

Contra Costa College Chiller Replacement

2600 Mission Bell Dr.

San Pablo, CA 94806

As Prepared By:



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PROJECT TEAM

Client Name: Contra Costa Community College
Owner:
Architect:
MEP Engineer:
Consulting Engineer:
Construction Manager:
General Contractor:
Mechanical Contractor:

Sunbelt Design Engineer: Christoffer Gonzales PY
Sunbelt Project Manager: 866303
Project Number: As-Built
Drawing Designation: 5/17/2017
Drawing Date:

0	AS-BUILT	05/17/17	NS
REV	DESCRIPTION	DATE	BY

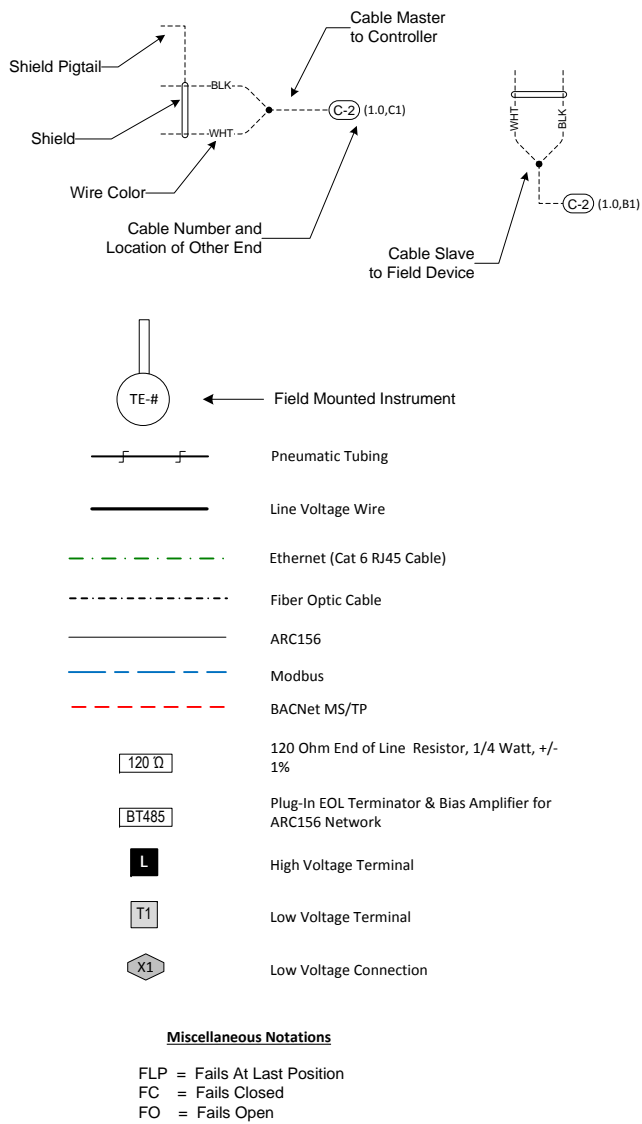
REVISION

Project:

Programmer

Lead Technician

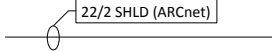
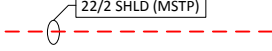
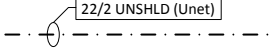
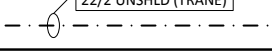
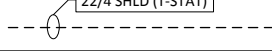
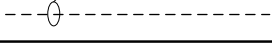
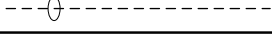
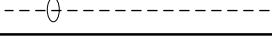
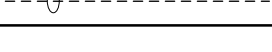
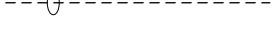
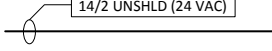
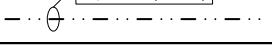
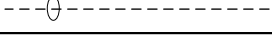
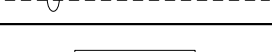
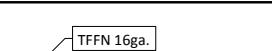

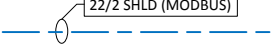
LEGEND



TAG DESCRIPTIONS

AA	Remote Annunciator Module & Auto Dialer	P	Pressure Probe
ALC	Automated Logic Controller	PDS	Pressure Differential Switch
ASA	Smoke Detector	PDT	Pressure Differential Transmitter
CR	Control Relay	PS	Pressure Switch
ENC	Enclosure	PT	Pressure Transmitter
ES	Direct Current Power Supply	QT	Gas Transmitter
FCV	Flow Control Valve / Damper Actuator	ST	Speed Transmitter
FE	Flow Element	SUB	Subpanel
FS	Flow Switch	TE	Temperature Element
FT	Flow Transmitter	TS	Temperature Switch
G	Generic Device	TSH	Temperature Switch High
IP	Electro-Pneumatic Transducer	TSL	Temperature Switch Low
IS	Current Switch	TT	Temperature Transmitter
ISE	Circuit Breaker	TY	Dew Pt./Enthaply/Wet Bulb Transducer
IT	Current Transducer	V	Valve
JT	BTU Meter	VT	Vibration Transmitter / Switch
JY	Power Meter	X	Unclassified
KS	Electronic Timeclock	XF	Transformer
LS	Level Switch	YKS	Position Transmitter
LT	Level Transmitter	YL	Position Transmitter
MS	Humidistat	YS	Leak Detector
MT	Humidity Transmitter	YSE	Emergency Stop
MTE	Humidity Transmitter w/ Temperature Element	YY	Transducer
MTT	Humidity Transmitter w/ Temperature Transmitter	ZS	Position Indicating Switch
N	Accessories	ZT	Position Transmitter
NY	Network Device		

SUNBELT CONTROLS STANDARD CABLE SPECIFICATIONS AND ABBREVIATIONS

Cable Line Types	Part Number	Wire Type	Manufacturer	Typical Application	Circuit Type	Color
	W221P-2227 (GREEN JACKET) or W221P-2227SUNBELT(ORANGEJACKET) or Sunbelt Controls approved equivalent. W221P-1876 for wet locations.	22 AWG / 2 Conductors; Stranded, shielded, plenum rated & twisted pair. Low Capacitance	Connect Air 209-221-6900	ARC156	NET+ NET-	WHITE BLACK WITH GREEN JACKET. USE ORANGE JACKET FOR SUB-NETWORKS
	W221P-2044B (BLUE JACKET)	22 AWG / 2 Conductors; Stranded, shielded, plenum rated & twisted pair.	Connect Air 209-221-6900	BACnet MS/TP	NET+ NET-	BLACK RED WITH BLUE JACKET
	W221P-2005PNKB or Sunbelt Controls approved equivalent.	22 AWG / 2 Conductors; Stranded, unshielded, plenum rated & twisted pair.	Connect Air 209-221-6900	UNET	UNET + UNET -	WHITE BLACK WITH PINK JACKET
	W221P-2001YB or Sunbelt Controls approved equivalent.	22 AWG / 2 Conductors; Stranded, unshielded, plenum rated & twisted pair. Low Capacitance	Connect Air 209-221-6900	TRANE COMMS	NET + NET - CLASS 2 WIRING ONLY	RED BLACK WITH YELLOW JACKET
	W224C-2020SUNBELT or Sunbelt Controls approved equivalent.	22 AWG / 4 Conductors; Stranded, shielded, plenum rated & double pair.	Connect Air 209-221-6900	AUTOMATED LOGIC T-STAT	12V GND NET+ NET-	(PAIR 1) RED BLACK (PAIR 2) WHITE GREEN PURPLE JACKET
	W181P-2051SUNBELT or Sunbelt Controls approved equivalent.	18 AWG / 2 Conductors; Stranded, unshielded, plenum rated & twisted pair.	Connect Air 209-221-6900	I/O WIRING	INA INB CLASS 2 WIRING ONLY	RED BLACK WITH WHITE JACKET / PURPLE STRIPE
	W181P-2040BB/R or Sunbelt Controls approved equivalent.	18 AWG / 2 Conductors; Stranded, shielded, plenum rated & twisted pair.	Connect Air 209-221-6900	I/O WIRING	INA INB CLASS 2 WIRING ONLY	RED BLACK WITH WHITE JACKET
	W183C-2052SUNBELT or Sunbelt Controls approved equivalent.	18 AWG / 3 Conductors; Stranded, unshielded, plenum rated.	Connect Air 209-221-6900	I/O WIRING	CLASS 2 WIRING ONLY	BLACK, WHITE, RED WITH WHITE JACKET / ORANGE STRIPE
	W184C-2099B or Sunbelt Controls approved equivalent.	18 AWG / 4 Conductors; Stranded, unshielded, plenum rated.	Connect Air 209-221-6900	I/O WIRING	CLASS 2 WIRING ONLY	BLACK, WHITE, RED, GREEN WITH WHITE JACKET
	W186C-2054B W188C-2046B W1810C-2078B W1812C-2148B or Sunbelt Controls approved equivalent.	18 AWG / 6 Conductors; Stranded, unshielded, plenum rated 18 AWG / 8 Conductors. 18 AWG / 10 Conductors. 18 AWG / 12 Conductors.	Connect Air 209-221-6900	I/O WIRING	CLASS 2 WIRING ONLY	BLACK, RED, WHITE, GREEN, BROWN, BLUE ORANGE, YELLOW, VIOLET, GRAY, PINK, TAN. WITH WHITE JACKET
	W141P-2013SUNBELT or Sunbelt Controls approved equivalent.	14 AWG / 2 Conductors; Stranded, unshielded, plenum rated.	Connect Air 209-221-6900	POWER WIRING	24 VAC POWER TO FIELD DEVICES (T1) 24 VAC NEUTRAL TO FIELD DEVICES (T2) 24 VAC POWER TO FIELD DEVICES (T3) 24 VAC NEUTRAL TO FIELD DEVICES (T4)	RED BLACK WHITE JACKET / RED STRIPE
	W181P-2040PRB or Sunbelt Controls approved equivalent.	18 AWG / 2 Conductors; Stranded, shielded, plenum rated & twisted pair.	Connect Air 209-221-6900	COMMUNICATION RS-485 2-WIRE, TRANE	NET+ OR TX OR + NET- OR RX OR -	WHITE BLACK WITH PURPLE JACKET
	W183C-2058B or Sunbelt Controls approved equivalent.	18 AWG / 3 Conductors; Stranded, shielded, plenum rated.	Connect Air 209-221-6900	I/O WIRING REQUIRING SHIELDING	CLASS 2 WIRING ONLY	BLACK, WHITE, RED WITH WHITE JACKET
	W184C-2059YRB or Sunbelt Controls approved equivalent.	18 AWG / 4 Conductors; Stranded, shielded, plenum rated.	Connect Air 209-221-6900	COMMUNICATIONS RS-485 4-WIRE 4-WIRE MODBUS I/O WIRING REQUIRING SHIELDING	CLASS 2 WIRING ONLY	BLACK, WHITE, RED, GREEN WITH YELLOW JACKET
	W224P-2175B or Sunbelt Controls approved equivalent W222P-1005LT for wet locations	24 AWG / 4 Pairs, twisted plenum rated.	Connect Air 209-221-6900	NETWORK WIRE	NETWORK COMMUNICATIONS	BLUE JACKET
	W161C-1293 or Sunbelt Controls approved equivalent.	16 AWG TFFN stranded wire.	Connect Air 209-221-6900	Control Panel Interior Wire	120VAC Hot; 120VAC Neutral; GROUND 24VAC H Power to Controllers (T1); 24VAC N Power to Controllers (T2); 24VAC H Power to Field Devices. (T3); 24VAC N Power to Field Devices. (T4); Inputs (DIs, AIs); Digital Outputs (DOs); Analog Outputs (AOs); Common from Powered AOs; 24VDC+	BLACK; WHITE; GREEN or GREEN/YELLOW; BLUE; WHITE; RED; WHITE; YELLOW ORANGE; BROWN; BLACK; RED
	W221P-2227YEL	22 AWG / 2 Conductors; Stranded, shielded, plenum rated & twisted pair. Low Capacitance	Connect Air 209-221-6900	MODBUS COMMUNICATION	NET+ NET-	WHITE BLACK WITH YELLOW JACKET

Note: No cable substitutions without prior written approval from Sunbelt Controls Controls.

Abbreviations

- AWG

CAT-5, 5e, 6, 6e

EIA-232

EIA-485

G or GND

I/O

INA

INB

LS5V

NET-

NET+

RX-

RX+

ST / SC

TEMP

TFFN

TX-

TX+

VAC

VDC+
- American Wire Gauge

- Ethernet Cable

- Communications Protocol

- Communications Protocol

- Ground

- Input/Output

- Input A

- Input B

- +5vdc Logistat

- ARCnet comm. -

- ARCnet comm. +

- Receive -

- Receive +

- Fiber Optic Connector

- Temperature

- A thermoplastic-insulated, nylon-jacketed conductor signed for use in dry locations and an operating temperature of up to 90 degrees Celsius.

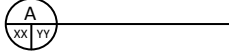

- Transmit -

- Transmit +

- Voltage Alternating Current

- Voltage Direct Current, Positive side.

Detail Reference Guide



XX = Page # of Reference (May be multiple instances per wiring detail).

A = Unique Reference Symbol


YY = Page # of Wiring Detail (One instance)

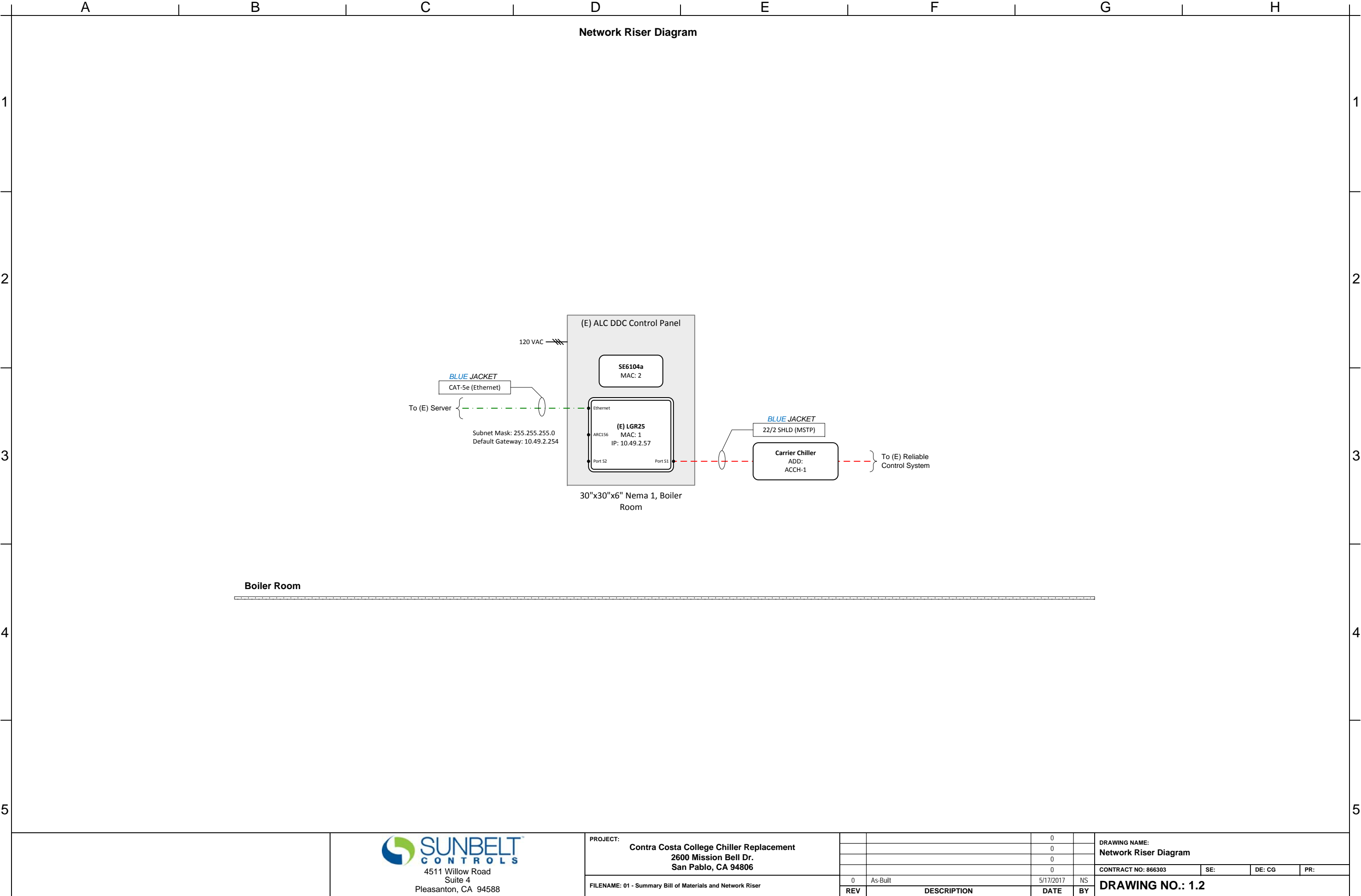
Network Notes:

- All communication cable terminations in and out of a temperature control panel, terminal equipment, or VAV box must be labeled with "from (equipment name)" and "to (equipment name)" locations.
- All ARC156/CMnet or Unet communication, serial interface, control, and monitoring wiring must be terminated at the locations designated and must be free of splices.
- All internal panel power wiring shall be 16 AWG stranded THHN. All field wiring shall be 18 AWG, unless otherwise noted. Does not apply to thermostat wire.
- Each ARC156/CMnet segment supports a maximum of 99 modules excluding repeaters.
- Each segment must be wired in a daisy chain fashion. Branching requires the use of a REP485 (repeater) and/or an AAR (ARCnet to ARCnet Router). Segments with more than 99 modules require an AAR.
- Network ends must be terminated with a BT485 or TERM485 resistors.
- Each network must have at least one (1) DIAG485 installed on the network to supply bias if the network is terminated with TERM485 resistors. Otherwise the DIAG485 will not supply bias. If more than one (1) DIAG485 is installed, only one shall provide network bias.
- When shielded cable is used, do not strip back sheath more than 1" in order to keep the twisted pair from separating. Do not ground shield to the panel or chassis ground. The shield should only be connected to the Optional Shield connection at the module.
- Ungrounded shields must be cut back and taped to prevent contact with metal surfaces.
- Electrical installation shall be in accordance with the project specifications, national, state, and local electrical codes along with Automated Logic's standards.
- Cat-6 cabling runs shall not exceed a maximum cable length of 325'. All Cat-6 Ethernet wiring shall comply with IEEE 802.3 standards.
- All pneumatic tubing that exceeds 10' in length must be rigid copper or poly tubing installed in conduit. All poly tubing in exposed areas must be installed in conduit. Use plenum rated poly tubing for runs made in hung ceilings. Short lengths of less than 16" are permitted to be exposed for connection to field devices.
- All temperature control panels will have a dedicated 120 VAC circuit. Conduit provided and installed by Div. 26.

<u>DRAWING#</u>	<u>DRAWING NAME</u>
SYM.1	Symbol Legend
WIRE.1	Wire Specification
TOC.1	Table of Contents
1.1	Summary Bill of Materials
1.2	Network Riser Diagram
2.1	(E) ALC DDC Control Panel
2.2	(E) ALC DDC Control Panel Layout [Page 1 of 2]
2.3	(E) ALC DDC Control Panel Layout [Page 2 of 2]
2.4	Chilled Water System Schematic
2.5	Chilled Water System Sequence of Operations
2.6	Carrier Chiller BACnet Integration
2.7	Chilled Water System Bill of Materials
DETAILS.1	

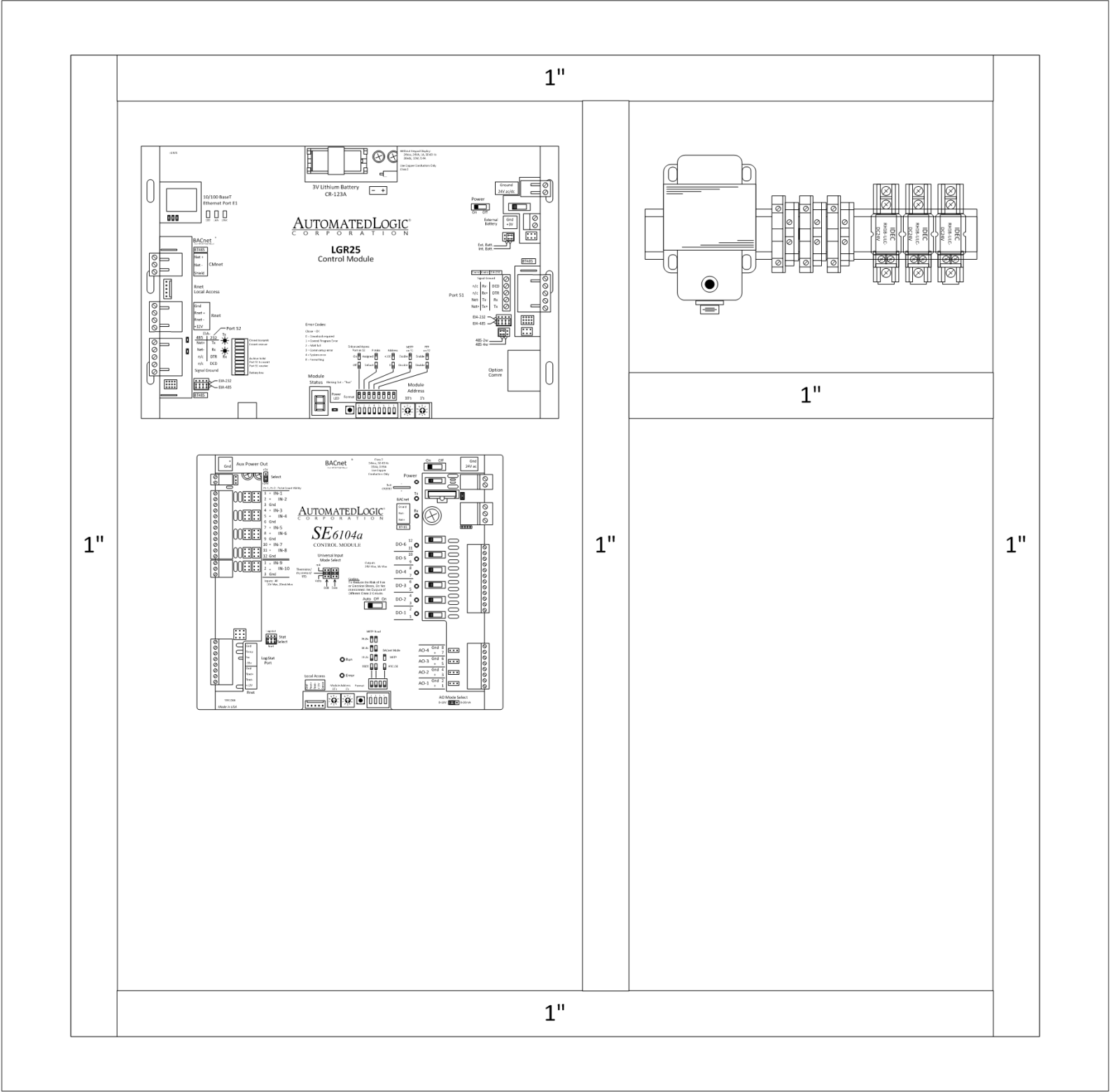
Summary Bill of Materials															
Bill of Material															
Vendor		Part Number		Product Description				Manufacturer		Panel Or Field		Quantity			
BAPI		ALC/10K-2-I-4"-BB2-M304		Immersion 4" Insertion in BAPI BOX 2 NEMA 4X, w/304 Stainless Thermowell				BAPI		F		2			
ALPS		RH1B-ULAC24V+SH1B-05		Control Relay,SPDT,24VAC,LED,w/ Socket				Idec		P		3			
Automated Logic		SE6104a		Control Module, 6DO, 10UI, 4AO				Automated Logic		P		1			
ALPS		TR100VA001		Xfmr 96VA,120:24,Ckt Brkr, Class 2				Functional Devices		P		1			

 4511 Willow Road Suite 4 Pleasanton, CA 94588		PROJECT: Contra Costa College Chiller Replacement 2600 Mission Bell Dr. San Pablo, CA 94806						0		DRAWING NAME: Summary Bill of Materials			
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						0	As-Built	5/17/2017	NS	DRAWING NO.: 1.1			
				REV	DESCRIPTION			DATE	BY				



(E) ALC DDC Control Panel

(E) ALC DDC Control Panel
(30x30x6 NEMA-1)



SUNBELT
CONTROLS
4511 Willow Road
Suite 4
Pleasanton, CA 94588

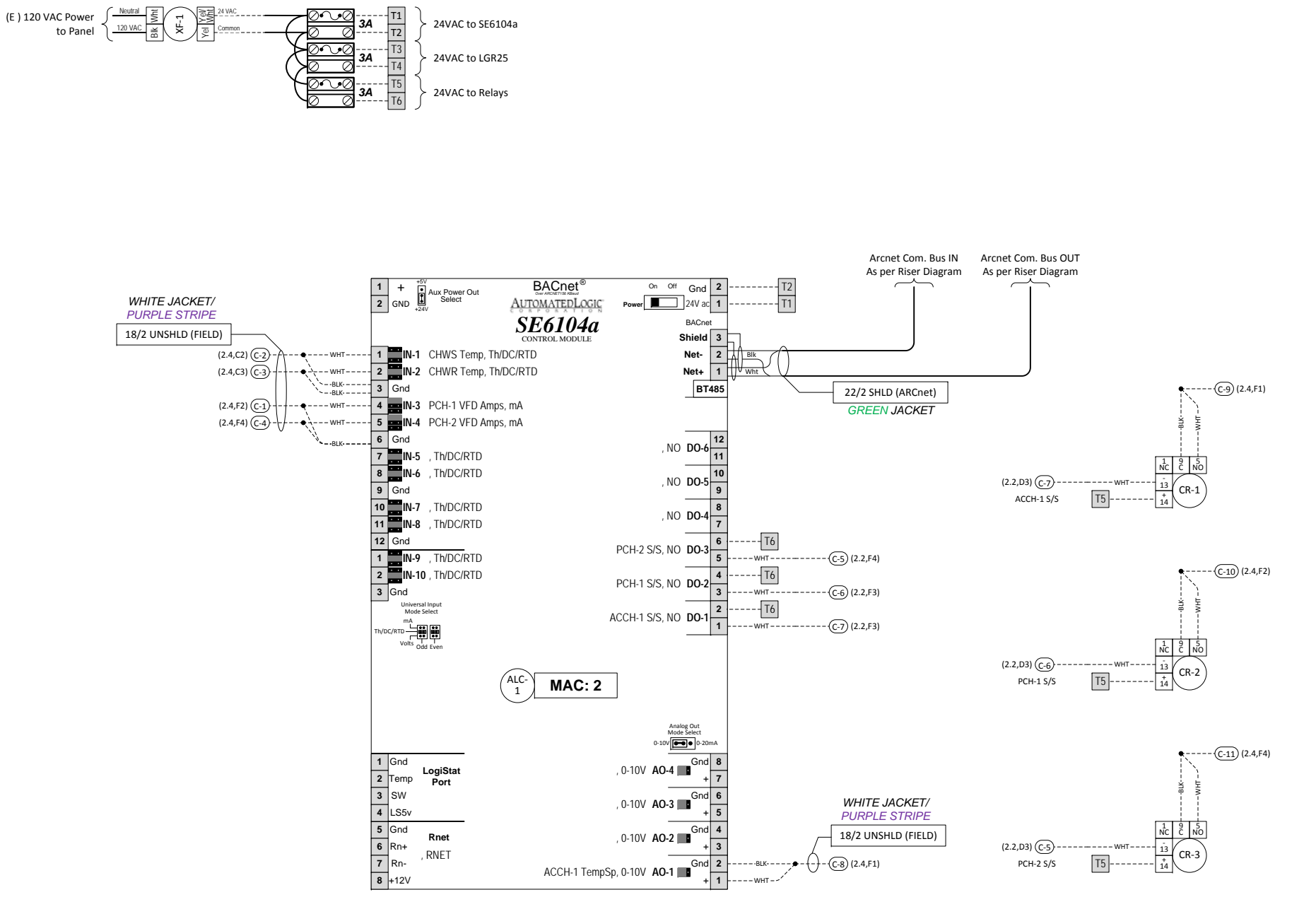
PROJECT:
Contra Costa College Chiller Replacement
2600 Mission Bell Dr.
San Pablo, CA 94806

FILENAME: 02 - Chilled Water System

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REV	DESCRIPTION	DATE	BY

DRAWING NAME:
(E) ALC DDC Control Panel
CONTRACT NO: 866303 SE: DE: CG PR:
DRAWING NO.: 2.1

(E) ALC DDC Control Panel Layout [Page 1 of 2]



(E) ALC DDC Control Panel			
Part	Power Consumption per Part (VA)	Quantity	Total Power Consumption (VA)
SE6104a	20	1	20
LGR25	24	1	24
Relay	1	3	3
Total Power Consumption for Panel (VA)			47

Panel continued on next page



PROJECT: Contra Costa College Chiller Replacement
2600 Mission Bell Dr.
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FILENAME: 02 - Chilled Water System

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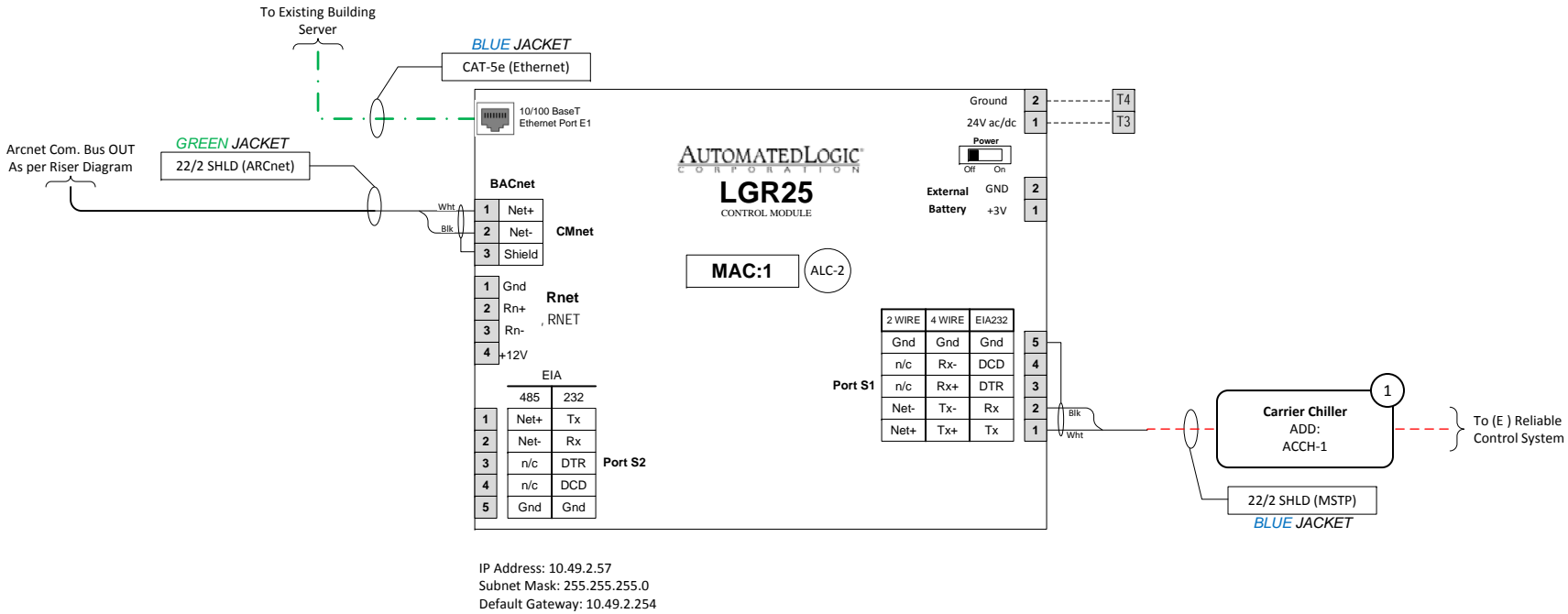
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(E) ALC DDC Control Panel Layout [Page 1 of 2]

CONTRACT NO: 866303 SE: DE: CG PR:

DRAWING NO.: 2.2

(E) ALC DDC Control Panel Layout [Page 2 of 2]

Panel continued from previous page



Sheet Notes:
1.Refer to 'Carrier Chiller BACnet Integration' (page 2.6) for integration details.



PROJECT:
Contra Costa College Chiller Replacement
2600 Mission Bell Dr.
San Pablo, CA 94806

FILENAME: 02 - Chilled Water System

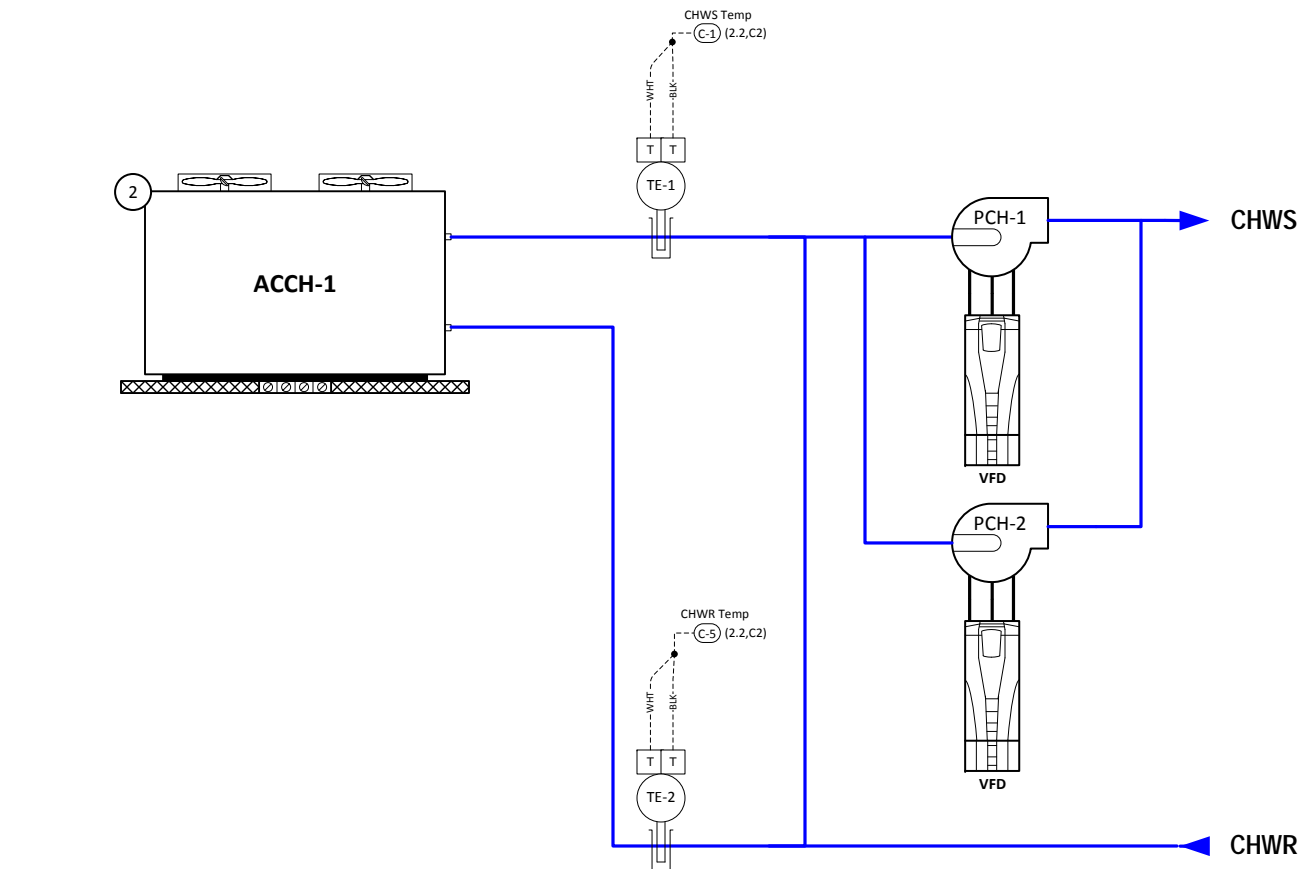
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DRAWING NAME:
(E) ALC DDC Control Panel Layout [Page 2 of 2]

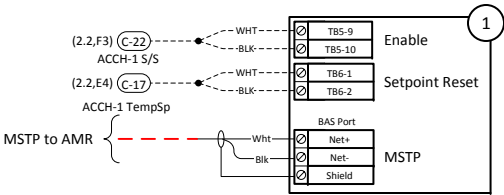
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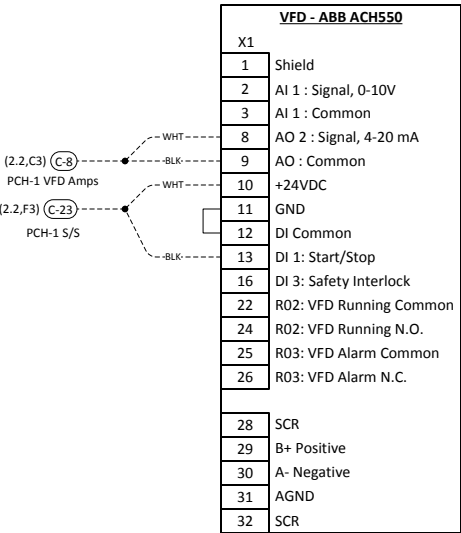
Chilled Water System Schematic



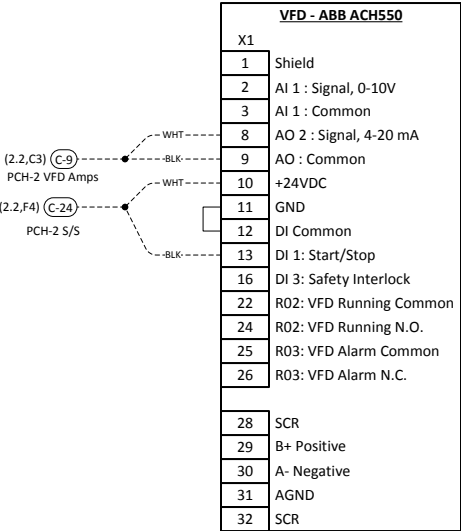
1. Chilled Water System Schematic



2. ACCH-1 Control Wiring



3. PCH-1 Control Wiring



4. PCH-2 Control Wiring

- Sheet Notes:
1. Hardwire Chiller status point not available. Chiller status to be monitored via software integration point.
 2. Primary system pump is integral to ACCH-1 and is controller locally via chiller controls.



PROJECT: Contra Costa College Chiller Replacement
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FILENAME: 02 - Chilled Water System

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0	As-Built	5/17/2017	NS
REV	DESCRIPTION	DATE	BY

DRAWING NAME:
Chilled Water System Schematic


CONTRACT NO: 866303

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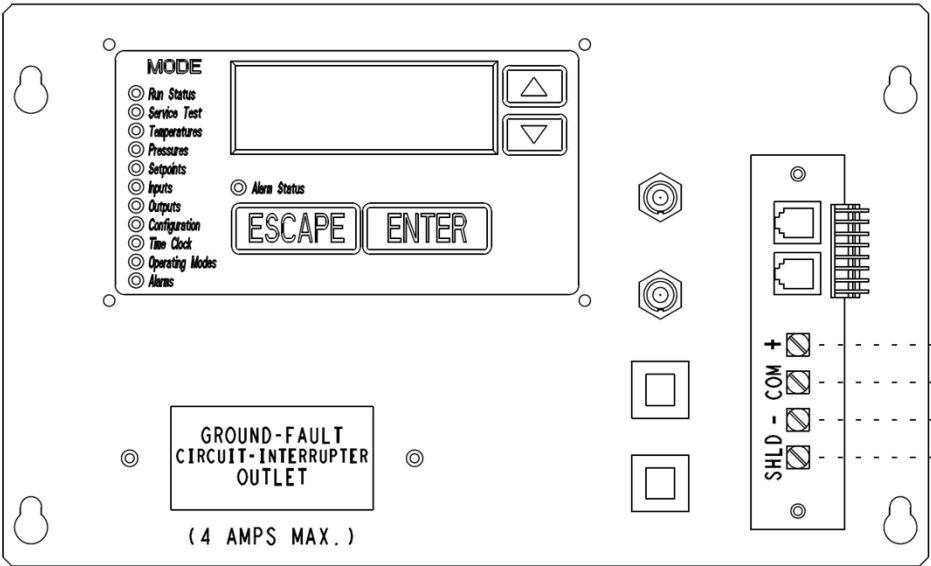
DE: CG

PR:

DRAWING NO.: 2.4

A	B	C	D	E	F	G	H
1	Chilled Water System Sequence of Operations						
	<u>Chilled Water System</u> <u>Chiller - Run Conditions:</u> The chiller shall be enabled to run whenever the outside air temperature is greater than 54°F (adj.).			<u>Chiller:</u> The chiller shall be enabled a user adjustable time after pump statuses are proven on. The chiller shall therefore have a user adjustable delay on start.			
	To prevent short cycling, the chiller shall run for and be off for minimum adjustable times (both user definable), unless shutdown on safeties or outside air conditions.			The delay time shall be set appropriately to allow for orderly chilled water system start-up, shutdown and sequencing.			
	The chiller shall run subject to its own internal safeties and controls.			The chiller shall run subject to its own internal safeties and controls.			
	<u>Chilled Water Pump Operation:</u> The two chilled water pumps shall run anytime the chiller is called to run.			The controller shall monitor the compressor statuses.			
2	The two chilled water pumps shall run together in parallel, and they shall be commanded to run at the same constant speed.			Alarms shall be provided as follows: -Chiller Failure: Commanded on, but the status is off. -Chiller Running in Hand: Commanded off, but the status is on. -Chiller Runtime Exceeded: Status runtime exceeds a user definable limit.			
	Alarms shall be provided as follows: Chilled Water Pump 1 -Failure: Commanded on, but the status is off. -Running in Hand: Commanded off, but the status is on. -Runtime Exceeded: Status runtime exceeds a user definable limit.			<u>Chilled Water Supply Temperature Setpoint:</u> The chilled water supply temperature setpoint shall reset based on outside air temperature.			
3	Chilled Water Pump 2 -Failure: Commanded on, but the status is off. -Running in Hand: Commanded off, but the status is on. -Runtime Exceeded: Status runtime exceeds a user definable limit.			As outside air temperature drops from 75°F (adj.) to 50°F (adj.) the chilled water supply temperature setpoint shall reset upwards by adding from 0°F (adj.) to 10°F (adj.) to the current setpoint.			
				<u>Chilled Water Temperature Monitoring:</u> The following temperatures shall be monitored: -Chilled water supply. -Chilled water return.			
4				Alarms shall be provided as follows: -High Chilled Water Supply Temp: If the chilled water supply temperature is greater than 55°F (adj.). -Low Chilled Water Supply Temp: If the chilled water supply temperature is less than 38°F (adj.).			
5							
				PROJECT: Contra Costa College Chiller Replacement 2600 Mission Bell Dr. San Pablo, CA 94806		DRAWING NAME: Chilled Water System Sequence of Operations	
		4511 Willow Road Suite 4 Pleasanton, CA 94588		FILENAME: 02 - Chilled Water System		CONTRACT NO: 866303 SE: DE: CG PR:	
				0	As-Built	5/17/2017	NS
				REV	DESCRIPTION	DATE	BY
				DRAWING NO.: 2.5			

Carrier Chiller BACnet Integration



Description	Type	BACnet Instance	Notes
Run Status	AI	AV:0	0=Off, 1=Running, 2=Stopping, 3=Delay, 4=Tripout, 5=Ready, 6=Override, 7=Defrost, 8=Run Test, 9=Test
Chiller Occupied?	DI	BV:1	Yes/No
Alarm State	AI	AV:4	0=Normal, 1=Partial, 2=Shutdown
Active Demand Limit Val	AI	AV:6	0-100%
Percent Total Capacity	AI	AV:5	%
Current Setpoint	AI	AV:8	
Leaving Fluid Temp	AI	AV:9	
Emergency Stop	DI	BV:5	
Min Left for Start	AI	AV:1	
Comp 1 Output	DI	BV:6	
Comp 2 Output	DI	BV:7	
Comp 3 Output	DI	BV:8	
Comp 4 Output	DI	BV:9	
Percent Total Capacity A	AI	AV:12	
Discharge Pressure A	AI	AV:13	
Suction Pressure A	AI	AV:14	
Comp Return Gas Temp A	AI	AV:25	
Suction Superheat Temp A	AI	AV:25	
Saturated Condensing Temp A	AI	AV:23	
Saturated Suction Temp A	AI	AV:24	
EXV % Open	AI	AV:27	
Percent Total Capacity B	AI	AV:30	
Discharge Pressure B	AI	AV:31	
Suction Pressure B	AI	AV:32	
Active Demand Limit Val	AO	AV:6	
Control Point Out	AO	AV:9	
Emergency Stop Out	DO	BV:5	

Sheet Notes:
1. Points shall be displayed on the front-end graphics.



PROJECT:
Contra Costa College Chiller Replacement
2600 Mission Bell Dr.
San Pablo, CA 94806

FILENAME: 02 - Chilled Water System

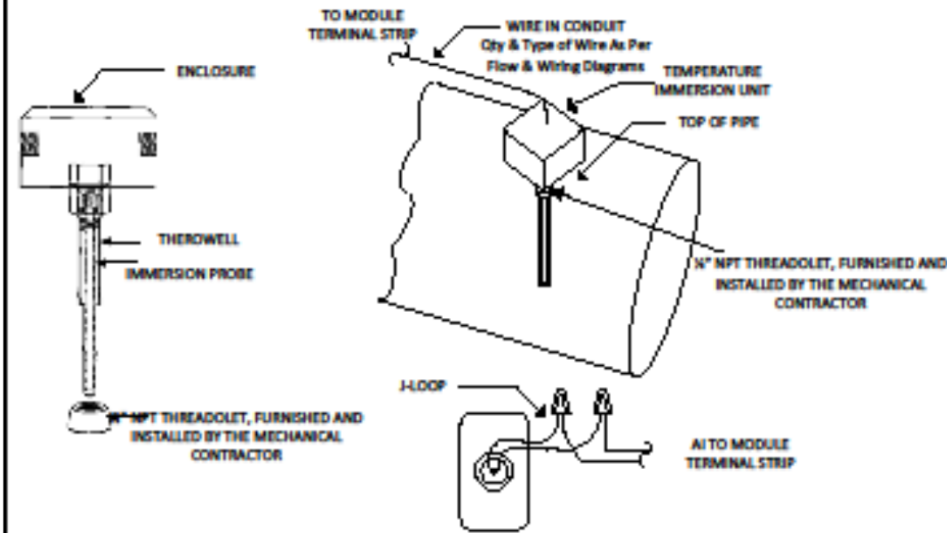
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0	As-Built	5/17/2017	NS
REV	DESCRIPTION	DATE	BY

DRAWING NAME:
Carrier Chiller BACnet Integration
CONTRACT NO: 866303 SE: DE: CG PR:

DRAWING NO.: 2.6

Chilled Water System Bill of Materials									
Bill of Material w/ Tags									
Tag	Vendor	Part Number	Product Description	Manufacturer	Panel/Field	Quantity			
CR-1	ALPS	RH1B-ULAC24V+SH1B-05	Control Relay,SPDT,24VAC,LED,w/ Socket	Idec	P	1			
CR-2	ALPS	RH1B-ULAC24V+SH1B-05	Control Relay,SPDT,24VAC,LED,w/ Socket	Idec	P	1			
CR-3	ALPS	RH1B-ULAC24V+SH1B-05	Control Relay,SPDT,24VAC,LED,w/ Socket	Idec	P	1			
XF-1	ALPS	TR100VA001	Xfmr 96VA,120:24,Ckt Brkr, Class 2	Functional Devices	P	1			
ALC-1	Automated Logic	SE6104a	Control Module, 6DO, 10UI, 4AO	Automated Logic	P	1			
TE-1	BAPI	ALC/10K-2-I-4"-BB2-M304	Immersion 4" Insertion in BAPI BOX 2 NEMA 4X, w/304 Stainless Thermowell	BAPI	F	1			
TE-2	BAPI	ALC/10K-2-I-4"-BB2-M304	Immersion 4" Insertion in BAPI BOX 2 NEMA 4X, w/304 Stainless Thermowell	BAPI	F	1			

TEMPERATURE IMMERSION SENSOR AND THERMOWELL

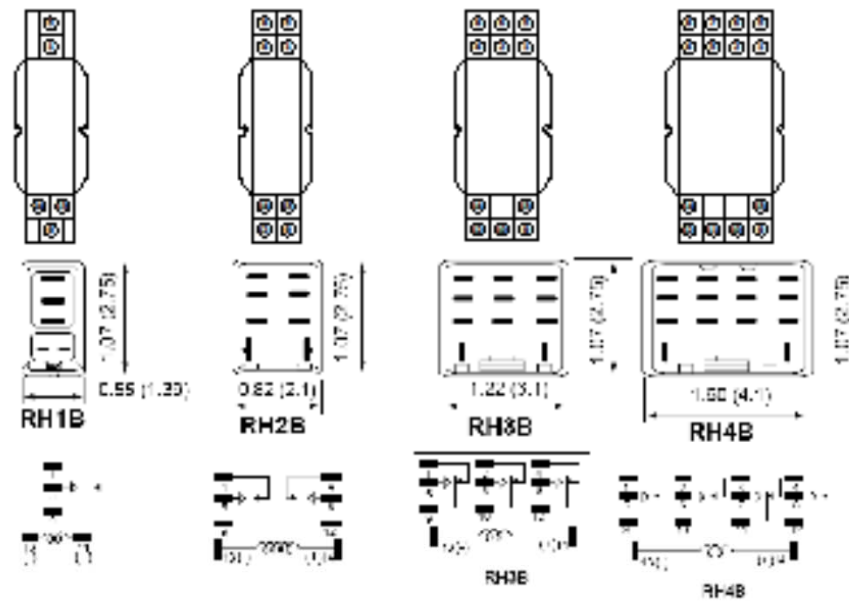


MOUNTING INSTRUCTIONS – IMMERSION UNIT

1. THE THERMOWELL THREADS INTO A 1/2" FNPT THERMOWELL FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
2. THE IMMERSION UNIT THREADS INTO A 1/2" FNPT THERMOWELL. NO EXTERNAL HARDWARE IS NEEDED. THERMALLY CONDUCTIVE GREASE MUST BE APPLIED TO THE PROBE PRIOR TO INSERTION TO OPTIMIZE HEAT TRANSFER.
- NOTE: THE THERMOWELLS ARE DESIGNED TO CONNECT THE 1-1/8" HEX NUT TO THE IMMERSION FITTING ON THE UNIT, DO NOT OVERTIGHTEN OR DAMAGE TO THE FITTING MAY OCCUR.
3. TERMINATE THE UNIT.
4. INCORPORATE A "J-LOOP" INTO THE TERMINATION. A "J-LOOP" IS FORMED BY POINTING THE WIRE NUTS OF A TERMINATION UP CREATING A "J" IN THE CABLE IN ORDER TO REDUCE THE LIKELIHOOD OF CONDENSATION COLLECTING IN THE WIRE NUT.

NOTE: INSTALL FLEXIBLE CONDUIT FOR ALL CABLE OR WIRE BROUGHT TO END DEVICE FROM JUNCTION BOX. FLEXIBLE CONDUIT SHOULD NOT EXCEED 18 INCHES.

IDEC GENERAL PURPOSE RELAYS



PANEL MOUNTING INSTRUCTIONS

SNAP THE RELAY BASE ONTO THE DIN RAIL IN THE DESIRED LOCATION. PART NUMBER FOR 35 mm DIN RAIL: DIN-3P OR DIN-6P (3 OR 6 FOOT LENGTHS RESPECTIVELY).

SURFACE MOUNTING INSTRUCTIONS

FASTEN THE RELAY BASE TO THE DESIRED LOCATION USING THE (2) SCREW HOLES IN THE RELAY BASE.