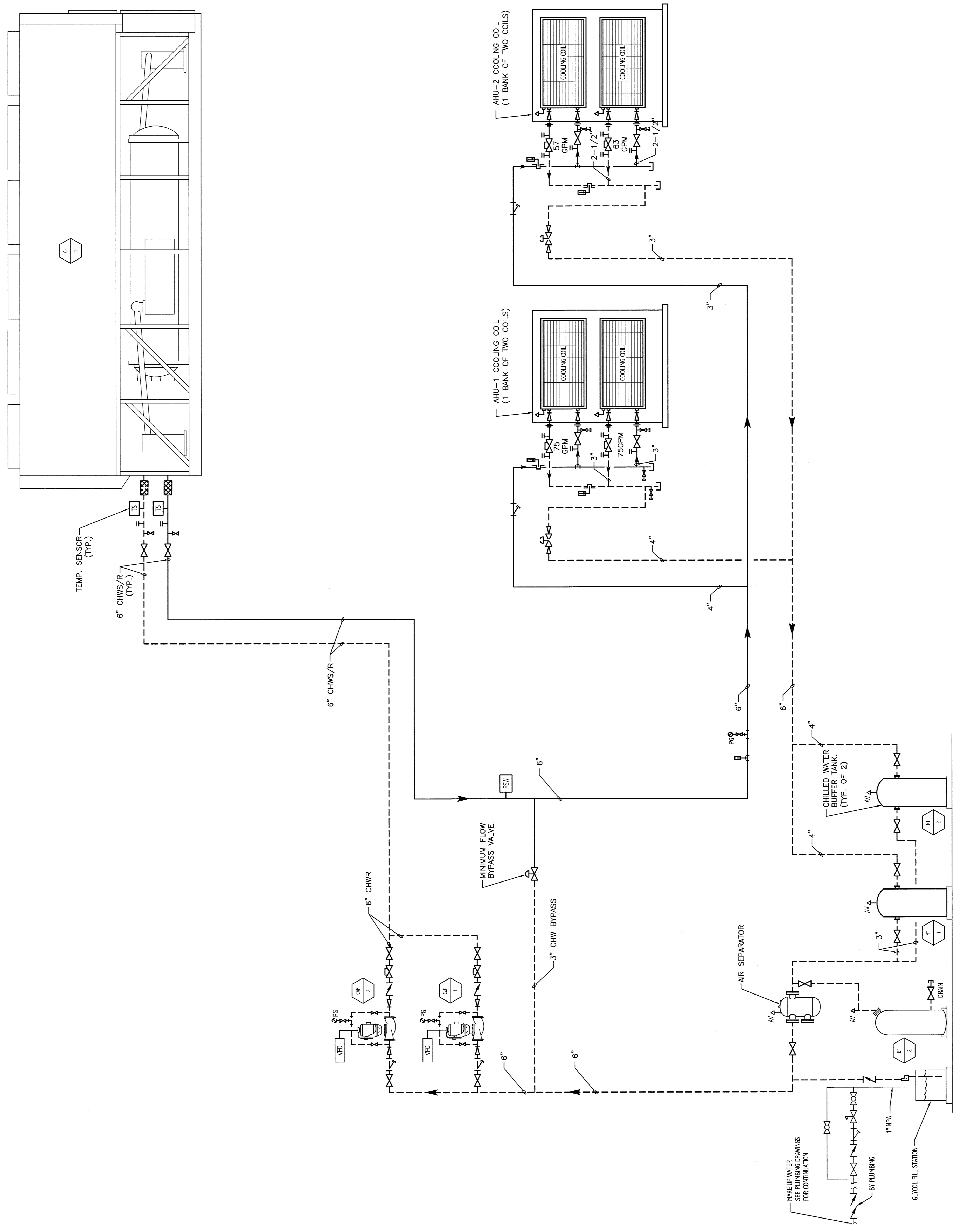


NOTE:

- SEE BOOK FOR PROJECT GENERAL NOTES
- SEE SHEET M-652 FOR LEGEND AND ABBREVIATIONS.

SEQUENCE OF OPERATION:

- WHEN A CHILLED WATER SYSTEM CONTROL VALVE IS OPEN, THE CHILLER CONTROLLER SHALL OPERATE THE BYPASS VALVE TO THE FULL OPEN POSITION. THE BYPASS VALVE SHALL BE OPENED TO PREVENT WATER FROM BEING SHUT OFF TO THE CHILLED WATER SYSTEM. THE BYPASS VALVE SHALL BE OPENED TO PREVENT WATER FROM BEING SHUT OFF TO THE CHILLED WATER SYSTEM. THE BYPASS VALVE SHALL BE OPENED TO PREVENT WATER FROM BEING SHUT OFF TO THE CHILLED WATER SYSTEM.
- THE SYSTEM SETPOINT SHALL BE AT 45 DEGREES F. THE CHILLER CONTROLLER SHALL CONTROL CHILLER SETPOINTS TO MAINTAIN THE SYSTEM SUPPLY WATER TEMPERATURE AT SETPOINT.
- THE CHILLER CONTROLLER SHALL NOT SHUTDOWN PUMPS UNTIL THE CHILLER IS PROVED OFF.
- WHEN A CHILLER FAILS, THE CHILLER SEQUENCING SOFTWARE SHALL LOCKOUT THAT CHILLER AND LOG AN ALARM AT THE USER WORKSTATION.
- CHILLER LEAD/LAG COMPRESSOR SEQUENCING: THE CHILLER CONTROLLER SHALL HAVE THE CAPABILITY OF SEQUENCING THE CHILLER COMPRESSORS. ROTATION SHALL BE INITIATED BASED ON AN OPERATOR ENTERED DAY INTERNAL.
- THE CHILLED WATER PUMPS, CHW-1 AND CHW-2 SHALL OPERATE SUBJECT TO DIFFERENTIAL PRESSURE SENSOR DP-2. AS THE BYPASS VALVE OR INDIVIDUAL COIL CONTROL VALVE OPENS THE PUMP SHALL BE PUMPED UP TO MAINTAIN THE DIFFERENTIAL PRESSURE IN THE "SECONDARY LOOP". PROVIDE ZERO/LOW PUMP AUTOMATIC SHUTDOWN ON A 7 DAY INTERNAL AND ADJUSTION POINT FAILURE.
- CHILLER SOFT START - THE CHILLER SEQUENCING SOFTWARE WILL PROVIDE A USER ADJUSTABLE LOADING TIME AT SYSTEM START-UP. THIS LIMITS SYSTEM ELECTRICAL DEMAND DURING CHILLED WATER LOOP FOLLOW-ON.
- CHILLER MINIMUM FLOW BYPASS VALVE CONTROL (V-3)
 - THE CHILLER MINIMUM FLOW BYPASS VALVE AND VALVE SHALL BE SIZED TO ALLOW FOR THE MANUFACTURER'S RECOMMENDED MINIMUM FLOW WITH ALL LOAD CONTROL VALVES CLOSED FOR THE LARGEST CHILLER IN THE SYSTEM.
 - THE CHILLER MINIMUM FLOW BYPASS VALVE SHALL BE A NORMALLY OPEN VALVE.
 - THE CHILLER MINIMUM FLOW BYPASS VALVE SHALL BE MODULATED TO THE FULLY OPEN POSITION WHEN THE SYSTEM IS SHUTDOWN. THIS SHALL BE DONE TO PREVENT WATER HAMMER WHEN A PUMP IS STOPPED AND TO ALLOW FOR MINIMUM FLOW IN THE EVENT THE CHILLER CALLS FOR PUMP OPERATION.
 - FOLLOWING THE COMPLETED START OF THE CHILLER AND WHENEVER SYSTEM IS ENABLED, CHILLER CONTROL SYSTEM SHALL MODULATE THE CHILLER MINIMUM FLOW BYPASS VALVE SUCH THAT THE CHILLED WATER FLOW THROUGH ANY OPERATING CHILLERS SHALL NOT DROP BELOW THE MANUFACTURER'S RECOMMENDED MINIMUM FLOW.
 - THE CHILLER MINIMUM FLOW SHALL BE DETERMINED BASED ON THE PRESSURE DROP ACROSS THE CHILLER EVAPORATOR BARREL USING A HIGH ACCURACY DIFFERENTIAL PRESSURE SENSOR. THE DIFFERENTIAL PRESSURE SETPOINT SHALL BE DETERMINED BASED ON THE MANUFACTURER'S CHILLER PRESSURE DROP RATING CURVES.
- PROVIDE MONITORING OF ALL POINTS AVAILABLE AT THE CHILLER CONTROL PANEL. A COMMUNICATION GATEWAY SHALL BE PROVIDED WITH THE CHILLER IF NECESSARY.



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MECHANICAL
CHILLED WATER SYSTEM SCHEMATIC

SHEET TITLE:	DATE:
SCALE:	AS NOTED
PROJECT MANAGER:	SLB
JOB CAPTAIN:	TCC
DATE OF RECORD:	M-652-0819
SHIFT CAPTION:	0819
PROJECT No.:	M-652

ISSUED FOR G.M.P. & PERMITTING
4-3-09

CURRENT ISSUE STATUS:

A1 CHILLED WATER SYSTEM SCHEMATIC

NOT TO SCALE

PROGRESS PRINT