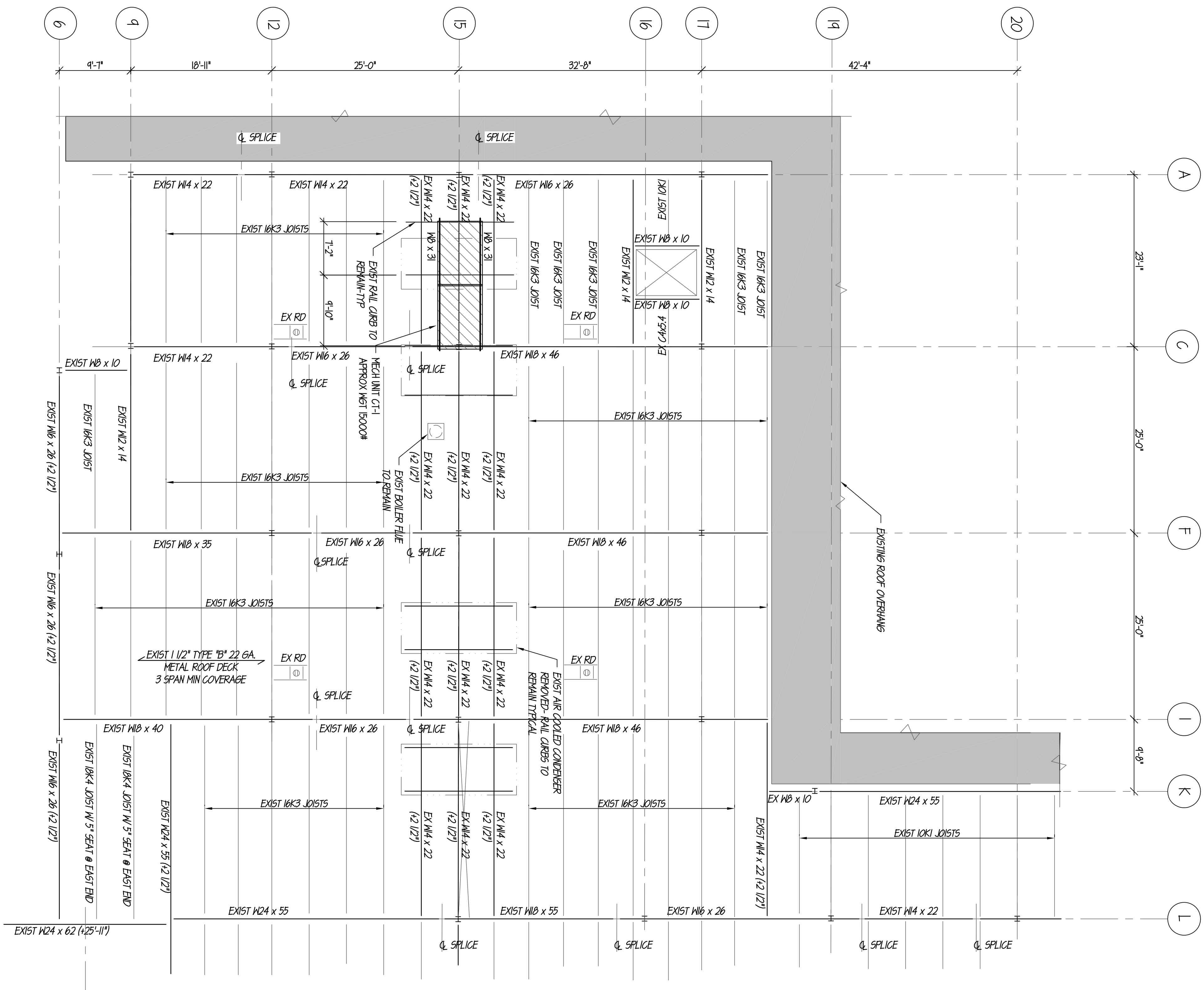
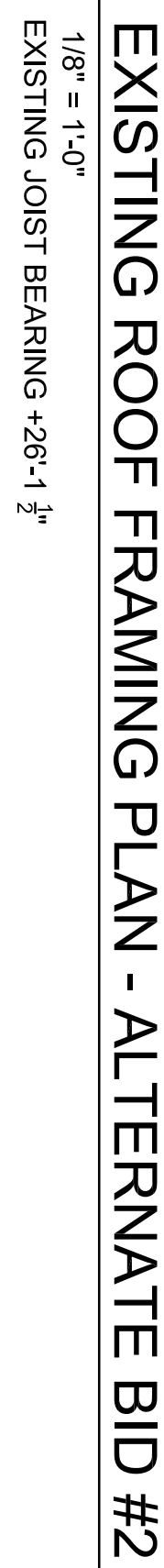
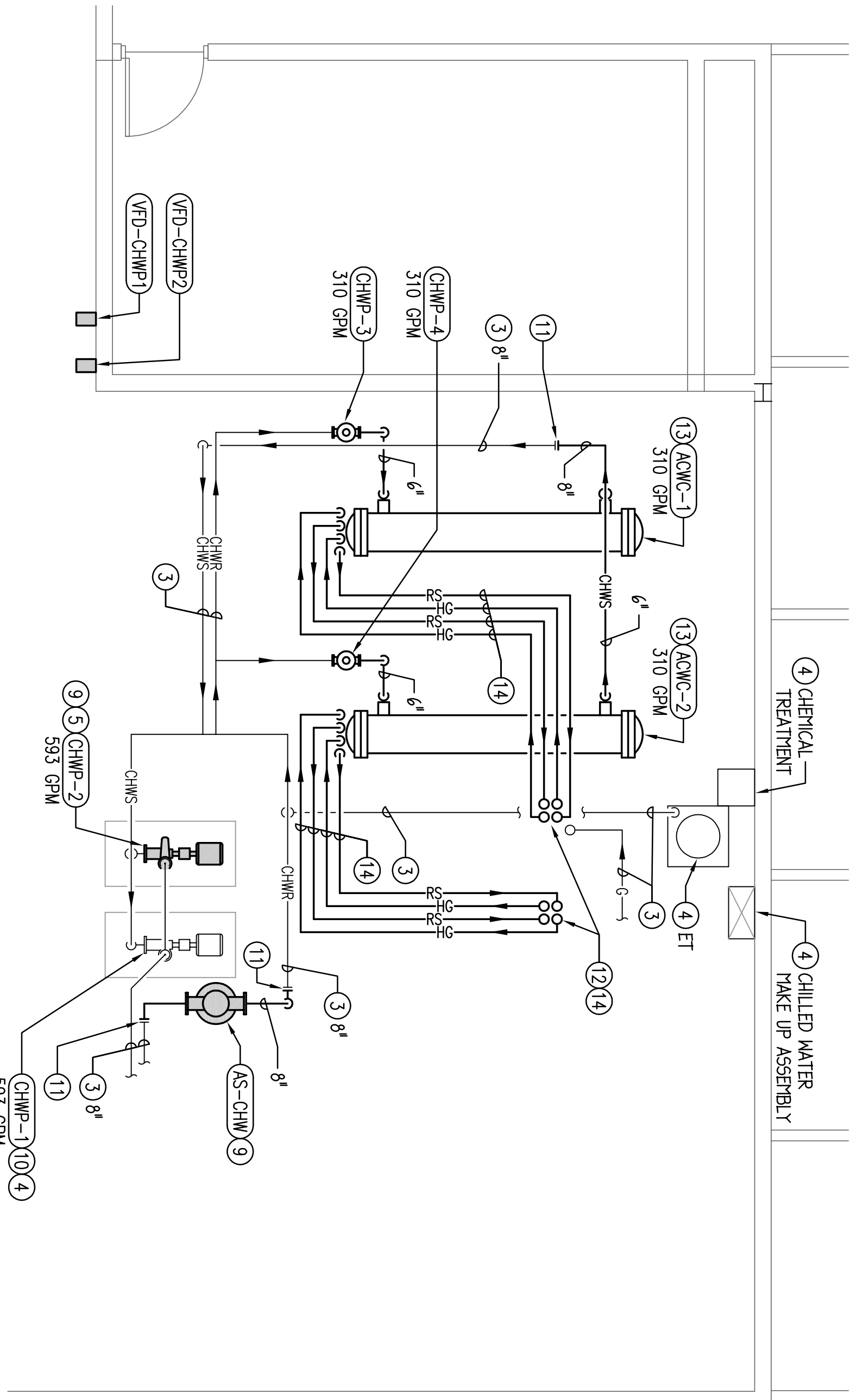
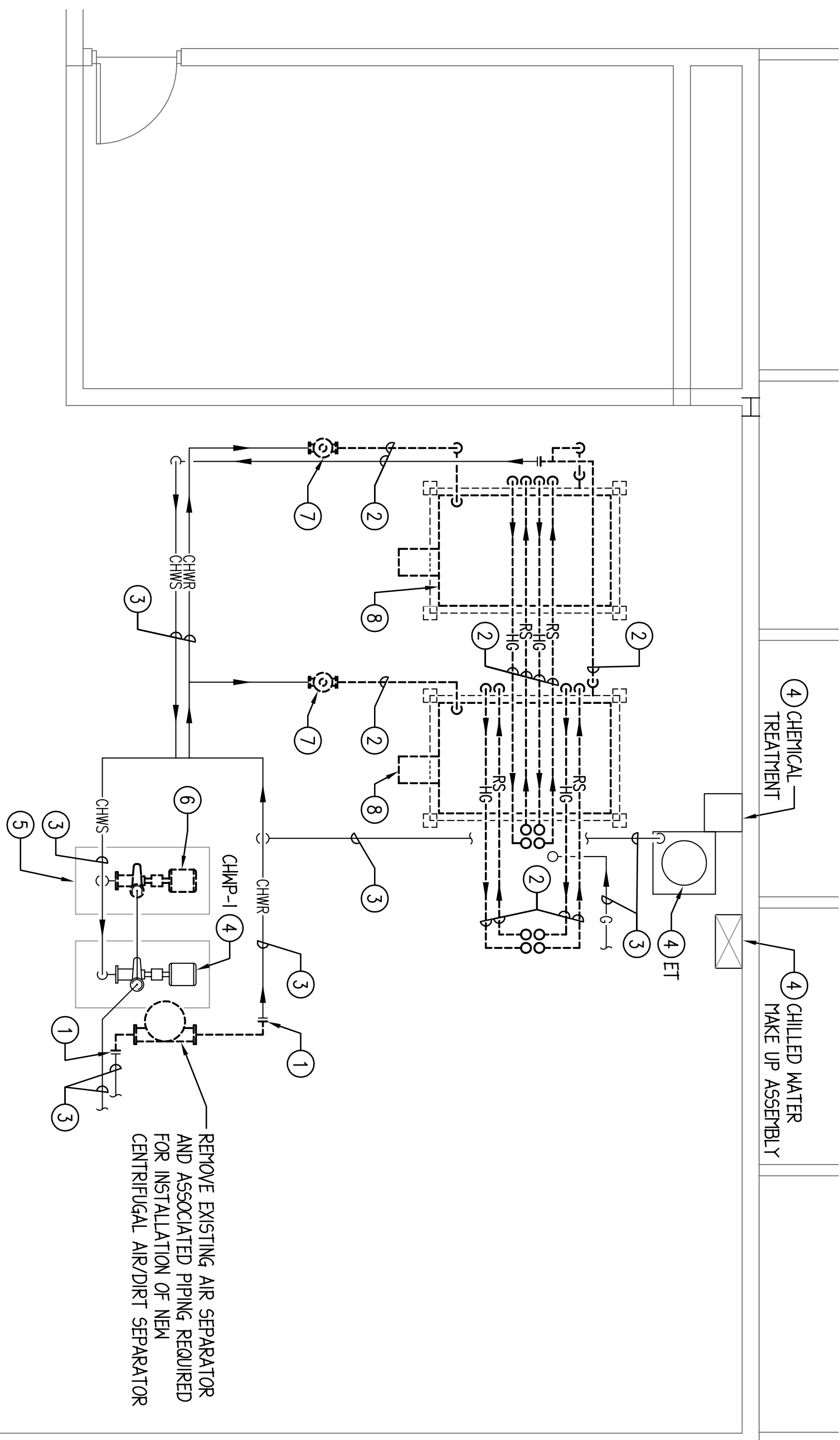




- DRAWING NOTES:** (TYPICAL FOR THIS DRAWING ONLY.)
1. NEW CONNECTION TO BE MADE AT THIS LOCATION. REMOVE ALL PIPING, VALVING, HANGERS, INSULATION, ETC. SHOWN DASHED BEYOND THIS POINT.
 2. REMOVE ALL PIPING, VALVING, HANGERS, INSULATION, ETC. SHOWN DASHED.
 3. EXISTING PIPING AND VALVING TO REMAIN.
 4. EXISTING HVAC EQUIPMENT TO REMAIN.
 5. EXISTING SPRING ISOLATED INERTIA BASE TO REMAIN AND BE MODIFIED TO PROPERLY ACCEPT NEW EQUIPMENT. REPLACE SPRINGS IF REQUIRED BY NEW EQUIPMENT WEIGHT/SIZES.
 6. REMOVE BASE MOUNTED PUMP.
 7. REMOVE INLINE PUMP AND ALL ASSOCIATED PIPING, VALVING, INSULATION, HANGERS, SUPPORTS, ETC.
 8. REMOVE CHILLER AND ALL ASSOCIATED PIPING, VALVING AND CONTROLS. REMOVE INERTIA BASE AND ALL ASSOCIATED SUPPORTS.
 9. MODIFY EXISTING PIPING AS REQUIRED TO PROPERLY INSTALL NEW EQUIPMENT.
 10. BALANCE EXISTING CHILLED WATER PUMP TO FLOW RATE INDICATED.
 11. TAKE NEW CONNECTION TO EXISTING PIPING AT THIS LOCATION.
 12. PIPE OF SIZE INDICATED UP THRU EXISTING ROOF PENET. PROVIDE NEW AAS PLASTIC WEATHER PROOF CAP AND SUPPORT NEW PIPING ABOVE AND BELOW ROOF.
 13. REPIPE EVAPORATOR/COOLER SECTION.
 14. REFRIGERANT PIPING SIZE IN STRICT ACCORDANCE WITH CHILLER MANUFACTURERS INSTRUCTION.



BASE BID. MECHANICAL ROOM HVAC PLAN
1/4" = 1'-0"



BASE BID. MECHANICAL ROOM HVAC DEMOLITION PLAN
1/4" = 1'-0"

BIDDING NOTES:

BASE BID: PROVIDE ALL WORK SHOWN ON THIS SHEET.
ALT. BID #2: DELETE THIS SHEET IN ITS ENTIRETY.

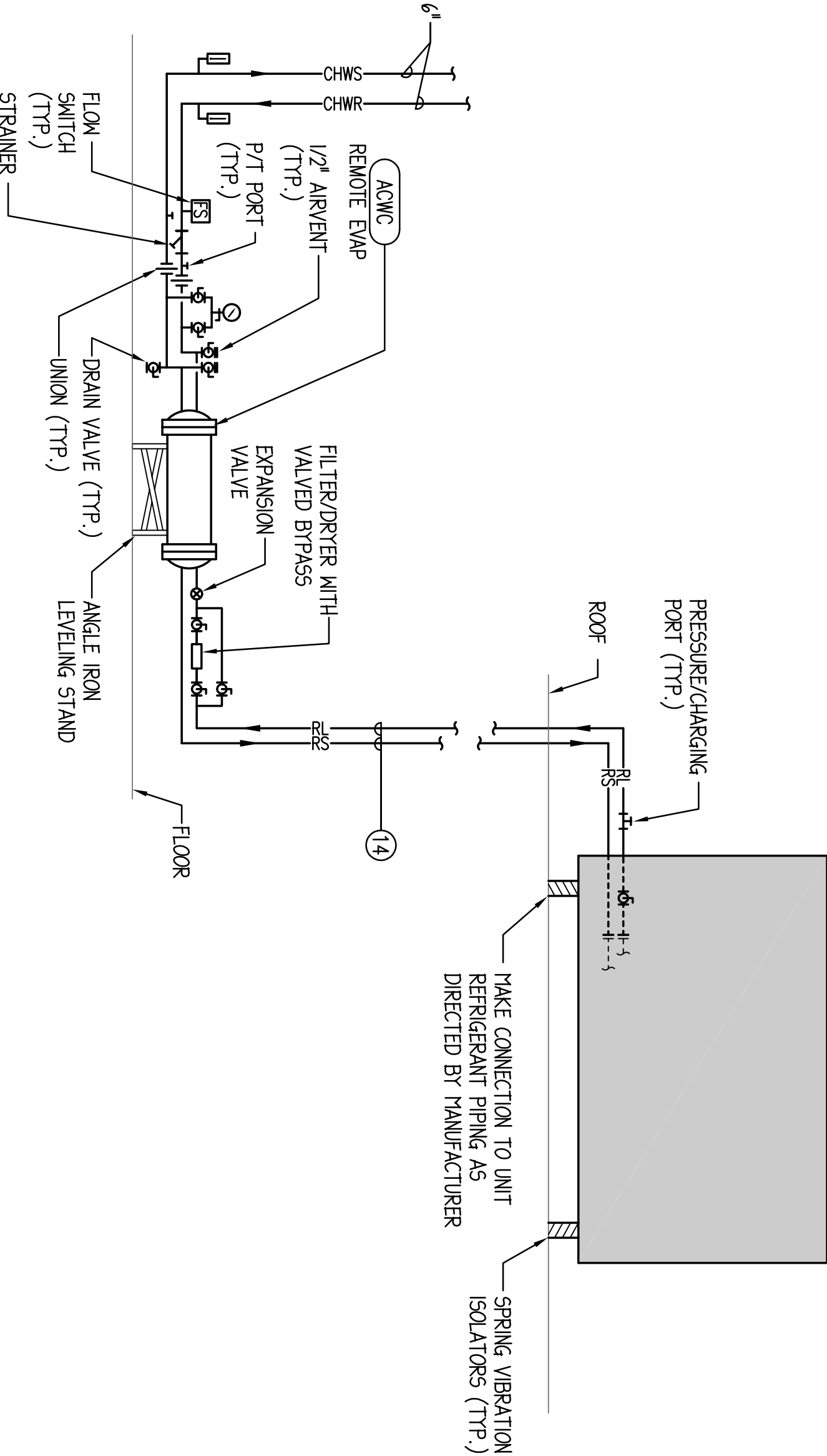
BIDDING NOTES:

TEMPERATURE CONTROL: ALL TEMPERATURE CONTROL WORK SHALL BE BY TRADE CONTRACTS UNDER SEPARATE BID CONTRACT.

ALT. BID #1: PROVIDE NEW DIFFERENTIAL PRESSURE SENSOR IN CHILLED WATER PIPING SYSTEM (AT LOCATION OF T.C. CONTRACTORS CHOOSING) AND REPLACE THE FOLLOWING 3-WAY CHILLED WATER VALVES WITH 2-WAY VALVES AS FOLLOWS (FIELD VERIFY ALL EXISTING SIZES):

- AHU-1: 4" 1212 GPM
- AHU-2: 2" 16.1 GPM
- AHU-3: 1" 19.1 GPM
- AHU-4: 1" 16.1 GPM
- AHU-5: 1" 16.1 GPM
- AHU-6: 1" 16.1 GPM
- AHU-7: 1" 16.1 GPM
- AHU-8: 1" 16.1 GPM

CAP UNBID BYPASS PIPING FORMERLY SERVING 3-WAY VALVE AT PAIN. NEW CONTROL VALVES TO BE FINISHED AND WIRED BY T.C. CONTRACTOR AND INSTALLED BY HVAC CONTRACTOR.



- NOTES:**
1. DETAIL IS TYPICAL FOR EACH REPIPE EVAPORATOR.
 2. SIZE ALL REFRIGERANT PIPING IN ACCORDANCE WITH CHILLER MANUFACTURERS INSTRUCTION. PROVIDE DOUBLE SALTION RISERS IF REQUIRED.
 3. PROVIDE ALL REFRIGERANT PIPING ACCESSORIES AND VALVES AS INSTALLED AND/OR FINISHED BY CHILLER MANUFACTURER.
 4. ALL VALVING SHOWN IS TO BE PROVIDED FOR EACH REFRIGERANT CIRCUIT. REPIPE EVAPORATOR INSTALLATION DETAIL. NONE

VARIABLE FREQUENCY DRIVES									
EQUIPMENT TAG	LOCATION	EQUIPMENT SERVED	MANUFACTURER	MODEL	MOUNTING	SIZE (IN.)		MAX. DRIVE OUTPUT CURRENT	MOTOR
						H	D		HP
(VFD-1)	TECH ROOM	(CHWP-1)	TACO	START	WALL MOUNTED	18.9 x 9.5 x 10.2	11	7 1/2	1750
(VFD-2)	TECH ROOM	(CHWP-2)	TACO	START	WALL MOUNTED	18.9 x 9.5 x 10.2	11	7 1/2	1750

NOTES: 1. OTHER ACCEPTABLE MANUFACTURERS: APPROVED EQUAL. 2. PROVIDE NEMA 1 ENCLOSURE, INPUT DISCONNECT SWITCH, OUTPUT LINE REACTOR, AND Bypass INTERFACE.

HYDRONIC ACCESSORIES SCHEDULE									
EQUIPMENT TAG	EQUIPMENT TYPE	LOCATION	SERVICE	MANUFACTURER	MODEL	TYPE	MAXIMUM PRESSURE DROP (PSI)	OPERATING (PSI)	NOTES
(AS-CHWP)	AIR/DRIFT SEPARATOR	TECH ROOM	CHILLED WATER SYSTEM	TACO	400BAC-42	TANGENTIAL 8" INLET, 8" OUTLET	1.0	--	1/2

NOTES: 1. OTHER ACCEPTABLE MANUFACTURERS: BKQ, SPROTHERM. 2. REMOVABLE TIE-DA AND FLANGED OR GROOVED CONNECTIONS.

PUMP SCHEDULE													
EQUIPMENT TAG	LOCATION	SERVICE	MANUFACTURER	MODEL	TYPE	GPM	HEAD (FT.)	IMP. DIA. (IN.)	RPM	MINIMUM EFFICIENCY	TRIPLE DUTY VALVE		MOTOR
											TYPE	SIZE	
(CHWP-2)	TECH ROOM	CHILLED WATER SYSTEM	TACO	F4075	BASE MOUNTED	503	30	6.9	1750	82%	STRAIGHT	5	6.4
(CHWP-3)	TECH ROOM	CHILLED WATER SYSTEM	TACO	K19307	INLINE	310	18	6.0	1750	58%	STRAIGHT	4	6.1
(CHWP-4)	TECH ROOM	CHILLED WATER SYSTEM	TACO	K19307	INLINE	310	18	6.0	1750	58%	STRAIGHT	4	6.1

NOTES: 1. OTHER ACCEPTABLE MANUFACTURERS: BKQ, ARISTON. 2. PREMIUM EFFICIENCY MOTORS.

AIR COOLED WATER CHILLER SCHEDULE													
EQUIPMENT TAG	LOCATION	AREA SERVED	MANUFACTURER	MODEL	TYPE	DESIGN DUTY (TONS)	DIMENSIONS (LxWxH)	OPERATING WEIGHT (LBS)	REFRIGERANT TYPE	CHARGE (LBS)	COMPRESSORS		EVAPORATOR
											NO.	NOMINAL TONS EACH	
(ACWC-1)	ROOF	CHILLED WATER SYSTEM	CARRIER	30R350	SCROLL	150	108"108"64"	7100	R-410A	56/52	6	(3) @ 25	PD
(ACWC-2)	ROOF	CHILLED WATER SYSTEM	CARRIER	30R350	SCROLL	150	108"108"64"	7100	R-410A	56/52	6	(3) @ 25	PD

NOTES: 1. OTHER ACCEPTABLE MANUFACTURERS: TRANE. 2. REPIPE EVAPORATOR. 3. PROVIDE THE FOLLOWING FACTORY INSTALLED OPTIONS: COMPRESSOR SALTION SERVICE VALVES, SECTION LINE INSULATION, ENERGY MANAGEMENT MODULE, CONVENIENCE OUTLET, NON-FUSED DISCONNECT, CONDENSER COIL GRILLES, LOW SOUND ENCLOSURE, SPRING ISOLATORS, AND Bypass INTERFACE COMPATIBLE WITH CARPIS-MODE TEMPERATURE CONTROL SYSTEM. 4. ALT. BID #3: VFD DRIVEN CONDENSER FANS AND CONTROLS TO ACHIEVE AN LFPV OF 16.5 EER.

Consultants:
Mechanical - Electrical - Structural Engineers
1216 Tower Road
Schaumburg, Illinois 60173
847.882.2010
Fax 847.882.2201



MECHANICAL ROOM HVAC PLANS AND RISER DIAGRAM

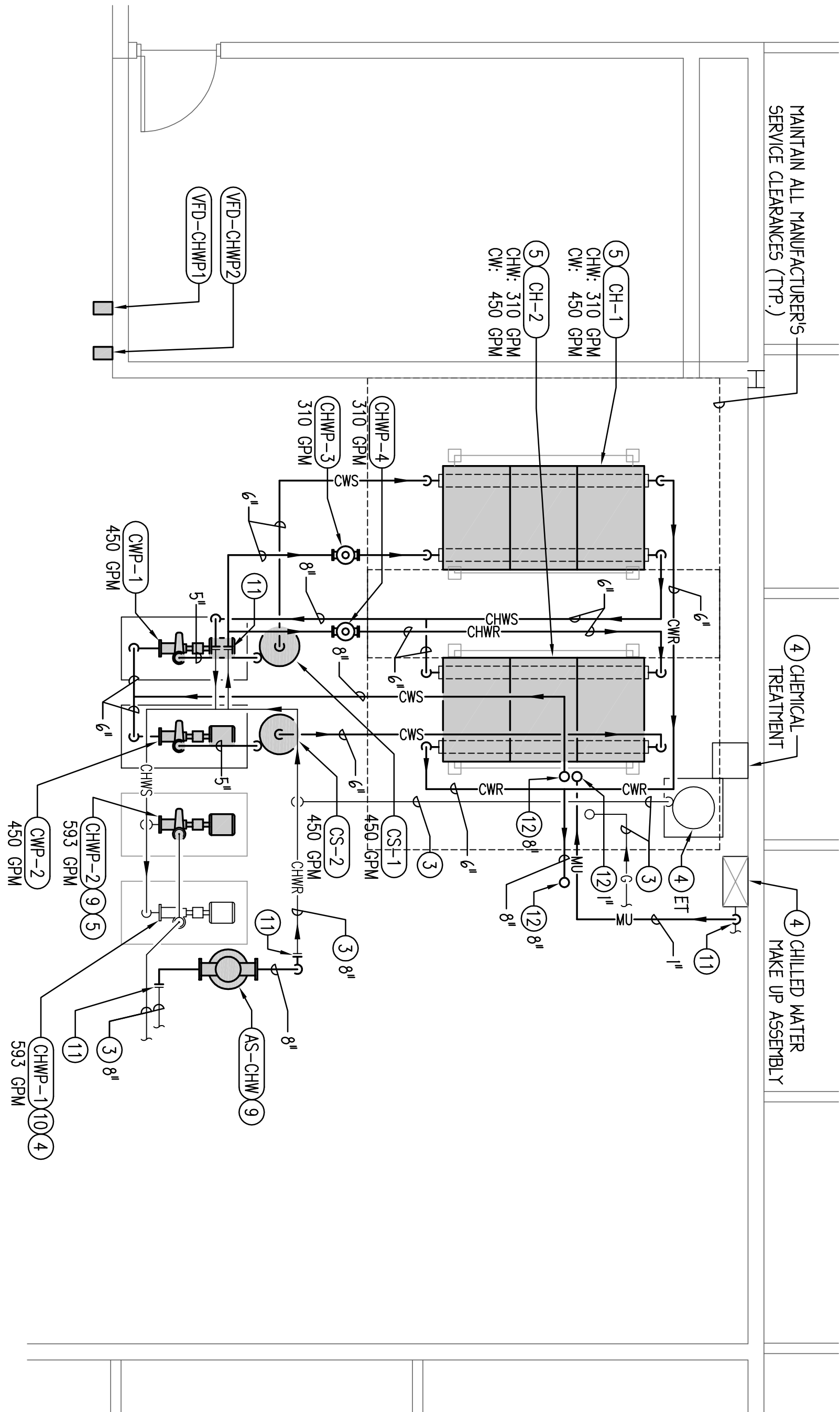
McHenry County College - Building 'B' Chiller Replacement
8900 US Hwy 14 - Building 'B'
Crystal Lake, Illinois 60012

Revisions:
23 JUNE 2014 - BID DOCUMENTS

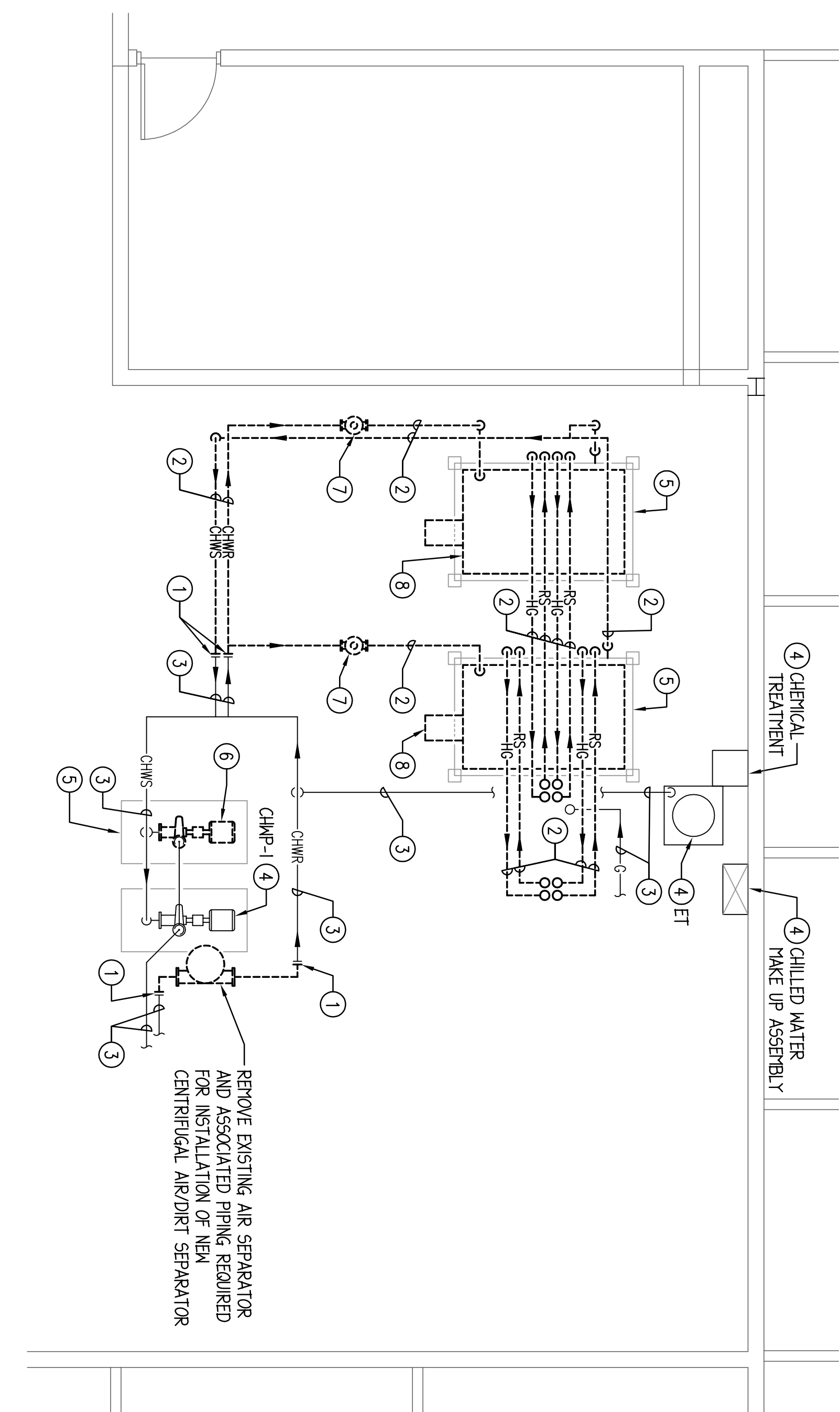
Issue Date:
20 JUNE 2014
Drawn By:
20/JO
Job Number:
1550A-4-3

HV-1

- DRAWING NOTES:** (TYPICAL FOR THIS DRAWING ONLY)
1. NEW CONNECTION TO BE MADE AT THIS LOCATION. REMOVE ALL PIPING, VALVING, HANGERS, INSULATION, ETC. SHOWN DASHED BEYOND THIS POINT.
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 5. EXISTING SPRING ISOLATED INERTIA BASE TO REMAIN AND BE MODIFIED TO PROPERLY ACCEPT NEW EQUIPMENT. REPLACE SPRINGS IF REQUIRED BY NEW EQUIPMENT WEIGHTS/SIZES.
 6. REMOVE BASE MOUNTED PUMP.
 7. REMOVE INLINE PUMP AND ALL ASSOCIATED PIPING, VALVING, INSULATION, HANGERS, SUPPORTS, ETC.
 8. REMOVE CHILLER, AND ALL ASSOCIATED PIPING, VALVING, AND CONTROLS.
 9. MODIFY EXISTING CHILLED WATER PUMP TO PROPERLY INSTALL NEW EQUIPMENT.
 10. BALANCE EXISTING CHILLED WATER PUMP TO FLOW RATE INDICATED.
 11. TAKE NEW CONNECTION TO EXISTING PIPING AT THIS LOCATION.
 12. PIPE OF SIZE INDICATED UP THRU EXISTING ROOF PORTAL. PROVIDE NEW GAS PLASTIC WEATHER PROOF CAP AND SUPPORT NEW PIPING ABOVE AND BELOW ROOF.
 13. PIPE OVER TO NEAREST FLOOR DRAIN.
 14. PROVIDE PASSAGION OF UNIT AS DIRECTED BY MANUFACTURER.
 15. SEE DETAIL ON SHEET HV-4.



MECHANICAL ROOM HVAC PLAN
1/4" = 1'-0"



MECHANICAL ROOM HVAC DEMOLITION PLAN
1/4" = 1'-0"

BIDDING NOTES:

BASE BID: DELETE THIS SHEET IN IT'S ENTIRETY.
ALT. BID #2: PROVIDE ALL WORK SHOWN ON THIS SHEET.

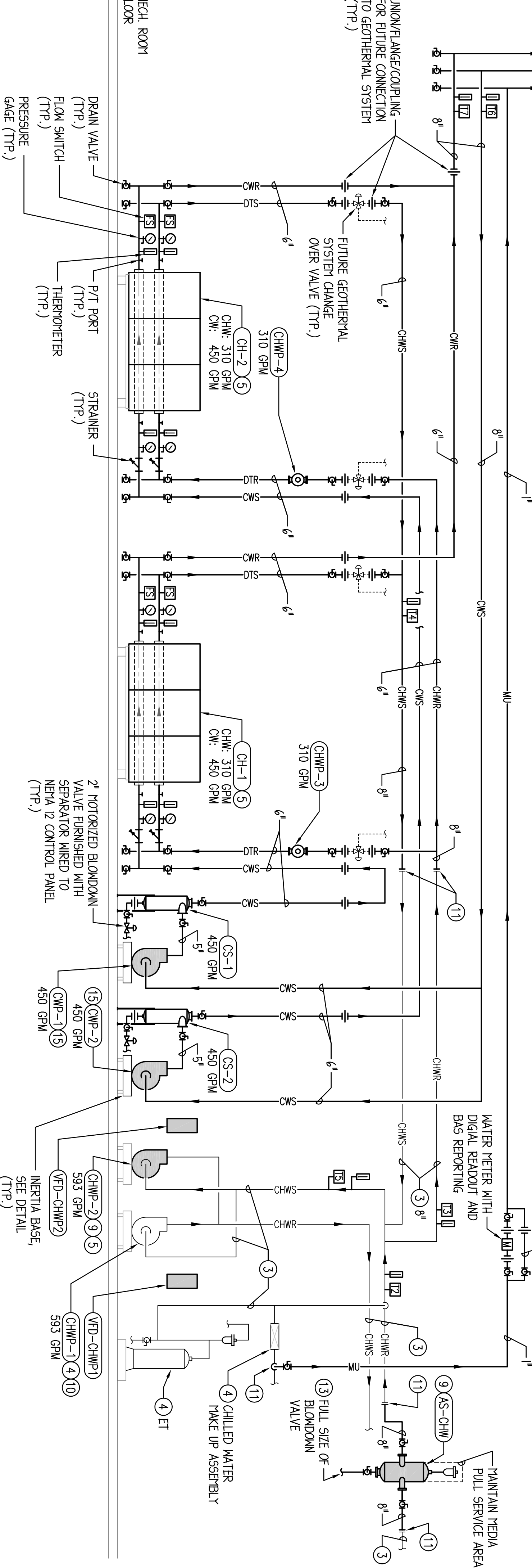
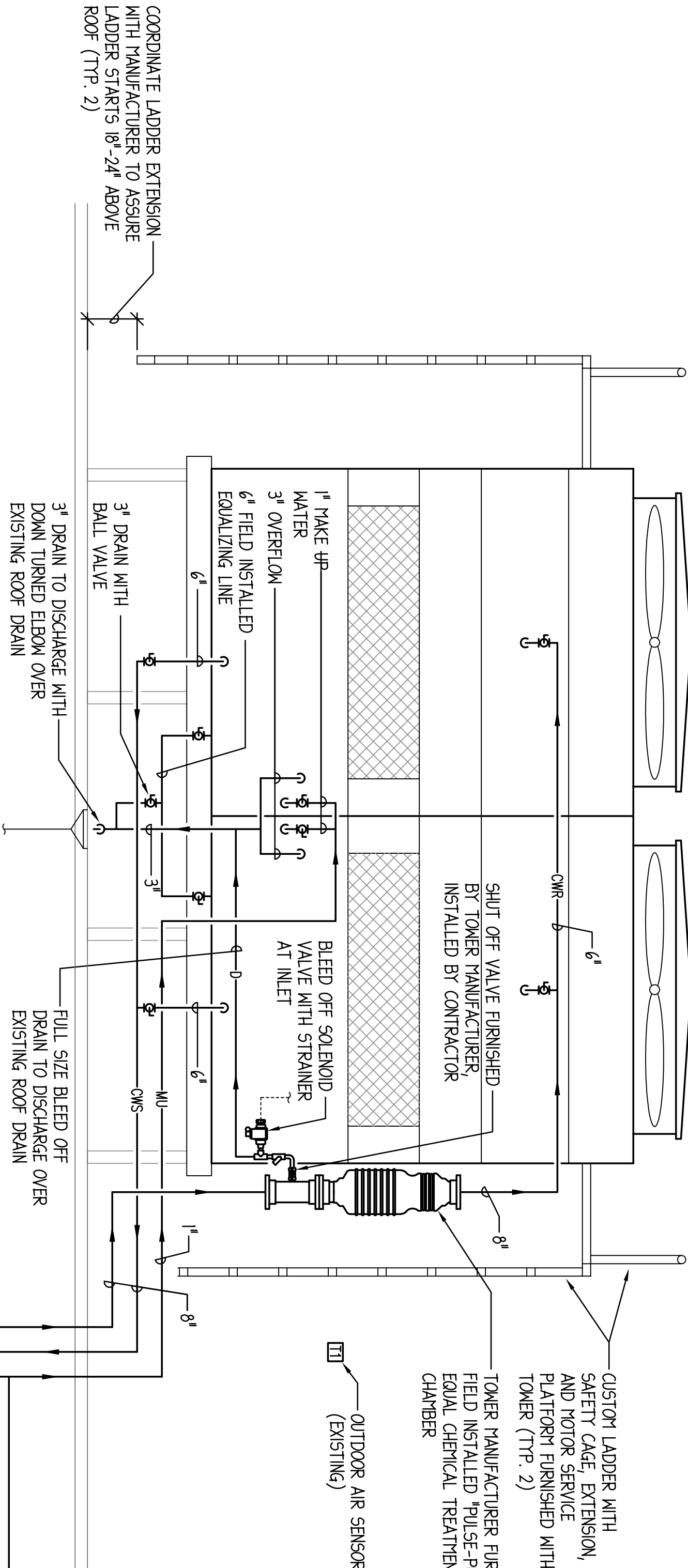
BIDDING NOTES:

TEMPERATURE CONTROL: ALL TEMPERATURE CONTROL WORK SHALL BE BY TRANE CONTROLS UNDER SEPARATE BAS CONTRACT.

ALT. BID #1: PROVIDE NEW DIFFERENTIAL PRESSURE SENSOR IN CHILLED WATER PIPING SYSTEM (AT LOCATION OF T.C. CONTRACTORS CHOOSING) AND REPLACE THE FOLLOWING 3-WAY CHILLED WATER VALVES WITH 2-WAY VALVES AS FOLLOWS (FIELD VERIFY ALL EXISTING SIZES):

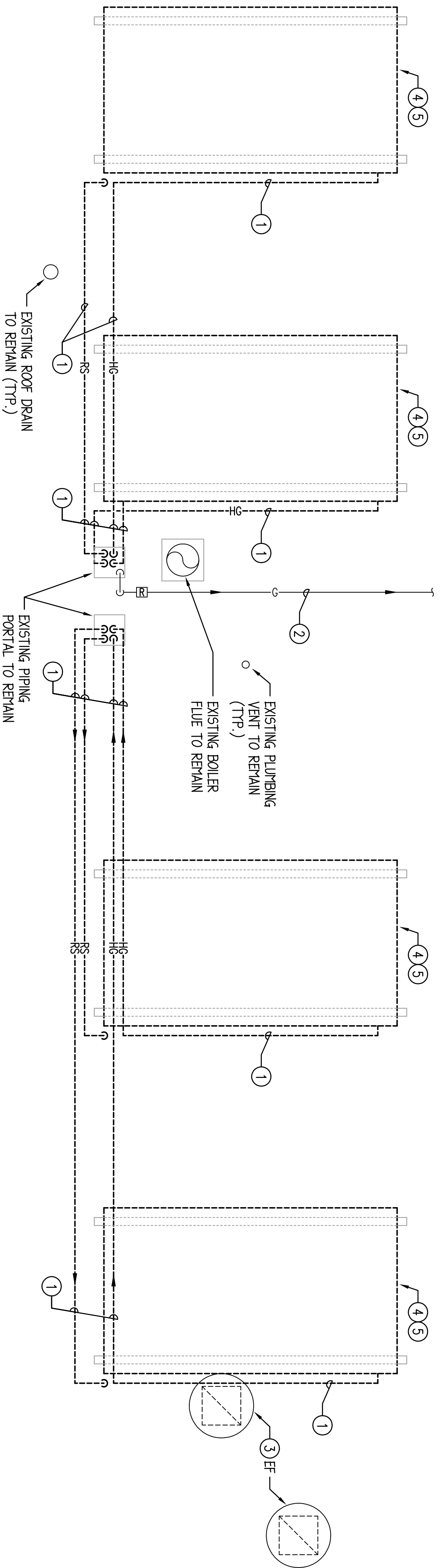
- AHU-1: 4" 1712 GPM
- AHU-2: 2" 16.1 GPM
- AHU-3: 3" 19.5 GPM
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CAP. UNIBID BYPASS PIPING FORMERLY SERVING 3-WAY VALVE AT MAIN. NEW CONTROL VALVES TO BE FINISHED AND WIRED BY T.C. CONTRACTOR AND INSTALLED BY HVAC CONTRACTOR.



SCHEMATIC PIPING DIAGRAM
NO SCALE

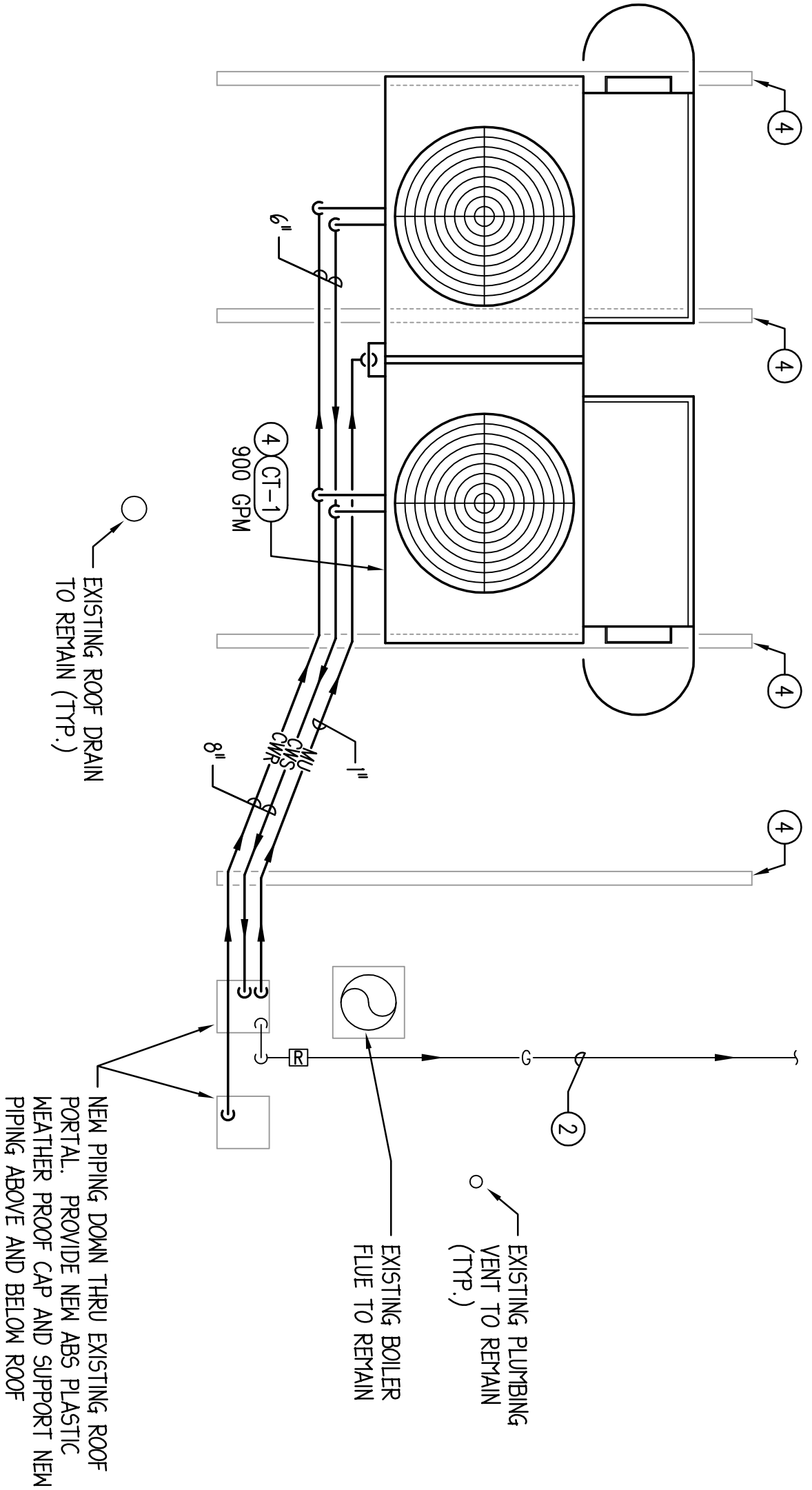
- DRAWING NOTES:** (TYPICAL FOR THIS DRAWING ONLY)
- 1 REMOVE ALL PIPING, VALVING, HANGERS, INSULATION, ETC. SHOWN DASHED.
 - 2 EXISTING PIPING AND VALVING TO REMAIN.
 - 3 EXISTING HVAC EQUIPMENT TO REMAIN.
 - 4 EXISTING ROOF SUPPORTS TO REMAIN AND BE MODIFIED TO PROPERLY ACCEPT NEW EQUIPMENT.
 - 5 REMOVE AIR COOLED CONDENSER AND ALL ASSOCIATED PIPING, VALVING, AND CONTROLS.
 - 6 REFRIGERANT PIPING SIZE IN STRICT ACCORDANCE WITH CHILLER MANUFACTURER'S INSTRUCTION.



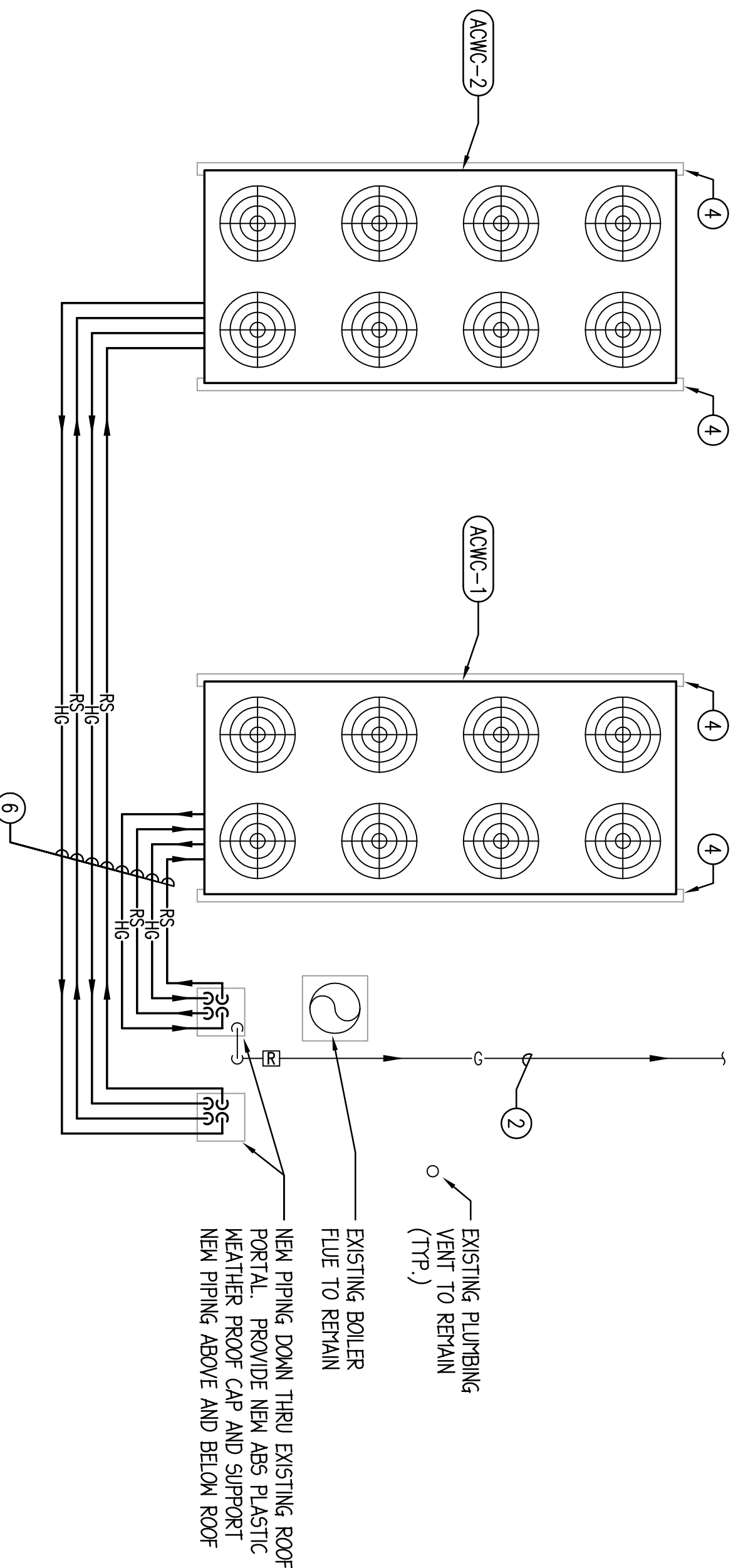
EXISTING INTAKE/
RELIEF/EXHAUST
FAN TO REMAIN
(TYP.)

EXISTING BOILER
FLUE TO REMAIN
(TYP.)

1 BASE BID & ALT. BID #2: HVAC ROOF DEMOLITION PLAN
1/4" = 1'-0"

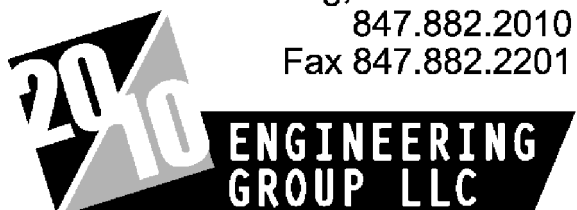


2 ALT. BID #2: HVAC ROOF PLAN
1/4" = 1'-0"



2 BASE BID: HVAC ROOF PLAN
1/4" = 1'-0"

Consultants:
Mechanical - Electrical - Structural Engineers
1216 Tower Road
Schaumburg, Illinois 60173
847.882.2010
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HVAC DEMOLITION AND NEW WORK ROOF PLANS

McHenry County College - Building 'B' Chiller Replacement
8900 US Hwy 14 - Building 'B'
Crystal Lake, Illinois 60012

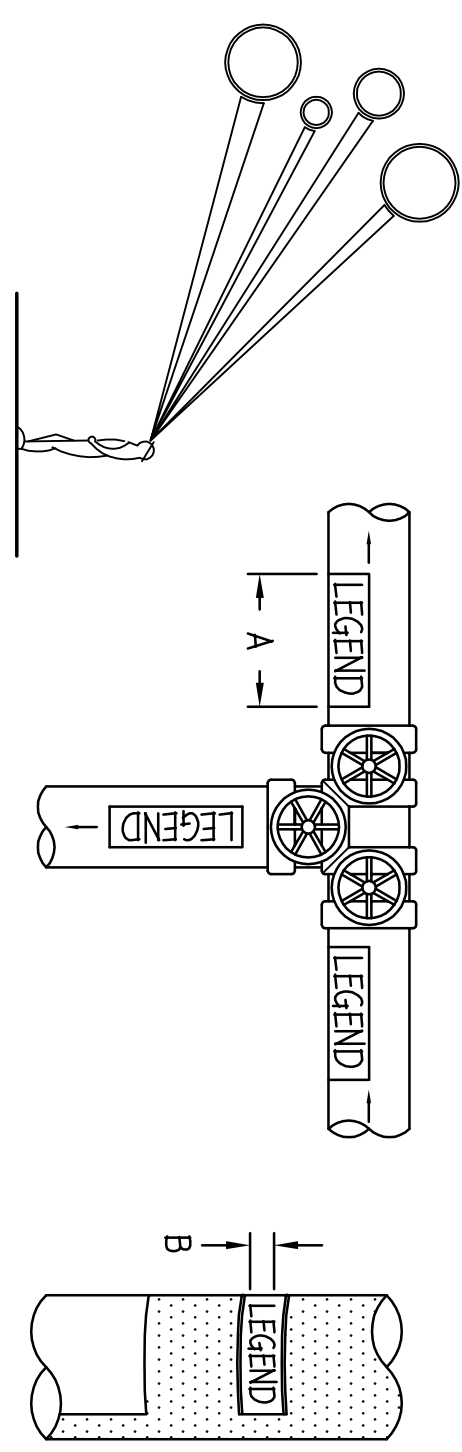
Revisions:
23 JUNE 2014 - BID DOCUMENTS

Issue Date:
18 JUNE 2014

Drawn By:
20/10

Job Number:
1600-A-3

HV-3

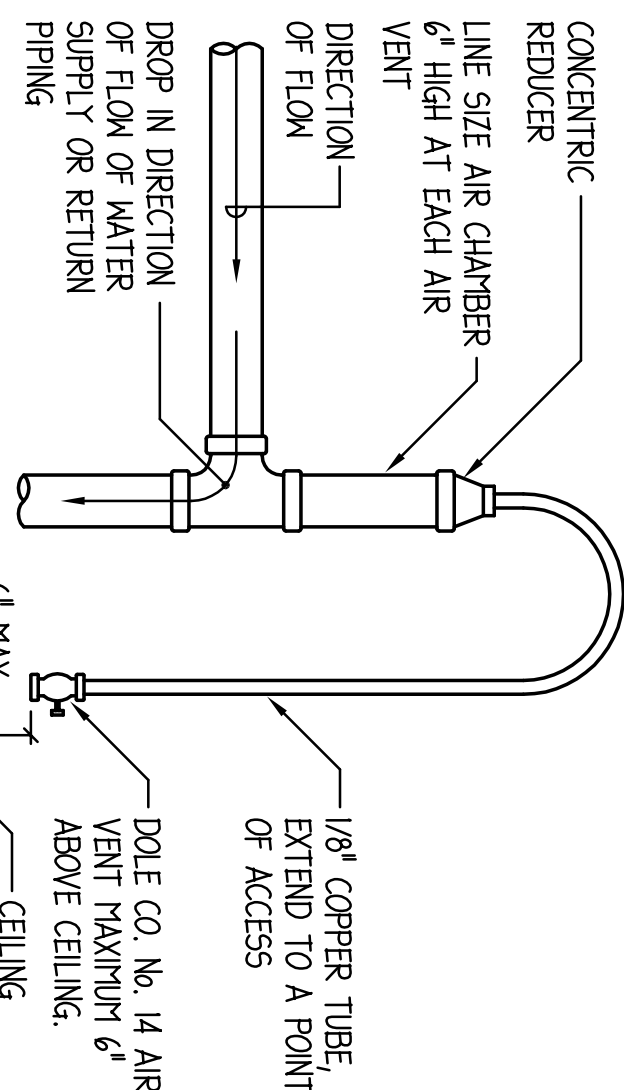


NOTE: IDENTIFICATION MARKERS OR STRIPS TO BE PLACED ON ALL EXPOSED COVERED AND UNCOVERED PIPES AT 50'-0" INTERVALS, ADJACENT TO ALL VALVES OR BRANCHES, AND AT BOTH SIDES OF WALL/FLOOR PENETRATIONS. ARROWS OF SAME COLOR AS IDENTIFICATION MARKERS SHALL ALSO BE PLACED ON PIPES POINTING AWAY FROM MARKER INDICATING DIRECTION OF FLOW.

SIZE OF LEGAL LETTERS	
OUTSIDE DIAMETER OF PIPE OR COVERING	LENGTH OF COLOR FIELD A
3/4" TO 1 1/4"	8"
1 1/2" TO 2"	8"
2" 1/2" TO 6"	12"

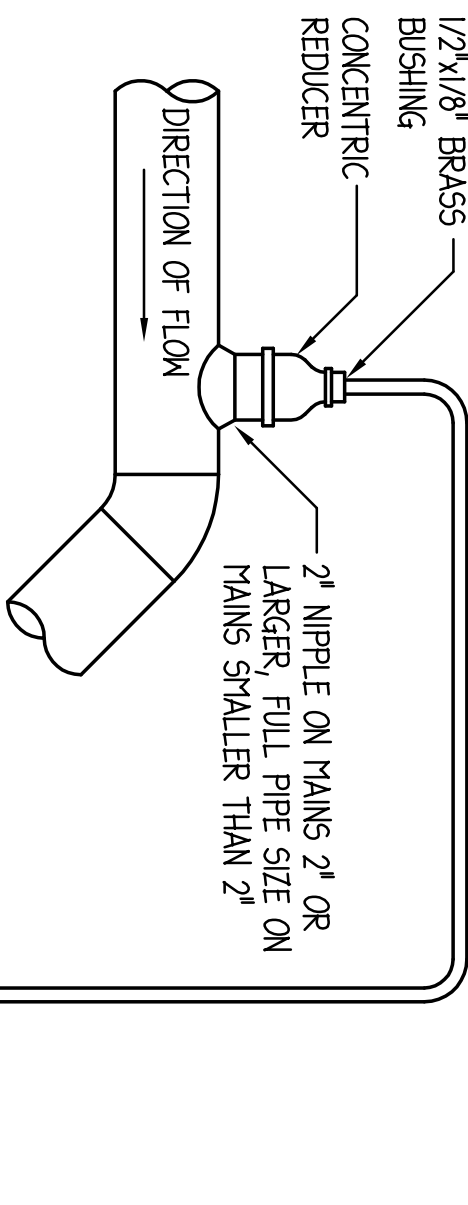
TYPICAL PIPE IDENTIFICATION MARKERS

NO SCALE



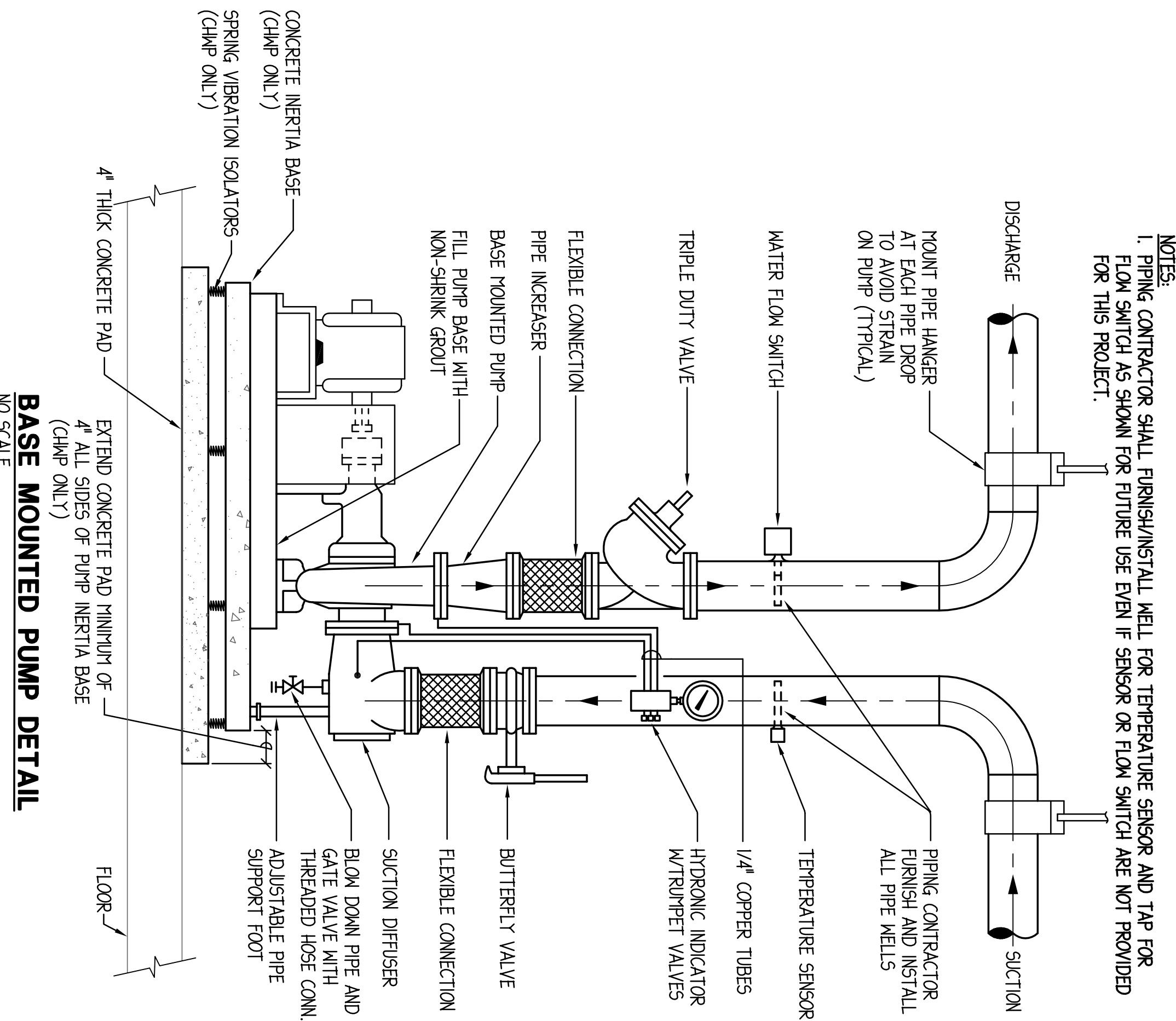
MANUAL AIR VENT DETAIL

NO SCALE

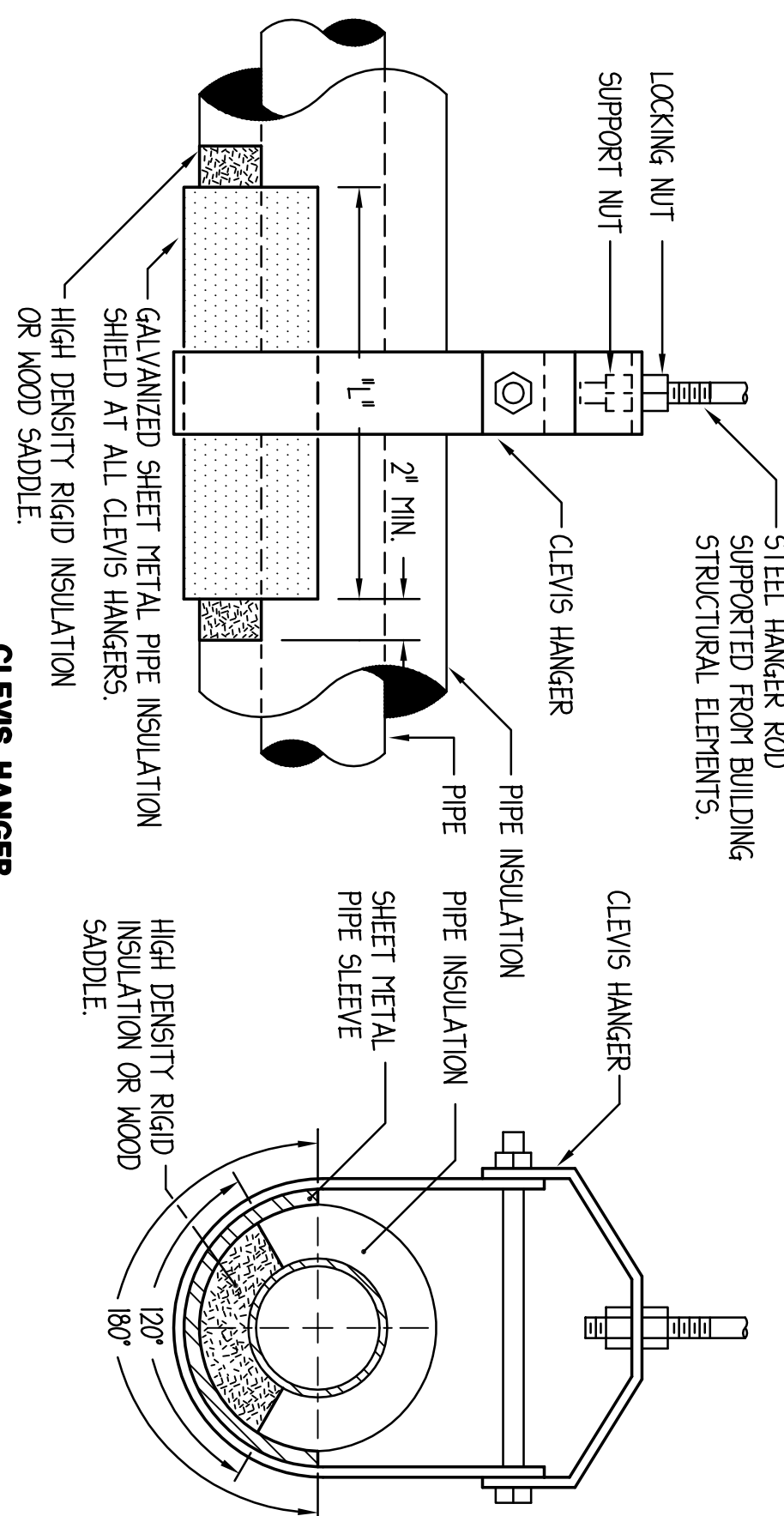


AIR VENT AT HIGH POINTS OF MAINS

NO SCALE



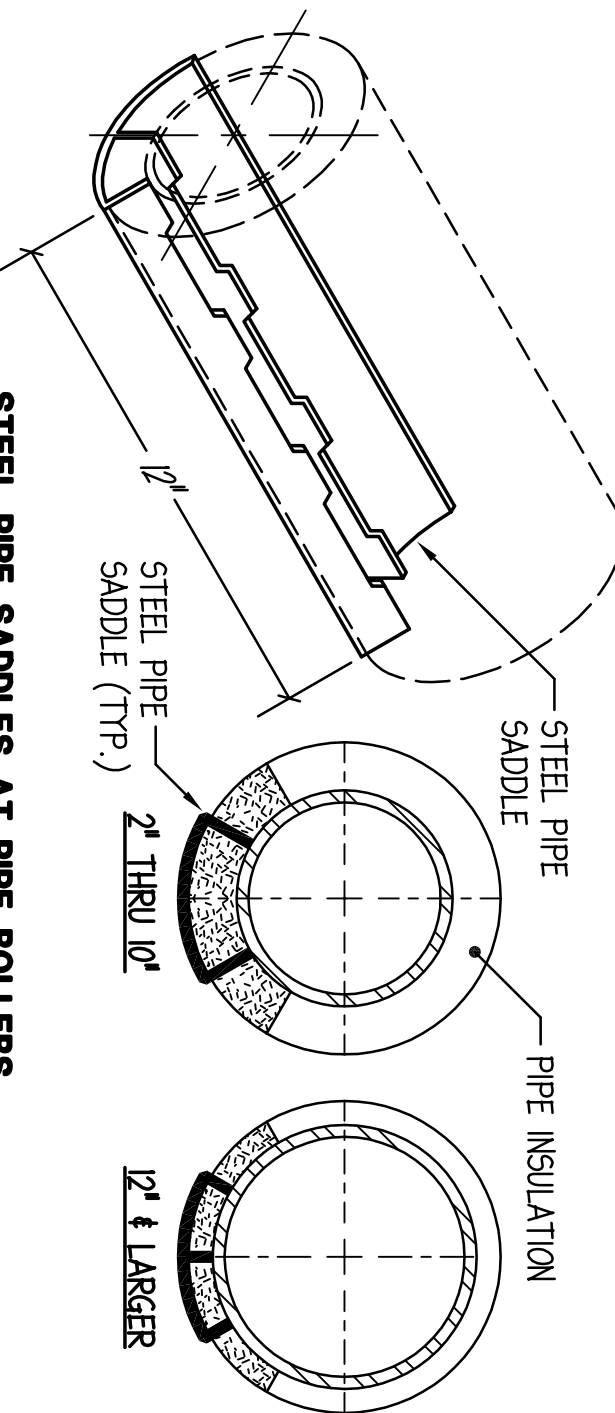
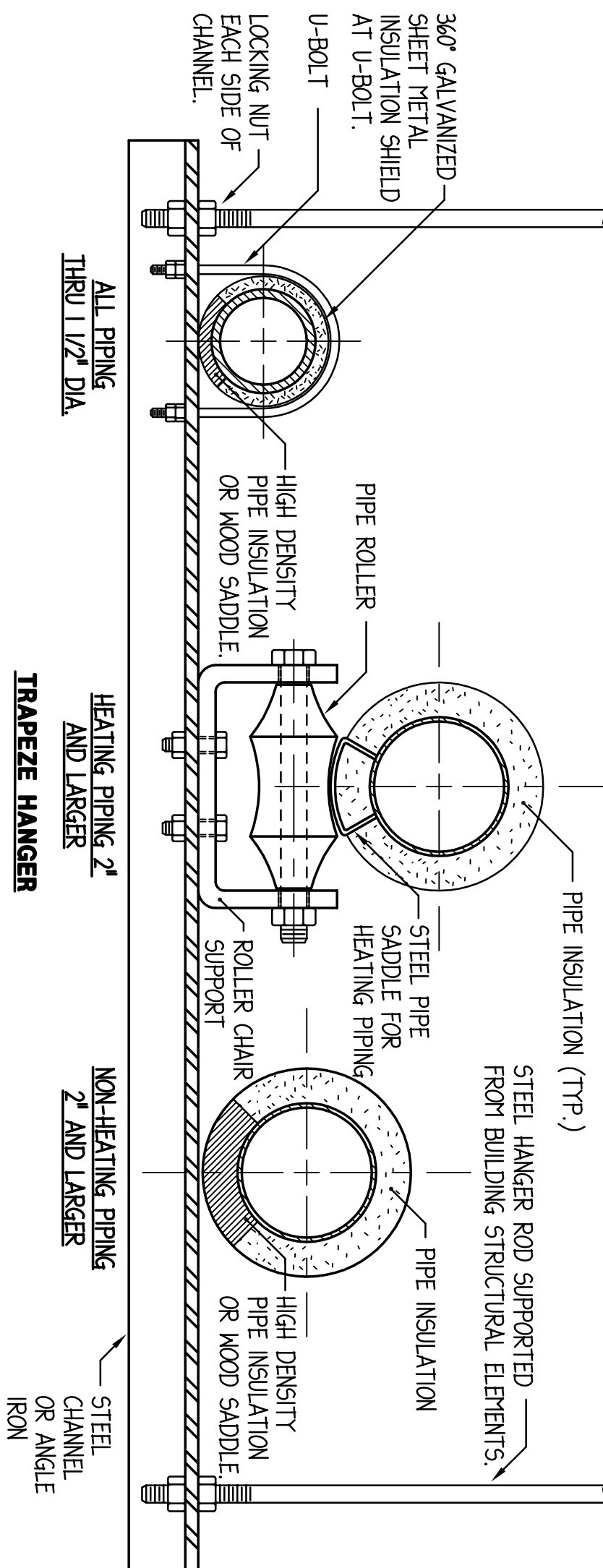
NOTES:
1. PIPING CONTRACTOR SHALL FURNISH/INSTALL WELL FOR TEMPERATURE SENSOR AND TAP FOR FLOW SWITCH AS SHOWN FOR FUTURE USE EVEN IF SENSOR OR FLOW SWITCH ARE NOT PROVIDED FOR THIS PROJECT.



CLEVIS HANGER

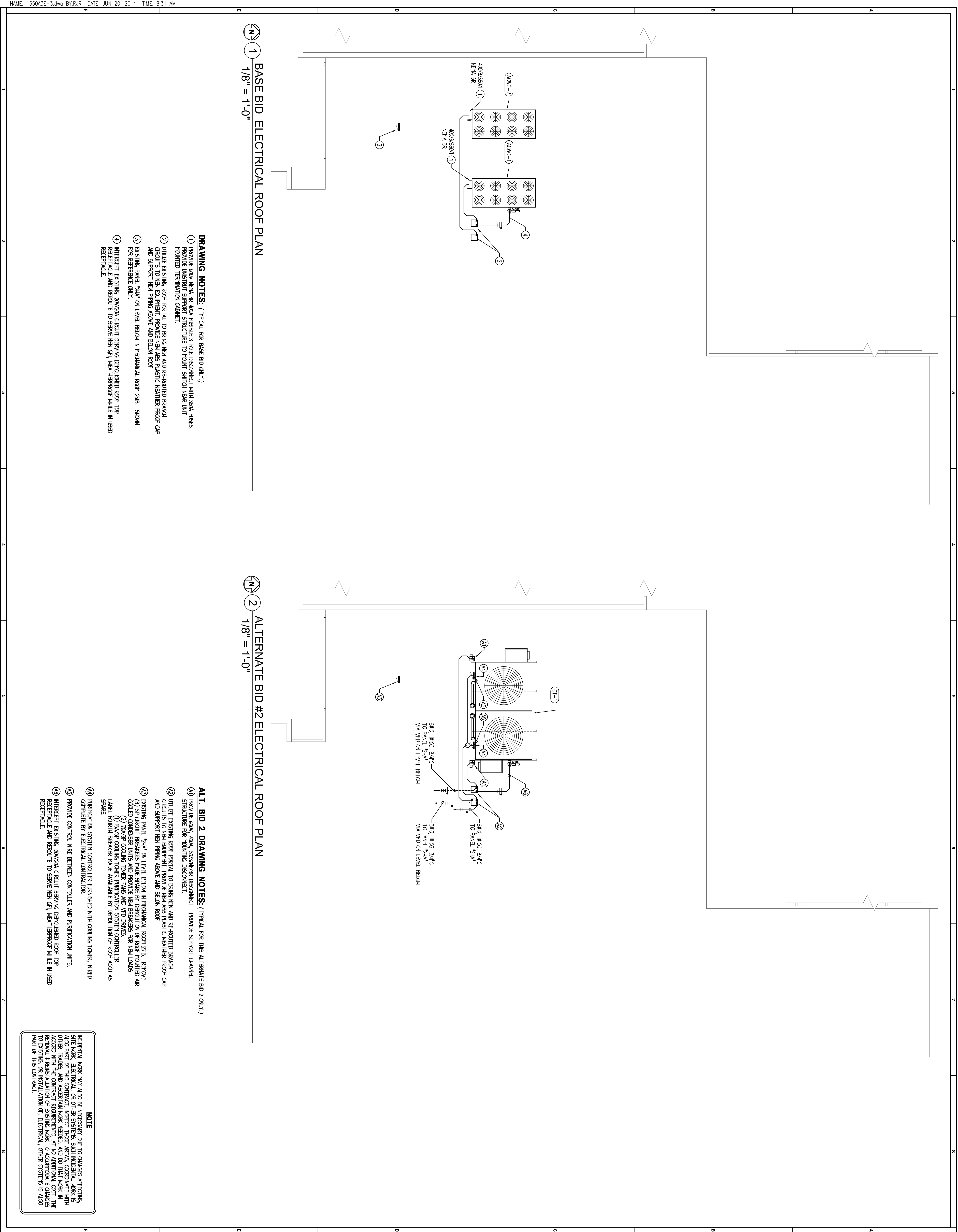
PIPE INSULATION SHIELD SCHEDULE		
PIPE SIZE	LENGTH	GAUGE
UP TO 3/4"	8"	20 GA.
1" - 2"	12"	18 GA.
2 1/2" - 4"	12"	16 GA.
5" & 6"	18"	16 GA.
8" & UP	24"	14 GA.

NOTE: 1. CONFER WITH ARCHITECT AND REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION ON ACCEPTABLE METHODS AND LOCATIONS FOR HANGER SUPPORTS.



TYPICAL PIPE HANGER DETAILS

NO SCALE



Consultants:

Mechanical - Electrical - Structural Engineers

1216 Tower Road

Schaumburg, Illinois 60173

847.882.2010

Fax 847.882.2201

BASE BID AND
ALTERNATE BID #2
PARTIAL ROOF
ELECTRICAL PLAN

McHenry County College - Building 'B' Chiller Replacement
8900 US Hwy 14 - Building 'B'
Crystal Lake, Illinois 60012

Revisions:	
23 JUNE 2014 - BID DOCUMENTS	

Issue Date:	16 JUNE 2014
Drawn By:	20/10
Job Number:	1600-A-3

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND LOCAL AMENDMENTS.

17. SUPPORT STRUCTURES FOR ELECTRICAL EQUIPMENT SHALL BE FORMED CHANNEL STEEL AT INTERIOR LOCATIONS AND GALVANIZED STEEL OR STAINLESS AT EXTERIOR LOCATIONS. UNISTRUT OR EQUAL.



20A, 2P, 3 WIRE, GROUNDING TYPE, 125V. SPECIFICATION-GRADE, DUPLEX RECEPTACLE NEMA 5-20R
 (CST) (MP)
 INSTALLED W/ AEE UNO

- "SPD" DENOTES REPLACEMENT WITH INTEGRAL SURGE PROTECTIVE DEVICE.
- "AFCI" DENOTES ARC FAULT CIRCUIT INTERRUPTER.

- ☒ COMBINATION 1 BLOCK STARTER WITH FUSE DISCONNECT, ALL PNEU KAILING, NO. OF FOLEY, FUSE SIZE AND NEMA STARTER SIZE AS INDICATED.

- INDIA 30
NEMA STARTER SIZE.

- DENOTES INSULATED GROUND WIRE, #12 AWG MINIMUM.

A	AMPERES	HP	HORSEPOWER
---	---------	----	------------

AFCI	ARC FAULT CIRCUIT INTERCEPTER	KCH	THOUSAND CIRCULAR MILS
AFEF	ABOVE FINISHED FLOOR	MCA	MINIMUM CIRCUIT AMP
C	CONDUIT	V	VOLTS
CT	CURRENT TRANSFORMER	VA	VOLT - AMPERES
CU	COPPER	WP	WEATHER PROOF
EC	ELECTRICAL CONTRACTOR	IP	SINGLE POLE
EM	EMERGENCY	2P	TWO POLE
FLA	FULL LOAD AMP	3P	THREE POLE
G, GND	GROUND	⌀	PHASE
GFI	GROUND FAULT CIRCUIT INTERCEPTER		
GFI	GROUND FAULT PROTECTIVE EQUIPMENT		

SEE DRAWINGS HV-4 AND HV-5 FOR GENERAL NOTES, AND ADDITIONAL DETAILS APPLICABLE TO THIS TRADE'S WORK

INCIDENTAL WORK MAY ALSO BE NECESSARY DUE TO CHANGES AFFECTING SITE WORK, ELECTRICAL, OR OTHER SYSTEMS. SUCH INCIDENTAL WORK IS ALSO PART OF THIS CONTRACT. INSPECT THOSE AREAS, COORDINATE WITH OTHER TRADES, AND ASCERTAIN WORK NEEDED, AND DO THAT WORK IN ACCORD WITH THE CONTRACT REQUIREMENTS, AT AN ADDITIONAL COST. THE REMOVAL, & REINSTALLATION OF EXISTING WORK TO ACCOMMODATE CHANGES TO EXISTING, OR INSTALLATION OF, ELECTRICAL, OTHER SYSTEMS IS ALSO PART OF THIS CONTRACT.

ELECTRICAL SPECIFICATIONS, SYMBOLS AND ABBREVIATIONS