

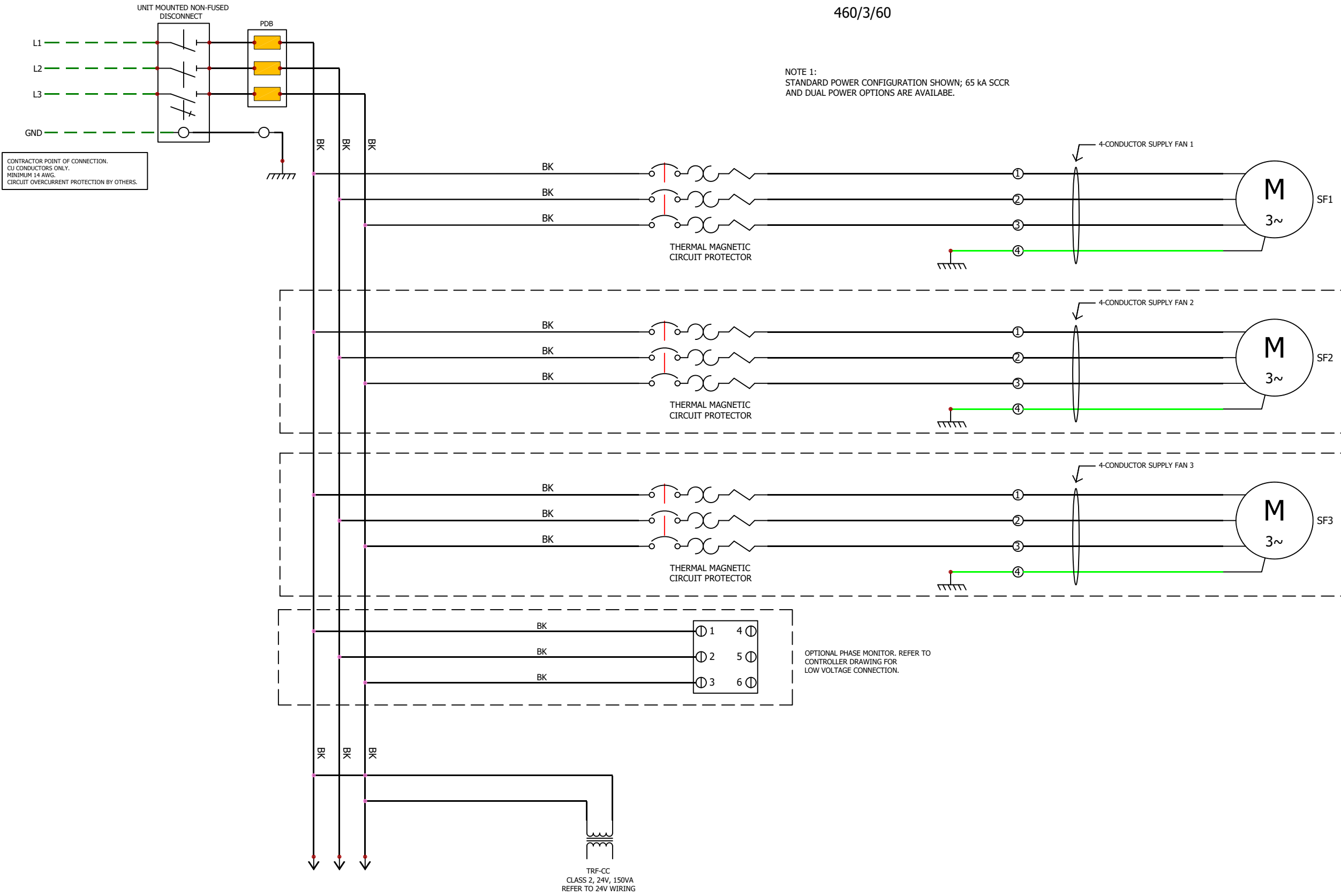
MC2 Sample Wiring - Water Cooled

Document book

0	6/7/2019		
REV.	DATE	NAME	CHANGES
			AboveAir Technologies, LLC 5179 Mountville Rd. Frederick, MD 21703
			REVISION 0
			CONTRACT:
			SCHEME 22

460/3/60

NOTE 1:
STANDARD POWER CONFIGURATION SHOWN; 65 kA SCCR
AND DUAL POWER OPTIONS ARE AVAILABLE.



CONTRACTOR POINT OF CONNECTION.
CU CONDUCTORS ONLY.
MINIMUM 14 AWG.
CIRCUIT OVERCURRENT PROTECTION BY OTHERS.

NOTE 2:
TWO SUPPLY FANS REQUIRED
FOR UNITS 42 kW (12.0T) -
70 kW (20.0T) CAPACITY

NOTE 3:
THREE SUPPLY FANS REQUIRED
FOR UNITS 88 kW (25.0T) -
105 kW (30.0T) CAPACITY

OPTIONAL PHASE MONITOR. REFER TO
CONTROLLER DRAWING FOR
LOW VOLTAGE CONNECTION.

TRF-CC
CLASS 2, 24V, 150VA
REFER TO 24V WIRING

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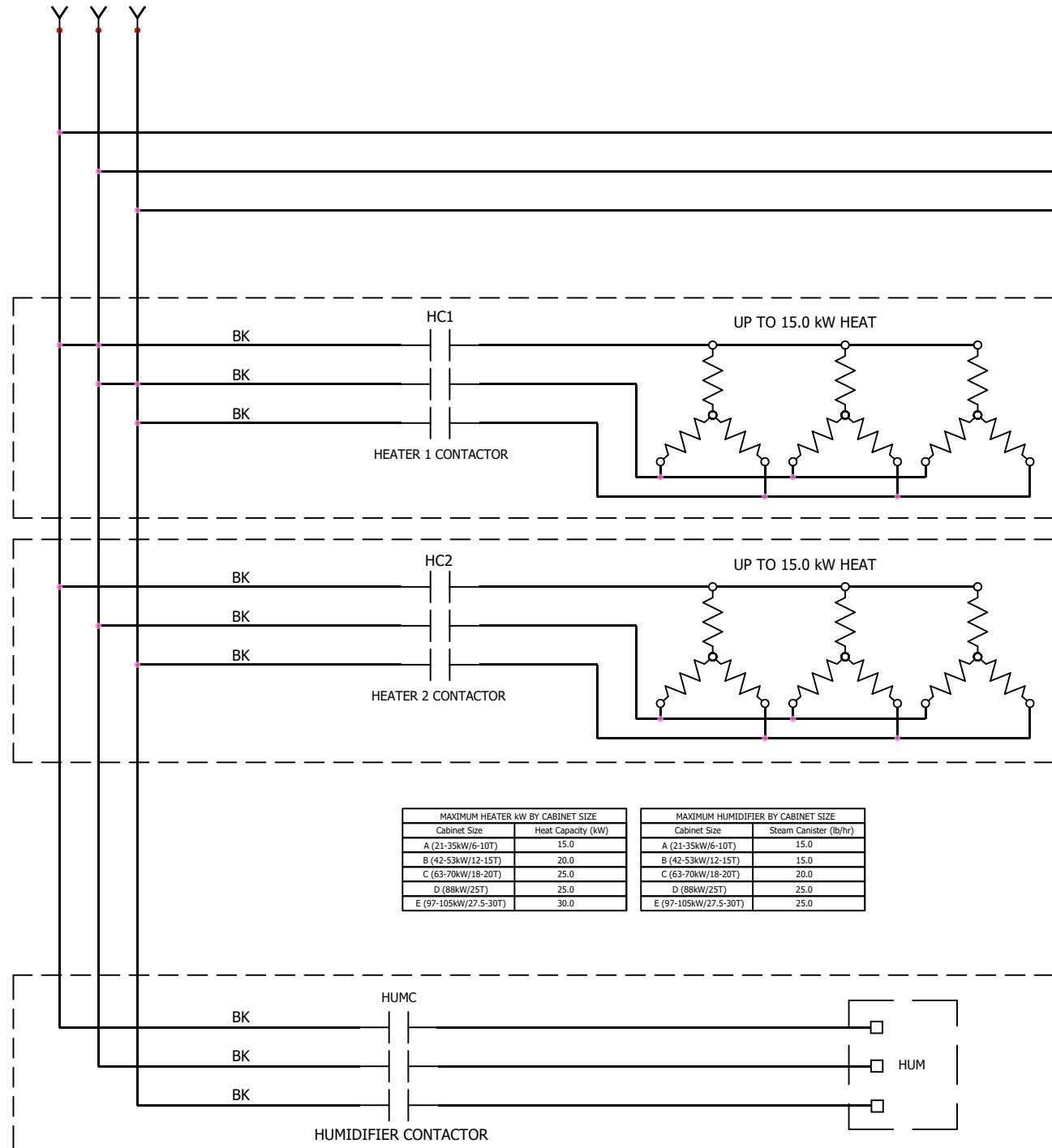
Fan Power
Main Power: 460/3/60

CONTRACT:

LOCATION: L1

Main electrical closet

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0	7/16/2019			
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				05

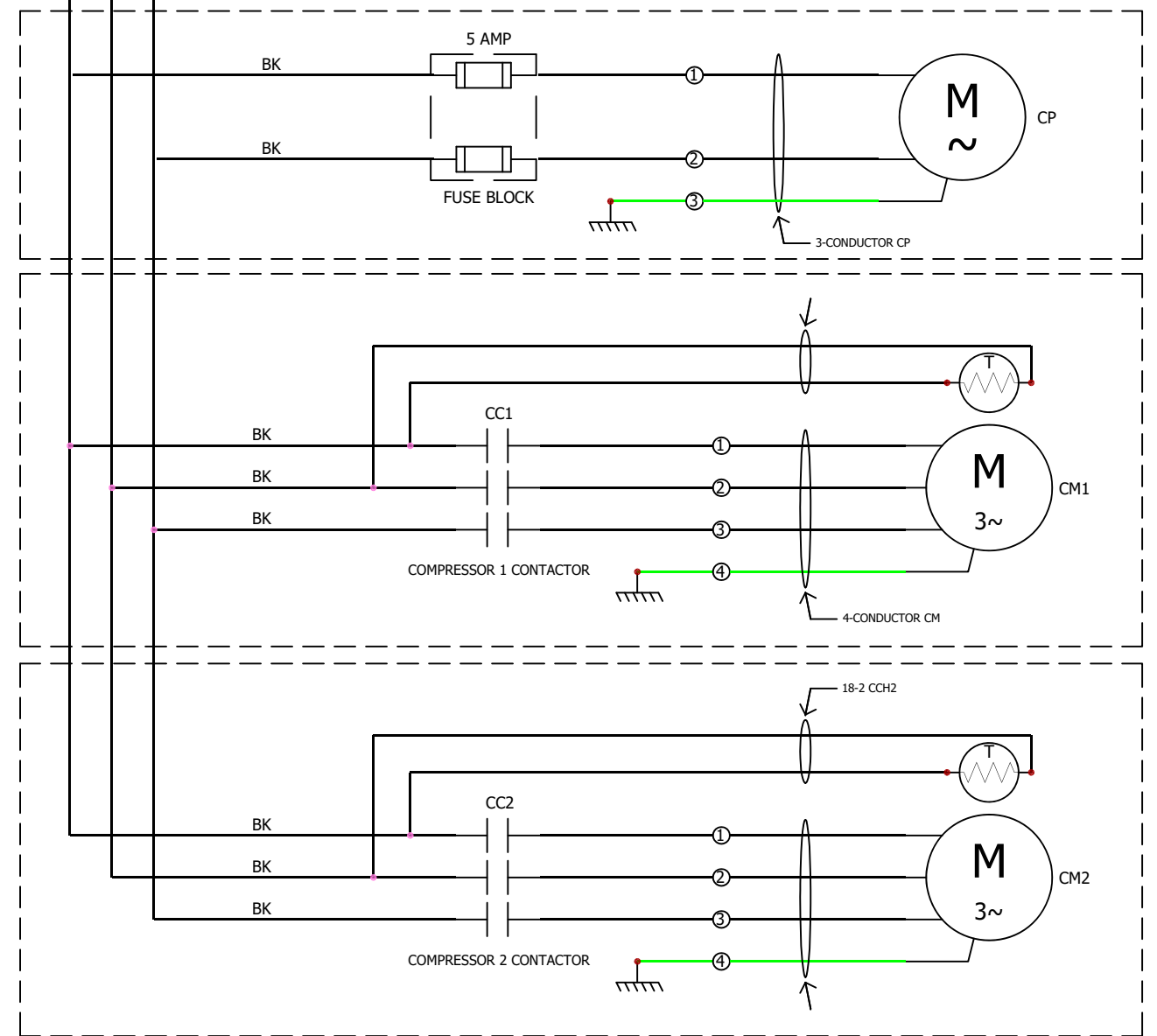


MAXIMUM HEATER kW BY CABINET SIZE		MAXIMUM HUMIDIFIER BY CABINET SIZE	
Cabinet Size	Heat Capacity (kW)	Cabinet Size	Steam Canister (lb/hr)
A (21-35kW/6-10T)	15.0	A (21-35kW/6-10T)	15.0
B (42-53kW/12-15T)	20.0	B (42-53kW/12-15T)	15.0
C (63-70kW/18-20T)	25.0	C (63-70kW/18-20T)	20.0
D (88kW/25T)	25.0	D (88kW/25T)	25.0
E (97-105kW/27.5-30T)	30.0	E (97-105kW/27.5-30T)	25.0

OPTIONAL UNIT MOUNTED ELECTRIC HEAT POWER WIRING

OPTIONAL UNIT MOUNTED ELECTRIC HEAT POWER WIRING

OPTIONAL UNIT MOUNTED HUMIDIFIER POWER WIRING



OPTIONAL UNIT POWERED, UNIT MOUNTED CONDENSATE PUMP POWER WIRING

DX SYSTEM CIRCUIT 1 COMPRESSOR 1 & CRANKCASE HEATER POWER WIRING

DX SYSTEM CIRCUIT 2 COMPRESSOR 2 & CRANKCASE HEATER POWER WIRING

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Heat & Accessory Power

Main Power: 460/3/60

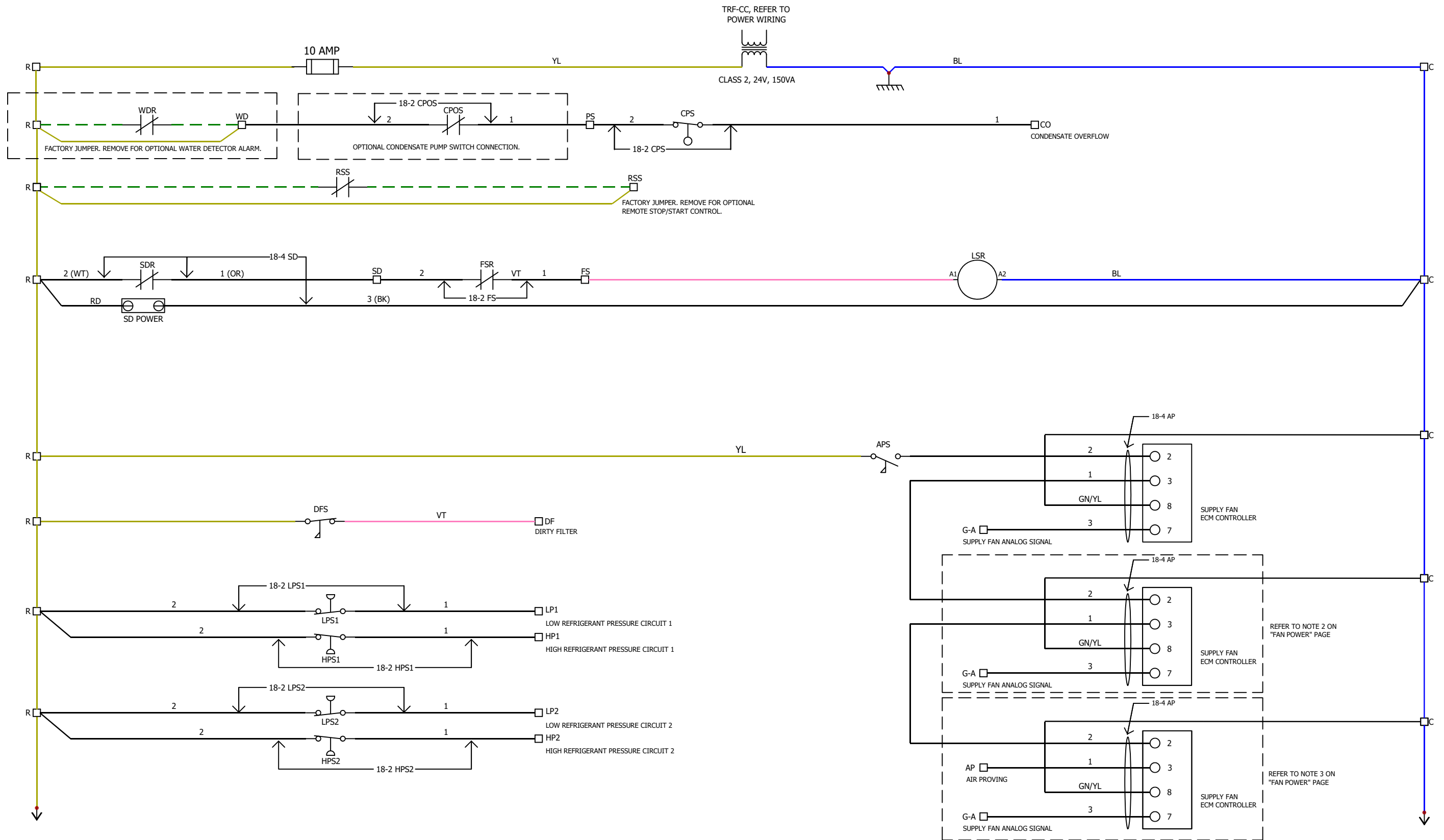
CONTRACT:

LOCATION: **L1** Main electrical closet

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			— 4-CONDUCTOR CM

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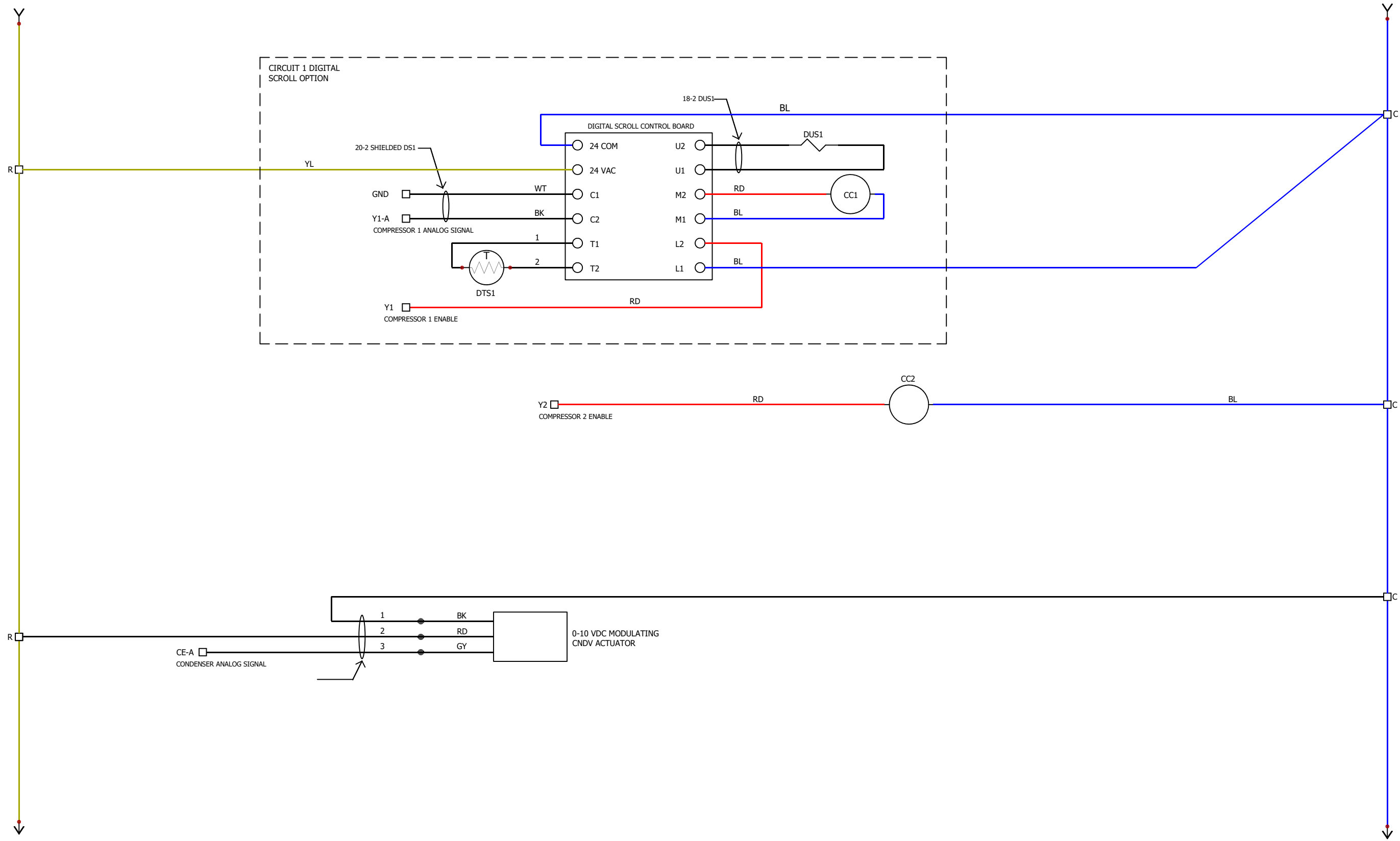
24V Safety & Fan

CONTRACT:

LOCATION: L1

Main electrical closet

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24V Cooling

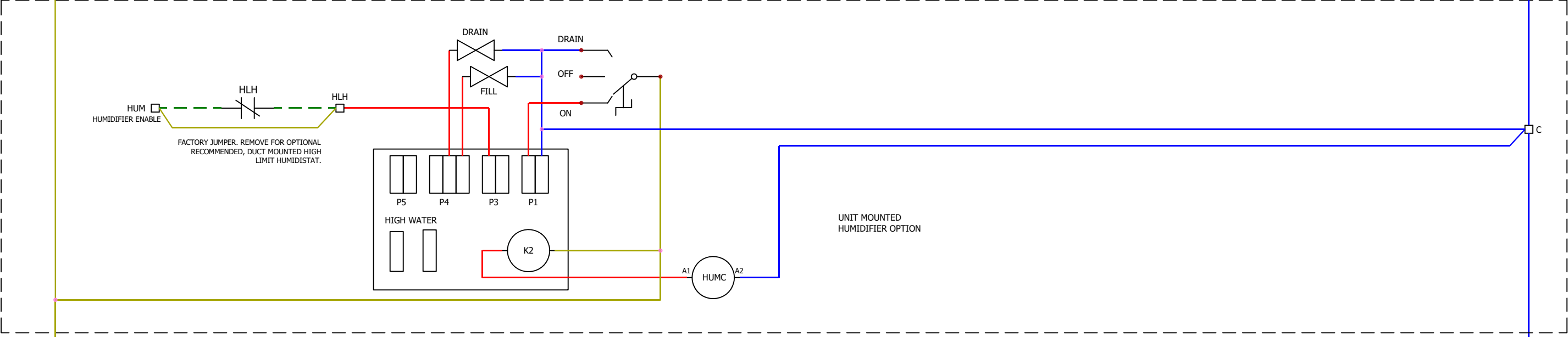
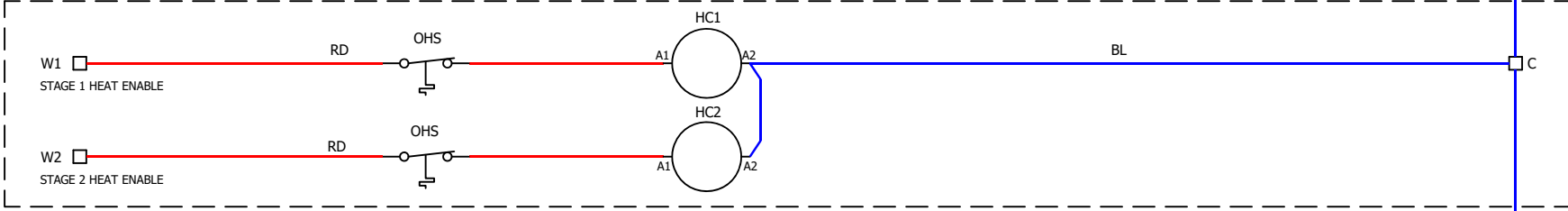
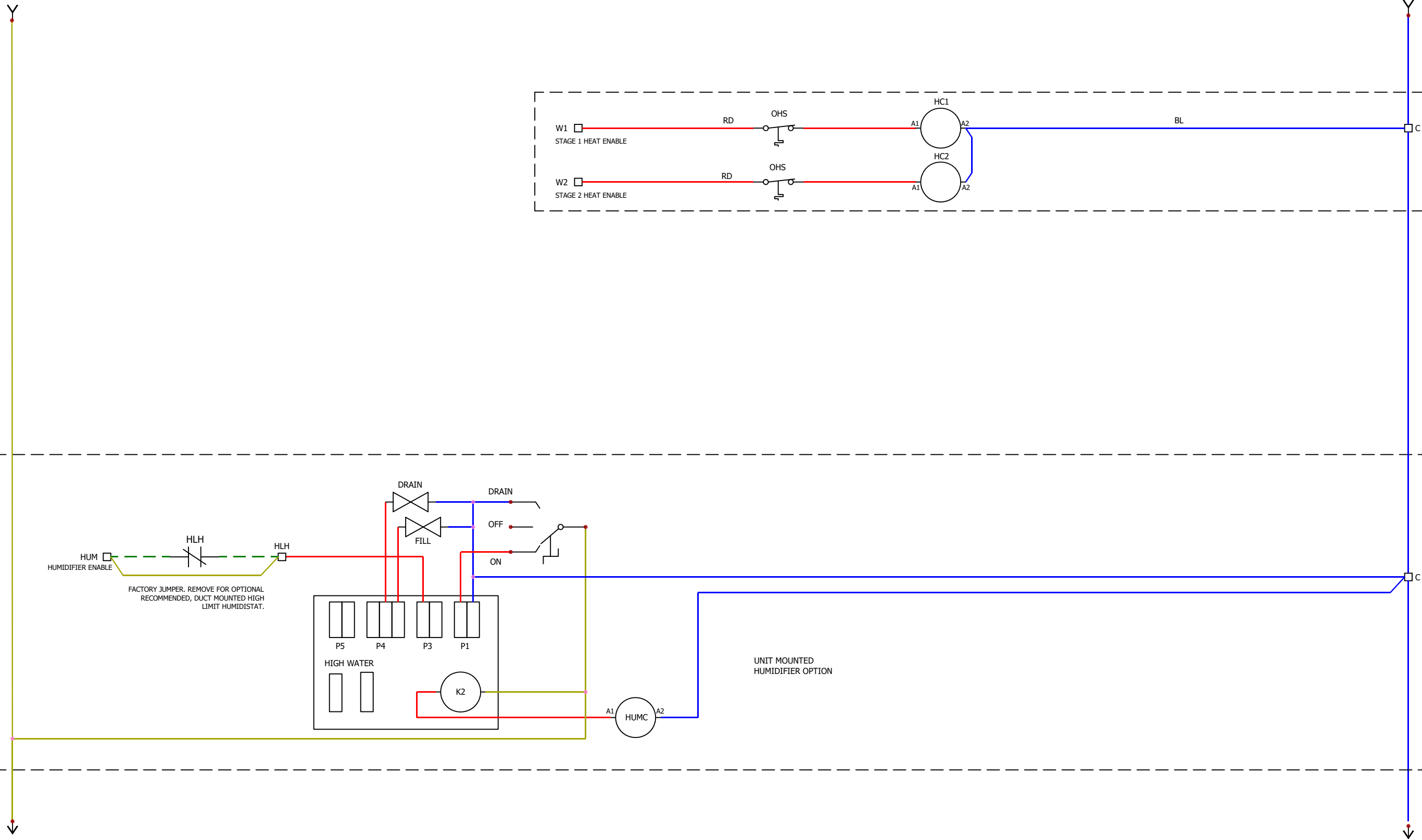
CONTRACT:

LOCATION: **L1**

Main electrical closet

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24V Heat & Humidification

CONTRACT: LOCATION: **L1** Main electrical closet

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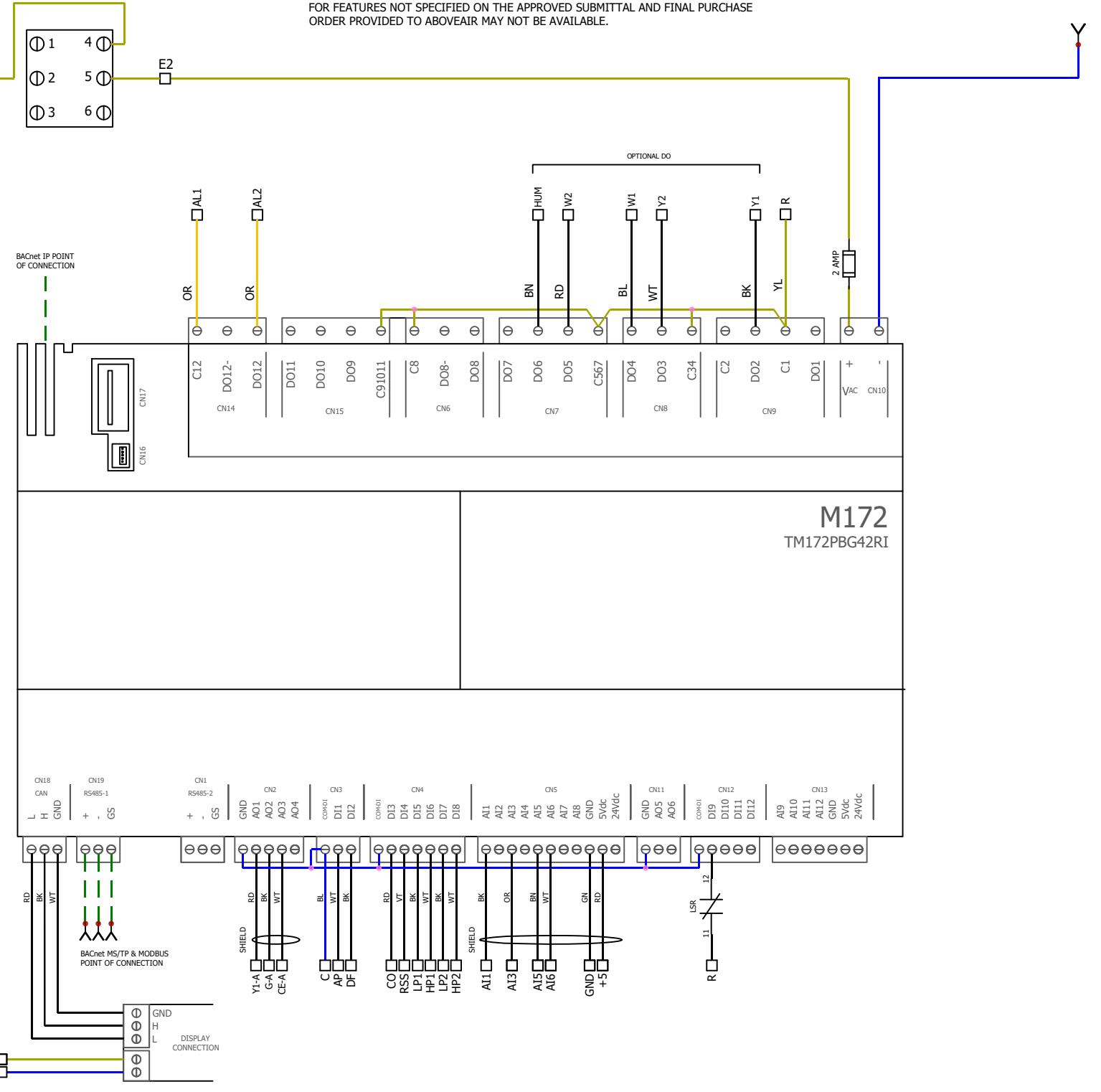
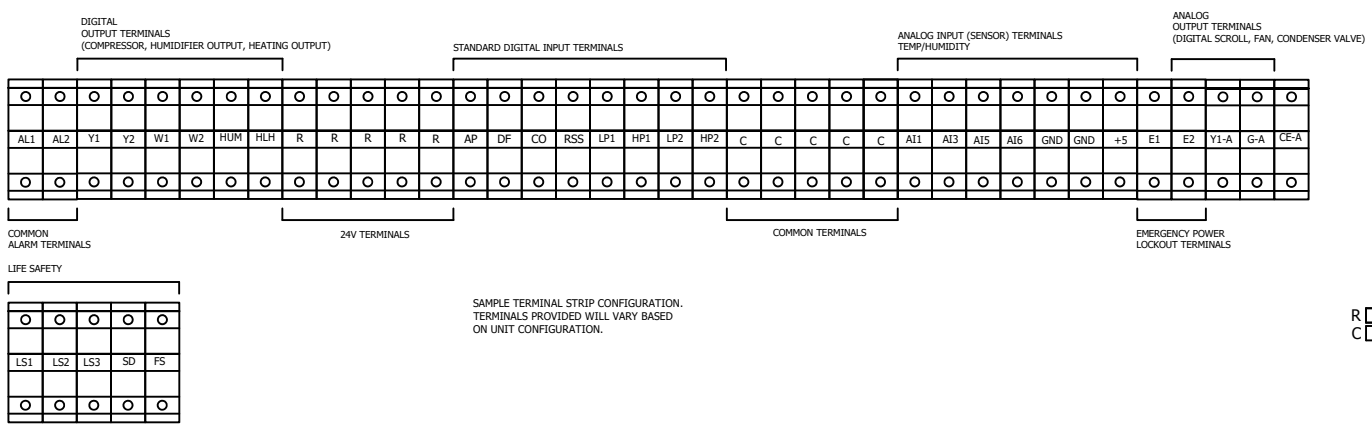
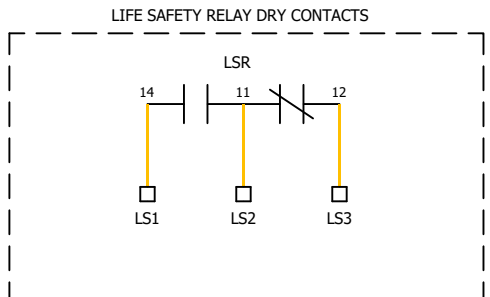
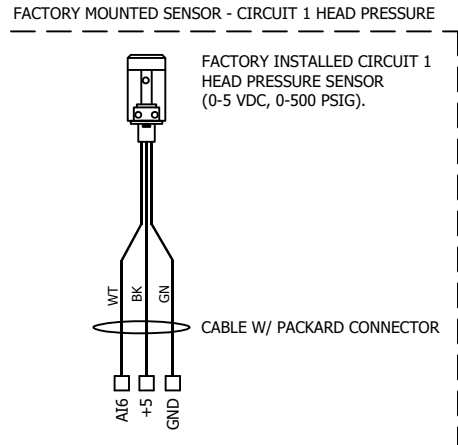
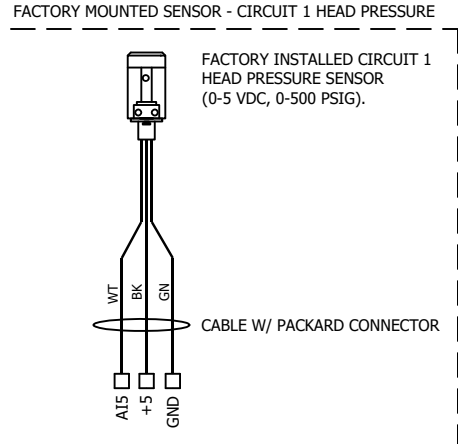
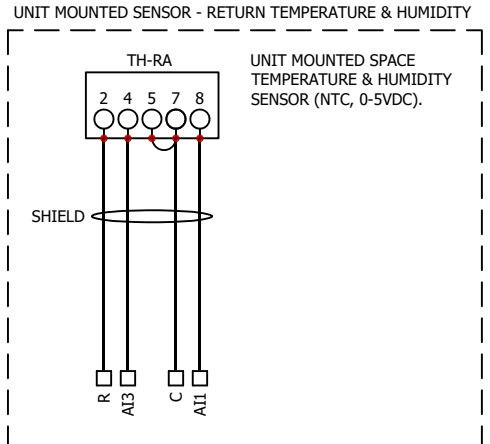
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NOTE 4:

THIS DRAWING DEPICTS A TYPICAL, MINIMUM CONTROLLER CONFIGURATION. FINAL IO AND MODULES INSTALLED IN THE UNIT WILL BE DETERMINED BASED ON THE FEATURES PURCHASED AND REQUIRED IO CONNECTIONS. SPARE IO FOR FEATURES NOT SPECIFIED ON THE APPROVED SUBMITTAL AND FINAL PURCHASE ORDER PROVIDED TO ABOVEAIR MAY NOT BE AVAILABLE.

NOTE 5:

FINAL SENSOR CONFIGURATIONS ARE DEPENDENT ON UNIT CONTROL SEQUENCE, SUBMITTAL AND PURCHASE ORDER DETAILS.



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Sample Control Wiring

Control Sequence: MC-2000S UH

CONTRACT:

LOCATION: **L1** Main electrical closet

REV.	DATE	NAME	CHANGES
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LEGEND

	DISPLAY CABLE (FACTORY WIRED)
	DISPLAY CABLE (FIELD WIRED)
	FIELD WIRING
	FACTORY JUMPER OR AUX DEVICE
	24V POWER
	COMMON
	24V CONTROL INPUT
	24V CONTROL OUTPUT
	ALARM/DRY CONTACT
	SHIELDED CABLE

	GROUND
	REFRIGERANT PRESURE SWITCH (OPEN ON PRESSURE DECREASE)
	REFRIGERANT PRESSURE SWITCH (OPEN ON PRESSURE INCREASE)
	NORMALLY OPEN CONTACTS
	NORMALLY CLOSED CONTACTS
	DIFFERENTIAL PRESSURE SWITCH (OPEN ON PRESSURE INCREASE)
	DIFFERENTIAL PRESSURE SWITCH (CLOSE ON PRESSURE INCREASE)
	OVERHEAT SWITCH (HEATER SAFETY SWITCH)
	DEFROST SWITCH
	VALVE/ SOLENOID
	ON/OFF/AUTO SWITCH
	RELAY OR CONTACTOR HOLDING COIL
	RESISTIVE HEAT
	TERMINAL

GENERAL POWER NOTES

- REFER TO UNIT NAMEPLATE FOR ELECTRICAL RATING INFORMATION.
- FIELD WIRING MUST BE IN ACCORDANCE WITH NEC/NFPA 70 AND ALL APPLICABLE LOCAL CODES.
- MAINTAIN MINIMUM 3 FEET CLEAR IN FRONT OF ELECTRICAL BOX OR GREATER AS REQUIRED BY CODE.
- DO NOT ROUTE POWER WIRING WITH CONTROL WIRING.
- ELECTRICAL BOX MAY BE HINGED. INSTALL ALL WIRING WITH PROPER STRAIN RELIEF AND ROUTING TO ALLOW BOX TO ROTATE FREELY ON ITS HINGE WHERE APPLICABLE.
- UNIT IS PHASE CHECKED AT FACTORY. IF FAN OR COMPRESSOR IS RUNNING BACKWARDS, CHANGE PHASING AT MAIN POWER BLOCK ONLY. DO NOT REPHASE INDIVIDUAL COMPONENTS.

COMMON POWER ABBREVIATIONS

CAP	CAPACITOR
CC#	COMPRESSOR CONTACTOR 1,2,...
CM#	COMPRESSOR MOTOR 1,2,...
CNDC/R#	CONDENSER CONTACTOR/RELAY 1,2,...
CNDM#	CONDENSER MOTOR 1,2,...
CP	CONDENSATE PUMP
CPHT	CONDENSATE PAN HEAT TAPE
DTS#	DISCHARGE TEMPERATURE SWITCH 1,2,...
DUS#	DIGITAL UNLOADER SOLENOID 1,2,...
ECM	ELECTRONICALLY COMMUTATED MOTOR
EVPC/R	EVAPORATOR CONTACTOR/RELAY
HGRV	HOT GAS REHEAT VALVE
HGS#	HOT GAS SOLENOID 1,2,...
HC/R#	HEATER CONTACTOR/RELAY 1,2,...
HUM	HUMIDIFIER
HUMC	HUMIDIFIER CONTACTOR
MPC#	MAIN POWER CONTACTOR 1, 2,...
SF	SUPPLY FAN
TRF#	TRANSFORMER 1,2,...
VFD	VARIABLE FREQUENCY DRIVE

ANALOG OUTPUT (0-10VDC) LABELS

AE-A	AIRSIDE ECONOMIZER
CE-A	CONDENSER VALVE/FAN
FE-A	FREE-COOLING VALVE
G-A	SUPPLY FAN
PH-A	PRE-HEAT
RH-A	HOT GAS REHEAT
W1-A	ELECTRIC/HOT WATER/STEAM HEAT
Y1-A	DIGITAL SCROLL COMPRESSOR 1/MODULATING CHILLED WATER VALVE

GENERAL CONTROL NOTES

- VDC SIGNALS ARE POLARITY SENSITIVE. FAILURE TO OBSERVE POLARITY MAY RESULT IN IMPROPER OPERATION AND DAMAGE TO SENSORS OR OTHER DEVICES.
- SENSOR CONNECTIONS SHOULD USE SHIELDED, MULTI-CORE CABLE WITH 3-5 CONDUCTORS. THE FOLLOWING WIRE SIZES ARE ACCEPTABLE:
 - UP TO 200': 20 AWG
 - 201' - 350': 18 AWG
 - 351' - 500': 16 AWG
- 24VAC AND COMMON TERMINALS CONNECTED VIA CENTRAL JUMPER.
- DISPLAY TERMINAL DOES NOT CONTAIN SENSORS. CABLE FOR CONNECTION IS PROVIDED BY THE FACTORY.
- ALL DEVICES ARE WIRED THROUGH NC CONTACTS AND ALARM ON LOSS OF 24VAC SIGNAL.
- FACTORY INSTALLED JUMPERS MUST REMAIN IN PLACE OR BE WIRED THROUGH THE INDICATED DEVICE.
- VALVES, SCR HEATERS, AND OTHER DEVICES MAY BE FACTORY MOUNTED OR FIELD WIRED. REFER TO YOUR SUBMITTAL FOR MORE INFORMATION.
- FIELD SUPPLIED DAMPERS, VALVES, SOLENOIDS, ETC. MAY NOT BE POWERED FROM UNIT'S TRANSFORMERS UNLESS SPECIFICALLY NOTED.

COMMON CONTROL ABBREVIATIONS

ACR	AUTO CHANGEOVER RELAY
ALR	ALARM RELAY
APS	AIR PROVING SWITCH
ASE	AIR SIDE ECONOMIZER
CC#	COMPRESSOR CONTACTOR 1,2,...
CLR	COMPRESSOR LOCKOUT RELAY
CNDC/R#	CONDENSER CONTACTOR/RELAY 1,2,...
CNDV	CONDENSER VALVE
CO	CONDENSATE OVERFLOW
COR	CONDENSATE OVERFLOW RELAY
CPOS	CONDENSATE PUMP OVERFLOW SWITCH
CPS	CONDENSATE PAN SWITCH
CWV	CHILLED WATER VALVE
DER	DAMPER ENABLE RELAY
DFS	DIRTY FILTER SWITCH
DFT	DEFROST TEMPERATURE SENSOR
DTS#	DISCHARGE TEMPERATURE SWITCH 1,2,...
DUS#	DIGITAL UNLOADER SOLENOID 1,2,...
ESR	EMERGENCY SHUTOFF RELAY
EVPC/R	EVAPORATOR CONTACTOR/RELAY
FCS	FAN CYCLING SWITCH
FCV	FREECOOL VALVE
FRZ	FREEZESTAT
FS	FIRESTAT
HGRV	HOT GAS REHEAT VALVE
HGS#	HOT GAS SOLENOID 1,2,...
HC/R#	HEATER CONTACTOR/RELAY 1,2,...
HLR	HUMIDIFIER LOCKOUT RELAY
HUMC	HUMIDIFIER CONTACTOR
HPS#	HIGH PRESSURE SWITCH 1,2,...
HWV	HOT WATER VALVE
LLS#	LIQUID LINE SOLENOID 1,2,...
LPS#	LOW PRESSURE SWITCH 1,2,...
LSR	LIFE SAFTEY RELAY
MPC#	MAIN POWER CONTACTOR 1,2,...
OHS	OVERHEAT SWITCH
PDB	POWER DISTRIBUTION BLOCK
PE	PUMP ENABLE
RSS	REMOTE STOP/START
REV#	REVERSING VALVE SOLENOID 1,2,...
SD	SMOKE DETECTOR
STV	STEAM VALVE
TRF#	TRANSFORMER 1,2,...
VFD	VARIABLE FREQUENCY DRIVE
WD/R	WATER DETECTOR/RELAY
WFS/R	WATER FLOW SWITCH/RELAY

SECTION N/A

AboveAir Technologies, LLC 5179 Mountville Rd. Frederick, MD 21703	<h2 style="margin: 0;">Wiring Notes</h2>				REVISION		
					0		
CONTRACT:	LOCATION: L1	Main electrical closet	REV.	DATE	NAME	CHANGES	SCHEME
			0	2/19/2019			
			ENGR: JPN		ENG MGR: MCR		