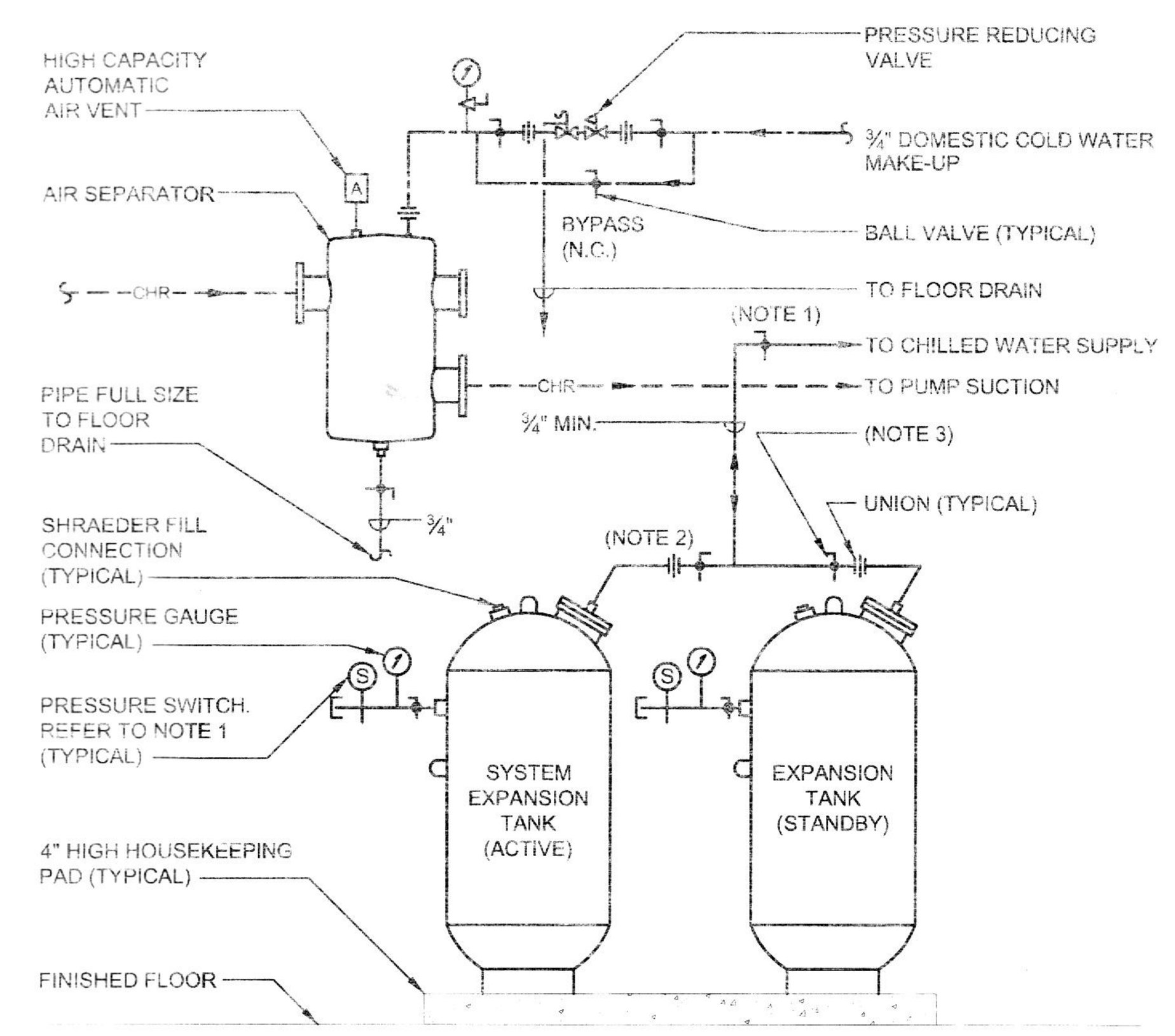


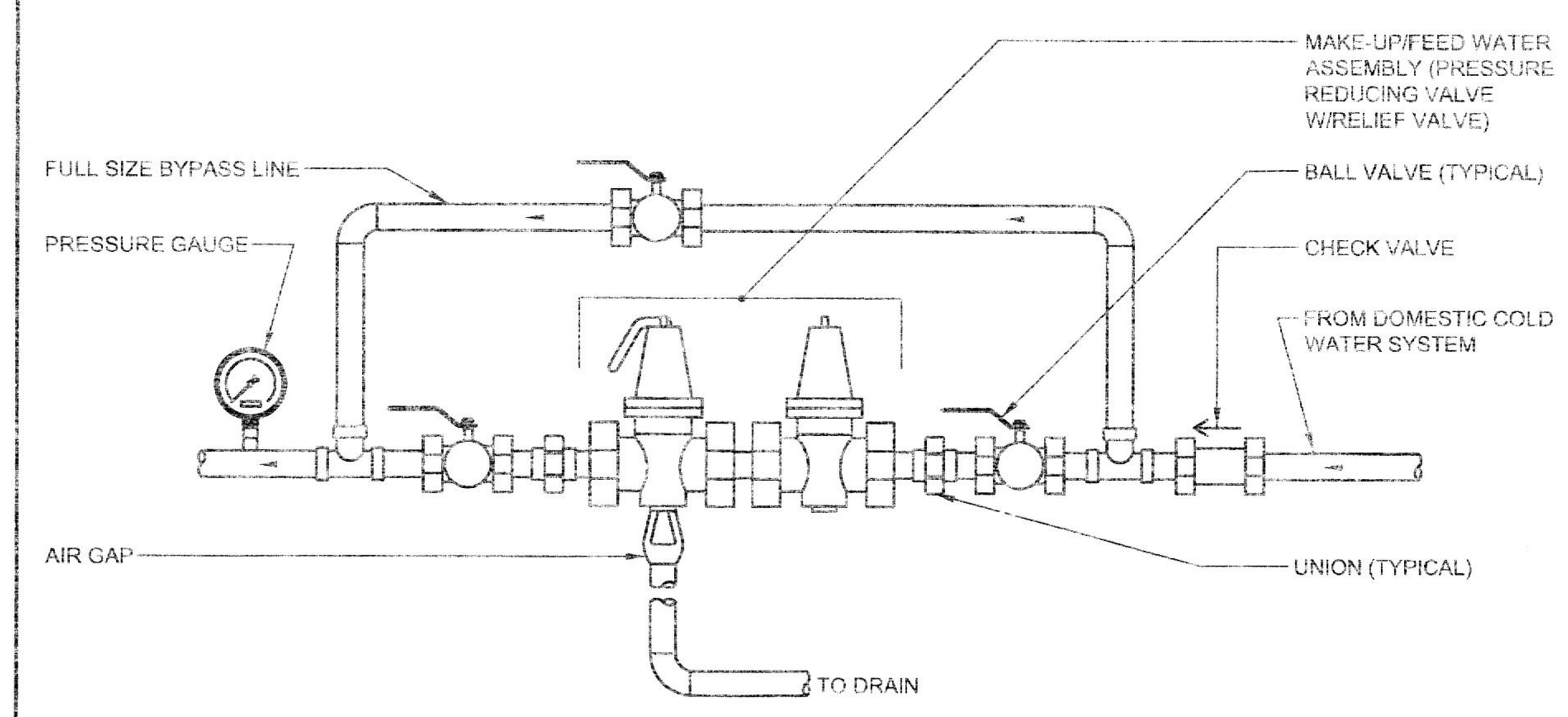
NOTES:

1) PRESSURE SWITCH SHALL BE SET TO 5 PSI HIGHER THAN SYSTEM PRESSURE. IF PRESSURE SWITCH IS ACTIVATED, A SIGNAL SHALL BE SENT TO BUILDING AUTOMATION SYSTEM TO SIGNAL EXPANSION TANK FAILURE.

2) BALL VALVE ASSOCIATED WITH ACTIVE EXPANSION TANK SYSTEM SHALL BE LABELED "NORMALLY OPEN".

3) BALL VALVE ASSOCIATED WITH STANDBY EXPANSION TANK SYSTEM SHALL BE LABELED "NORMALLY CLOSED". UPON FAILURE OF ACTIVE EXPANSION TANK, VALVE AT THE FAILED TANK SHALL BE CLOSED AND BALL VALVE AT THE STANDBY EXPANSION TANK SHALL BE OPENED.

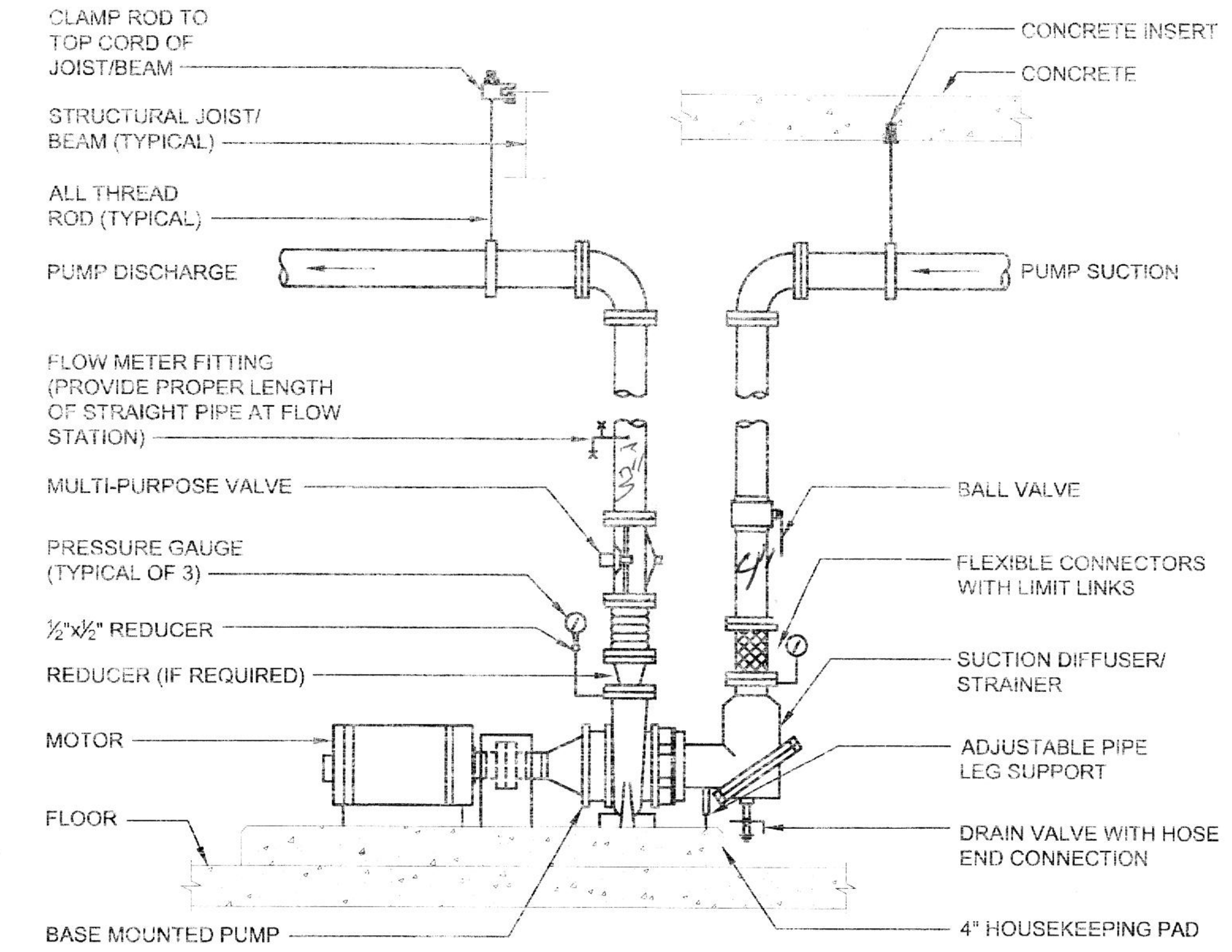
DETAIL - AIR SEPARATOR/EXPANSION TANK
NO SCALE



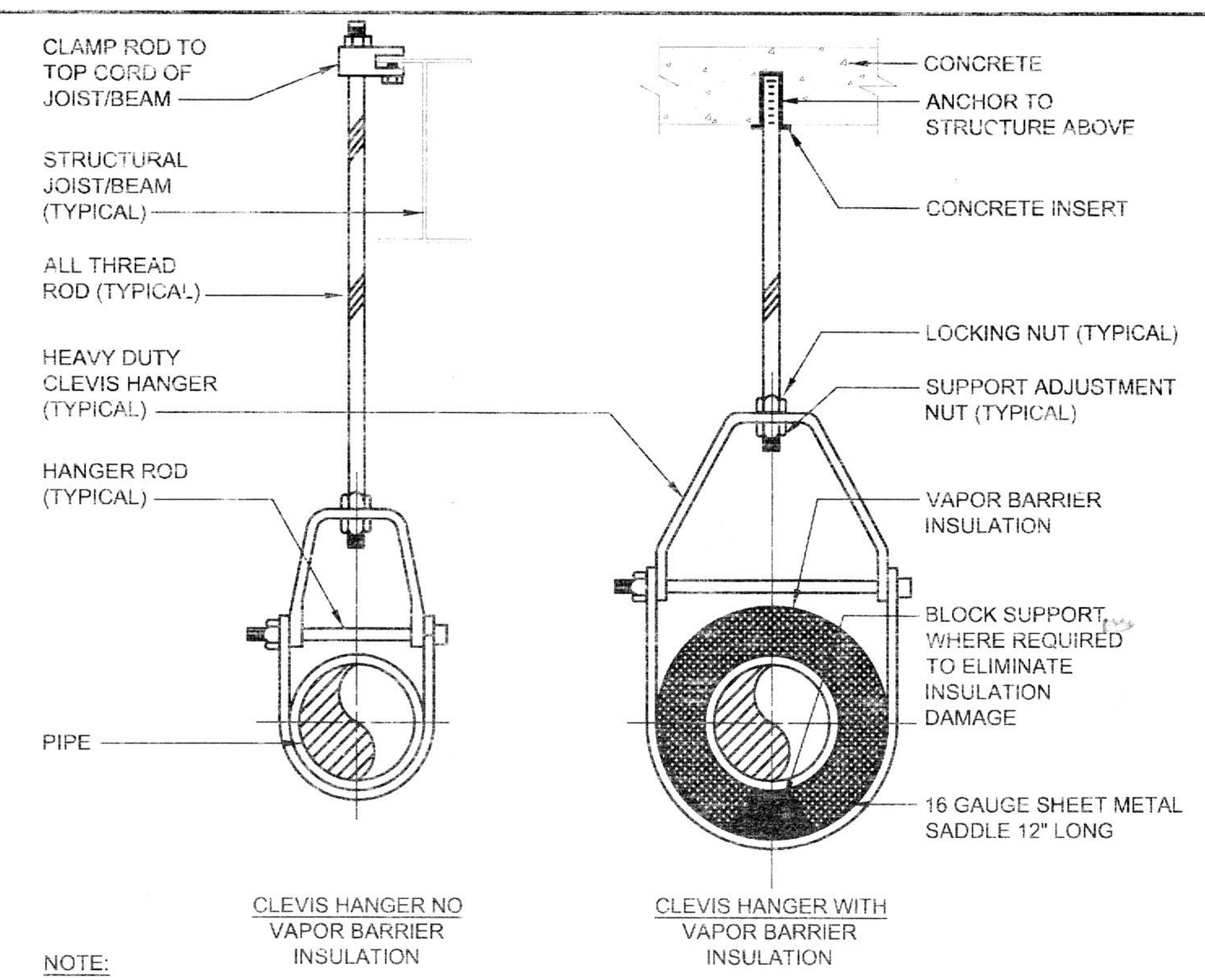
NOTE:

1. EXTEND DRAIN PIPING FULL SIZE TO FLOOR DRAIN.

DETAIL - MAKE-UP WATER ASSEMBLY
NO SCALE



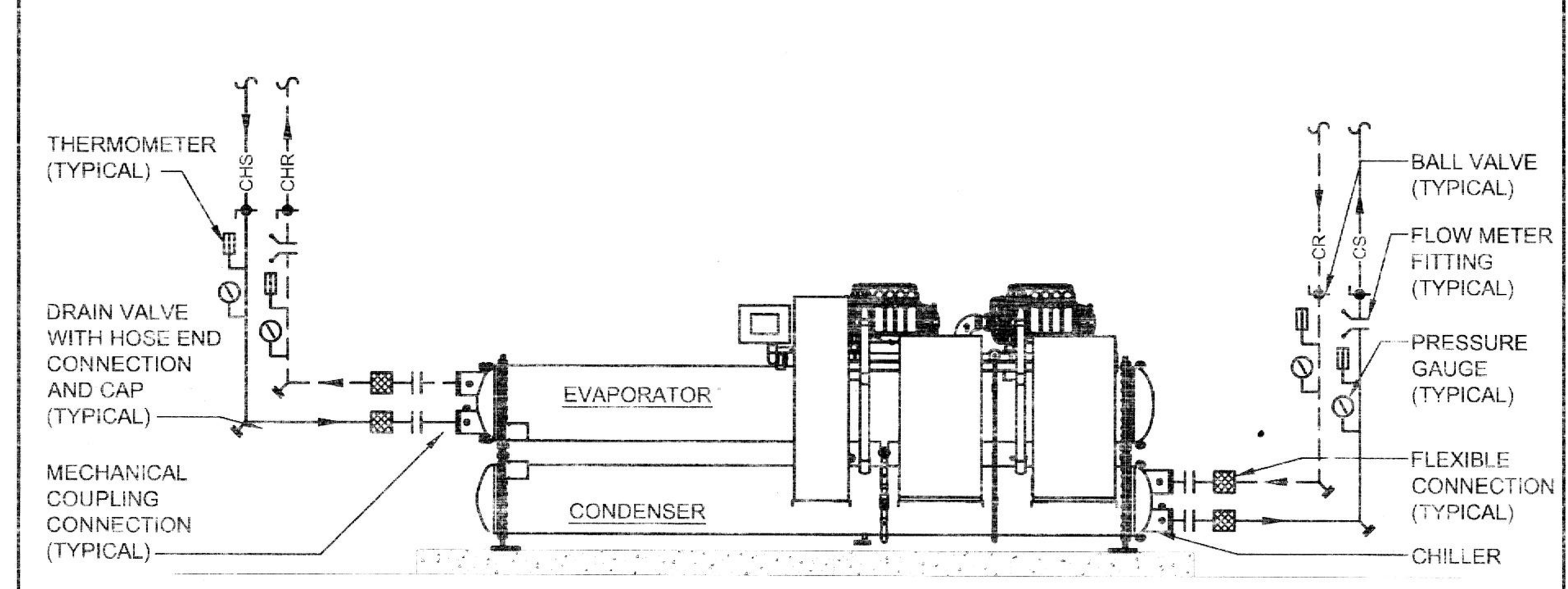
DETAIL - TYPICAL BASE MOUNTED PUMP CONNECTION
NO SCALE



NOTE:

1. ALL HANGERS FOR COPPER PIPING SHALL BE COPPER COATED.

DETAIL - PIPE SUPPORT
NO SCALE



NOTES:

1. PIPING FROM BALL SHUTOFF VALVE TO CHILLER CONNECTION SHALL UTILIZE MECHANICAL FITTINGS/COUPLINGS TO ALLOW EASY REMOVAL OF PIPING SYSTEMS FOR MAINTENANCE, TUBE-PULL, ETC.

2. ALL REFRIGERANT RELIEF PIPING SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND EXTENDED TO THE OUTSIDE.

DETAIL - CHILLER PIPING CONNECTIONS
NO SCALE

WATER COOLED CHILLER SCHEDULE

ITEM	NOMINAL CAPACITY (TONS)	LOCATION	COMPRESSOR DATA: QUANTITY/ TYPE	100% LOAD KW INPUT	100% LOAD KW/TON	75% LOAD KW INPUT	75% LOAD KW/TON	50% LOAD KW INPUT	50% LOAD KW/TON	25% LOAD KW INPUT	25% LOAD KW/TON	IPLV	STEPS OF UNLOADING
CH-1	55	MECHANICAL ROOM	SCROLL	43.1	0.764	26.9	0.636	15.8	0.560	7.9	0.560	20.3	4
CH-2	55	MECHANICAL ROOM	SCROLL	43.1	0.764	26.9	0.636	15.8	0.560	7.9	0.560	20.3	4

ITEM	EVAPORATOR DATA: FLUID	E.W.T. (°F)	L.W.T. (°F)	FLOW (GPM)	VELOCITY (FPS)	HEAD (FT. H_2O)	FOULING FACTOR	CONNECTION SIZES (IN.) INLET	CONNECTION SIZES (IN.) OUTLET
CH-1	WATER	54.0°F	44.0°F	135.40	9.07	15.8'	0.00010	2 1/2"	2 1/2"
CH-2	WATER	54.0°F	44.0°F	135.40	9.07	15.8'	0.00010	2 1/2"	2 1/2"

ITEM	CONDENSER DATA: FLUID	E.W.T. (°F)	L.W.T. (°F)	FLOW (GPM)	VELOCITY (FPS)	HEAD (FT. H_2O)	FOULING FACTOR	CONNECTION SIZES (IN.) INLET	CONNECTION SIZES (IN.) OUTLET
CH-1	WATER	85.0°F	95.0°F	169.20	4.26	9.9'	0.00025	4"	4"
CH-2	WATER	85.0°F	95.0°F	169.20	4.26	9.9'	0.00025	4"	4"

ITEM	REFRIGERANT DATA: REFRIGERANT TYPE	CIRCUITS	OPERATING WEIGHT (LBS.)	SINGLE POINT POWER (YES/NO)	ELECTRICAL DATA	MANUFACTURER/ MODEL #	REMARKS
CH-1	R410A	4	2,731	YES	208V/3ø/60HZ	DAIKIN WGZ055D	
CH-2	R410A	4	2,731	YES	208V/3ø/60HZ	DAIKIN WGZ055D	

NOTES:

1) THE CHILLER SHALL BE COMPLETE WITH HOT GAS BYPASS ON EACH REFRIGERATION CIRCUIT.
2) REFER TO THE MECHANICAL SPECIFICATION FOR ADDITIONAL INFORMATION.

VARIABLE FREQUENCY DRIVE SCHEDULE

ITEM	SYSTEM	MOTOR DATA		DRIVE DATA				OPERATING WEIGHT (LBS.)	HEAT DISSIPATED (BTUH)	INTEGRAL CIRCUIT BREAKER (YES/NO)	APPROXIMATE SIZE WxDxH (IN.xIN.xIN.)	MANUFACTURER/ MODEL #	REMARKS
		HP	ELECTRICAL DATA	NOM. HP	RATED AMPS	PULSE	ELECTRICAL DATA						
VFD-CT-1	COOLING TOWER CONDENSER FAN	20	208V/3ø/60HZ	20	100	6	208V/3ø/60HZ	176	1,829	YES	20.9"x15.3"x38.1"	ABB / ACH-550-BCR	NEMA TYPE 3R ENCLOSURE

AIR SEPARATOR SCHEDULE

ITEM	SYSTEM	PRESSURE DROP (FT. W.C.)	DESIGN FLOW (GPM)	FLOW GPM Cv FACTOR	DIMENSIONS (IN.)	SYSTEM CONNECTION (IN.)	MANUFACTURER/ MODEL #	REMARKS
AS-1	CHILLED WATER	2.31'	271	271	14" x 33 5/8"	4"	TACO / 4904AD-125	PROVIDE INTEGRAL DIRT SEPARATOR

PUMP SCHEDULE

ITEM	SYSTEM	TYPE	FLUID TYPE	FLUID FLOW (GPM)	HEAD (FEET)	IMPELLER DIAMETER (IN.)	PIPING CONNECTIONS		PUMP EFFICIENCY (%)	RPM	H.P.	NPSHR (FT. W.C.)	VFD (INTEGRAL, REMOTE, NONE)	ELECTRICAL DATA	MANUFACTURER/ MODEL #	REMARKS
							SUCTION	DISCHARGE								
P-1	CHILLED WATER	CLOSE COUPLED END SUCTION	WATER	271	103'	10.3"	4"	3"	69%	1,760	15	9.0'	NONE	208V/3ø/60HZ	TACO / CI3011	
P-2	CHILLED WATER	CLOSE COUPLED END SUCTION	WATER	271	103'	10.3"	4"	3"	69%	1,760	15	9.0'	NONE	208V/3ø/60HZ	TACO / CI3011	STANDBY
P-3	CONDENSER WATER	CLOSE COUPLED END SUCTION	WATER	340	65'	8.8"	4"	3"	78%	1,760	10	4.0'	NONE	208V/3ø/60HZ	TACO / CI3009C	
P-4	CONDENSER WATER	CLOSE COUPLED END SUCTION	WATER	340	65'	8.8"	4"	3"	78%	1,760	10	4.0'	NONE	208V/3ø/60HZ	TACO / CI3009C	STANDBY

BLADDER EXPANSION TANK SCHEDULE

ITEM	SYSTEM	INITIAL PRESSURE (PSIG.)	MAXIMUM PRESSURE (PSIG.)	VOLUME ACCEPTANCE (GAL)	DIMENSIONS (IN.)	SYSTEM CONNECTION (IN.)	MANUFACTURER/ MODEL #	REMARKS
ET-1	CHILLED WATER	17	50	23	20" x 29 1/8"	1"	TACO / CA90-125	
ET-2	CHILLED WATER	17	50	23	20" x 29 1/8"	1"	TACO / CA90-125	

SVA
SPEARS/VOTTA & Associates, Inc.
MECHANICAL & ELECTRICAL CONSULTING ENGINEERS

ENGINEER'S SEAL

ENGINEER/PE CERTIFICATION STATEMENT
I certify that these documents were prepared or approved by me, and that I am a duly licensed engineer under the laws of the State of Maryland, license number 20461 expiration date, May 26, 2016.

NOTRE DAME PREPARATORY SCHOOL - CHILLER REPLACEMENT
815 HAMPTON LANE
TOWSON, MD 21286

REVISIONS:

NO.	DESCRIPTION	DATE

LAST REV.:
PROJECT NO.: 14091A
DATE: 3/17/2015
SCALE: NONE
TITLE: MECHANICAL DETAILS AND SCHEDULES
SHEET: M 301

SVA#14091A