

GENERAL NOTES AND SPECIFICATIONS

1. THE MECHANICAL CONTRACTOR SHALL COMPLY WITH THE 2020 FLORIDA BUILDING CODE (7TH EDITION), THE STATE OF FLORIDA ENERGY CODE, AND ALL LOCAL CODES AS MAY BE APPLICABLE.
2. MECHANICAL PLANS ARE DIAGRAMMATIC ONLY. THEY ARE INTENDED TO INDICATE CAPACITY, SIZE, LOCATION, DIRECTION, AND GENERAL ARRANGEMENT, BUT NOT EXACT DETAILS OF CONSTRUCTION. THE FACT THAT ONLY CERTAIN FEATURES OF THE INSTALLATION ARE INDICATED MUST NOT BE TAKEN TO MEAN THAT OTHER SIMILAR OR DIFFERENT FEATURES WILL NOT BE REQUIRED. ALL RISES AND DROPS IN PIPING AND DUCTWORK NOT NECESSARILY SHOWN.
3. WORK SHALL INCLUDE ALL LABOR, MATERIALS, PERMITS AND OTHER COSTS AS ARE NECESSARY FOR THE INSTALLATION OF A COMPLETE AND SATISFACTORY OPERATIONAL AIR CONDITIONING SYSTEM.
4. SHOP DRAWINGS SHALL BE PROVIDED FOR ALL MECHANICAL EQUIPMENT THAT IS TO BE USED ON THIS PROJECT WHETHER OR NOT THE EQUIPMENT IS SPECIFICALLY SPECIFIED IN THESE DOCUMENTS. THIS INCLUDES (BUT IS NOT LIMITED TO) HVAC EQUIPMENT & SUPPORTS, DIFFUSERS/GRILLES/DOVERS, DUCT WORK & SUPPORTS, REFRIGERANT LINES, INSULATION, HVAC SPECIALTIES (COLLARS, FIRE DAMPERS, BALANCING DAMPERS ETC.) CONTROLS & CABLING, ETC.. SHOP DRAWINGS SHALL BE REQUIRED PRIOR TO ORDERING OR ANY INSTALLATION OF EQUIPMENT. ANY EQUIPMENT NOT INCLUDED IN THE SHOP DRAWING SUBMITTALS, SHALL BE PROVIDED PER THE PLANS AND SPECIFICATIONS.

SUBMITTALS ARE TO BE TOTAL & COMPLETE. INCOMPLETE SHOP DRAWINGS WILL NOT BE REVIEWED. A MINIMUM OF FOUR (4) SETS OF SUBMITTALS SHALL BE PROVIDED IN BOOK/BINDER FORMAT WITH ALL EQUIPMENT (INCLUDING ANY/ALL OPTIONS) CLEARLY SELECTED/INDICATED ON THE CUTSHEETS INCLUDED IN THE SUBMITTAL. VERIFY WITH THE PROJECT ARCHITECT FOR ADDITIONAL SETS AS MAY BE REQUIRED. ELECTRONIC SUBMITTALS SUBMITTED ARE ACCEPTABLE, HOWEVER ALL COSTS INCURRED WITH PRINTING SHOP DRAWINGS RECEIVED ELECTRONICALLY SHALL BE REIMBURSED.

SHOP DRAWINGS SUBMITTED BY WAY OF AN ELECTRONIC PROJECT MANAGEMENT SYSTEM ARE NOT ACCEPTABLE.

5. THIS CONTRACTOR SHALL COORDINATE WITH THE OTHER CONTRACTORS TO INSURE THAT EACH TRADE SHALL HAVE SUFFICIENT SPACE TO INSTALL THEIR EQUIPMENT (DUCTWORK, PIPING, ELECTRICAL, ETC.).
6. VERIFY ALL DIMENSIONS FROM ARCHITECTURAL PLANS OR FIELD DIMENSIONS.
7. UNLESS NOTED, ALL MATERIALS SHALL BE NEW, COMPLETE, INCLUDE MANUFACTURER'S WARRANTY, AND BE U.L. APPROVED IF APPLICABLE. ALL WORK SHALL PRESENT A NEAT MECHANICAL APPEARANCE WHEN COMPLETED.
8. CONTRACTOR SHALL FURNISH AND INSTALL CURBS AND BASES FOR ALL EQUIPMENT AS SHOWN ON PLAN. THIS CONTRACTOR SHALL CONFIRM ALL CURB REQUIREMENTS AND THEIR SIZES.
9. EQUIPMENT AS PER SCHEDULED LIST OF ACCEPTABLE MANUFACTURERS:
CHILLER: DAKIN, DUNHAM BUSH OR APPROVED EQUAL
PUMPS: ARMSTRONG OR APPROVED EQUAL
10. ALL EQUIPMENT SHALL BE STARTED, TESTED, ADJUSTED AND BALANCED FOR AIR DELIVERY AS INDICATED ON THE PLANS, AND PLACED IN SATISFACTORY OPERATIONAL CONDITION BY A TEST AND BALANCE COMPANY WHOSE SOLE BUSINESS IS THE TESTING, ADJUSTING AND BALANCING OF SYSTEMS OF SIMILAR SIZE AND TYPE. THIS CONTRACTOR SHALL GUARANTEE ALL WORKSMANSHIP, MATERIALS AND EQUIPMENT TO BE FREE OF DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF CERTIFICATE OF COMPLETION. THIS IS IN ADDITION TO ANY WARRANTY OR GUARANTEE FROM THE EQUIPMENT MANUFACTURER. FURNISH THE OWNER WITH THE MANUFACTURER'S WRITTEN WARRANTY CERTIFICATES. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ONE BELT AND SHEAVE CHANGE ON ALL BELT DRIVEN EQUIPMENT FOR BALANCING PURPOSES.
ALL CONTROLS ARE TO BE TESTED AND CALIBRATED SO AS TO BE OPERATING WITH THE MANUFACTURER'S SPECIFICATIONS. ANY DEFECTIVE UNITS ARE TO BE REPLACED.
11. ALL EQUIPMENT SHALL BE PROPERLY SUPPORTED AND ISOLATED TO PREVENT NOISE AND VIBRATION TRANSMISSION.
12. PROVIDE ADEQUATE CLEARANCE FOR ACCESS TO ALL EQUIPMENT. CONTRACTOR SHALL ENSURE THAT NO TRANSGRESSION OF THIS SPACE IS MADE BY OTHER CONTRACTORS.
13. ALL CONTROL WIRING SHALL BE IN CONDUIT AND RATED FOR OUTDOOR USE.

HYDRONIC NOTES AND SPECIFICATIONS

1. BUTTERFLY VALVES: 2 1/2" AND LARGER - MSS SP-67; RATED AT 200 PSI, CAST IRON BODY, CONFORMING TO ASTM A 126, CLASS B. PROVIDE VALVES WITH FIELD REPLACEABLE EPDM SLEEVE, NICKEL-PLATED DUCTILE IRON DISC, STAINLESS STEEL STEM AND EPDM O-RING STEM SEALS. PROVIDE LEVER OPERATORS WITH LOCKS FOR SIZES 2 - 6 INCHES. DRILL AND TAP VALVES ON DEAD END SERVICE FOR VALVES REQUIRING ADDITIONAL BODY STRENGTH.
2. BALL VALVES: 2" AND SMALLER - ALL SERVICE VALVES 2" AND SMALLER SHALL BE ALL BRONZE FULL PORT BALL VALVES WITH 90 DEGREE LEVER OPERATION FROM OPEN TO CLOSED POSITION
3. MANUAL AIR VENT- BRONZE BODY AND NON-FERROUS INTERNAL PARTS; 150 PSIG WORKING PRESSURE, 225 DEG. F MAXIMUM OPERATING TEMPERATURE. MANUALLY OPERATED SCREWDRIVER OR THUMBSCREW WITH 1/8" N.P.S. DISCHARGE CONNECTION AND 1/2" N.P.S. INLET CONNECTION.
4. AS -2 - AIR SEPARATORS: WELDED BLACK STEEL: ASME CONSTRUCTED AND LABELED FOR 125 PSIG WORKING PRESSURE, 375 DEG. F OPERATING TEMPERATURE, PERFORATED STAINLESS STEEL AIR COLLECTOR TUBE DESIGNED TO DIRECT RELEASED AIR TO AN AIR VENT; TANGENTIAL INLET AND OUTLET CONNECTIONS; THREADED CONNECTIONS FOR 3" FLANGED CONNECTIONS AND BLOW DOWN FITTING CONNECTION. PROVIDE UNITS WITH STRAINER AND PROVIDE FOR FULL SYSTEM FLOW CAPACITY. AIR SEPARATOR EQUAL TO B&G R-4.
5. CHILLED WATER PIPING:
 - A. BELOW GROUND:

PRE-INSULATED SCHEDULE 40 BLACK STEEL PIPING BY ROVANOX OR EQUAL
 - B. ABOVE GROUND:

> 2" STEEL PIPE - ASTM A 120, SCHEDULE 40, SEAMLESS, BLACK STEEL, PLANE ENDS, STEEL FITTINGS - ASTM A 234, SEAMLESS OR WELDED JOINTS.

<= 2" COPPER PIPING WITH SOLDERED JOINTS. PROVIDE WITH DIELECTRIC UNION BETWEEN CONNECTION TO DISSIMILAR PIPING.

INSULATION TO BE EQUAL TO PITTSBURGH "FOAM-GLASS" OR EQUAL FOR ALL INSULATION. PROVIDE ALUMINUM EXTERIOR JACKETING FOR CHILLED WATER PIPING EXPOSED TO OUTDOOR ENVIRONMENT.
8. CHILLED WATER PUMPS SHALL BE SUITABLE FOR INSTALLATION IN AN OUTDOORS ENVIRONMENT. ACCEPTABLE MANUFACTURER'S ARE:

WEINMAN
BELL & GOSSETT
AURORA
ARMSTRONGS
PEERLESS

CHILLER EQUIPMENT SCHEDULE									
GENERAL									
UNIT DESIGNATION				CHR-2					
MANUFACTURER				DAIKIN					
UNIT SIZE/MODEL				AG2110E					
COOLING CAPACITY (TONS)				111.6					
CHILLER INPUT POWER (KW)				125.8					
CAPACITY CONTROL STEPS				4					
MINIMUM CAPACITY (%)				25					
EER/IPLV				10.6/15.9					
REFRIGERANT				R410A					
PERFORMANCE DATA									
FLUID TYPE				WATER					
FLUID ENTERING TEMP (°F)				54					
FLUID LEAVING TEMP (°F)				44					
FLUID FLOW RATE (GPM)				267					
FLUID PRESSURE DROP (FT WC)				8.6					
CONDENSING TEMP (°F)				95					
PUMP HORSEPOWER (HP) (EACH)				7.5					
ELECTRICAL POWER DATA									
NAMEPLATE VOLTAGE				480-3					
FREQUENCY (Hz)				60					
MINIMUM CIRCUIT AMPS (MCA)				245.0					
MAXIMUM OVERCURRENT PROTECTION				250					
REMARKS				1, 2, 3, 4, 5					
REMARKS									
1 PROVIDE SINGLE POINT POWER CONNECTION FOR CONTROL CIRCUIT.									
2 PROVIDE WITH FACTORY PHASE LOSS, OVERVOLTAGE PROTECTION, AND INTEGRAL ELECTRICAL SERVICE DISCONNECT.									
3 PROVIDE WITH FACTORY INSTALLED DUAL PUMPS, 267 GPM @ 49.2 FT HEAD.									
4 PROVIDE WITH FACTORY INSTALLED EXPANSION TANK.									
5 PROVIDE WITH FACTORY INSTALLED CABINET CONTROLLER MATCHED TO SELECTED BUILDING AUTOMATION CONTROLS SYSTEM.									
PUMP SCHEDULE (EXISTING)									
MARK	MANUFACTURER	MODEL	IMP	EFF	GPM	HEAD (FT)	HP	RPM	VOLT
P-1	ARMSTRONG	4302 6X6X6	6	74%	500	45	10	3600	480/3
P-2	ARMSTRONG	4302 4X4X6	-	-	315	65	10	3600	480/3
REMARKS									
1. EXISTING PUMPS ARE DUAL ARM PUMPS WITH 2 PUMP HOUSINGS AND MOTORS WITH INVERTER DUTY MOTORS AND CONTROL IS EXISTING TO REMAIN AND BE REUSED.									
2. EXISTING DUAL ARM PUMP TO BE RETROFITTED AS FOLLOWING: PROVIDE (2) NEW 10 HP MOTORS, REPLACE IMF AND PROVIDE NEW PACKING, BEARING AND SEALS. PROVIDE WITH (2) NEW VFD'S WITH CIRCUIT BREAKER DISCONNECT DRIVE TO EXISTING HORSEPOWER, VOLTAGE & AMPERAGE IN NEMA 4 ENCLOSURE (CONTRACTOR MAY REUSE ENCLOSURE AT CONTRACTOR'S DISCRETION, OTHERWISE PROVIDE WITH NEW ENCLOSURE). PROVIDE WITH MEAT COVER. VFD TO COME WITH AUTO/OFF/BYPASS ON VFD DRIVE.									

THRUST BLOCK DIAGRAM

N.T.S.

NOTE:
CONCRETE THRUST BLOCK TO BEAR AGAINST
SOLID UNDISTURBED EARTH OR REPLACED
EARTH COMPACTED TO 95% PROCTOR
DENSITY.

ELEVATION B-B

ELEVATION A-A

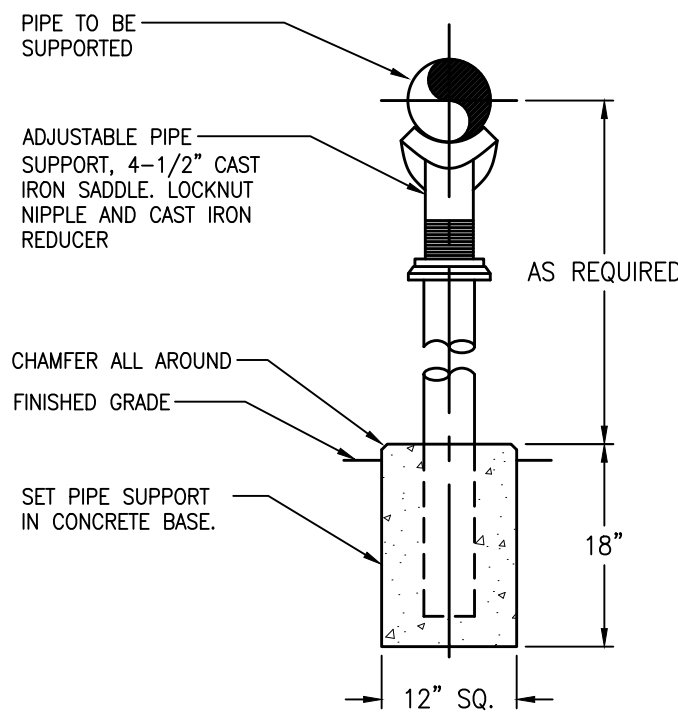
45° ELBOW PLAN

90° ELBOW PLAN

TEE PLAN

CHILLED WATER VALVE PIT	N.T.S.
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PIPE SUPPORT	N.T.S.
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ABBREVIATIONS

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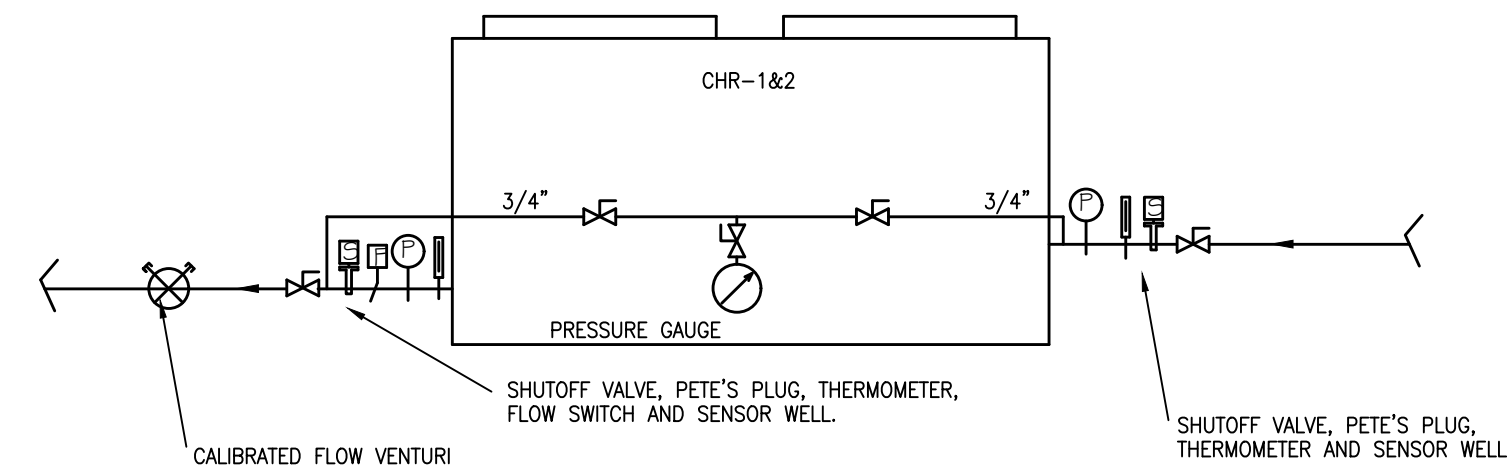
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CHILLED WATER SITE PLAN KEYNOTES

1. EXISTING PRE-INSULATED CHILLED WATER LINES UNDERGROUND FROM CHILLER PLANT TO BUILDING. REFER TO BUILDING MECHANICAL PLANS AND ENLARGED CHILLED WATER PLANT DRAWING FOR CONTINUATION OF PIPING.
2. LOCATION OF EXISTING AND RENOVATED CHILLED WATER PLANT. SEE ENLARGED PLAN AND PIPING SCHEMATIC ON THESE PLANS FOR MORE DETAILS OF CONSTRUCTION.
3. EXISTING 50 TON CHILLER, PIPING AND PUMP TO BE REMOVED.
4. EXISTING 150 TON MCQUAY CHILLER TO REMAIN AND BE REUSED.
5. EXISTING CHILLED WATER PUMP, BUILDING SECONDARY PUMP AND AIR SEPARATOR TO REMAIN.
6. NEW CHILLER PER PLANS WITH INTEGRAL PUMP AND NEW AIR SEPARATOR.
7. PROVIDE NEW 3" CHWS & CHWR TAP FROM EXISTING 6" CHILLED WATER LINES IN LANDSCAPE AREA. FIELD COORDINATE EXACT LOCATION OF EXISTING LINES IN FIELD. PROVIDE AS PRE-INSULATED SCHEDULE 40 BLACK STEEL WITH INSULATION AND HDPE JACKET.
8. EXTEND 3" CHWR AND CHWS TO BUILDING. STUB UP AT LOCATION INDICATED 3' ABOVE GRADE. PROVIDE A NEW BURIED SHUTOFF VALVE ON EACH PIPE.



TYPICAL PUMP PIPING DIAGRAM



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CLIENT REVIEW

CLIENT REVIEW 03 - 20 - 2023	
100% CD	

08 - 11 - 2023

4 ADDENDUM #4
03 - 01 - 2024

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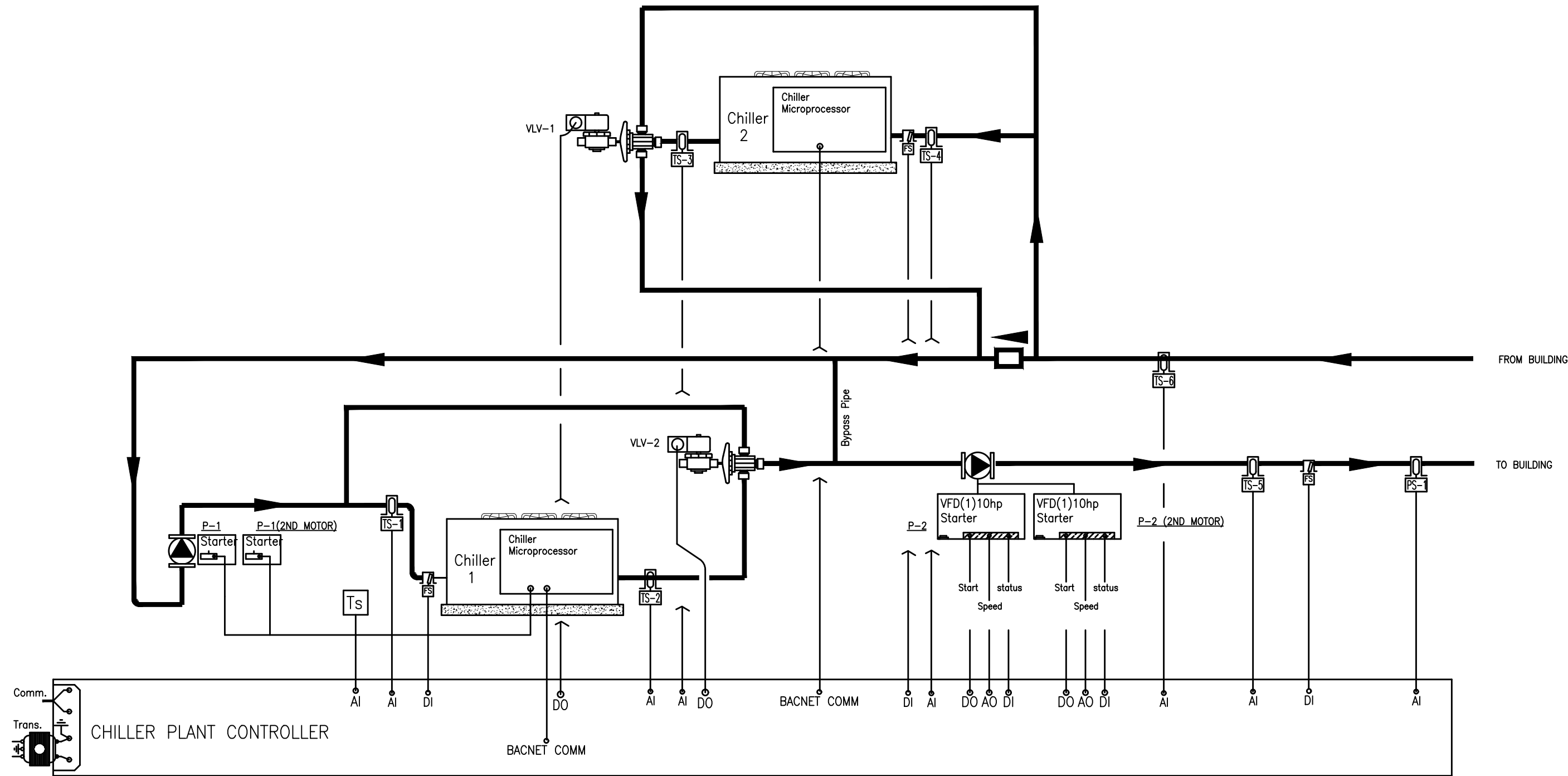
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PROJECT NO. 2022-127

CHILLER PLANT SEQUENCE OF CONTROLS



CONTROL POINTS:

- A. PUMP #1, MOTOR #1 – START/STOP
- B. PUMP #1, MOTOR #2 – START/STOP
- C. PUMP #1 – STATUS
- D. PUMP #2, MOTOR #1 – START/STOP
- E. PUMP #2, MOTOR #1 – SPEED ADJUSTMENT
- F. PUMP #2, MOTOR #1 – STATUS
- G. PUMP #2, MOTOR #2 – START/STOP
- H. PUMP #2, MOTOR #2 – SPEED ADJUSTMENT
- I. PUMP #2, MOTOR #2 – STATUS
- J. PUMP #2 – FLOW SWITCH
- K. PUMP #2 – LEAVING WATER TEMPERATURE
- L. PUMP #1 – FLOW SWITCH
- M. CHR-1 RETURN WATER TEMPERATURE
- N. CHR-1 SUPPLY WATER TEMPERATURE
- O. CHR-2 RETURN WATER TEMPERATURE
- P. CHR-2 SUPPLY WATER TEMPERATURE
- Q. CHR-2 FLOW SWITCH
- R. VALVE #1 (3-WAY) OPEN/CLOSE CHILLER BYPASS
- S. VALVE #1 POSITION MONITOR
- T. VALVE #2 (3-WAY) OPEN/CLOSE CHILLER BYPASS
- U. VALVE #2 POSITION MONITOR
- V. CAMPUS RETURN WATER TEMPERATURE
- W. VALVE #1 – OPEN/CLOSE
- X. VALVE #2 – NORMAL/FULL BYPASS
- Y. CHILLED WATER PIPING PRESSURE SENSOR
- Z. CHILLER 1 – ETHERNET COMMUNICATION LINK
- AA. CHILLER 2 – ETHERNET COMMUNICATION LINK

INCLUDE ALL CHILLER POINTS AVAILABLE FROM CHILLER MFR. ON NETWORK.

SEQUENCE OF CONTROLS:

- 1. SETPOINTS:
LEAVING CHILLED WATER TEMPERATURE – 42°F (ADJUSTABLE)
- 2. CHILLERS:

CHILLER #1 AND CHILLER #2 SHALL BE CYCLED AS LEAD/LAG CHILLERS. THE LEAD AND LAG CHILLER SHALL ALTERNATE WEEKLY.

WITH A CALL FOR COOLING FROM ANY OF THE AIR HANDLERS AT THE CAMPUS, CHILLED WATER BUILDING LOOP PUMP SHALL BE ENERGIZED. IF CHILLER #1 IS THE LEAD CHILLER, PUMP #1 SHALL BE ENERGIZED AND WATER FLOW SHALL PASS THROUGH CHILLER #1. IF CHILLER #2 IS THE LEAD CHILLER, THE INTEGRAL PUMPS WITH THE NEW CHILLER SHALL BE ENERGIZED TO CIRCULATE CHILLED WATER.

IF THE LEAD CHILLER IS OPERATING AT 100% CAPACITY AND THE LEAVING WATER TEMPERATURE IS GREATER THAN 46°F, THEN AFTER A 10 MINUTE TIME DELAY THE LAG CHILLER SHALL BE ENERGIZED TO SUPPLEMENT THE COOLING OF THE LEAD CHILLER UNTIL SUCH TIME A THE LEAD CHILLER LEAVING WATER TEMPERATURE IS LESS THAN 42°F.

CHILLERS SHALL NOT BE ENERGIZED UNTIL WATER FLOW IS PROVEN, PUMPS ARE INITIATED AND THE BYPASS VALVE IS IN THE CORRECT POSITION TO ALLOW CHILLER WATER FLOW THROUGH THE CHILLER. IF THESE ARE NOT PROVEN ON THE LEAD CHILLER, AN ALARM SHALL BE SENT FOR FAULT TO SERVICE THE UNIT AND THE SYSTEM SHALL SWITCH TO THE LAG CHILLER FOR OPERATION.

FOR EXISTING PUMPS, THE CHILLED WATER PUMPS SHALL ALTERNATE BETWEEN MOTOR #1 & MOTOR #2 ON A WEEKLY BASIS. CHILLED WATER PUMP MOTORS #1 AND #2 SHALL ALTERNATE LEAD/LAG SERVICE ONCE A WEEK FOR BOTH PUMPS.

THE VFD FOR PUMP #2 SHALL ADJUST THE SPEED OF THE PUMP MOTOR TO MAINTAIN A CONSTANT DOWNSTREAM WATER PIPING PRESSURE AS MEASURED BY A PRESSURE SENSOR AT A MINIMUM OF 2/3 DISTANCE DOWN THE PIPING NETWORK.

- 3. CHILLERS OPERATION:

UPON PROVING FLOW ON CHILLER, THE CHILLER SHALL REMAIN ON AND MAINTAIN A LEAVING WATER TEMPERATURE OF 42°F LEAVING WATER TEMPERATURE. CHILLER PACKAGED CONTROLS SHALL RUN CHILLER TO MAINTAIN LEAVING WATER TEMPERATURE, AND SHALL SEND A GENERAL ALARM TO BUILDING AUTOMATION SYSTEM FROM CHILLER PRE-PACKAGED CONTROLS.

PROVIDE ALL ALARMS, STATUS AND OPERATION VALUES AS PROVIDED BY CHILLER MICROPROCESSOR VIA CHILLER PROVIDED CONTROLS INTERFACE CARD/PANEL COMPATIBLE WITH SELECTED BUILDING AUTOMATION SYSTEM PROVIDER. ALL POINTS PROVIDED BY CHILLER SHALL BE INDICATED VISUALLY ON WEB-BASED CONTROL SYSTEM.

- 4. 3 WAY BYPASS VALVE OPERATION:

THE 3 WAY BYPASS VALVES SHALL OPEN TO ALLOW WATER FLOW FROM ITS' RESPECTIVE CHILLER, WHEN THAT CHILLER IS OPERATIONAL. THE 3 WAY BYPASS VALVE SHALL SHUTOFF FLOW TO CHILLER WHEN THE CHILLER IS NOT OPERATIONAL (I.E. LAG CHILLER FOR TEH WEEK.

THE VALVES SHALL BE PROVIDED WITH POSITION INDICATORS TO VERIFY THAT THE VALVE IS IN THE CORRECT POSITION. IF VALVE DOES NOT OPEN (OR CLOSE), AN ALARM SHALL BE SENT TO BUILDING AUTOMATION SYSTEM TO PROVIDE MAINTENANCE AND REPAIR FOR THE VALVE. IF THE VALVE HAS NOT GONE TO THE CORRECT POSITION, THE CHILLER ASSOCIATED WITH THE VALVE SHALL BE TURNED OFF AND THE OTHER CHILLER SHALL BE CYCLED TO THE LEAD CHILLER.

VALVE #2 SHALL OPEN TO FULL BYPASS AND THE EXISTING CHILLER PLANT, PIPING AND PUMPS SHALL OPERATE ON THEIR OWN.

- 5. COMMUNICATION:

PROVIDE CONDUIT AND WIRING TO INTERCONNECT NEW CHILLER PLANT CONTROLLER TO CAMPUS DDC SYSTEM. SEE BUILDING "A" DRAWINGS FOR MORE DETAILS OF OVERALL NETWORK ARCHITECTURE.

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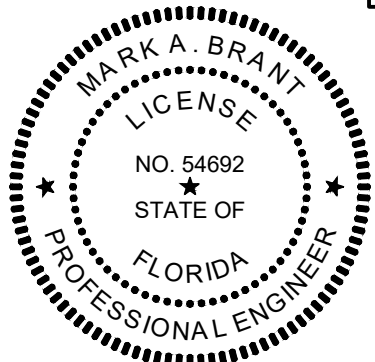
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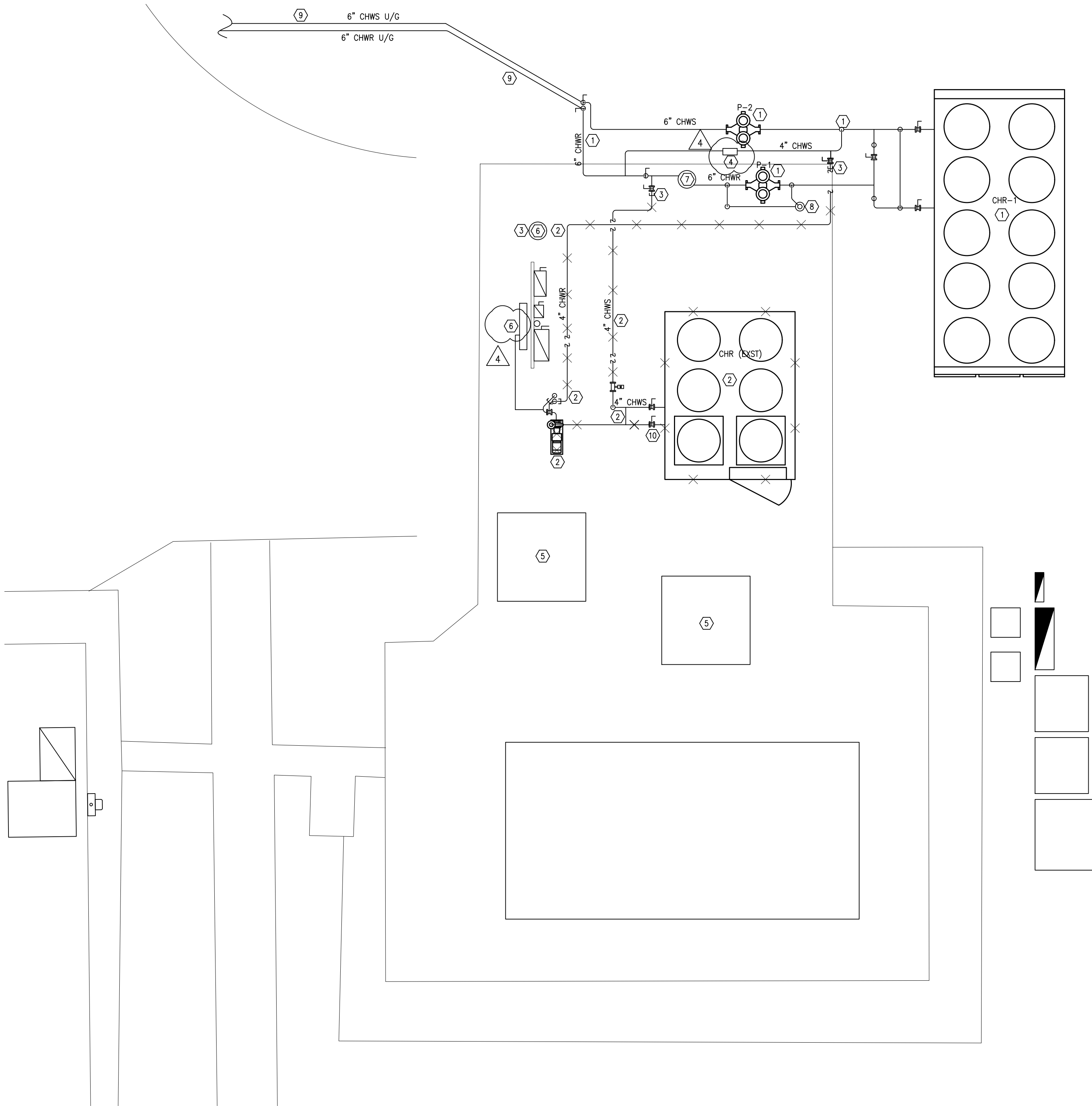
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THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY MARK A. BRANT, PE, ON 2/28/2024.

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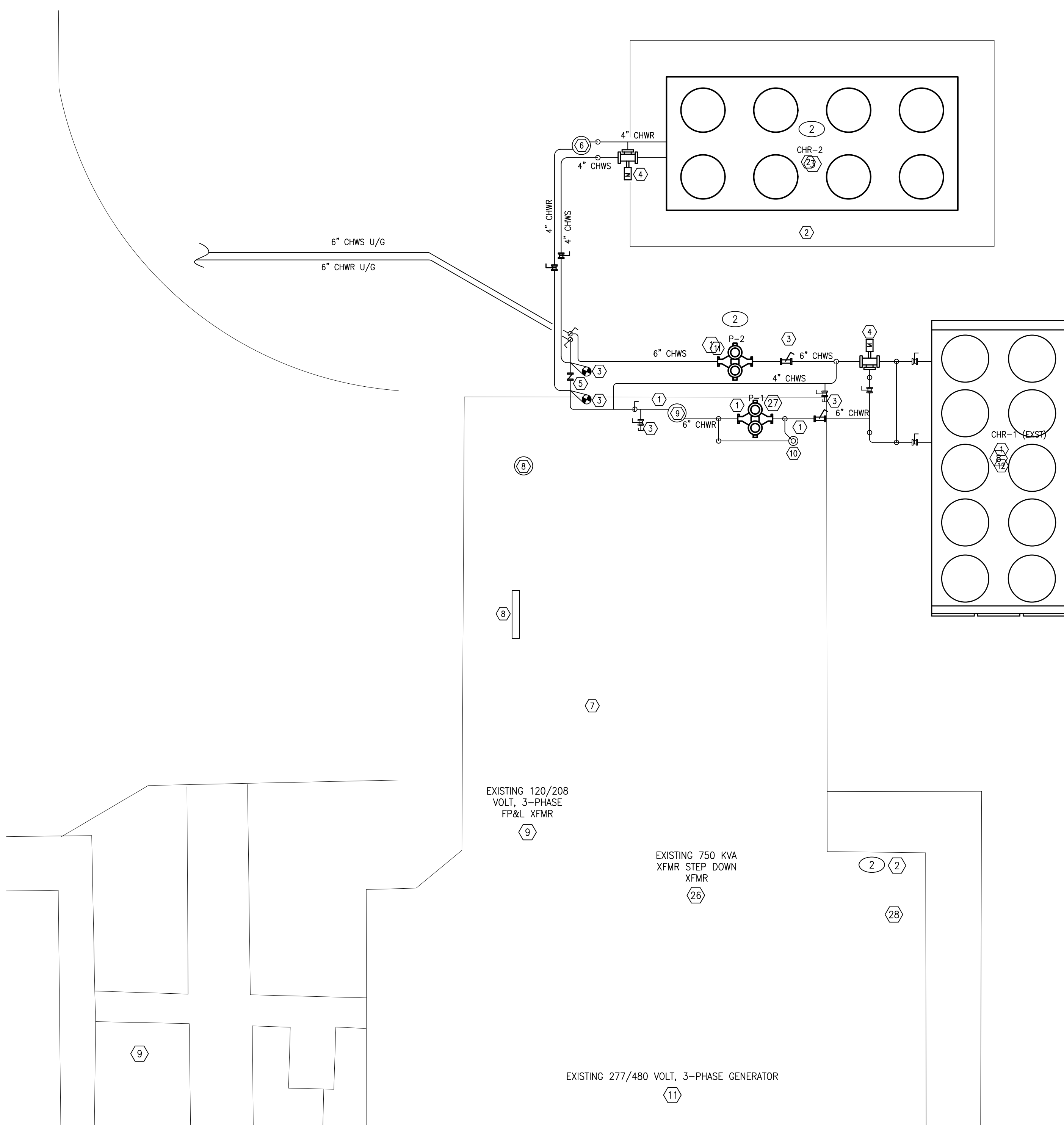


ENLARGED CHILLER PLANT PLAN - EXISTING

SCALE : 1/4" = 1'-0"

CHILLER PLANT KEYNOTES (EXISTING)

- EXISTING CHILLER (CHR-1) TO REMAIN AND OPERATIONAL WHILE EXISTING CHILLER IS TO BE DISCONNECTED. ALL ASSOCIATED PUMPS, PIPING, CONTROLS AND POWER TO REMAIN INTACT TO CHR-1.
- EXISTING INOPERATIVE CHILLER AND ALL ASSOCIATED PIPING, ELECTRICAL, CONTROL WIRING, PUMP, VALVES, ETC. MARKED "X" SHALL BE DISCONNECTED AND REMOVED.
- PIPING FROM REMOVED CHILLER SYSTEM PIPING TO BE CAPPED AND SEALED AT EXISTING POINT OF CONNECTION AT APPROXIMATE LOCATION INDICATED.
- CONTRACTOR TO REMOVE CHECK VALVE IN SYSTEM BYPASS AT THIS APPROXIMATE LOCATION TO ALLOW (2-WAY FLOW) THROUGH THE PIPE.
- EXISTING TRANSFORMER TO REMAIN.
- EXISTING EXPANSION TANK AND WATER MAKEUP TO REMAIN AND BE REUSED FOR EXISTING AND NEW CHILLER PLANT. ENSURE THAT MAKEUP WATER SYSTEM REMAINS INTACT WITH BUILDING AND CHILLER PLANT RENOVATION. CONTRACTOR SHALL REPLACE ALL EXISTING PRESSURE REDUCING VALVES, PRESSURE GAUGES, BYPASS VALVE AND CHECK VALVES ASSOCIATED WITH CHILLED WATER MAKEUP FEED. FIELD VERIFY EXACT LOCATION, NUMBER AND TYPE OF DEVICES.
- EXISTING AIR SEPARATOR REMAIN AND BE REUSED.
- EXISTING FILTER TYPE CHEMICAL FEEDER TO REMAIN.
- EXISTING UNDERGROUND PIPING TO BUILDING TO REMAIN.



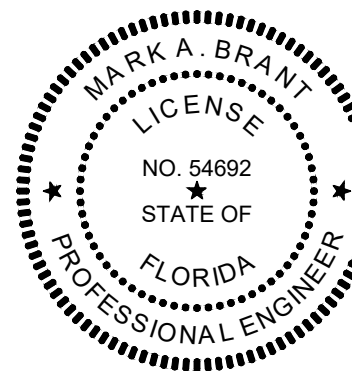
ENLARGED CHILLER PLANT PLAN - RENOVATED

SCALE : 1/4" = 1'-0"

CHILLER PLANT KEYNOTES

- EXISTING CHILLER (CHR-1) TO REMAIN AND OPERATIONAL WHILE NEW (CHR-2) IS BEING INSTALLED. ALL ASSOCIATED PUMPS, PIPING, CONTROLS AND POWER TO REMAIN INTACT AND WORKING. SCHEDULE WORK TO MINIMIZE DOWNTIME.
- PROVIDE AND INSTALL NEW CHILLER SYSTEM (CHR-2). REFER TO CHILLER PIPING DETAIL FOR ENLARGED VIEW OF PIPING AND APPURTENANCES REQUIRED AT CHILLER, I.E. SYSTEM BYPASS, FLOW SWITCH, SHUTOFF VALVES, CHECK VALVES, PETE'S PLUGS AND PRESSURE GAUGES. STARTUP SHALL BE PROVIDED BY FACTORY CERTIFIED TECHNICIAN.
- PROVIDE AND INSTALL NEW CHILLED WATER PIPING, TIE-INTO EXISTING SYSTEM AS NOTED.
- NEW 3 WAY MOTORIZED VALVE.
- NEW CHECK VALVE TO BE INSTALLED IN EXISTING PIPING.
- NEW AIR SEPARATOR. SEE HYDRONIC NOTES FOR SPECIFICATIONS AND DETAILS.
- EXISTING 208V-3 PHASE TRANSFORMER.
- EXISTING EXPANSION TANK TO REMAIN. EXISTING MAKEUP WATER PIPING TO THE SYSTEM SHALL REMAIN AND BE REUSED. EXISTING PRESSURE GAUGES, PRESSURE REDUCING VALVES, PIPING, CHECK VALVES, ETC. TO BE REPLACED IN MAKEUP WATER SYSTEM.
- EXISTING AIR SEPARATOR TO REMAIN.
- EXISTING CHEMICAL FEED TANK TO REMAIN.
- SECONDARY BUILDING PUMP TO BE RETROFITTED, REPAIRED AND PROVIDED WITH GENERAL MAINTENANCE PER CHILLED WATER PUMP SCHEDULE INCLUDING NEW 10 HP MOTORS, REVISED WATER FLOW AND VFD.
- CONTRACTOR TO REPAIR EXISTING CHR-1 BACNET INTERFACE CONTROLLER.

GENERAL NOTE: ALL NEW DDC CONTROLS CONNECTED TO NEW BUILDING AUTOMATION SYSTEM IS TO BE PROVIDED FOR THE ENTIRE CHILLER PLANT INCLUDING BACNET CONTROLLERS FOR EACH CHILLER, PUMPS, VALVES WITH THIS RENOVATION. SEE CONTROLS SCHEMATIC FOR DETAILS OF NEW CONTROL SYSTEM REQUIREMENTS.



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PROJECT NO. 2022-121