERAL BRACES TO WOOD FRAMING SHALL USE NOT LESS THAN TWO (2) ⅝"ø BOLTS TO WOOD MEMBERS, AND ONE ⅝"ø BOLT TO STEEL MEMBERS. CONNECTION AT BOTTOM OF BRACES SHALL USE (1) 5/8"ø M.B. TO PIPE CLEVIS/CLAMP AS SHOWN ON MECHANICAL DRAWINGS.
3. SEE MECHANICAL DRAWINGS FOR ATTACHMENT OF LATERAL BRACES TO PIPES/CONDUITS BEING BRACED.
4. SLOPE OF LATERAL BRACES SHALL BE BETWEEN 35 AND 55 DEGREES FROM HORIZONTAL.
5. LATERAL BRACES SHALL GENERALLY OCCUR IN A VERTICAL PLANE PERPENDICULAR TO AXIS OF SUBJECT PIPE/CONDUIT. BRACES SHALL BE SPLAYED NOT MORE THAN 10 DEGREES FROM THIS VERTICAL PLANE PERPENDICULAR TO PIPE/CONDUIT AXIS.

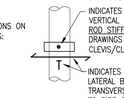
C. PIPE HANGER AND BRACE LEGEND AND NOTES:

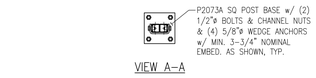
1. LATERAL (DIAGONAL) BRACES MAY EXTEND UP FROM PIPES IN EITHER TRANSVERSE DIRECTION. GENERALLY, BRACE DIRECTION CHOSEN SHOULD PROVIDE SHORTEST POSSIBLE LENGTH OF BRACE TO ROOF FRAMING.
2. REFER TO MECHANICAL PLANS FOR LOCATIONS.

HANGER ROD LOCATIONS ON PLAN ARE SHOWN THUS:



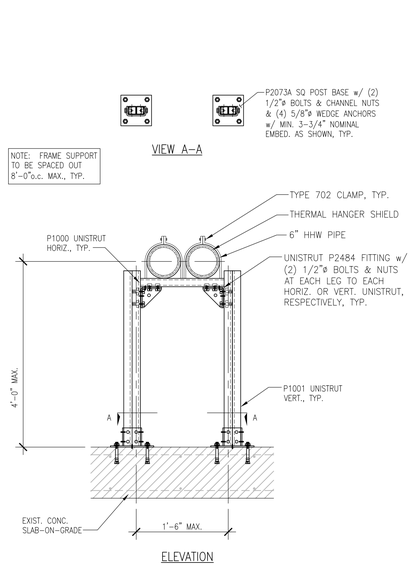
LATERAL BRACE LOCATIONS ON PLAN ARE SHOWN THUS:





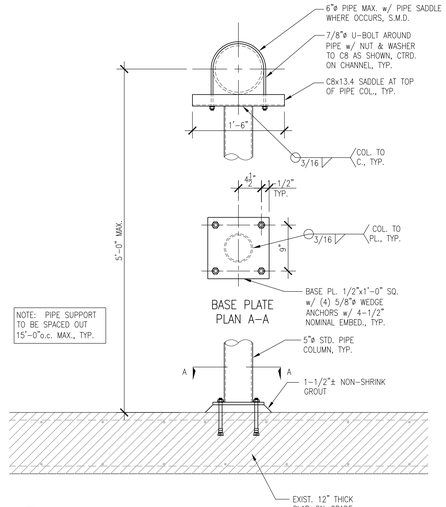
25 PIPE SUPPORT FRAME & ANCHORAGE TO SLAB & WALL

SCALE: 1"=1' 0"



27 PIPE SUPPORT FRAME & ANCHORAGE TO SLAB

SCALE: 1"=1' 0"



30 PIPE SUPPORT PS-2

SCALE: 1-1/2"=1' 0"

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REGISTERED PROFESSIONAL ENGINEER TIMOTHY D. HYDE No. S3260 EXP. 3/31/27 STRUCTURAL

SOLANO COMMUNITY COLLEGE DISTRICT

SOLANO COMMUNITY COLLEGE

4000 SUISUN VALLEY RD
FAIRFIELD, CA 94534

HYDRONIC SYSTEM MODERNIZATION

DSA APPL #02-123745

ISSUE		
MARK	DATE	DESCRIPTION
	10/03/25	100% SD
	10/24/25	50% CD
	11/12/25	PROGRESS SET
	12/01/25	DSA SUBMITTAL
	01/23/26	DSA BACKCHECK
3	03/11/26	ADDENDUM #3

SOBE PROJECT NO:	2510-00649
DATE:	03/11/26
DRAWN BY:	JJQ, TDH
CHECKED BY:	TDH
APPROVED BY:	

SHEET TITLE

STRUCTURAL HANGERS & BRACES SUPPORT DETAILS AND ANCHORAGE DETAILS

SCALE: AS NOTED

THIS DRAWING IS 30" X 42" AT FULL SIZE

S-5.2

SHEET OF –