

### **ADDENDUM #3**

DATE: **September 21, 2022**

TO CONTRACT DOCUMENTS ENTITLED:

**EAST CAMPUS CHILLER PLANT – INSTALL WATER COOLED CHILLER  
PROJECT NUMBER: CP212233**

**At University of Missouri  
Columbia, Missouri 65211**

ADVERTISEMENT DATE: August 25, 2022

PREPARED FOR: The Curators of the University of Missouri

CONSULTANT Ross & Baruzzini, Inc.  
6 South Old Orchard  
St. Louis, Missouri 63119  
314-918-8383

Drawings and Specifications for the above noted project and the work covered thereby are herein modified as follows, and except as set forth herein, otherwise remain unchanged and in full force and effect:

#### **General:**

#### **Specifications:**

1. ADVERTISEMENT FOR BIDS
  - a. **REVISE** paragraph “Sealed bids for EAST CAMPUS CHILLER PLANT – INSTALL WATER COOLED CHILLER UNIVERSITY OF MISSOURI COLUMBIA, MISSOURI PROJECT NUMBER: CP212233 CONSTRUCTION ESTIMATE: \$834,305.34 - \$927,005.93 will be received by the Curators of the University of Missouri, Owner, at Campus Facilities, Planning, Design & Construction, Missouri 65211, **until 1:30 p.m, C.T., September 27, 2022** and then immediately opened and publicly read aloud.”
2. 230500 Basic Mechanical Materials and Methods
  - a. **REVISE** paragraph **2.8.E** “Mechanical Room Floor Paint: Sherwin Williams ArmorSeal 8100 (D70W8161) water-based epoxy in **gloss** finish and Shark Grip additive for slip resistance. **Finish shall match existing conditions. Test small area for match prior to covering entire work area. Refer to specification sections 033000 Concrete and 099000 Protective Coatings.**”

#### **Drawings:**

1. SHEET M000 – SYMBOLS, ABBREVIATIONS AND GENERAL NOTES
  - a. Refer to reissued sheet for revisions.
    - i. MODIFY GENERAL NOTE 15 **“EXISTING PLATE AND FRAME HEAT EXCHANGER SHALL BE DEMOLISHED. CONTRACTOR SHALL DRAIN AND DISCONNECT ALL EXISTING PIPING COMPONENTS AND THEN REMOVE HEAT EXCHANGER FROM THE CONSTRUCTION SITE.”**
2. SHEET MD101 – MECHANICAL – GROUND LEVEL – DEMOLITION PLAN - SOUTH



- a. Refer to reissued sheet for revisions.
  - i. MODIFY KEYED NOTE 4 “**CONTRACTOR SHALL DRAIN AND DISCONNECT ALL EXISTING PIPING FROM EXISTING PLATE AND FRAME HEAT EXCHANGER. PLATE AND FRAME HEAT EXCHANGER SHALL BE DEMOLISHED AND REMOVED BY THIS CONTRACTOR. EXISTING PLATE AND FRAME HEAT EXCHANGER (ARMSTRONG MODEL S-229-3750-417). WEIGHT (LBS): EMPTY 24,868 / FLOODED 33,052. SIZE (INCHES) 154.94 x 44.63 x 127.09.”**
- 3. SHEET MD201 – MECHANICAL SECTION VIEWS – DEMOLITION PLAN
  - a. Refer to reissued sheet for revisions.
    - i. MODIFY KEYED NOTE 6 “**CONTRACTOR SHALL DRAIN AND DISCONNECT ALL EXISTING PIPING FROM EXISTING PLATE AND FRAME HEAT EXCHANGER. PLATE AND FRAME HEAT EXCHANGER SHALL BE DEMOLISHED AND REMOVED BY THIS CONTRACTOR. EXISTING PLATE AND FRAME HEAT EXCHANGER (ARMSTRONG MODEL S-229-3750-417). WEIGHT (LBS): EMPTY 24,868 / FLOODED 33,052. SIZE (INCHES) 154.94 x 44.63 x 127.09.”**

**Attachments:**

Advertise Bid Sheet; Sheet M000, MD101 AND MD201.

**END OF ADDENDUM #3**



CAMPUS FACILITIES

General Services Bldg.  
Columbia, Missouri 65211  
Telephone: (573) 882-6800

ADVERTISEMENT FOR BIDS

Sealed bids for:

EAST CAMPUS CHILLER PLANT –  
INSTALL WATER COOLED CHILLER  
UNIVERSITY OF MISSOURI  
COLUMBIA, MISSOURI  
PROJECT NUMBER: CP212233

CONSTRUCTION ESTIMATE: \$834,305.34 - \$927,005.93

will be received by the Curators of the University of Missouri, Owner, at Campus Facilities, Planning, Design & Construction, Room L100 (Front Reception Desk), General Services Building, University of Missouri, Columbia, Missouri 65211, until 1:30 p.m., C.T., September 27, 2022 and then immediately opened and publicly read aloud.

Addendum 03

Drawings, specifications, and other related contract information may be obtained at <http://operations-webapps.missouri.edu/pdc/adsite/ad.html>. Electronic bid sets are available at no cost and may be printed as desired by the plan holders. No paper copies will be issued. If paper copies are desired, it is the responsibility of the user to print the files or have them printed.

Questions regarding the scope of work should be directed to Randy Diemer with Ross & Baruzzini at (314) 391-5779 or [rdiemer@rossbar.com](mailto:rdiemer@rossbar.com). Questions regarding commercial conditions should be directed to Ashley Karpel at (573) 882-1349 or [karpela@missouri.edu](mailto:karpela@missouri.edu).

A prebid meeting will be held at 10:00 a.m., C.T., September 14, 2022 in the General Services Bldg., Room 194A, followed by a site walk-through.

Information regarding bid results will be available the day following the bid opening by calling (573) 882-1133

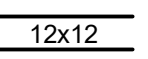
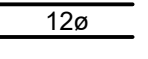



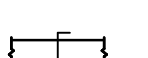
A Diversity Participation goal of 10% MBE, 10% Combined WBE, DBE, Veteran Owned Business and 3% SDVE has been established for this contract.




The Owner reserves the right to waive informalities in bids and to reject any and all bids.

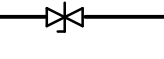
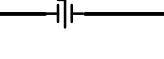
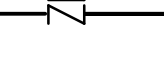
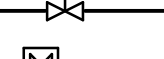
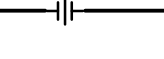

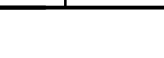
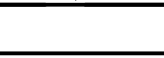
Individuals with special needs as addressed by the Americans with Disabilities Act may contact (573) 882-1133.

Advertisement Date: September 1, 2022



DUCT SYSTEM SYMBOLS	
	DUCT SIZE, FIRST FIGURE IS SIDE SHOWN (CLEAR INSIDE, ADJUST FOR LINER)
	ROUND DUCT SIZE, (ACTUAL SIZE INDICATED)
	CHANGE OF ELEVATION - RISE (R) OR DROP (D)
	EXHAUST AIR SECTION UP
	EXHAUST AIR SECTION DOWN
	MANUAL VOLUME DAMPER

MECHANICAL SYMBOLS	
	HVAC SENSOR
	SENSOR TYPE
T	TEMPERATURE SENSOR
R	REFRIGERANT SENSOR
	EQUIPMENT DESIGNATION
1	UNIT NUMBER
AHU-1	EXISTING EQUIPMENT DESIGNATION

PIPE LINE SYMBOLS	
	BALL VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	TWO-WAY CONTROL VALVE
	MOTORIZED BUTTER FLY VALVE
	PRESSURE AND TEMPERATURE TEST PORT
	PRESSURE GAGE WITH COCK
	PITCH DOWN IN DIRECTION OF ARROW

PIPE SYSTEM ABBREVIATIONS	
—CF—	CHEMICAL FEED
—CHWR—	CHILLED WATER RETURN
—CHWS—	CHILLED WATER SUPPLY
—CW—	COLD WATER, DOMESTIC
—D—	DRAIN
—LPR—	LOW PRESSURE CONDENSATE RETURN (15 PSIG)
—LPS—	LOW PRESSURE STEAM SUPPLY (15 PSIG)
—MPR—	MEDIUM PRESSURE CONDENSATE RETURN (60 PSIG)
—MPS—	MEDIUM PRESSURE STEAM SUPPLY (60PSIG)
—MU—	MAKE-UP WATER (NON-POTABLE)
—RV—	REFRIGERANT VENT
—TWR—	TOWER WATER RETURN
—TWS—	TOWER WATER SUPPLY

MECH EQUIPMENT DESIGNATION	
MECH	EQUIPMENT DESIGNATION
AS	AIR SEPARATOR
BS	BASKET STRAINER
CH	CHILLER
CT	COOLING TOWER
CTF	COOLING TOWER FILTER
CWP	CHILLED WATER PUMP
EF	EXHAUST FAN
HX	HEAT EXCHANGER
HXP	HEAT EXCHANGER PUMP
LP	LOOP PUMP
MD	MOTORIZED DAMPER
P	PUMP
PHX	PLATE HEAT EXCHANGER
TP	TOWER PUMP
VFD	VARIABLE FREQUENCY DRIVE

MECHANICAL ABBREVIATIONS			
A	AIR OR AMP (PER CONTEXT)	JS	JOIST SPACE
ACC	ACCESSORIES	KW	KILOWATTS
AD	ACCESS DOOR	L	LENGTH
AFF	ABOVE FINISHED FLOOR	LAT	LEAVING AIR TEMPERATURE
AFS	AIR FLOW SWITCH	LB(S)	POUNDS
AHRI	AIR CONDITIONING, HEATING, AND REFRIGERATION INSTITUTE	LF	LINEAR FEET
AI	ANALOG SIGNAL INPUT	LRA	LOCKED ROTOR AMPS
AMB	AMBIENT	LVL	LIGHT SPACE
AO	ANALOG SIGNAL OUTPUT	LVL	LEVEL
AP	ACCESS PANEL	LWT	LEAVING WATER TEMPERATURE
APD	AIR PRESSURE DROP	MAN	MANUAL
APLV	APPLICATION PART LOAD VALUE	MANU	MANUFACTURER
APPROX	APPROXIMATE	MAX	MAXIMUM
ARCH	ARCHITECTURE/ARCHITECT	MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
AUX	AUXILIARY	MCA	MINIMUM CIRCUIT AMPS
AV	AUTOMATIC VENT	MCC	MOTOR CONTROL CENTER
AVG	AVERAGE	MCH	MECHANICAL
BDD	BACK DRAFT DAMPER	MERV	MINIMUM EFFICIENCY REPORTING VALUE
BFC	BELOW FINISHED CEILING	MFR	(ASHRAE 52.2)
BFL	BACKFLOW PREVENTER	MTL	MINIMUM OR MINUTE (PER CONTEXT)
BHP	BRAKE HORSEPOWER	MTD	MOUNTED
BI	BINARY SIGNAL INPUT	MTL	METAL
BMS	BUILDING MANAGEMENT SYSTEM	MV	MANUAL VENT
BO	BINARY SIGNAL OUTPUT	NC	NORMALLY CLOSED OR NOISE CRITERIA (PER CONTEXT)
BOB	BOTTOM OF BEAM	NIC	NOT IN CONTRACT
BOD	BOTTOM OF DUCT	NO	NORMALLY OPEN OR NUMBER (PER CONTEXT)
BOP	BOTTOM OF PIPE	NOM	NOMINAL
BS	BEAM SPACE	NPLV	NON-STANDARD PART LOAD VALUE
BTU	BRITISH THERMAL UNIT	NPSH	NET POSITIVE SUCTION HEAD
BTUH	BRITISH THERMAL UNITS PER HOUR	NTS	NOT TO SCALE
BWE	BAKED WHITE ENAMEL	OA	OUTSIDE AIR
CAP	CAPACITY	OBD	OPPOSED BLADE DAMPER
CAV	CONSTANT AIR VOLUME	OC	ON CENTER
CFM	CUBIC FEET PER HOUR	OD	OUTSIDE DIAMETER
CFM	CUBIC FEET PER MINUTE	OT	OIL TRAP
CI	CAST IRON	PA	PIPE ANCHOR
CLS	COOLING DUCT (COLD DUCT)	PBD	PARALLEL BLADE DAMPER
CO	CLEAN OUT	PD	PRESSURE DROP
COMP	COMPRESSOR	PENT	PENTHOUSE
CONC	CONCRETE	PH	PHASE
COND	CONDENSATE	PHC	PHEHEAT COIL
CONN	CONNECTION	PLBG	PLUMBING
CORR	CORRIDOR	PNEU	PNEUMATIC
CV	CONTROL VALVE	PPH	POUNDS PER HOUR
D	DEPTH	PRESS	PRESSURE
DB	DRY BULB	PRV	PRESSURE REGULATING VALVE
DBA	A-WEIGHTED DECIBELS	PSI	POUNDS PER SQUARE INCH
DEFL	DEFLECTION	PSIA	POUNDS PER SQUARE INCH ABSOLUTE
DEG	DEGREES	PSIG	POUNDS PER SQUARE INCH GAUGE
DEG F	DEGREES FAHRENHEIT	QTY	QUANTITY
DES	DESIGN	RA	RETURN AIR
DIA	DIAMETER	RAD	RADIATED
DIM	DIMENSION	RD	ROOF DRAIN
DISCH	DISCHARGE	REFR	REFRIGERANT
DIV	DIVISION	REQ	REQUIRED
DN	DOWN	RH	RELATIVE HUMIDITY
DP	DIFFERENTIAL PRESSURE SENSOR	RLA	RUNNING LOAD AMPS
DPS	DIFFERENTIAL PRESSURE SWITCH	RM	ROOM
DPT	DIFFERENTIAL PRESSURE TRANSMITTER	RND	ROUND
DTL	DETAIL	RPM	REVOLUTIONS PER MINUTE
DWG(S)	DRAWING(S)	SA	SUPPLY AIR
EA	EXHAUST AIR OR EACH (PER CONTEXT)	SAN	SANITARY
EAT	ENTERING AIR TEMPERATURE	SECN	SECTION
EER	ENERGY EFFICIENT RATIO	SEER	SEASONAL ENERGY EFFICIENCY RATIO
EFF	EFFICIENCY	SENS	SENSIBLE
ELEC	ELECTRIC	SF	SQUARE FOOT
ELEV	ELEVATION	SH	SENSIBLE HEAT
EQ	EQUAL	SHT	SHEET
ESP	EXTERNAL STATIC PRESSURE	SND	SOUND
EWB	ENTERING AIR WET BULB TEMPERATURE	SOL	SOLENOID
EWT	ENTERING WATER TEMPERATURE	SP	STATIC PRESSURE
EXH	EXHAUST	SPD	STATIC PRESSURE DIFFERENTIAL
EXIST, EX	EXISTING	SPT	STATIC PRESSURE TRANSMITTER
EXT	EXTERNAL	SQ	SQUARE
F	FAHRENHEIT	SST	STAINLESS STEEL
F&T	FLOAT AND THERMOSTATIC	STL	STEEL
FC	FLEXIBLE CONNECTION	STM	STEAM
FD	FLOOR DRAIN	T&P	TEMPERATURE AND PRESSURE
FDC	FIRE DEPARTMENT CONNECTION	TC	TEMPERATURE CONTROL
FIN	FINISHED	TD	THERMODYNAMIC OR TEMPERATURE DIFFERENTIAL (PER CONTEXT)
FLR	FLOOR	TDH	TOTAL DYNAMIC HEAD
FPF	FINS PER FOOT	TEMP	TEMPERATURE
FPM	FEET PER MINUTE	TOT	TOTAL
FS	FLOW SWITCH	TPD	TOTAL PRESSURE DROP
FT	FEET	TSP	TOTAL STATIC PRESSURE
FT-HD	HEAD IN FEET	TYP	TYPICAL
GA	GAUGE	UC	UNDERCUT DOOR
GAL	GALLONS	UG	UNDERGROUND
GALV	GALVANIZED	UNO	UNLESS NOTED OTHERWISE
GC	GENERAL CONTRACTOR	V	VOLTS
GPH	GALLONS PER HOUR	VAC	VACUUM
GPM	GALLONS PER MINUTE	VD	VOLUME DAMPER (MANUAL)
H	HEIGHT	VEL	VELOCITY
HD	HEAD	VERT	VERTICAL
HEV	HOSE END VALVE	VFD	VARIABLE FREQUENCY DRIVE
HORIZ	HORIZONTAL	VOL	VOLUME
HP	HORSEPOWER	VTR	VENT THRU ROOF
HR	HOUR	W	WATT OR WIDTH (PER CONTEXT)
HTG	HEATING DUCT (HOT DECK)	WI	WITH
HVAC	HEATING, VENTILATING & AIR CONDITIONING	W/O	WITHOUT
HW	HOT WATER	WB	WET BULB
HZ	HERTZ	WC	WATER COLUMN
IB	INVERTED BUCKET	WGL	WATER GAUGE
IE	INVERT ELEVATION	WPD	WATER PRESSURE DIFFERENTIAL
IN	INCHES	WT	WEIGHT
INDIC	INDICATOR		
IPLV	INTEGRATED PART-LOAD VALUE		
ISP	INTERNAL STATIC PRESSURE		

MECHANICAL PROJECT GENERAL NOTES		
1. ALL ELBOWS, FITTINGS, ETC., IN PIPING AND DUCTWORK REQUIRED TO CLEAR ALL JOB OBSTRUCTIONS ARE NOT NECESSARILY INDICATED. ALL NECESSARY TRANSITIONS, FITTINGS AND OFFSETS ARE REQUIRED WHETHER SHOWN OR NOT.	9. THE CONTRACTOR SHALL CONNECT THE NEW HVAC SYSTEM TO THE OWNERS EXISTING BUILDING CONTROL SYSTEM. REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.	16. INSTALL ALL MANUFACTURED ITEMS, MATERIALS, AND EQUIPMENT IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED SPECIFICATIONS, EXCEPT THAT SPECIFICATIONS HEREIN, WHERE MORE STRINGENT, SHALL BE COMPLIED WITH.
2. THE CONTRACTOR SHALL COORDINATE STAGING AND SCHEDULING WITH THE OWNER'S REPRESENTATIVE.	10. REFER TO SPECIFICATION 230990 - TESTING, ADJUSTING AND BALANCING FOR REQUIREMENTS CONCERNING OWNER TEST AND BALANCING OF SYSTEMS.	17. CONTRACTOR SHALL CHECK ALL CONTRACT DOCUMENTS, FIELD CONDITIONS, AND DIMENSIONS FOR ACCURACY AND CONFIRM THAT WORK IS BUILDABLE AS SHOWN BEFORE PROCEEDING WITH CONSTRUCTION. IF THERE ARE ANY QUESTIONS REGARDING THESE OR OTHER COORDINATING QUESTIONS, THE CONTRACTOR SHALL OBTAIN A CLARIFICATION FROM THE OWNER BEFORE PROCEEDING WITH WORK.
3. EXISTING CONDITIONS ARE BASED ON INFORMATION OBTAINED FROM PREVIOUS CONSTRUCTION DOCUMENTS AND INFORMAL FIELD OBSERVATION AND SHALL NOT BE CONSTITUTED AS "AS BUILT." THE CONTRACTOR SHALL FIELD-VERIFY EXISTING CONDITIONS BEFORE THE ONSET OF CONSTRUCTION.	11. THESE PLANS ARE DIAGRAMMATIC IN NATURE. THE CONTRACTOR SHALL BE PREPARED TO MAKE SOME ALTERATIONS TO THE EXACT LOCATION OF DUCTWORK, PIPING AND EQUIPMENT FROM THE LOCATION INDICATED ON THESE DRAWINGS TO FIT ACTUAL JOB CONDITIONS.	18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE WHICH MAY OCCUR DURING CONSTRUCTION TO EXISTING EQUIPMENT, BUILDING FEATURES, OR ANY OTHER RELATED PROPERTY OF THE LANDLORD OR OWNER.
4. DEMOLISH ALL PIPING, DUCTWORK EQUIPMENT, ETC., SHOWN TO BE REMOVED, IN ITS ENTIRETY, INCLUDING ALL HANGERS AND SUPPORTS.	12. CONTRACTOR SHALL PROTECT ALL EXISTING EQUIPMENT DURING CONSTRUCTION.	19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE FIRE EXTINGUISHERS IN THE WORK SPACE TO COMPLY WITH ALL FIRE REGULATIONS THROUGHOUT THE DURATION OF CONSTRUCTION. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL AND LOCAL SAFETY REGULATIONS IN THE EXECUTION OF THE WORK.
5. WHERE CONTRACTOR IS REQUIRED TO CONCEAL NEW WORK, REMOVE OR MODIFY EXISTING CONSTRUCTION OR EQUIPMENT, OR ATTACH TO EXISTING CONSTRUCTION, THE CONTRACTOR SHALL REPAIR OR REPLACE EXISTING CONSTRUCTION AND MATERIALS TO MATCH CONDITIONS AT THE ONSET OF CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE AND REPLACE EXISTING CEILINGS AND WALLS REQUIRED FOR INSTALLATION OF MECHANICAL SYSTEMS.	13. EAST CAMPUS CHILLER PLANT IS AN ACTIVE OPERATING FACILITY PROVIDING CHILLED WATER TO THE ENTIRE UNIVERSITY OF MISSOURI CAMPUS 24/7 365 DAYS. CHILLED WATER, CONDENSING WATER AND ALL ELECTRICAL COMPLETE SHUT DOWNS SHALL BE FULLY COORDINATED WITH THE OWNER'S REPRESENTATIVE. ALL SHUT DOWNS SHALL BE COORDINATED AND APPROVED 14-DAYS PRIOR TO SHUT DOWN.	20. WHERE THERE IS WORK ASSOCIATED WITH THE EXISTING CONCRETE FLOOR, CONTRACTOR SHALL INCLUDE IN HIS/HER BID TO SEAL FLOOR WATER TIGHT AT COMPLETION OF CONSTRUCTION.
6. THE OWNER SHALL MAINTAIN ALL SALVAGE RIGHTS OF EQUIPMENT AND MATERIALS REMOVED. ALL EQUIPMENT AND MATERIALS NOT CLAIMED BY THE OWNER SHALL BE REMOVED FROM THE PREMISES BY THIS CONTRACTOR.	14. THERE ARE MULTIPLE PIECES OF EQUIPMENT THAT WITH BE RELOCATED AND REUSED. COORDINATE WITH OWNERS REPRESENTATIVE.	A. REFER TO SHEET MD101 MECHANICAL - GROUND LEVEL - DEMOLITION PLAN - SOUTH.
7. ALL WORK SHALL BE INSTALLED PER THE REFERENCE DETAILS, REGARDLESS OF WHETHER OR NOT THE DETAILS ARE CALLED OUT ON THE PLANS.	15. EXISTING PLATE AND FRAME HEAT EXCHANGER SHALL BE DEMOLISHED. CONTRACTOR SHALL DRAIN AND DISCONNECT ALL EXISTING PIPING COMPONENTS AND THEN REMOVE FROM THE CONSTRUCTION SITE.	B. REFER TO SHEET M201 AND M202 MECHANICAL PLANS.
8. PROVIDE VENTS AT ALL HYDRONIC PIPING HIGH POINTS, AND DRAINS AT ALL PIPING LOW POINTS, REGARDLESS OF WHETHER SHOWN OR NOT.	16. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL LEAVE ALL WORK AREAS AND FINISHED SPACES IN A CLEAN AND ACCEPTABLE CONDITION.	C. REFER TO SHEET P101 PLUMBING - GROUND LEVEL & UNDERGROUND DEMOLITION AND NEW WORK PLAN.
9. THERE ARE EXISTING TEMPERATURE CONTROLS THAT ARE BEING REUSED AND/OR RELOCATED. REFER TO DOCUMENTS AS NOTED FURTHER WITHIN THESE DOCUMENTS. ALL EXISTING TEMPERATURE CONTROLS THAT ARE BEING CALLED OUT TO BE DEMOLISHED OR DISABLED AS WORK OF THIS CONTRACT SHALL BE COMPLETELY REMOVED FROM BUILDING. COORDINATE WITH OWNERS REPRESENTATIVE.	17. BEFORE PERFORMING ANY WORK OR ORDERING ANY MATERIALS, THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS OF ANY EXISTING AND NEW WORK AND SHALL BE RESPONSIBLE FOR THEIR ACCURACY. ANY DIFFERENCES FOUND SHALL BE SUBMITTED TO THE OWNER FOR CONSIDERATION BEFORE PROCEEDING WITH THE WORK.	

Ross & Baruzzini

6 SOUTH OLD ORCHARD  
ST. LOUIS, MO 63119  
T 314.918.8383  
F 314.918.8383  
WWW.ROSSBARUZZINI.COM

ROSS & BARUZZINI  
MISSOURI STATE CERTIFICATE OF  
AUTHORITY #000148

UNIVERSITY OF MISSOURI  
EAST CAMPUS CHILLER PLANT  
INSTALL WATER COOLED CHILLER  
UM PROJECT NUMBER CP212233  
COLUMBIA, MISSOURI

MISSOURI

UNIVERSITY OF MISSOURI  
EAST CAMPUS CHILLER PLANT  
INSTALL WATER COOLED CHILLER  
UM PROJECT NUMBER CP212233  
COLUMBIA, MISSOURI

UNIVERSITY OF MISSOURI  
EAST CAMPUS CHILLER PLANT  
INSTALL WATER COOLED CHILLER  
UM PROJECT NUMBER CP212233  
COLUMBIA, MISSOURI

MISSOURI

UNIVERSITY OF MISSOURI  
EAST CAMPUS CHILLER PLANT  
INSTALL WATER COOLED CHILLER  
UM PROJECT NUMBER CP212233  
COLUMBIA, MISSOURI

UNIVERSITY OF MISSOURI  
EAST CAMPUS CHILLER PLANT  
INSTALL WATER COOLED CHILLER  
UM PROJECT NUMBER CP212233  
COLUMBIA, MISSOURI

MISSOURI

UNIVERSITY OF MISSOURI  
EAST CAMPUS CHILLER PLANT  
INSTALL WATER COOLED CHILLER  
UM PROJECT NUMBER CP212233  
COLUMBIA, MISSOURI

UNIVERSITY OF MISSOURI  
EAST CAMPUS CHILLER PLANT  
INSTALL WATER COOLED CHILLER  
UM PROJECT NUMBER CP212233  
COLUMBIA, MISSOURI

MISSOURI

UNIVERSITY OF MISSOURI  
EAST CAMPUS CHILLER PLANT  
INSTALL WATER COOLED CHILLER  
UM PROJECT NUMBER CP212233  
COLUMBIA, MISSOURI

UNIVERSITY OF MISSOURI  
EAST CAMPUS CHILLER PLANT  
INSTALL WATER COOLED CHILLER  
UM PROJECT NUMBER CP212233  
COLUMBIA, MISSOURI

MISSOURI

UNIVERSITY OF MISSOURI  
EAST CAMPUS CHILLER PLANT  
INSTALL WATER COOLED CHILLER  
UM PROJECT NUMBER CP212233  
COLUMBIA, MISSOURI

UNIVERSITY OF MISSOURI  
EAST CAMPUS CHILLER PLANT  
INSTALL WATER COOLED CHILLER  
UM PROJECT NUMBER CP212233  
COLUMBIA, MISSOURI

MISSOURI

UNIVERSITY OF MISSOURI  
EAST CAMPUS CHILLER PLANT  
INSTALL WATER COOLED CHILLER  
UM PROJECT NUMBER CP212233  
COLUMBIA, MISSOURI

UNIVERSITY OF MISSOURI  
EAST CAMPUS CHILLER PLANT  
INSTALL WATER COOLED CHILLER  
UM PROJECT NUMBER CP212233  
COLUMBIA, MISSOURI

MISSOURI

UNIVERSITY OF MISSOURI  
EAST CAMPUS CHILLER PLANT  
INSTALL WATER COOLED CHILLER  
UM PROJECT NUMBER CP212233  
COLUMBIA, MISSOURI

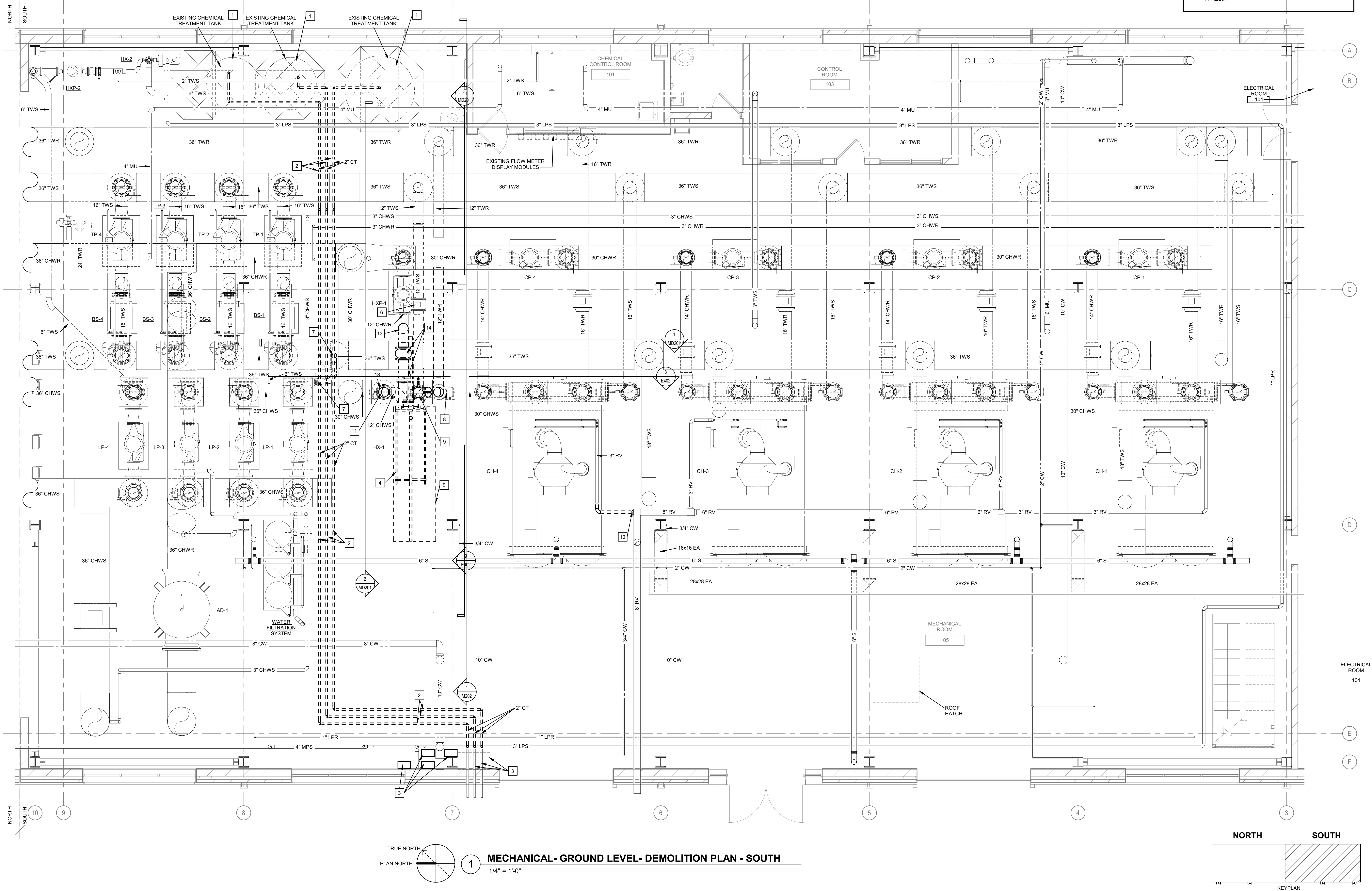
UNIVERSITY OF MISSOURI  
EAST CAMPUS CHILLER PLANT  
INSTALL WATER COOLED CHILLER  
UM PROJECT NUMBER CP212233  
COLUMBIA, MISSOURI

MISSOURI

UNIVERSITY OF MISSOURI  
EAST CAMPUS CHILLER PLANT  
INSTALL WATER COOLED CHILLER  
UM PROJECT NUMBER CP212233  
COLUMBIA, MISSOURI



9/21/2022 9:22:09 AM



11. DISCONNECT AND REMOVE EXISTING FLOW METER AND TEMPERATURE TRANSMITTER IN EXISTING 12-INCH CHWS. FLOW METER AND TEMPERATURE TRANSMITTER TO BE RELOCATED. CONTRACTOR SHALL STORE EQUIPMENT AND PROTECT FROM DAMAGE. REFER TO NEW WORK PLANS.
12. DISCONNECT A PORTION OF THE EXISTING 12-INCH CHWR AT EXISTING PUMP HXP-1.
13. DISCONNECT AND REMOVE EXISTING BUTTERFLY TYPE SHUTOFF VALVE IN CHWS. SHUT OFF VALVES TO BE RELOCATED. CONTRACTOR SHALL STORE EQUIPMENT AND PROTECT FROM DAMAGE. REFER TO NEW WORK PLANS.
14. DISCONNECT AND REMOVE EXISTING BUTTERFLY TYPE SHUTOFF VALVE IN CHWR. SHUT OFF VALVES TO BE RELOCATED. CONTRACTOR SHALL STORE EQUIPMENT AND PROTECT FROM DAMAGE. REFER TO NEW WORK PLANS. HORIZONTAL CHECK VALVE SHALL BE DEMOED. NOT REQUIRED.
6. DISCONNECT AND REMOVE EXISTING FLOW METER AND TEMPERATURE TRANSMITTER IN EXISTING 12-INCH TWS. FLOW METER AND TEMPERATURE TRANSMITTER TO BE RELOCATED. CONTRACTOR SHALL STORE EQUIPMENT AND PROTECT FROM DAMAGE. REFER TO NEW WORK PLANS.
7. DISCONNECT 6-INCH TWS AT SHUT OFF VALVE TO 36-INCH TWS MAIN. CONNECTION TO 36-INCH MAIN TO BE MOVED TO ALLOW FOR NEW CONNECTION TO CHILLER CH-9. REFER TO NEW WORK PLANS.
8. DISCONNECT AND REMOVE EXISTING CONTROL VALVE IN EXISTING 12-INCH TWR. COORDINATE WITH DIVISION 28. CONTROL VALVE TO BE RELOCATED. CONTRACTOR SHALL STORE EQUIPMENT AND PROTECT FROM DAMAGE. REFER TO NEW WORK PLANS.
9. DISCONNECT AND REMOVE EXISTING BUTTERFLY TYPE SHUTOFF VALVE IN TWS. SHUT OFF VALVE TO BE RELOCATED. CONTRACTOR SHALL STORE EQUIPMENT AND PROTECT FROM DAMAGE. REFER TO NEW WORK PLANS.
10. DISCONNECT A PORTION OF THE EXISTING 8-INCH REFRIGERANT RELIEF VENT PIPE TO EXTEND TO NEW CHILLER CH-9. REFER TO NEW WORK PLAN.

4. CONTRACTOR SHALL DRAIN AND DISCONNECT ALL EXISTING PIPING FROM EXISTING PLATE AND FRAME HEAT EXCHANGER. PLATE AND FRAME HEAT EXCHANGER SHALL BE DEMOLISHED AND REMOVED BY THIS CONTRACTOR. EXISTING PLATE AND FRAME HEAT EXCHANGER (ARMSTRONG MODEL S-220-3750-417). WEIGHT (LBS): EMPTY 24,888 / FLOODED 33,052. SIZE (INCHES) 154.94 x 44.63 x 127.09.
5. DEMOLISH EXISTING CONCRETE HOUSEKEEPING PAD EXISTING PLATE AND FRAME HEAT EXCHANGER CURRENTLY IS SITTING ON. CONTRACTOR SHALL SMOOTH EXISTING FLOOR TO MATCH EXISTING FLOOR. REMOVE ALL ANCHOR BOLTS, DOWELS, GROUT AND CONCRETE TO CREATE A SMOOTH SURFACE. CONTRACTOR SHALL SEAL FLOOR TO MATCH EXISTING. REFER TO SPECIFICATIONS (099000 PROTECTIVE COATINGS) FOR CONCRETE SEALANT REQUIREMENTS. INCLUDE A MINIMUM 20'-0" x 10'-0" OF CONCRETE SEALING WORK IN BIDS.

1. EXISTING CHEMICAL TREATMENT TANK SHALL REMAIN. TANKS WILL CONTINUE TO BE USED THROUGHOUT THIS PROJECT.
2. DISCONNECT AND REMOVE EXISTING 2-INCH CHEMICAL TRANSFER LINES, HANGER SUPPORTS AND ALL ACCESSORIES FROM SHUTOFF VALVES AT PIPE ENTRANCE INTO BUILDING COMPLETELY TO PIPES INTO EXISTING CHEMICAL TREATMENT TANKS. EXISTING SHUT OFF VALVES AND QUICK DISCONNECTS AT EXTERIOR TO BUILDING SHALL REMAIN. EXISTING TANKS SHALL REMAIN. OWNER SHALL CLEAN PIPES PRIOR TO CONTRACTOR REMOVAL. DO NOT TOUCH PIPING UNTIL OWNER HAS CONFIRMED PIPING HAS BEEN CLEANED. COORDINATE WITH OWNER'S REPRESENTATIVE.
3. DISCONNECT AND REMOVE EXISTING CHEMICAL TRANSFER PUMPS (TOTAL OF TWO), PIPING, SUPPORTS. 16X16X18 STAINLESS STEEL DRIP TANK, MOTOR CONTROL PANELS, TANK LEVEL MONITORS, CONTROLS AND ALL ACCESSORIES. RETURN TO OWNER MOTOR CONTROL PANELS AND LEVEL MONITORS. PIPES THROUGH WALL SHALL BE ABANDONED. CAP PIPES INSIDE OF BUILDING. COORDINATE WITH ELECTRICAL DRAWINGS.

- ### GENERAL NOTES
1. THIS CHILLER PLANT RUNS 24/7 365 DAYS. ALL SHUTDOWN SHALL BE COORDINATED A MINIMUM OF 72 HOURS IN ADVANCE.
  2. THERE ARE MULTIPLE ACTIVE CHEMICAL TREATMENT TANKS WITHIN THE WORK AREA OF THIS PROJECT. CONTRACTOR SHALL FOLLOW ALL SAFETY STANDARDS. COORDINATE WITH OWNER'S REPRESENTATIVE.
  3. THERE ARE EXISTING TEMPERATURE CONTROL COMPONENTS THAT WILL BE DISCONNECTED AND RELOCATED BY CONTRACTOR ASSOCIATED WITH EXISTING HEAT EXCHANGER (HX-1). HEAT EXCHANGER PUMP (HXP-1). COORDINATE WITH OWNER'S REPRESENTATIVE PRIOR TO ANY DISCONNECTIONS.
  4. REFER TO MD201 - MECHANICAL SECTION VIEWS - DEMO FOR MORE INFORMATION CONCERNING MECHANICAL DEMOLITION.
  5. THIS BUILDING WAS COMPLETED IN TWO PHASES. NORTH AND SOUTH. THERE ARE TWO EXISTING ELECTRICAL ROOMS. ELECTRICAL ROOM 104 IN SOUTH. ELECTRICAL ROOM 107 NORTH. BOTH ROOMS HAVE EXISTING BUILDING MANAGEMENT CONTROL PANELS.

**Ross & Baruzzi**  
6 SOUTH OLD ORCHARD  
ST. LOUIS, MO 63119  
P 314.916.8383  
F 314.916.8383  
WWW.ROSSANDBARUZZI.COM

MISSOURI STATE CERTIFICATE OF AUTHORITY #000148

**UNIVERSITY OF MISSOURI**  
EAST CAMPUS CHILLER PLANT  
INSTALL WATER COOLED CHILLER  
UM PROJECT NUMBER CP212233  
COLUMBIA, MISSOURI

© ROSS & BARUZZI, INC. 2022

**RANDY J. DIEMER**  
ENG. LIC. NO. PE-2017015702  
The Professional Engineer, whose signature and official seal appear on this document, assumes responsibility for the design, preparation, and execution of the work shown on this drawing, and for the accuracy and completeness of the information provided. The Engineer's signature and seal are required for the drawing to be used for construction purposes. The Engineer's signature and seal are required for the drawing to be used for construction purposes. The Engineer's signature and seal are required for the drawing to be used for construction purposes.

**WHEN THIS DRAWING IS REPRODUCED AT ORIGINAL SCALE THIS BAR = 1" INCH**  
1 INCH

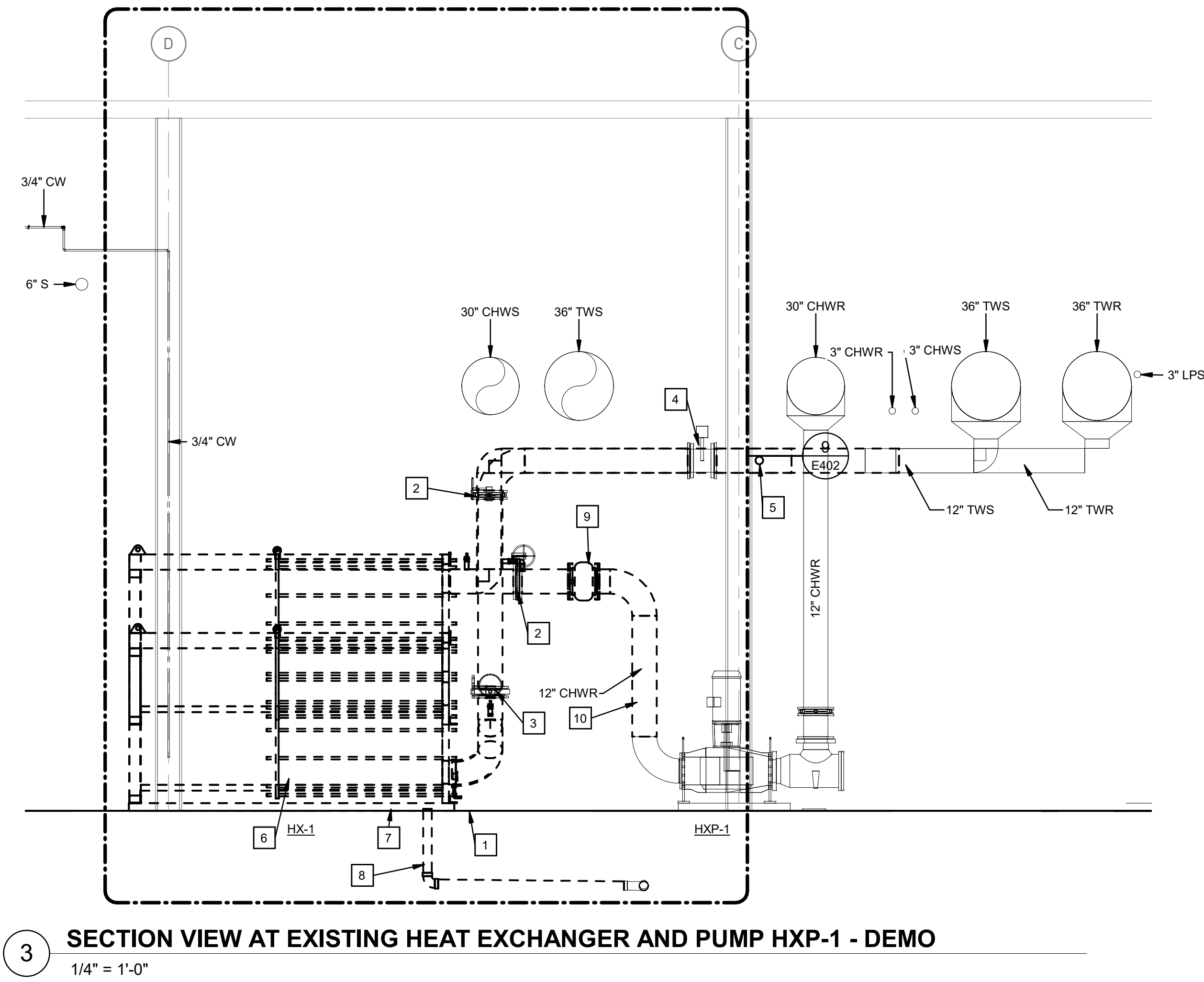
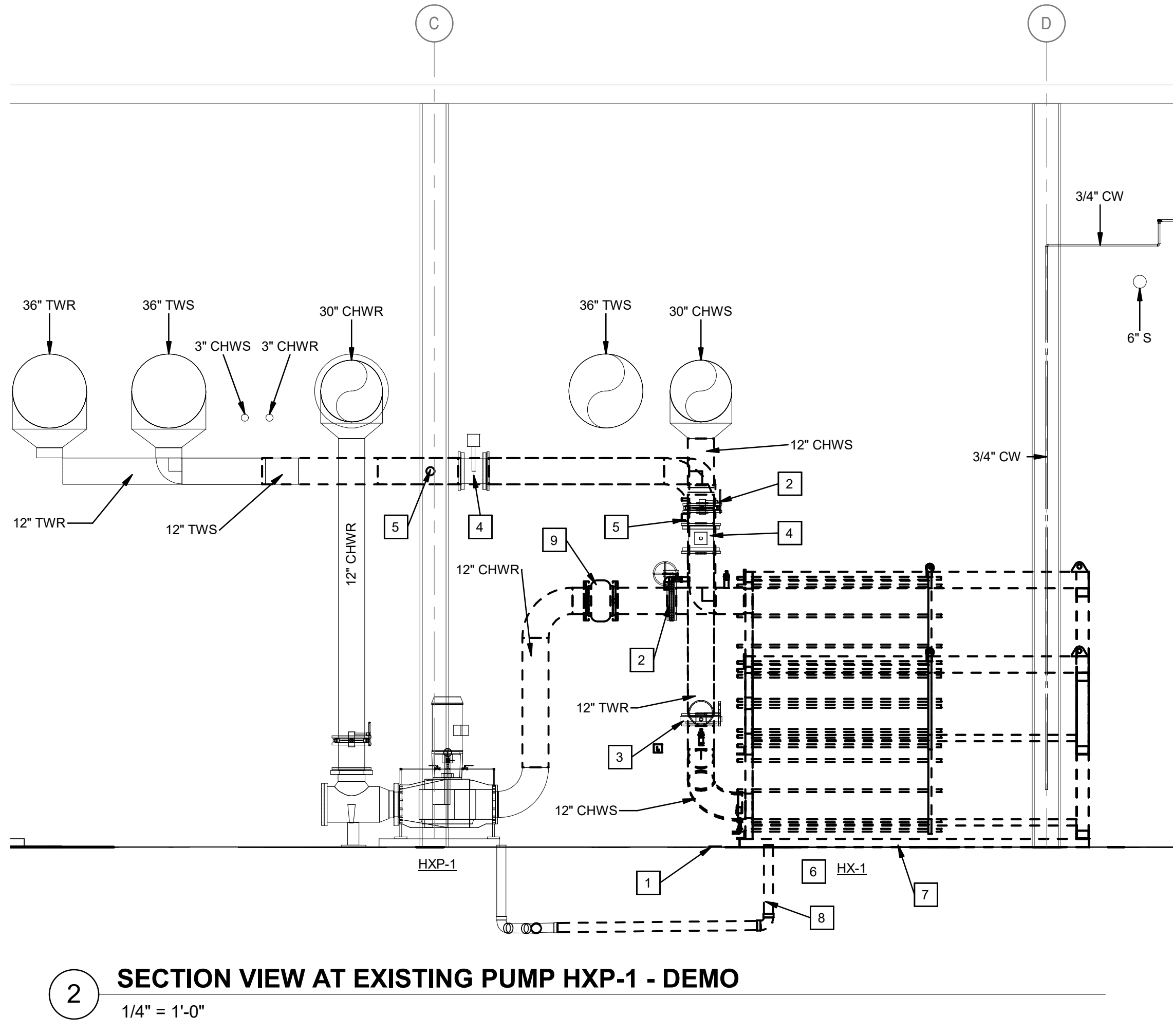
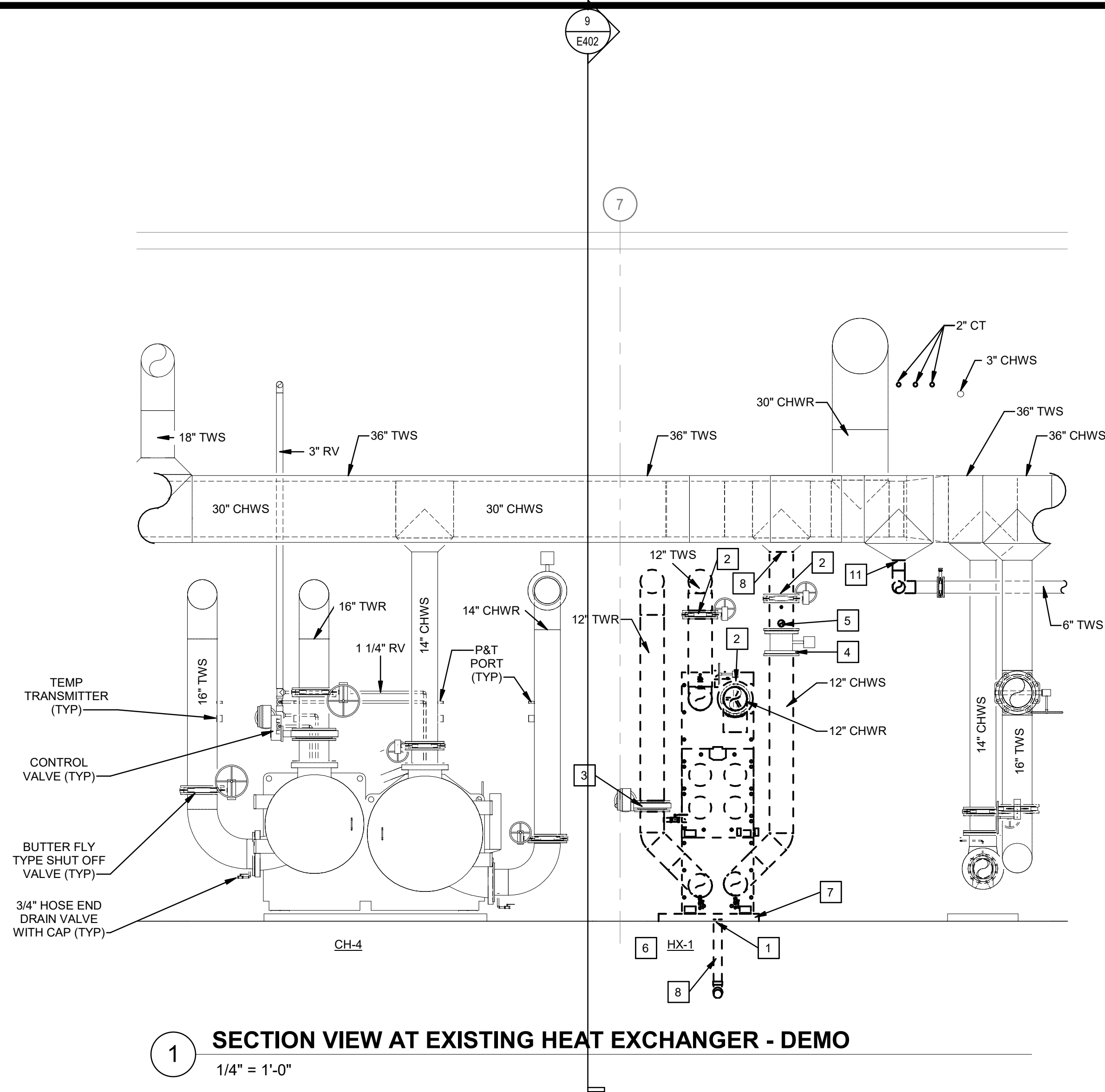
DATE	DESCRIPTION
09/21/2022	Addendum #3

DESIGNED BY:	RJD
CHECKED BY:	JRC
MU PROJ. NO.:	CP212233
RB PROJ. NO.:	0011484.000
ISSUE DATE:	08/25/2022

DRAWING TITLE:  
MECHANICAL - GROUND LEVEL - DEMOLITION PLAN - SOUTH

DRAWING NO.:  
**MD101**





- | #   | KEYED NOTES   |
|-----|---|
| 1.  | EXISTING FLOOR DRAIN IN FRONT OF HEAT EXCHANGER TO BE DEMOED. REFER TO SHEET P101 - GROUND LEVEL & UNDERFLOOR DEMOLITION AND NEW WORK PLAN FOR NEW FLOOR DRAIN LOCATION.  |
| 2.  | DISCONNECT AND REMOVE EXISTING BUTTERFLY TYPE SHUTOFF VALVE. SHUT OFF VALVE TO BE RELOCATED. CONTRACTOR SHALL STORE EQUIPMENT AND PROTECT FROM DAMAGE. REFER TO NEW WORK PLANS.   |
| 3.  | DISCONNECT AND REMOVE EXISTING CONTROL VALVE IN EXISTING 12-INCH TWR. COORDINATE WITH DIVISION 26. CONTROL VALVE TO BE RELOCATED. CONTRACTOR SHALL STORE EQUIPMENT AND PROTECT FROM DAMAGE. REFER TO NEW WORK PLANS.  |
| 4.  | DISCONNECT AND REMOVE EXISTING FLOW METER IN EXISTING 12-INCH. FLOW METER TO BE RELOCATED. CONTRACTOR SHALL STORE EQUIPMENT AND PROTECT FROM DAMAGE. REFER TO NEW WORK PLANS.   |
| 5.  | DISCONNECT AND REMOVE EXISTING TEMPERATURE TRANSMITTER. TRANSMITTER SHALL BE RELOCATED. CONTRACTOR SHALL STORE EQUIPMENT AND PROTECT FROM DAMAGE. TYPICAL FOR ALL EXISTING TEMPERATURE TRANSMITTERS SERVING PLATE AND FRAME HEAT EXCHANGER (CHWS, CHWR, TWS AND TWR).   |
| 6.  | CONTRACTOR SHALL DRAIN AND DISCONNECT ALL EXISTING PIPING FROM EXISTING PLATE AND FRAME HEAT EXCHANGER. PLATE AND FRAME HEAT EXCHANGER SHALL BE DEMOLISHED AND REMOVED BY THIS CONTRACTOR. EXISTING PLATE AND FRAME HEAT EXCHANGER (ARMSTRONG MODEL S-229-3750-417). WEIGHT (LBS): EMPTY 24,868 / FLOODED 33,032. SIZE (INCHES): 154.94 x 44.63 x 127.09.   |
| 7.  | DEMOLISH EXISTING CONCRETE FLOOR BEHIND EXISTING PLATE AND FRAME HEAT EXCHANGER CURRENTLY IS SITTING ON. CONTRACTOR SHALL SMOOTH EXISTING FLOOR TO MATCH EXISTING FLOOR. REMOVE ALL ANCHOR BOLTS, DOWELS, GROUT AND CONCRETE TO CREATE A SMOOTH SURFACE. CONTRACTOR SHALL SEAL FLOOR TO MATCH EXISTING. REFER TO SPECIFICATIONS (099000 PROTECTIVE COATINGS) FOR CONCRETE SEALANT REQUIREMENTS. INCLUDE A MINIMUM 20'-0" x 10'-0" OF CONCRETE SEALING WORK IN BIDS. |
| 8.  | DEMO A PORTION OF UNDERGROUND SANITARY PIPING AND EXISTING FLOOR DRAIN. REFER TO PLUMBING SHEET P101.   |
| 9.  | DISCONNECT AND REMOVE THE EXISTING HORIZONTAL CHECK VALVE.  |
| 10. | REMOVE EXISTING PIPING FROM EXISTING HXP-1 AS SHOWN. PREPARE PIPE FOR CONNECTION TO NEW. REFER TO NEW WORK PLAN.  |
| 11. | DISCONNECT 6-INCH TWS AT SHUT OFF VALVE TO 36-INCH TWS MAIN. CONNECTION TO 36-INCH MAIN TO BE MOVED TO ALLOW FOR NEW CONNECTION TO CHILLER CH-9. REFER TO NEW WORK PLANS.   |



UNIVERSITY OF MISSOURI  
EAST CAMPUS CHILLER PLANT  
INSTALL WATER COOLED CHILLER  
UM PROJECT NUMBER CP212233  
COLUMBIA, MISSOURI

© ROSS & BARUZZINI, INC. 2022

**RANDY J. DIEMER**  
ENG. LIC. NO. PE-2017015702

The Professional Engineer, whose signature and seal are on this document, assumes responsibility for the design, preparation and execution of the work shown on this drawing. The Professional Engineer's seal and signature are required on all drawings. The Professional Engineer shall not be responsible for subsequent drawings to this document, unless the drawings are made by the Engineer or with the Engineer's written authorization.

WHEN THIS DRAWING IS REPRODUCED AT ORIGINAL SCALE THIS BAR = 1" INCH	
1 INCH	
REVISIONS:	
Δ	DATE DESCRIPTION
1	09/21/2022 Addendum #3
DESIGNED BY:	RJD
CHECKED BY:	RJD
MU PROJ. NO.:	CP212233
RB PROJ. NO.:	0011484.000
ISSUE DATE:	08/25/2022
DRAWING TITLE:	MECHANICAL SECTION VIEWS - DEMOLITION PLAN
DRAWING NO.:	MD201