

FAA CONTROL TOWER SYSTEM UPGRADE

LITTLE ROCK, AR

ENGINEERING FIRM:
FAA

MECHANICAL CONTRACTOR:
COMFORT SYSTEMS USA



REVISION HISTORY				SIEMENS Powers of Arkansas WWW.POWERSAR.COM	Controls Division 5440 Northshore Drive N. Little Rock, AR 72118 USA PHONE: 501-374-5420 FAX: 501-370-9298	FAA Control Tower Sys Upgrade Little Rock, AR					C4431 0										
1	12/29/2015	DWJ	SUBMITTALS			<table><tr><td>ENGINEER</td><td>DRAFTER</td><td>CHECKED BY</td><td>INITIAL RELEASE</td><td>LAST EDIT DATE</td></tr><tr><td>DWJ</td><td>DWJ</td><td>JLJ</td><td>12/11/15</td><td>12/29/15</td></tr></table>						ENGINEER	DRAFTER	CHECKED BY	INITIAL RELEASE	LAST EDIT DATE	DWJ	DWJ	JLJ	12/11/15	12/29/15
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DWJ	DWJ	JLJ	12/11/15			12/29/15															
					Cover Sheet																

DWG

DESCRIPTION

	GENERAL
	Cover Sheet
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LEG	Legend & Abbreviations
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007	AHU—81.91 EXISTING MBC
008	AHU—81.91
009	AHU—1
014	AHU—1 PANEL
015	AHU—1 EXISTING MBC
016	AHU—1
017	CRU45
019	CRU45 PANEL
020	FURN—1&2 CU—2&
022	FURN—1&2 CU—2& PANEL
023	VRF
024	NOTES
025	HOT WATER SYSTEM
026	MISC1
027	MISC2
028	MISC3
029	CRU—1,2,3
030	EF—8,9
	DDC PANEL LAYOUTS
002	AHU—81.91 LAYOUT
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004	PXCM2p003
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010	AHU—1 LAYOUT
011	PXCM1p002
012	PXCM1p003
013	PXCM1p004
018	CRU45 PXCC
021	FURN—1&2 PXCC

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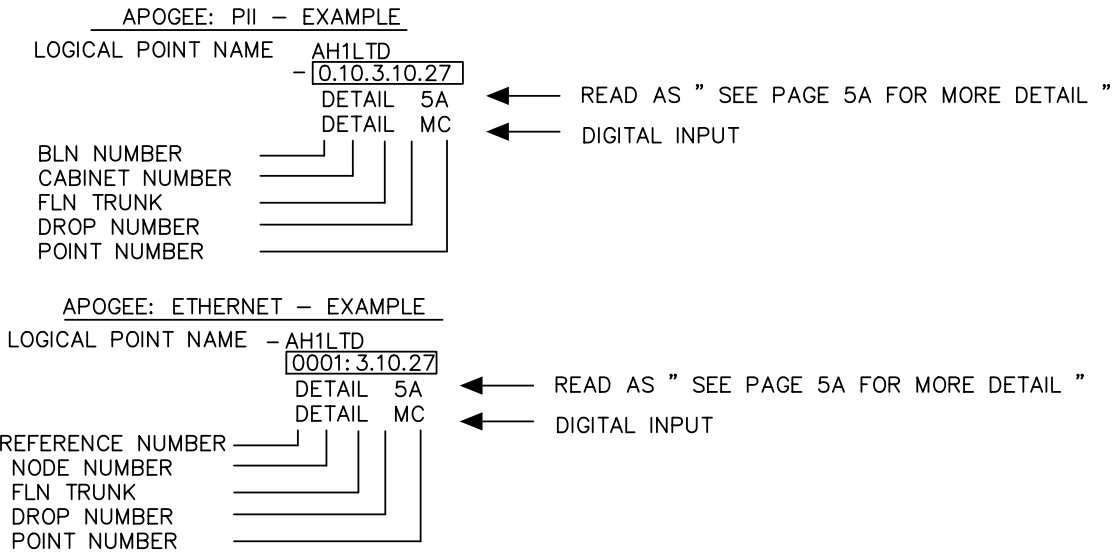
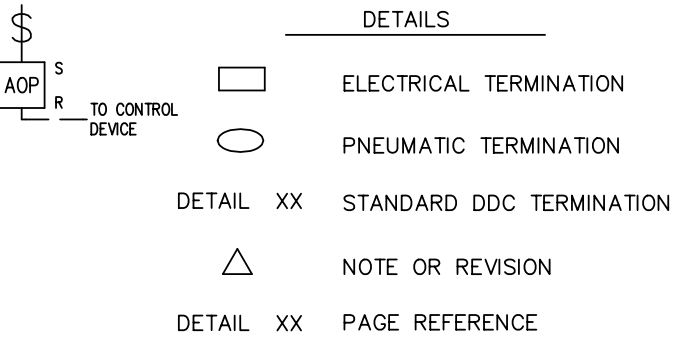
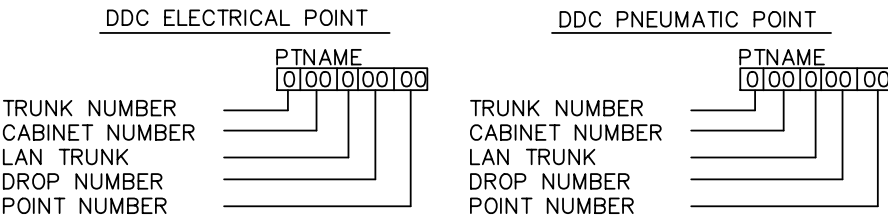
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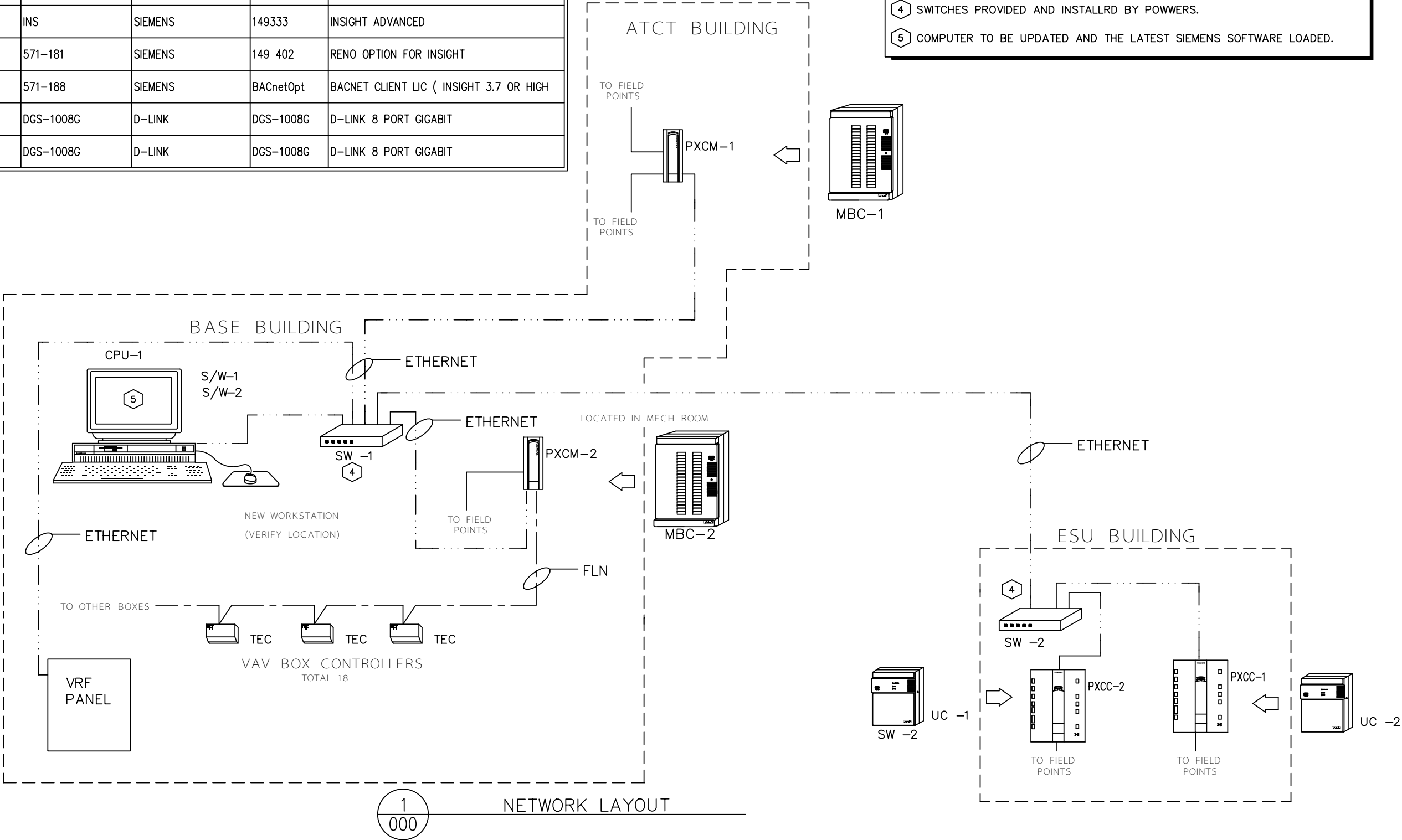
CONTROL SYMBOL	CONTROL SYMBOL DESCRIPTION	CONTROL SYMBOL	CONTROL SYMBOL DESCRIPTION	CONTROL SYMBOL	CONTROL SYMBOL DESCRIPTION
AC	AIR COMPRESSOR	GD	GAS DETECTOR	PXCM	PXC-MODULAR CONTROLLER
AD	AIR DRYER	HE	HUMIDIFIER ELECTRIC	RBC	REMOTE BUILDING CONTROLLER
AE	ACTUATOR ELECTRIC	H	HYGROSTATS	RC	RECEIVER CONTROLLER
AEM	APOGEE ETHERNET MICROSERVER	HHC	HAND-HELD OPERATOR'S TERMINAL	RCU	REMOTE CONTROL UNIT
AF	AIR FILTER	HL	HIGH LIMIT	RE	RELAY ELECTRIC
AFS	AIR FLOW STATION	HOA	HAND-OFF-AUTO SWITCH	RP	RELAY PNEUMATIC
AOP	ANALOG OUTPUT, PNEUMATIC	HORN	HORN	RS	RESTRICTOR
AP	ACTUATOR PNEUMATIC	HPC	HEAT PUMP CONTROLLER	RV	RELIEF VALVE
APS	AUX. POWER SUPPLY	HTD	HIGH TEMPERATURE DETECTOR	S/W	SOFTWARE
AT	AUTOMATIC TRAP	HTE	HUMIDITY TRANSMITTER ELECTRIC	SC	STEP CONTROLLER
ATD	AUTO TANK DRAIN	HTP	HUMIDITY TRANSMITTER PNEUMATIC	SCU	STAND ALONE CONTROL UNIT
ATEC	ACTUATOR TEC	INT	INTERCOM	SD	SMOKE DETECTOR
AZM	AUTOZERO MODULE	KWM	ELECTRIC KILOWATT METER	SE	SWITCH ELECTRIC
BELL	BELL	LC	LIMIT CONTROLLER (LIMITEM)	SPKR	SPEAKER
BIM	BUS INTERFACE MODULE	LLS	LIQUID LEVEL SWITCH	SPP	STATIC PRESSURE PROBE
BOIL	BOILER	LLT	LIQUID LEVEL TRANS.	SPR	STATIC PRESSURE REGULATOR
CBL	CABLES	LPR	POWER SUPPLY 24VAC/24VDC	SV	SOLENOID VALVE
CKV	CHECK VALVE	LTDE	LOW TEMP. DETECTOR ELECTRIC	SW	SWITCH PNEUMATIC
CM	CONSTRUCTION MATERIALS	LTDP	LOW TEMP. DETECTOR PNEUMATIC	T	ROOM THERMOSTAT, PNEUMATIC
CP	COMPONENT PANEL	LUI	LOCAL USER INTERFACE	TBC	TERMINAL BOX CONTROLLER
CPU	CENTRAL PROCESSING UNIT	MBC	MODULAR BUILDING CONTROLLER	TC	TEMPERATURE CONTROLLER(S200)
CRT	CATHODE RAY TUBE	MDM	MODEM	TCU	TERMINAL CONTROL UNIT
CS	CURRENT SWITCH	ME	ELECTRONIC ACTUATOR	TDR	TIME DELAY RELAY
CT	CURRENT TRANSDUCER	MEC	MODULAR EQUIPMENT CONTROLLER	TE	THERMOSTAT, ELECTRIC
CTTE	CO2 TEMP TRANSMITTER ELEC	MG	MAGNEHELIC GAUGE	TEC	TERMINAL EQUIPMENT CONTROLLER
CVC	CONSTANT VOLUME CONTROLLER	MPU	MULTI-POINT UNIT	TH	THERMOMETER
D	DAMPER	MS	MOTOR STARTER	TI	TRUNK INTERFACE
DDC	DUAL DUCT CONTROLLER	OBS	OBSOLETE	TIE	TRUNK ISOLATOR EXTENDER
DEM	DEMAND ENERGY MONITOR	ODP	OPERATOR DATA PANEL	TIU	TELCOM INTERFACE UNIT
DP	DEW POINT TRANSMITTER	P	PUMP	TMR	TIMER, TIME CLOCK
DPR	DIFFERENTIAL PRESS. REGULATOR	PA	PULSE ACCUMULATOR	TTE	TEMPERATURE TRANSMITTER ELECTRIC
DPS	DIFFERENTIAL PRESSURE SWITCH	PCT	PROGRAMMABLE CLOCK TIMER	TTP	TEMPERATURE TRANSMITTER PNEUMATIC
DPT	DIFF. PRESS. TRANSMITTER ELEC.	PE	PRESSURE ELECTRIC SWITCH	TXIO	TX-I/O FAMILY CONTROLLER MODULES
DPTP	DIFFERENTIAL PRESSURE PNEUMATIC	PL	PILOT LIGHT	UC	UNITARY CONTROLLER
DPU	DIGITAL POINT UNIT	PM	POWER MONITOR	UCC	UNIT CONDITIONER CONTROLLER
EC	ENTHALPY COMPARITOR	PNL	PANEL	UVC	UNIT VENT CONTROLLER
EP	ELECTRO-PNEUMATIC VALVE	PPM	POINT PICKUP MODULE	V	VALVE
ES	END SWITCH	PRC	PRESSURE REG. CONTROLLER	V*	VALVE SERVICE PARTS
ET	ENTHALPY TRANSMITTER	PRV	PRESSURE REDUCING VALVE	VA	TEC VALVE ACTUATOR
EXP	EXPANSION PANEL	PS	POSITIONING SWITCH	VAC	VIBRATION ISOLATOR
FAN	FAN	PSE	POSITION SENSOR ELECTRIC	VB	VARIABLE AIR VOLUME CONTROLLER
FHC	FUME HOOD CONTROLLER	PST	PULL STATION	VTE	VELOCITY TRANSMITTER ELECTRICAL
FM	FLOW MTR. (FLOW METER STATION)	PT	PITOT TUBE	W	WELL
FMS	FIRE MGMT. SYSTEM	PTE	PRESSURE TRANSMITTER ELECTRIC	XDR	TRANSDUCER
FS	FLOW SWITCH	PTP	PRESSURE TRANSMITTER PNEUMATIC	XFMR	TRANSFORMER
FTP	FLOW TRANSMITTER PNEU.	PTR	PRINTER		
G	GAUGE	PV	PILOT VALVE		
		PXCC	PX COMPACT CONTROLLER		



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	Powers of Arkansas WWW.POWERSAR.COM		ENGINEER DWJ DRAFTER DWJ CHECKED BY JLJ INITIAL RELEASE 12/11/15 LAST EDIT DATE 12/29/15	Legend & Abbreviations

Control Device	Qty	Product Number	Manufacturer	Document Number	Description
Field Mounted Devices					
CPU 1	1	DELL	DELL MARKETING LP	DELL	DEL DESKTOP/TOWER PER QUOTE
S/W 1	1	INS	SIEMENS	149333	INSIGHT ADVANCED
S/W 2	1	571-181	SIEMENS	149 402	RENO OPTION FOR INSIGHT
S/W 3	1	571-188	SIEMENS	BACnetOpt	BACNET CLIENT LIC (INSIGHT 3.7 OR HIGH
SW 1	1	DGS-1008G	D-LINK	DGS-1008G	D-LINK 8 PORT GIGABIT
SW 2	1	DGS-1008G	D-LINK	DGS-1008G	D-LINK 8 PORT GIGABIT

- INSTALLATION NOTES:
- 1 DIAGRAM IS A GRAPHICAL REPRESENTATION AND IS FOR REFERENCE ONLY. FOR FINAL LAYOUT SEE SYSTEM PROFILE.
 - 2 ETHERNET CONNECTIONS TO NEW DEVICES SHALL BE COORDINATED WITH THE DATA CONTRACTOR.
 - 3 ALL FIELD LEVEL DEVICES ARE TO BE DAISY CHAIN CONFIGURATION AT THE COMMUNICATION TRUNK.
 - 4 SWITCHES PROVIDED AND INSTALLRD BY POWWERS.
 - 5 COMPUTER TO BE UPDATED AND THE LATEST SIEMENS SOFTWARE LOADED.



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Riser Diagram

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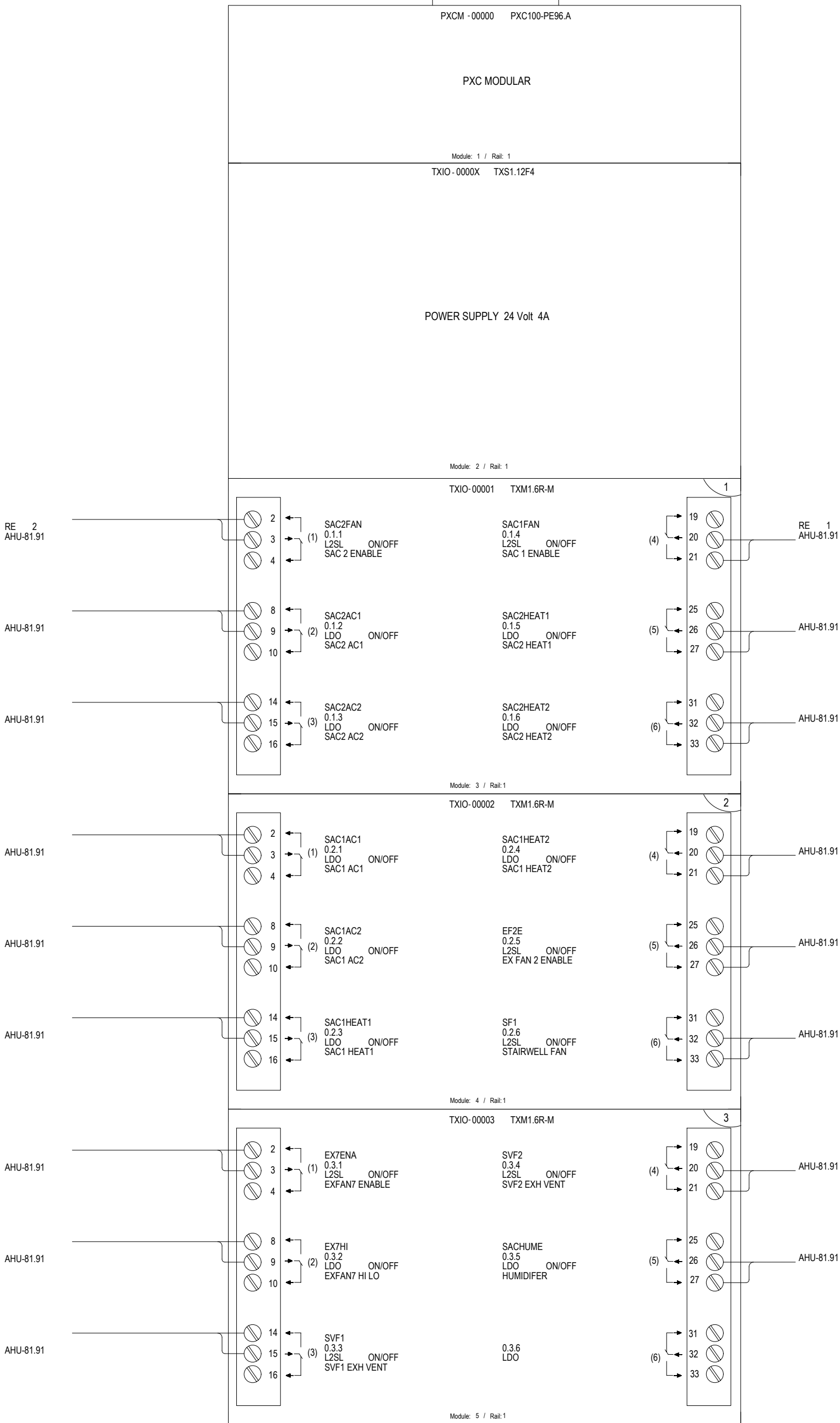
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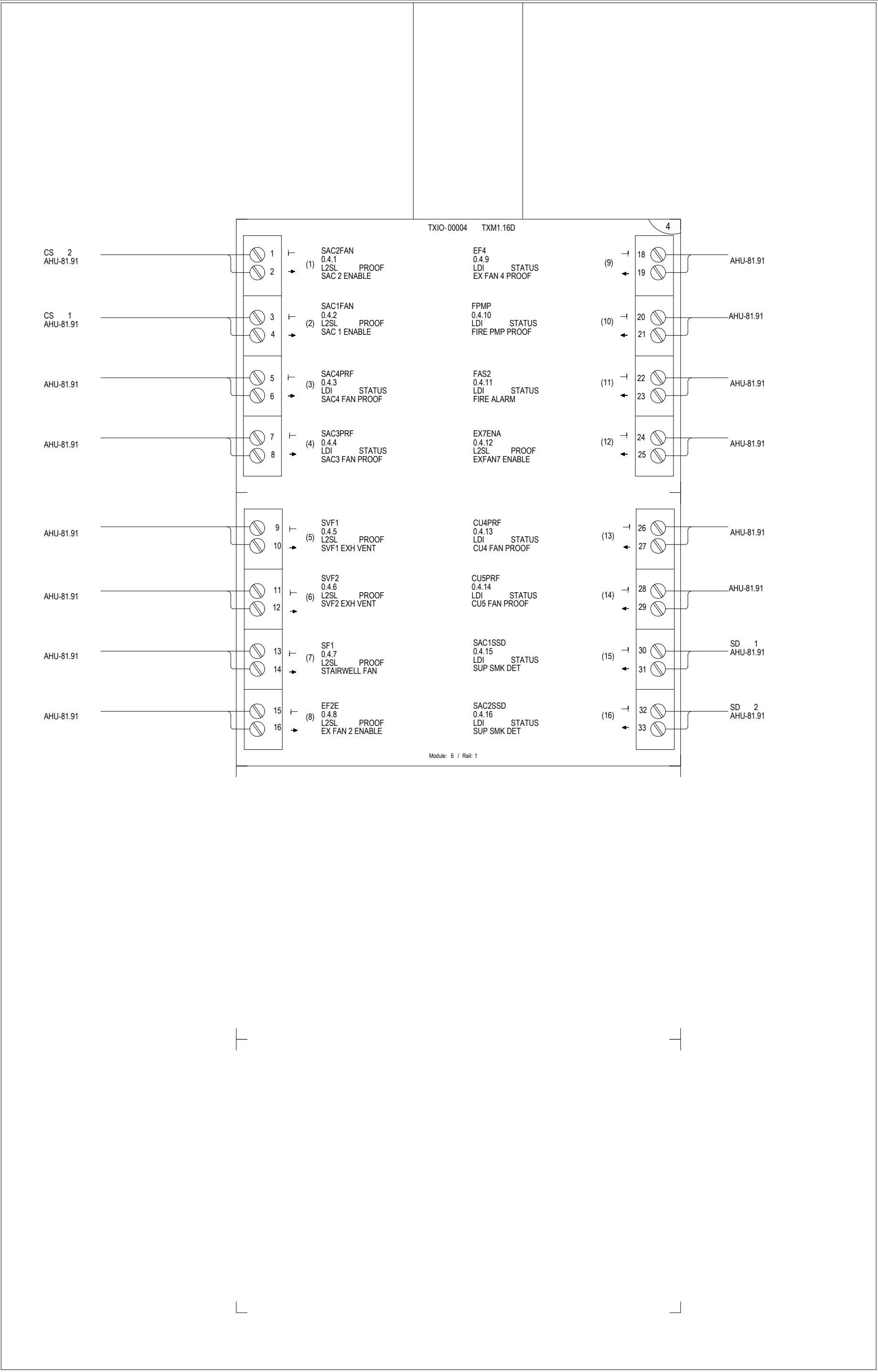
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N:\DT RESOURCES\JOBS\C4431\MDT\PCXM2P003.DWG

TXIO-0000X

TXS1.12F4

POWER SUPPLY 24 Volt 4A

Module: 1 / Rail: 2

TXIO-00005

TXM1.8X

Module: 2 / Rail: 2

TXIO-00006

TXM1.8X

Module: 3 / Rail: 2

TXIO-00007

TXM1.8X

Module: 4 / Rail: 2

TXIO-00008

TXM1.8X-ML

Module: 5 / Rail: 2

TTE 7
AHU-81.91

DPTE 1
AHU-81.91

DPTE 2
AHU-81.91

AHU-81.91

AHU-81.91

TTE 3
AHU-81.91

AHU-81.91

TTE 6
AHU-81.91

AHU-81.91

AHU-81.91

AHU-81.91

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AHU-81.91

AE 3
AHU-81.91

AE 4
AHU-81.91

AHU-81.91

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SACRAT
0.5.1
LAI
RET AIR TEMP

SAC1FP
0.5.2
LAI
FILTER PRESSURE

SAC2FP
0.5.3
LAI
FILTER PRESSURE

CU4FP
0.5.4
LAI
FILTER PRESSURE

EF2ST
0.6.1
LAI
SPACE TEMP

SAC1SAT
0.6.2
LAI
SUP AIR TEMP

FPRMT
0.6.3
LAI
FIRE PUMP RM TMP

SAC2MAT
0.6.4
LAI
MIX AIR TEMP

SAC1AC1L
0.7.1
LAI
SAC1 AC1 LOW

SAC1AC2H
0.7.2
LAI
SAC1 AC2 HIGH

SAC1AC2L
0.7.3
LAI
SAC1 AC2 LOW

SAC2AC1H
0.7.4
LAI
SAC2 AC1 HIGH

SACRSP
0.8.1
LAI
TOWER SETPT

SACOAD
0.8.2
LAO
OA DAMPER

SACRAD
0.8.3
LAO
RA DAMPER

CU4FB
0.8.4
LAO
FACE BYPASSDMP

SACRMH
0.5.5
LAI
CAB ROOM HUMI

CU5FP
0.5.6
LAI
FILTER PRESSURE

SACSAT
0.5.7
LAI
SUP AIR TEMP

SAC2SAT
0.5.8
LAI
SUP AIR TEMP

SAC1MAT
0.6.5
LAI
MIX AIR TEMP

CU5CT
0.6.6
LAI
COIL TEMP

CU4CT
0.6.7
LAI
COIL TEMP

SAC1AC1H
0.6.8
LAI
SAC1 AC1 HIGH

SAC2AC1L
0.7.5
LAI
SAC2 AC1 LOW

SAC2AC2H
0.7.6
LAI
SAC2 AC2 HIGH

SAC2AC2L
0.7.7
LAI
SAC2 AC2 LOW

SACRMT
0.7.8
LAI
CAB ROOM TEMP

CU5FB
0.8.5
LAO
FACE BYPASSDMP

SACOAT
0.8.6
LAI
OUTSIDE AIR TMP

SAC1RAD
0.8.7
LAO
RA DAMPER

SAC2RAD
0.8.8
LAO
RA DAMPER

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CURRENT

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HTE 1
AHU-81.91

AHU-81.91

TTE 4
AHU-81.91

TTE 5
AHU-81.91

TTE 2
AHU-81.91

AHU-81.91

AHU-81.91

AHU-81.91

AHU-81.91

AHU-81.91

TTE 8
AHU-81.91

AHU-81.91

TTE 1
AHU-81.91

AE 1
AHU-81.91

AE 2
AHU-81.91

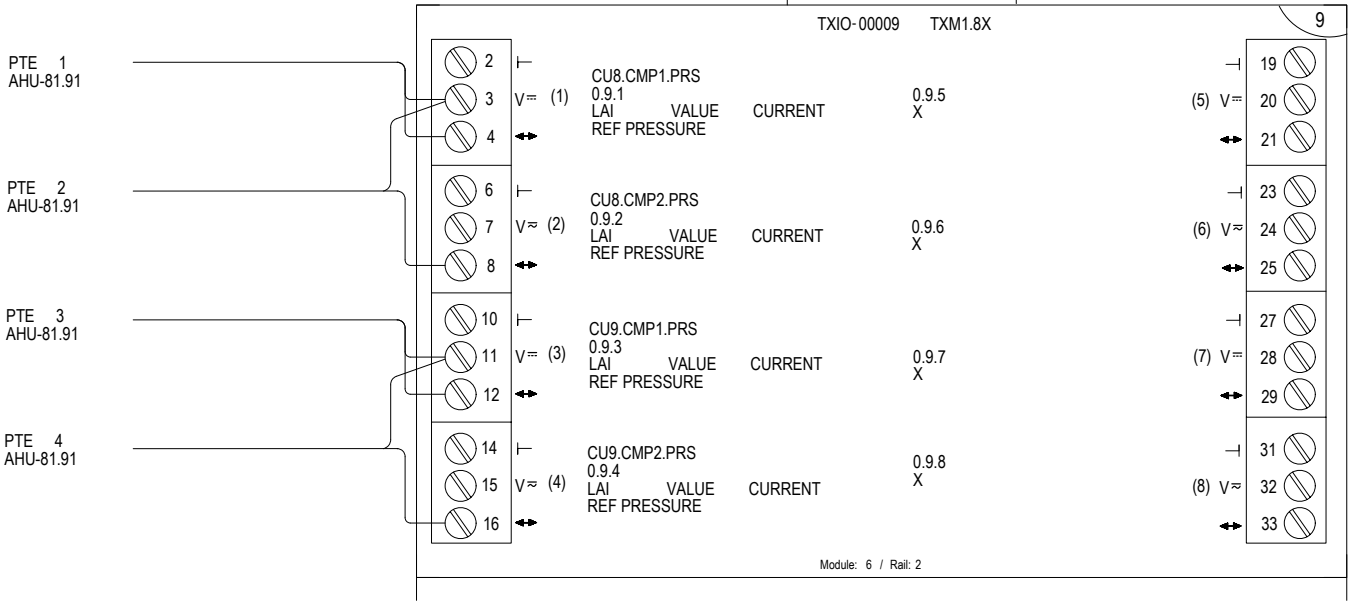
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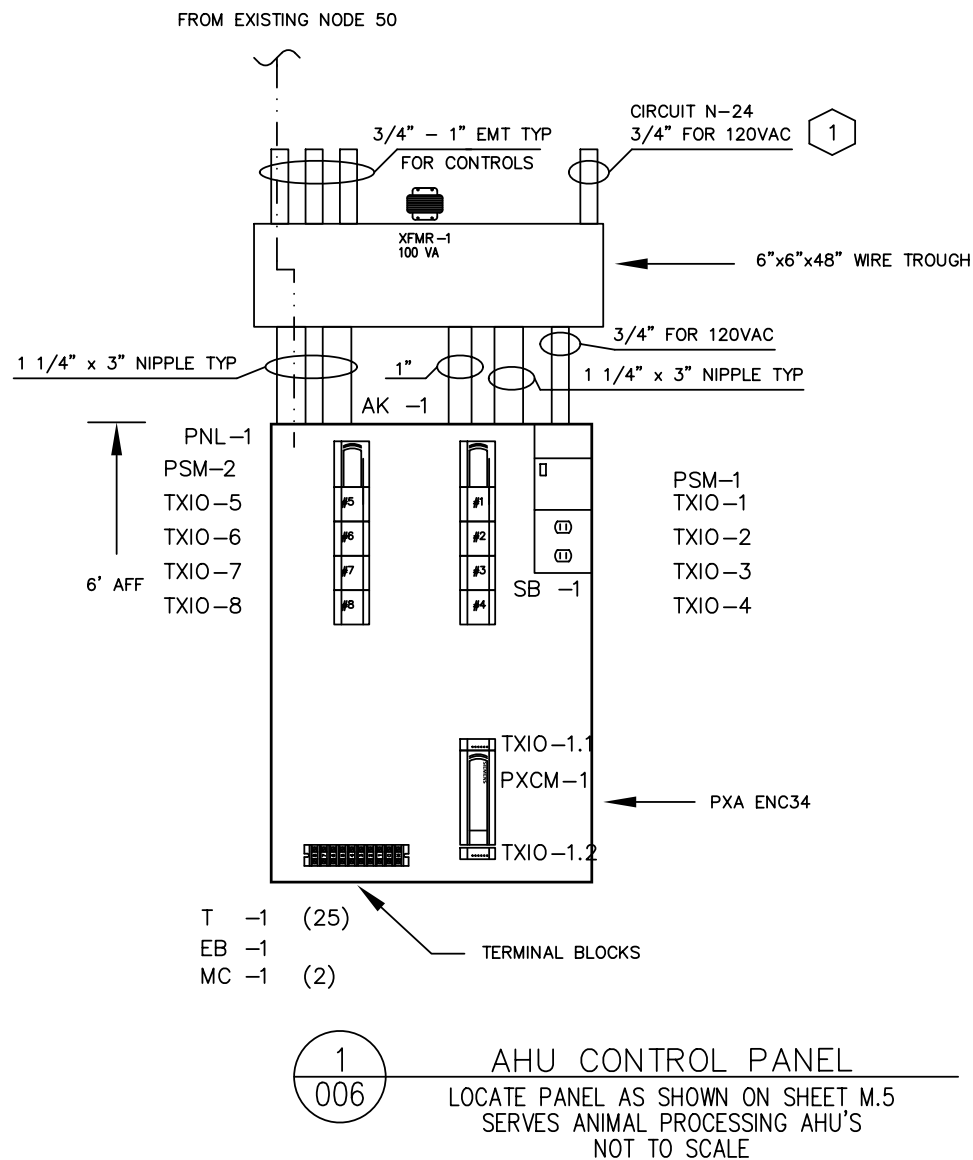
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INSTALLATION NOTES:

- 120 VAC DEDICATED POWER CIRCUIT PROVIDED BY ELEC IS EXISTING. REUSE EXISTING POWER FEED.
- RE-USE EXISTING PANELS AND CONDUIT WHEN POSSIBLE.
- DIAGRAMS ARE GRAPHICAL AND MAY CHANGE DUE TO SITE CONDITIONS.



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AHU-81.91 PANEL

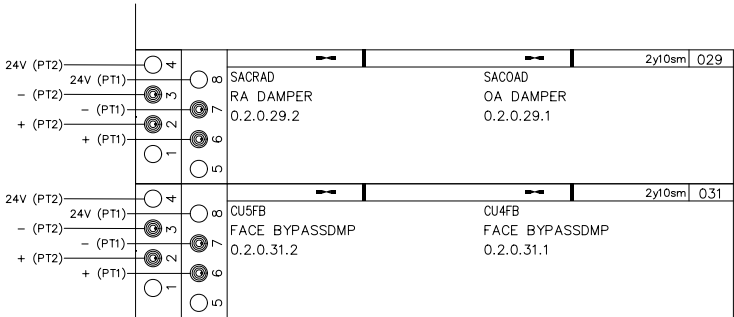
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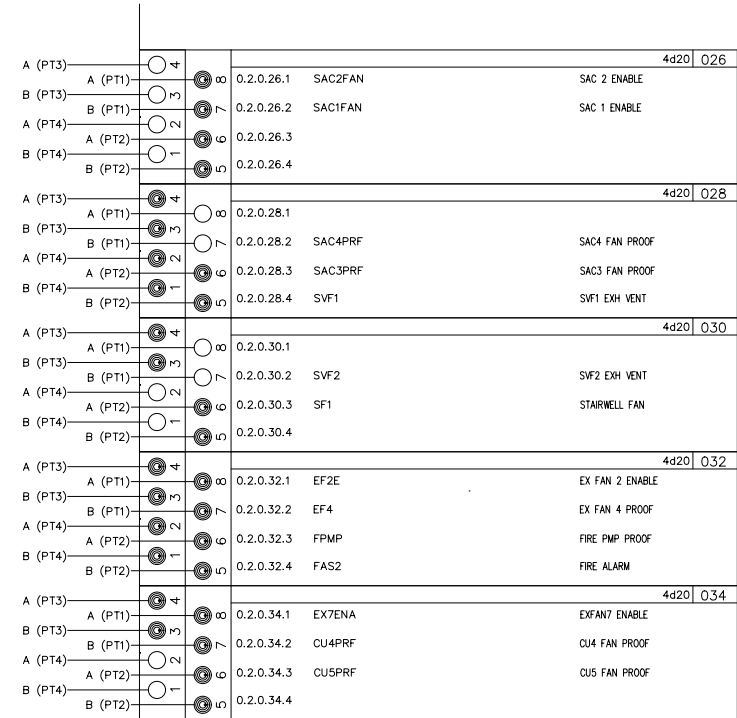
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OPEN PROCESSOR
RS485 / 72 MB



562-001

Control Device	Qty	Product Number	Manufacturer	Document Number	Description
Field Mounted Devices					
AE 1–3	3	GCA161.1U	SIEMENS	154001	MOD(V) SR,24V, MED.
AE 4	1	GCA161.1P	SIEMENS	154001	MOD(V) SR,24V, MED. PLNM
AK 1	1	TXA1.K24	SIEMENS	149476	ADDRESS KEY 1–24
CS 1–2	2	H609	VERIS	H609	Current Switch,Split–Core,Adj,N.O.,120V
DPTE 1–2	2	PXULX05S	VERIS INDU	px_d07101	PXULX05S,Pressure,Dry,Universal,LCD
EB 1	1	6G38–E–DIN	KELE INC	6G38	3/8” END SECTION – DIN MOUNT
HTE 1	1	QFA3001.WU	SIEMENS	149479	RM RH 2% 3–WIRE! ORDER QFA3001.WU–2–WIRE
MC 1	2	MSK	KELE INC	6G38	END BRACKET FOR 6G38–TSKK–DIN 2 REQUIRED
PNL 1	1	PXA–ENC34	SIEMENS	149475	ENCLOSURE ASSY 34
PSM 1–2	2	TXS1.12F4	SIEMENS	149476	24VDC SUPPLY 1200MA, 4 A FUSE
PTE 1–4	4	209–500P–G2M11–A1	SETRA	209Series	SETRA 0–5––# TRANSMITTER
PXCM 1	1	PXC100–PE96.A	SIEMENS	149478	PXC MOD, P2, TX–I/O, 96 NODE, APOGEE
RE 1–2	2	V645	VERIS	V645	V645,24VAC/DC/120VAC,LED,SPDT RELAY
SB 1	1	PXA–SB115V192VA	SIEMENS	553131	SERVICE BOX 115V, 24VAC, 192VA
SPP 1–4	4	269–062	SIEMENS	269–062	PR269 ACCESSORY, SENSING TUBE
T 1	25	6G38–TSKK–DIN	KELE INC	6G38	DIN RAIL MOUNTED TERMINAL BLOCK
TTE 1–3	3	544–342–24	SIEMENS	149261	FLEX AVER SNSR, PT 1K OHM, 24FT PROBE
TTE 4	1	544–339–18	SIEMENS	149261	DCT PT SNSR, PT 1K OHM, (375), 18” PROBE
TTE 5–7	3	544–342–24	SIEMENS	149261	FLEX AVER SNSR, PT 1K OHM, 24FT PROBE
TTE 8	1	540–760A	N/A	149312	SENSING ONLY. NO DISPLAY, BEIGE
TXIO 1–3	3	TXM1.6R–M	SIEMENS	149476	6 RELAY OUTPUT MODULE W/OVD
TXIO 4	1	TXM1.16D	SIEMENS	149476	16 DIGITAL INPUT MODULE
TXIO 5–7	3	TXM1.8X	SIEMENS	149476	8 UNIV I/O MODULE W/ 4–20MA
TXIO 8	1	TXM1.8X–ML	SIEMENS	149476	8 UNIV I/O W/ 4–20MA, OVD&LCD
TXIO 9	1	PXX–485.3	SIEMENS	149478	PXC MOD EXPANSION MODULE, 3 RS–485
TXIO 10	1	TXS1.EF4	SIEMENS	149476	BUS CONNECTION MODULE, 4A FUSE

Control Device	Qty	Product Number	Manufacturer	Document Number	Description
XFMR 1	1	X100CAA	VERIS	x_d	XFrmr,100VA,120–24VAC,CB,Ft & Single Hub

The constant volume air handling unit consists of a mixed air section with outdoor air and return air dampers, pre–filter, DX cooling coil, gas heating section and supply fan. The unit is DDC controlled using electric actuation.

The air handling unit is scheduled for automatic operation on a time of day basis for Occupied and Unoccupied modes. Within the Occupied mode, the system can enter the Warm–Up mode when the space temperature is below set point or the Cool–Down mode when the space temperature is above set point. The system stays in the Warm–Up or Cool–Down mode until the mode set point is satisfied. Within the Unoccupied mode, Night Heating is available when the space temperature drops below 65 degrees F (18 degrees C) and Night Cooling is available when the space temperature rises above 85 degrees F (29 degrees C). The latest start time is the scheduled occupancy for the space.

The air handling unit operates in Warm–Up, Cool–Down, Occupied, Unoccupied, Night Heating, Night Cooling and Safety modes as follows (All suggested set points and settings are adjustable.):

Occupied

The supply air temperature set point is reset based on the room temperature set point.

The fan starts or continues to run and the unit is controlled as follows:

When the outside air dry bulb temperature is below the economizer changeover value, the mixing dampers modulate with the gas heating and DX cooling staging to maintain supply air temperature set point with a low limit of 48 degrees F (9 degrees C) at the mixed air sensor. The mixing dampers ramp open slowly to minimize overshooting.

When the outside air dry bulb temperature is above the economizer changeover value, the mixing dampers are placed in the minimum outdoor air position. The gas heating and DX cooling stage in sequence without overlap to maintain the supply air temperature set point.

Return air humidity overrides control of DX cooling to maintain 55% relative humidity.

Unoccupied

The supply fan is off, the DX cooling is off, gas heating is off and mixing dampers close to the outdoor air.

Night Heating

The supply fan starts with the gas heating staging to maintain the supply air temperature set point for a minimum space temperature of 65 degrees F (18 degrees C). The DX cooling remains off and the mixing dampers are closed to the outdoor air.

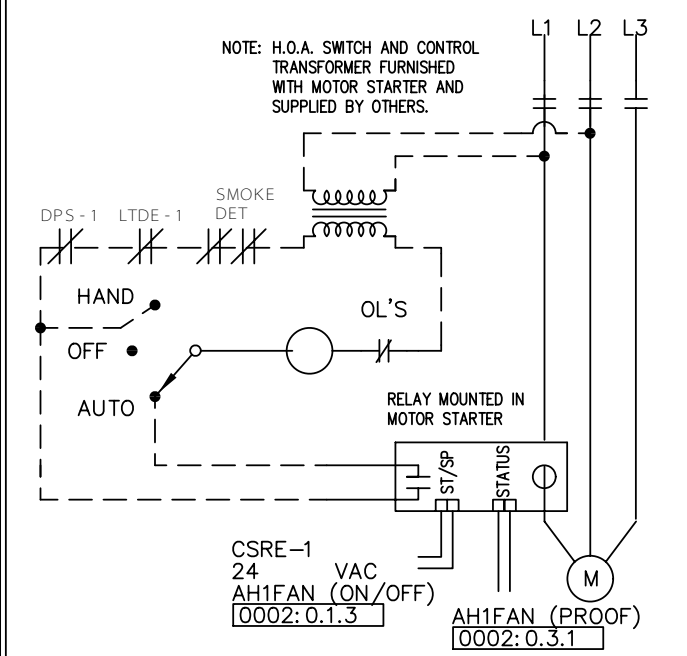
Night Cooling

The supply fan starts with the DX cooling staging and mixing dampers modulating in sequence without overlap to maintain the supply air temperature set point for a maximum space temperature of 85 degrees F (29 degrees C). When the outside air dry bulb temperature is above the economizer changeover value, the mixing dampers are closed. The gas heating remains off.

Safety

Smoke detectors in the supply and return air streams de–energize the supply fan upon activation. The DX cooling and gas heating are off. All dampers position to their normal position after the fan is de–energized. A current switch is installed in the supply fan starter. The DDC system uses this switch to confirm the fan is in the desired state (i.e. on or off) and generates an alarm if status deviates from DDC start/stop control.

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			ENGINEER DWJ	DRAFTER DWJ	CHECKED BY JLJ	INITIAL RELEASE	LAST EDIT DATE 12/29/15	008
			AHU-81.91					



2
009

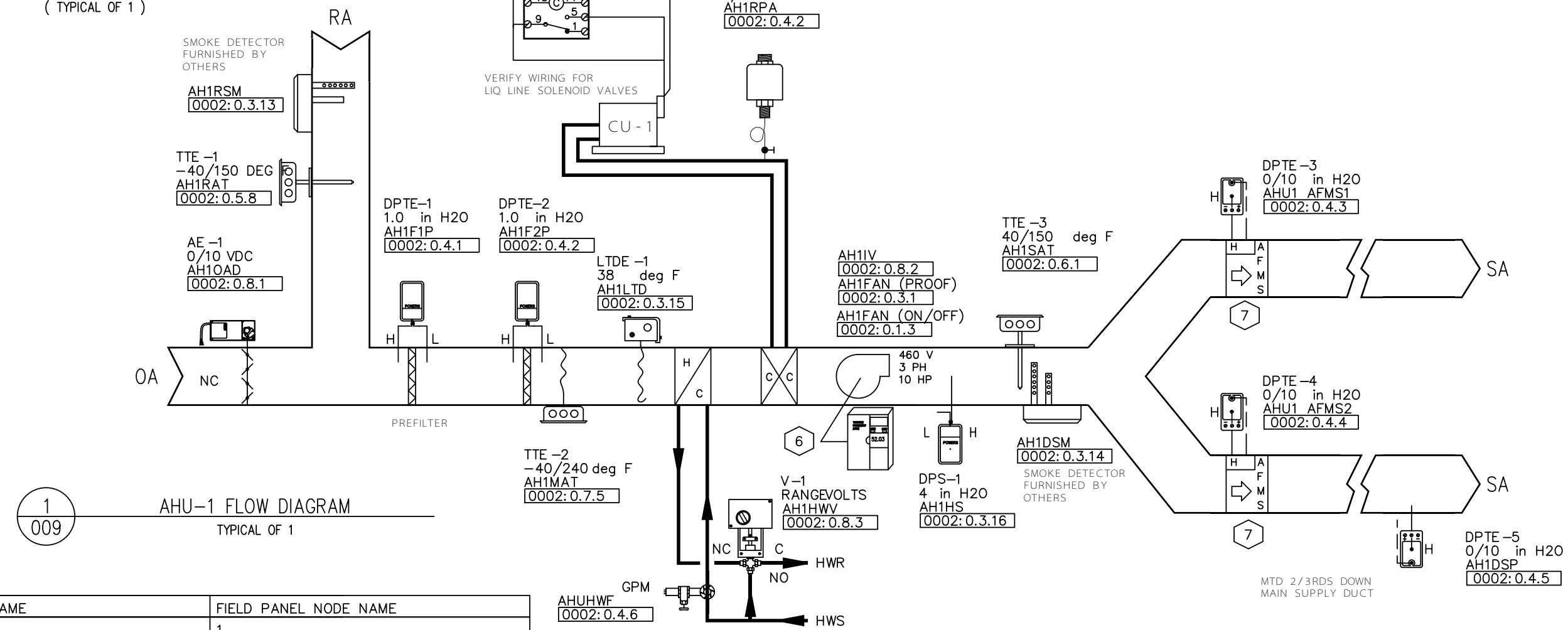
AHU-1 WIRING DIAGRAM
(TYPICAL OF 1)

- INSTALLATION NOTES:
- 1 REUSE EXISTING CONDUIT WHERE POSSIBLE.
 - 2 AHUS TO BE REPLACED WITH NEW AHUS. REPLACE REMOVED CONTROLS WITH NEW DEVICES.
 - 3 CONTROL TRANSFORMERS AND RELAYS MOUNTED IN COMPONENT PANEL.
 - 4 REUSE CONDUIT ON THE EXTERIOR OF THE WALL FOR WIRE PATH TO CONDENSING UNITS.
 - 5 SMOKE DETECTOR PROVIDED, MOUNTED, AND WIRED BY DIVISION OTHERS.
 - 6 VFD IS EXISTING AND TO BE REUSED.
 - 7 AI FLOW MEASURING STATION EXISTING AND TO BE REUSED.

SEQUENCE OF OPERATION:

AIR HANDLING UNIT NO.1:

THE UNIT WILL BE STARTED AND STOPPED IN ACCORDANCE WITH A PREDEFINED TIME SCHEDULE. WHEN THE UNIT STARTS THE OSA DAMPER WILL OPEN TO ITS MINIMUM POSITION SETTING. THE CONTROLLER WILL MODULATE THE SUPPLY FAN INLET VANE DAMPER TO MAINTAIN SUPPLY DUCT STATIC PRESSURE SETPOINT. THE CONTROLLER WILL CYCLE THE DX COOLING COMPRESSOR AS REQUIRED TO MAINTAIN DISCHARGE AIR TEMPERATURE SETPOINT OF 55 DEG F (ADJUSTABLE). THE CONTROLLER WILL OPERATE THE UNIT IN A HEATING MODE WHEN THE RETURN AIR TEMPERATURE DROPS BELOW 60 DEG (ADJUSTABLE). IN THE HEATING MODE THE OSA DAMPER WILL CLOSE, HOT WATER FLOW CONTROL VALVE WILL MODULATE TO FULL OPEN POSITION, AND THE INLET GUIDE VANES WILL BE REFERENCED TO 100 PERCENT. THE ASSOCIATED VAV BOX PRIMARY AIR DAMPERS WILL BE FULLY OPEN AND THE ZONE SPACE SENSORS WILL OPEN HOT WATER FLOW CONTROL VALVES TO MAINTAIN 68 DEGREES (ADJUSTABLE) SETPOINT. WHEN THE RETURN AIR RISES TO 65 DEGREES F (ADJUSTABLE), THE AHU WILL RETURN TO THE COOLING MODE. DUCT MOUNTED SMOKE DETECTOR STATIC PRESSURE HI LIMIT OR MIXED AIR LOW TEMP THERMOSTAT IF ACTIVATED WILL SHUT DOWN THE UNIT.



1
009

AHU-1 FLOW DIAGRAM
TYPICAL OF 1

REF#	FIELD PANEL NAME	FIELD PANEL NODE NAME
0002	PXCM1	1

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AHU-1				

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0
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SIEMENS

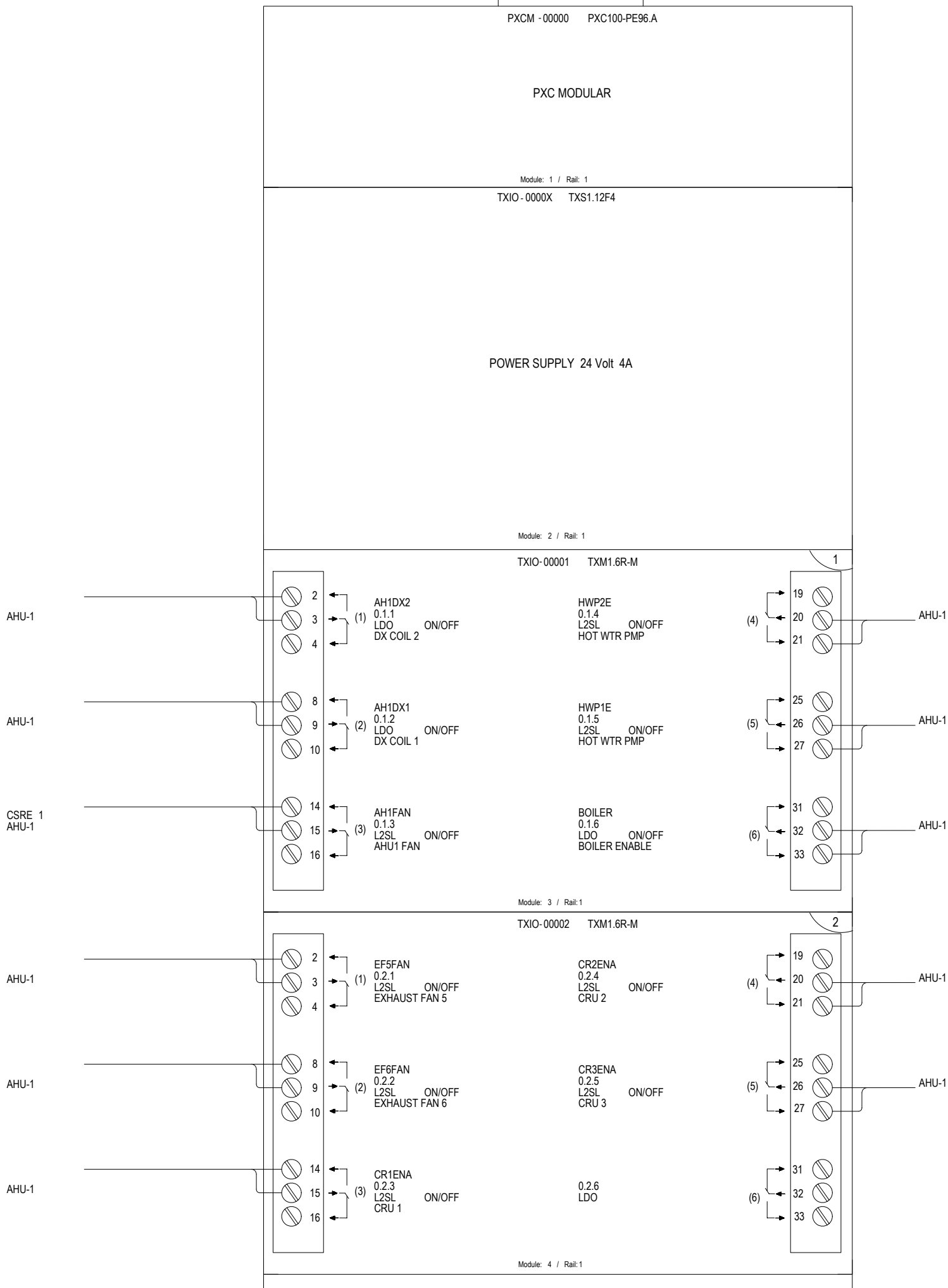
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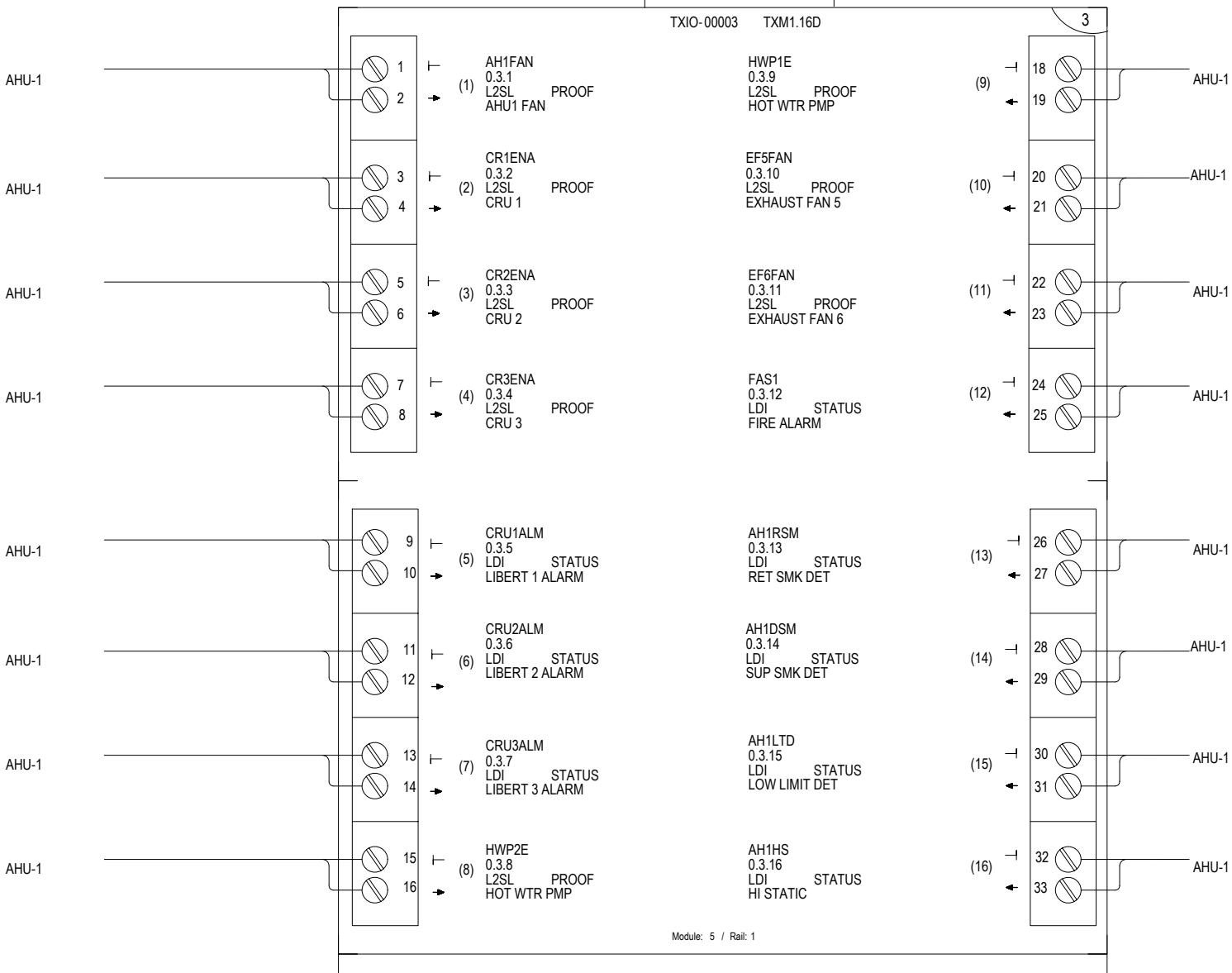
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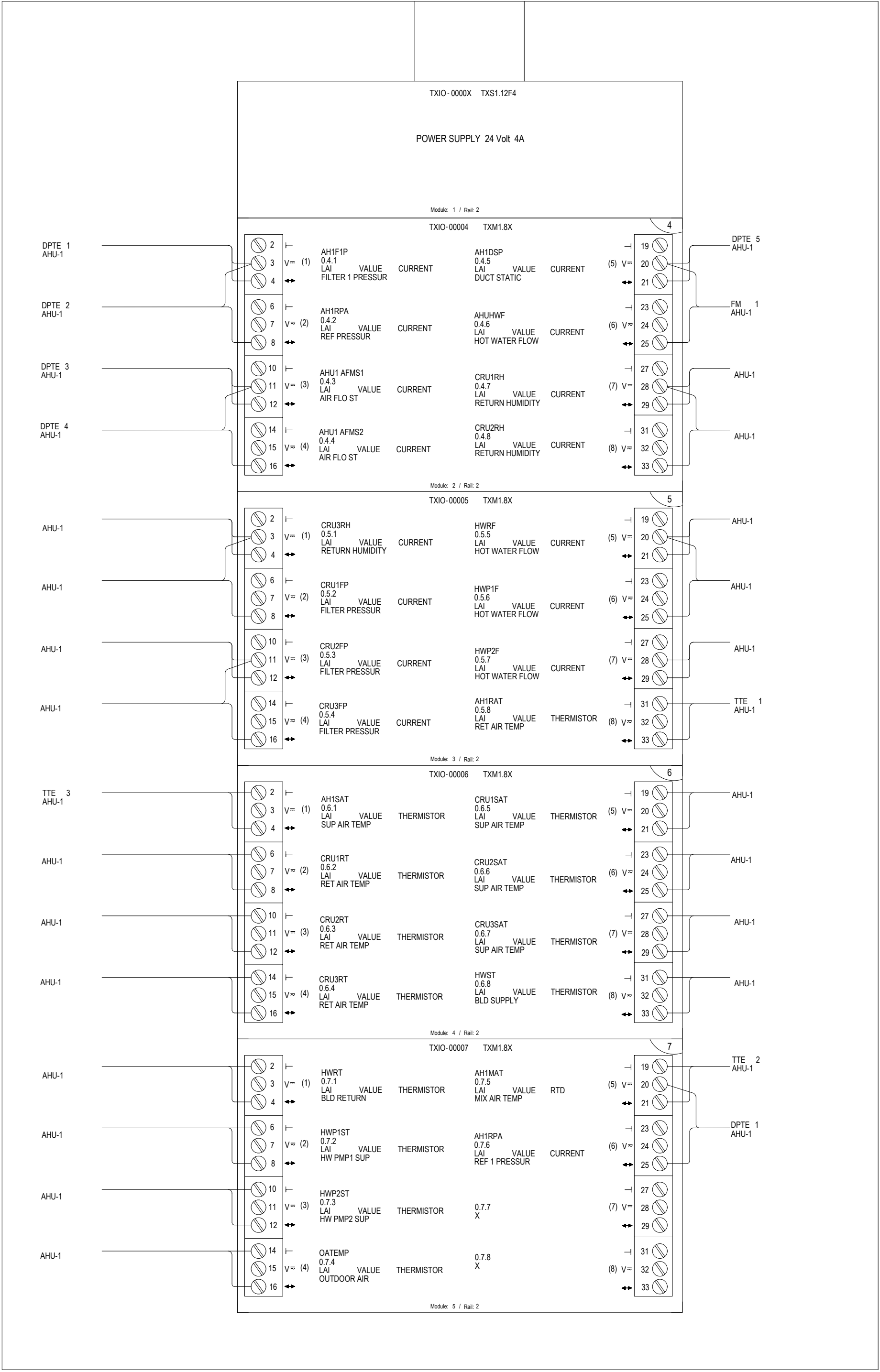
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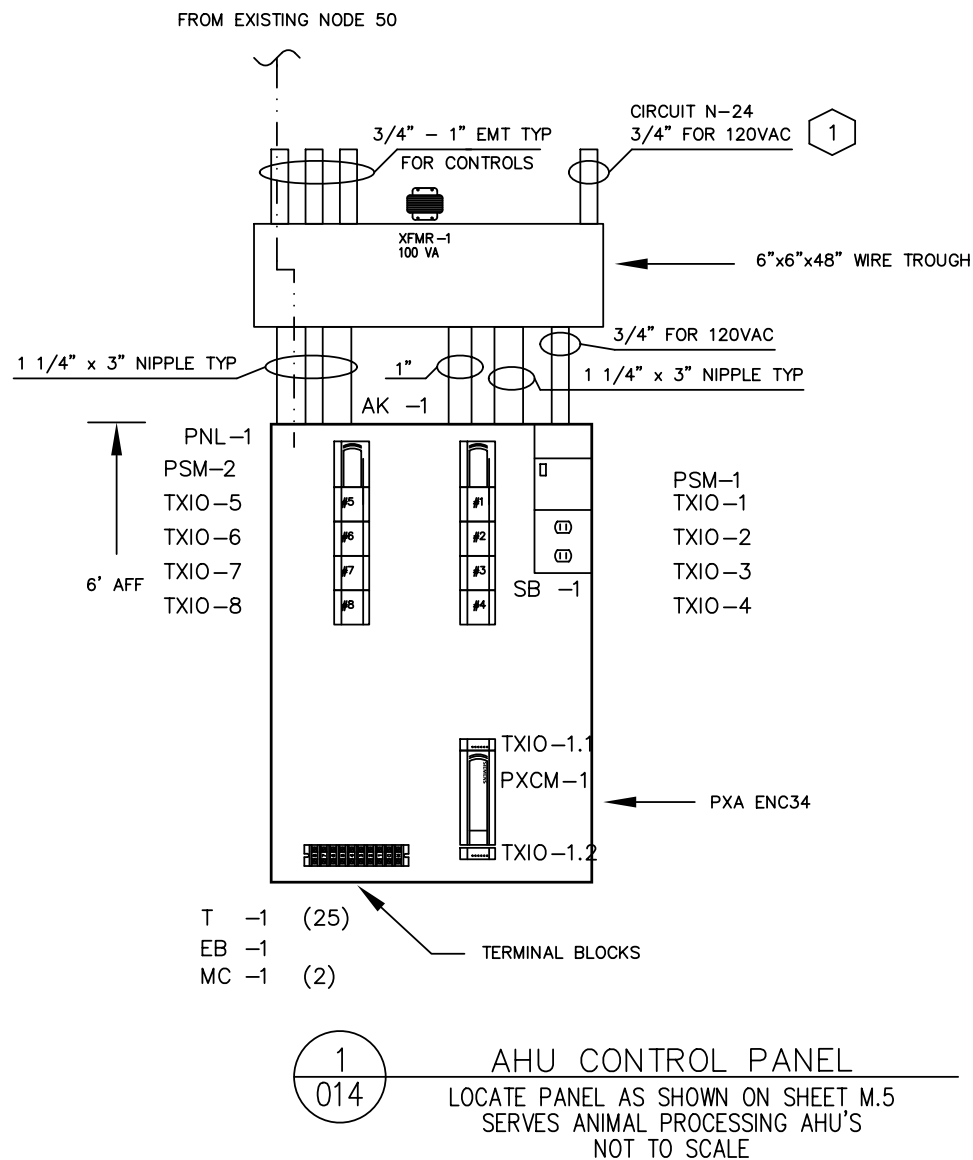
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INSTALLATION NOTES:

- 120 VAC DEDICATED POWER CIRCUIT PROVIDED BY ELEC IS EXISTING. REUSE EXISTING POWER FEED.
- RE-USE EXISTING PANELS AND CONDUIT WHEN POSSIBLE.
- DIAGRAMS ARE GRAPHICAL AND MAY CHANGE DUE TO SITE CONDITIONS.



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AHU-1 PANEL

C4431
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		AH1SAT SUP AIR TEMP 0.1.0.1.2 AH1RAT RET AIR TEMP 0.1.0.1.1	2n100k 001	1A	
		CRU1RT RET AIR TEMP 0.1.0.3.2 0.1.0.3.1	2n100k 003	2A	
		CRU3RT RET AIR TEMP 0.1.0.5.2 CRU2RT RET AIR TEMP 0.1.0.5.1	2n100k 005	3A	
		CRU2SAT SUP AIR TEMP 0.1.0.7.2 CRU1SAT SUP AIR TEMP 0.1.0.7.1	2n100k 007	4A	
		HWST BLD SUPPLY 0.1.0.9.2 CRU3SAT SUP AIR TEMP 0.1.0.9.1	2n100k 009	5A	
		HWPIST HW PMP1 SUP 0.1.0.11.2 HWRT BLD RETURN 0.1.0.11.1	2n100k 011	6A	
		OATEMP OUTDOOR AIR 0.1.0.13.2 HWPIST HW PMP2 SUP 0.1.0.13.1	2n100k 013	7A	
		AH1F2P FILTER 2 PRESSUR 0.1.0.15.2 AH1F1P FILTER 1 PRESSUR 0.1.0.15.1	2i420 015	8A	
		AHUHWF HOT WATER FLOW 0.1.0.19.2 AH1DSP DUCT STATIC 0.1.0.19.1	2i420 019	9A	
		CRU2RH RETURN HUMIDITY 0.1.0.21.2 CRU1RH RETURN HUMIDITY 0.1.0.21.1	2i420 021	10A	
		CRU1FP FILTER PRESSUR 0.1.0.23.2 CRU3RH RETURN HUMIDITY 0.1.0.23.1	2i420 023	11A	
		CRU3FP FILTER PRESSUR 0.1.0.25.2 CRU2FP FILTER PRESSUR 0.1.0.25.1	2i420 025	12A	
		HWPIF HOT WATER FLOW 0.1.0.27.2 HWRF HOT WATER FLOW 0.1.0.27.1	2i420 027	13A	
		0.1.0.29.2 HWPIF HOT WATER FLOW 0.1.0.29.1	2i420 029	14A	
		0.1.0.31.2 AH1MAT MIX AIR TEMP 0.1.0.31.1	2n100k 031	15A	
		AH1V INLET VANES 0.1.0.33.2 AH1OAD OA DAMPER 0.1.0.33.1	2y10sm 033	16A	
		0.1.0.35.2 AH1HWV HOT WTR VLV 0.1.0.35.1	2y10sm 035	17A	
OPEN PROCESSOR					MBC 001
RS485 / 72 MB					19B
					562-001
POWER MODULE					20B
					545 714

Control Device	Qty	Product Number	Manufacturer	Document Number	Description
Field Mounted Devices					
AE 1	1	SQB61.1	SIEMENS	N/A	RETURN DMPR ACT OBS/ BY GCA151.1U
AK 1	1	TXA1.K24	SIEMENS	149476	ADDRESS KEY 1–24
CSRE 1	1	H735	VERIS	1006cut009	CURRENT SENSOR W/RELAY
DPS 1	1	141–0575	SIEMENS	155 052	AIR FLOW SWITCH.05/12 MAN REST
DPTE 1–6	6	PXULX05S	VERIS INDU	px_d07101	PXULX05S,Pressure,Dry,Universal,LCD
LTDE 1	1	134–1504	SIEMENS	155 016	T’SSTAT, LOW TEMP,15/55,MANUAL
MC 1	2	MSK	KELE INC	6G38	END BRACKET FOR 6G38–TSKK–DIN 2 REQUIRED
PNL 1	1	PXA–MEC34KIT	SIEMENS	MEC34KIT	MEC LARGE ENCL MIGRATION KIT
PS 1	1	209–500P–G2M11–A1	SETRA	209Series	SETRA 0–5––# TRANSMITTER
PXCM 1	1	PXC100–PE96.A	SIEMENS	149478	PXC MOD, P2, TX–I/O, 96 NODE, APOGEE
RE 1–2	2	V645	VERIS	V645	V645,24VAC/DC/120VAC,LED,SPDT RELAY
SB 1	1	PXA–SB115V192VA	SIEMENS	553131	SERVICE BOX 115V, 24VAC, 192VA
T 1	25	6G38–TSKK–DIN	KELE INC	6G38	DIN RAIL MOUNTED TERMINAL BLOCK
TTE 1–2	2	544–339–18	SIEMENS	149261	DCT PT SNSR, PT 1K OHM, (375), 18” PROBE
TXIO 1–3	3	TXM1.6R–M	SIEMENS	149476	6 RELAY OUTPUT MODULE W/OVD
TXIO 4	1	TXM1.16D	SIEMENS	149476	16 DIGITAL INPUT MODULE
TXIO 5–7	3	TXM1.8X	SIEMENS	149476	8 UNIV I/O MODULE W/ 4–20MA
TXIO 8	1	TXM1.8X–ML	SIEMENS	149476	8 UNIV I/O W/ 4–20MA, OVD&LCD
TXIO 9	1	PXX–485.3	SIEMENS	149478	PXC MOD EXPANSION MODULE, 3 RS–485
TXIO 10	1	TXS1.EF4	SIEMENS	149476	BUS CONNECTION MODULE, 4A FUSE
XFMR 1	1	X100CAA	VERIS	x_d	XFrmr,100VA,120–24VAC,CB,Ft & Single Hub

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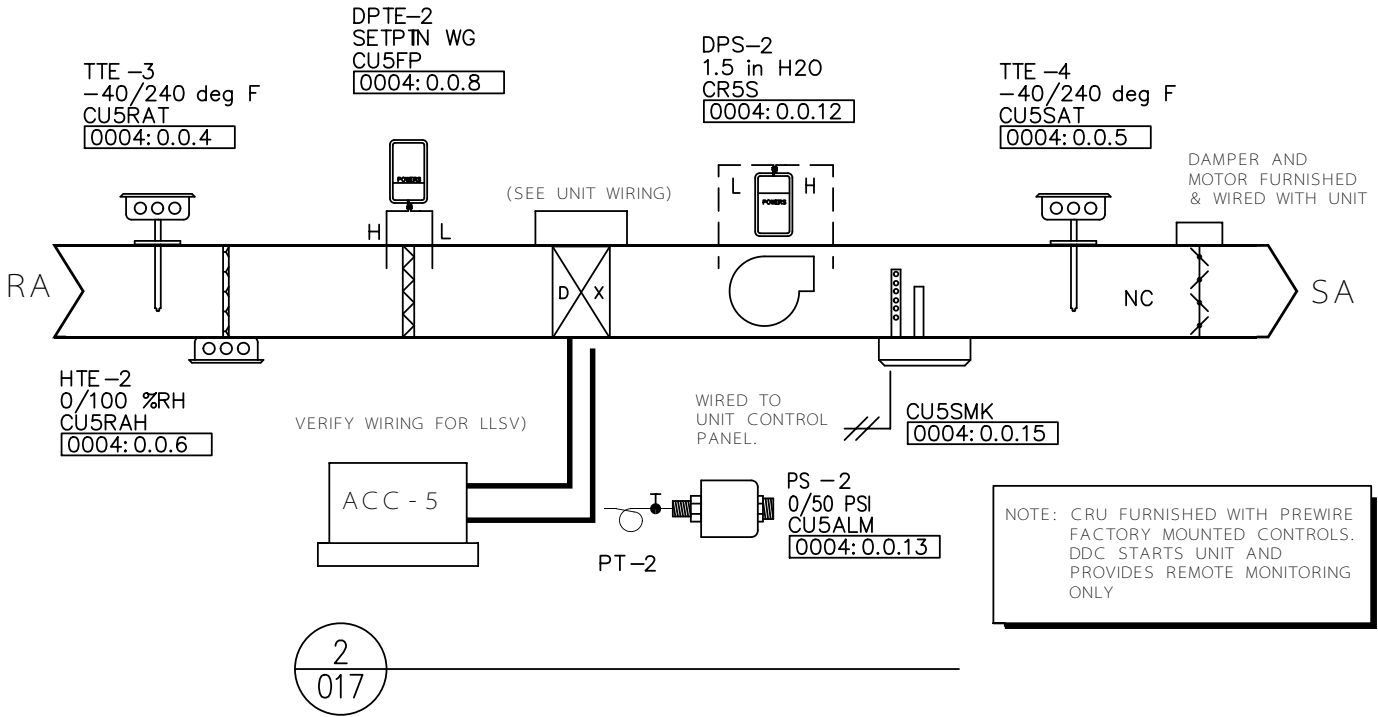
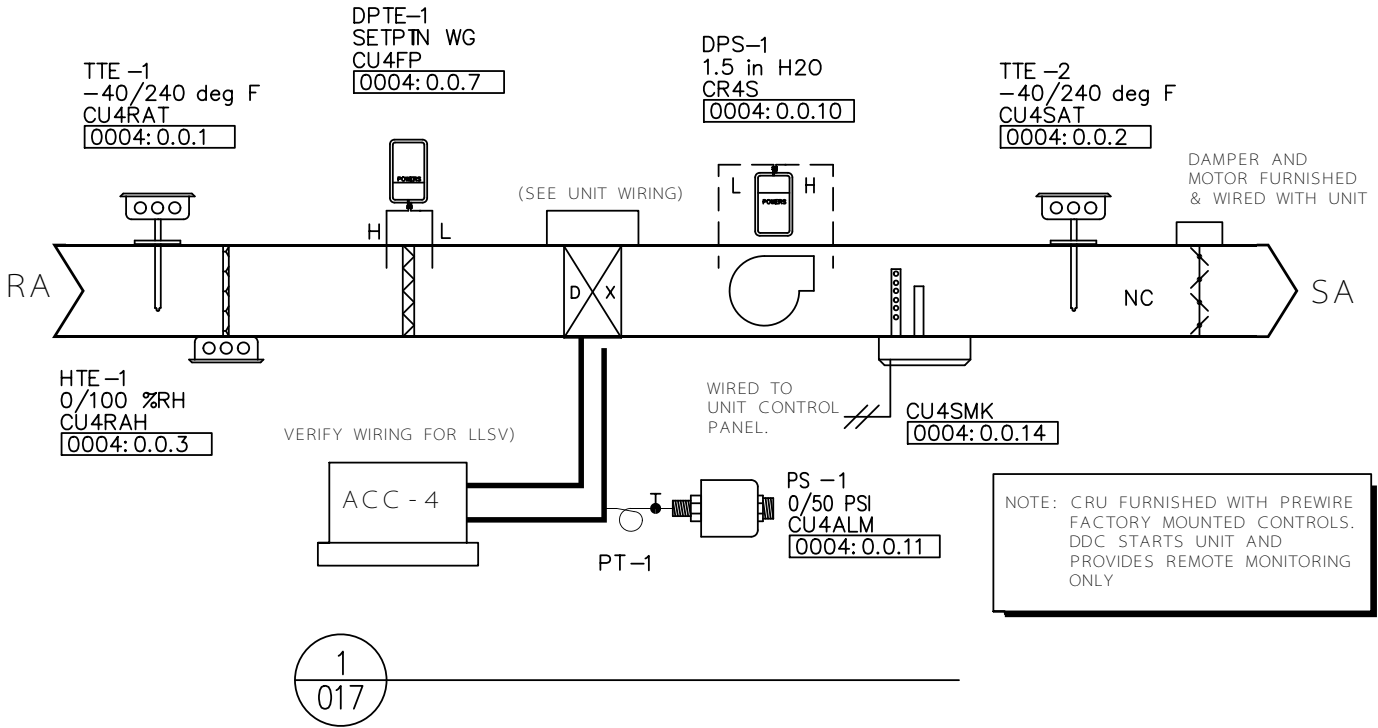
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ENGINEER	DRAFTER	CHECKED BY	INITIAL RELEASE	LAST EDIT DATE
DWJ	DWJ	JLJ		12/29/15

AHU-1

C4431

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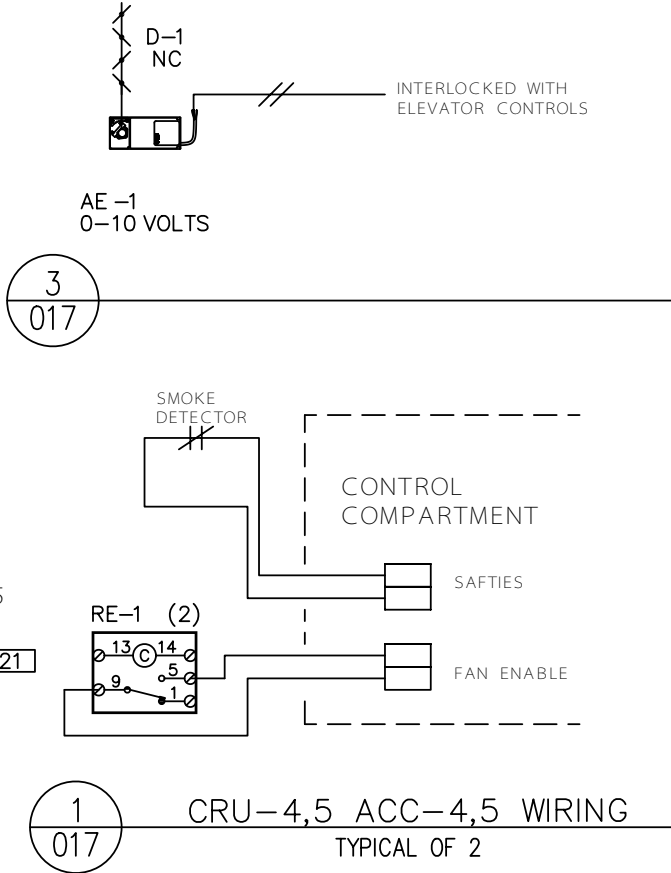
Control Device	Qty	Product Number	Manufacturer	SD Number	Document Number	Description
Field Mounted Devices						
DPS 1-2	2	141 0518	LANDIS & GYR	PC5-9	155 052	SWITCH,AIR FLOW,1.0/12 WG
DPTE 1-2	2	C264-2	SETRA			0-2' DIFF PRSS TRANS
HTE 1-2	2	534 636	LANDIS & GYR	S600-61	149 099	DUCT RH TRANSMITTER +/-2%
PS 1-2	2	A70AB-1	PENN			PRESS SWITCH
RE 1	2	V635	VERIS			SOLID STATE RELAY 120/24VAC
TTE 1-4	4	544 339	LANDIS & GYR	S600-58	149 261	D/PT TEMP SENSOR,RTD,-40/240F

SEQUENCE OF OPERATION:
CRU-4 AND 5

CRU-1,2 AND 3 WILL BE STARTED AND STOPPED BY THE DDC SYSTEM. EACH UNIT IS SIZED FOR 1/2 CAPACITY SO ONLY TO UNITS WILL RUN AT ANY TIEM WITH THE 3RD ACTING AS A BACK-UP UNIT. EVERY 7 DAYS THE UNITS WILL BE ALTERNATED TO RUN. THE UNITS ARE CONTROLLED BY THEIR FACTORY FURNISHED CONTROL SYSTEM AND THE DDC SYSTEM WILL MONITOR AND ENABLE AND DISABLE ONLY.

ELEVATOR CONTROL DAMPER:

THE DAMPER WILL BE INTERLOCKED TO OPEN WHEN THE ELEVATOR IS IN USE.



REF#	FIELD PANEL NAME	FIELD PANEL NODE NAME
0004	PXCC2	PXCC2

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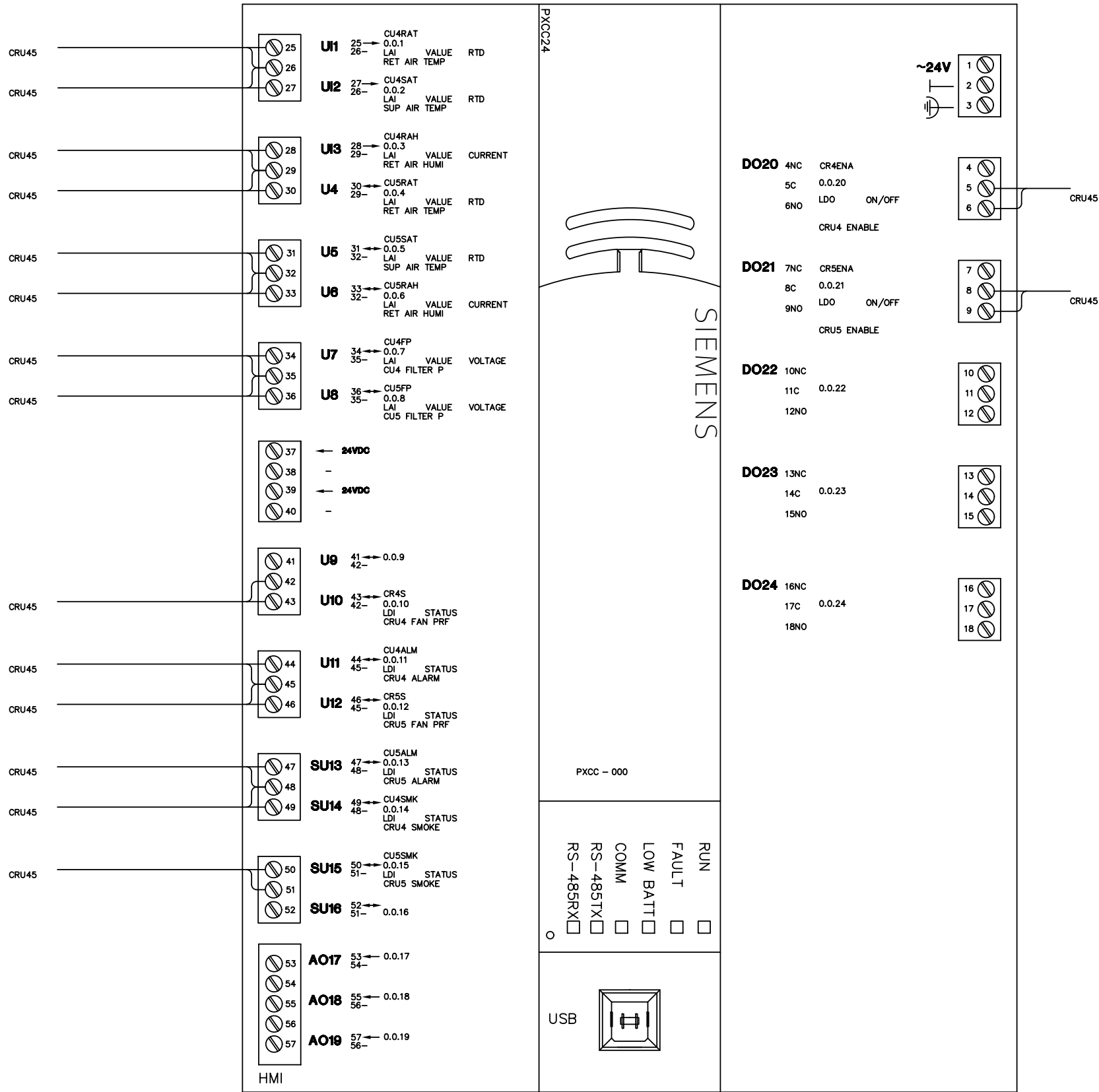
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DWJ	DWJ	JLJ	12/11/15	12/29/15

CRU45

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CRU45 PXCC

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018

Control Device	Qty	Product Number	Manufacturer	Document Number	Description
Field Mounted Devices					
XFMR 1	1	X050BAA	N/A	N/A	XFormer,50VA,120-24Vac,Ft Single Hub Mnt
Panel Mounted Devices					
PNL 1	1	PXA-UCKIT	SIEMENS	pxauckit	DIN RPLMT KIT FOR UC OR FLNC
PXCC 1	1	PXC24.2-PE.A	SIEMENS	149454	APOGEE 24PT, P2 ETHERNET

INSTALLATION NOTES:

1

REUSE EXISTING CONTROL PANEL.

2

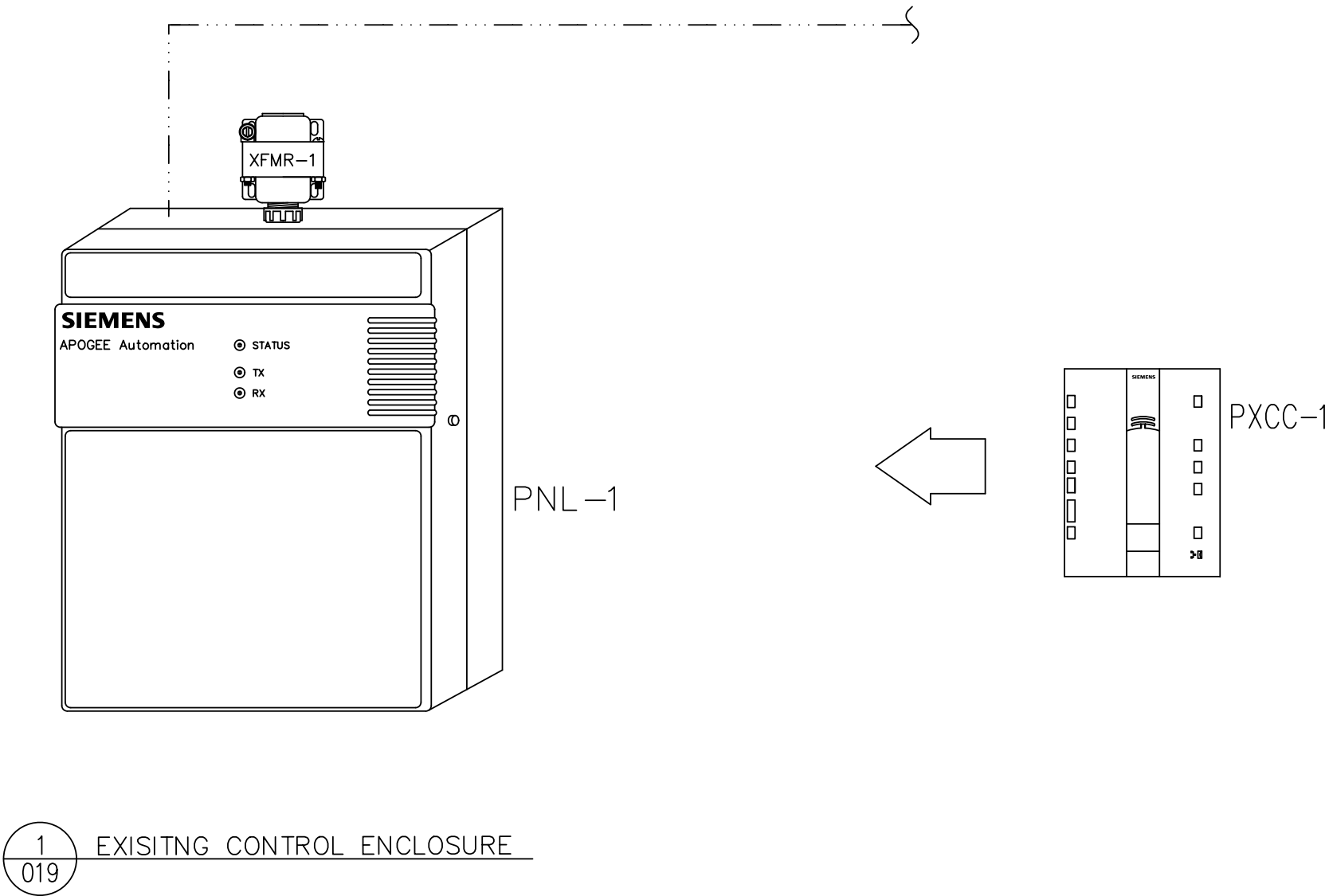
ADD A UC MIGRATION KIT TO THE EXISITNG PANEL.

3

NEW SIEMENS CONTROLLER TO BE MOUNTED IN THE EXISTING PANEL.

4

REUSE EXISTING CONDUIT AND WIRING TO TERMINATE TO
TO NEW SIEMENS CONTROLLER.



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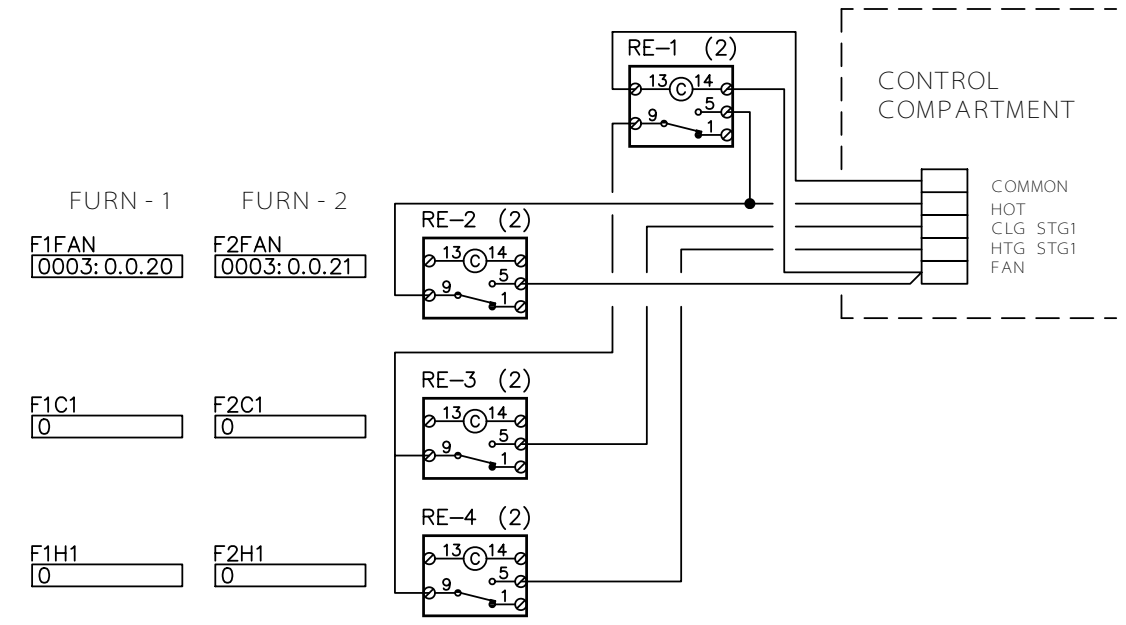
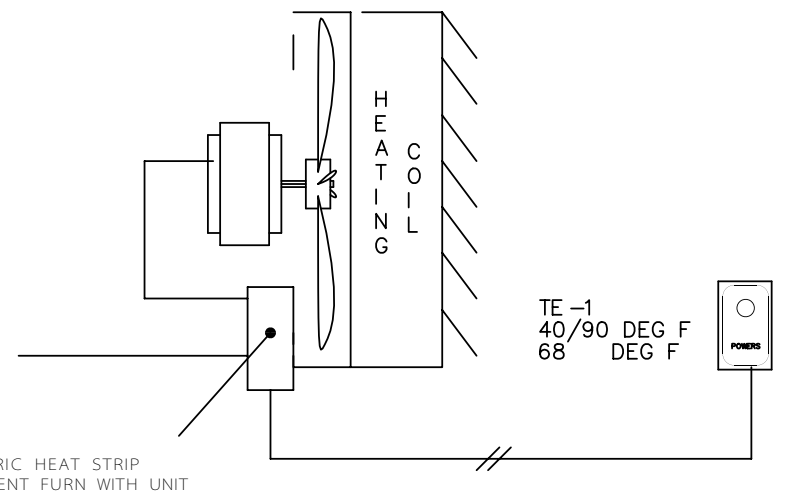
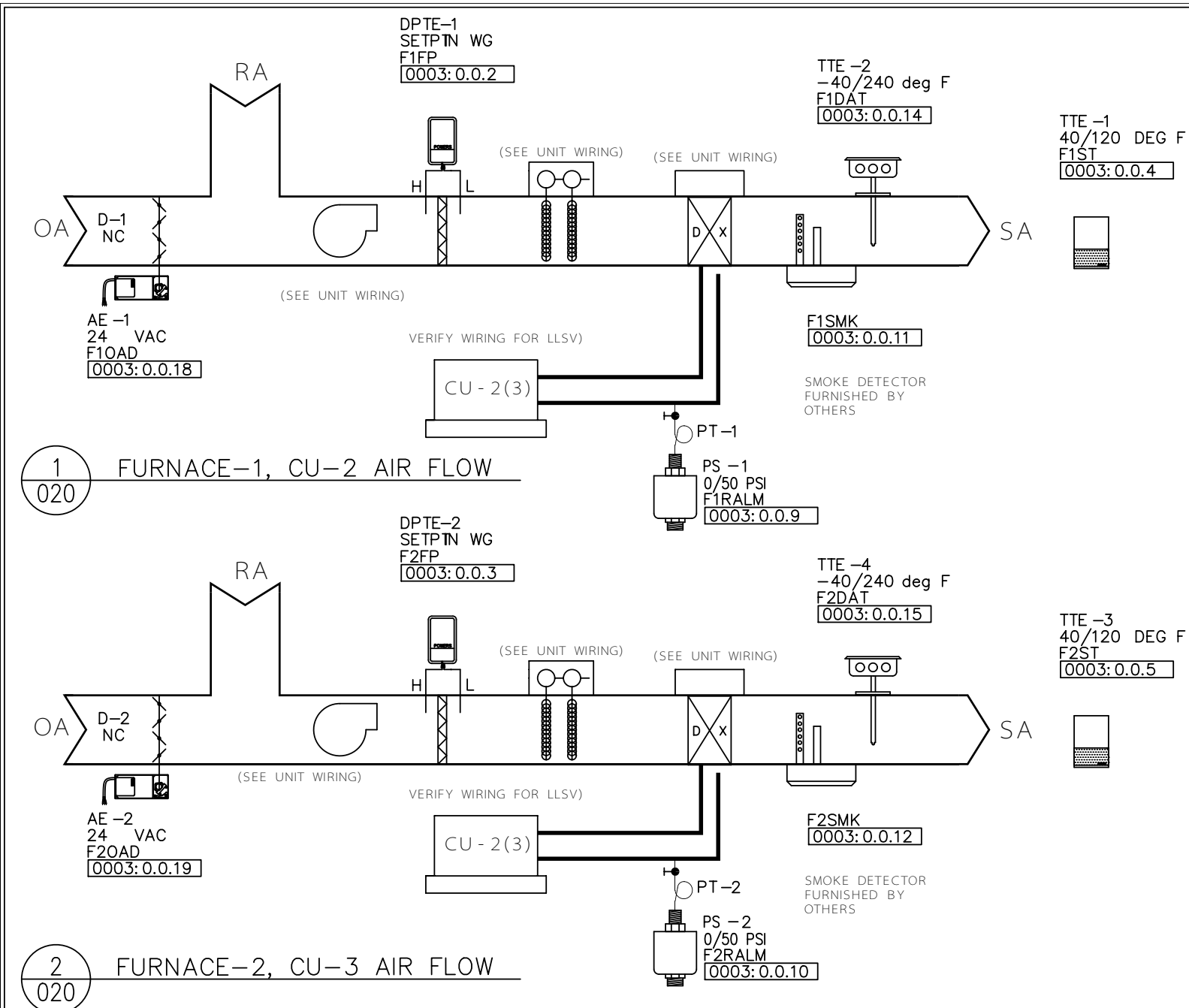
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CRU45 PANEL

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019



SEQUENCE OF OPERATION:

FURNACES FURN-1 AND 2:

FURNACES WILL BE STARTED AND STOPPED BY THE DC SYSTEM. WHEN THE FAN IS STARTED THE OSA DAMPER WILL BE OPENED. WHEN THE SPACE TEMPERATURE IS ABOVE SETPOINT THE CONDENSING UNIT WILL BE CYCLED AS REQUIRED TO MAINTAIN SETPOINT. WHEN THE SPACE TEMPERATURE IS BELOW SETPOINT ELECTRIC HEAT STRIPS WILL BE CYCLED AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT.

UNIT HEATER :

THE ELECTRIC SPACE MOUNTED THERMOSTAT WILL CYCLE THE FAN AND ELECTRIC HEAT AS REQUIRED TO MAINTAIN SEPOINT.

REF#	FIELD PANEL NAME	FIELD PANEL NODE NAME
0003	PXCC1	PXCC1

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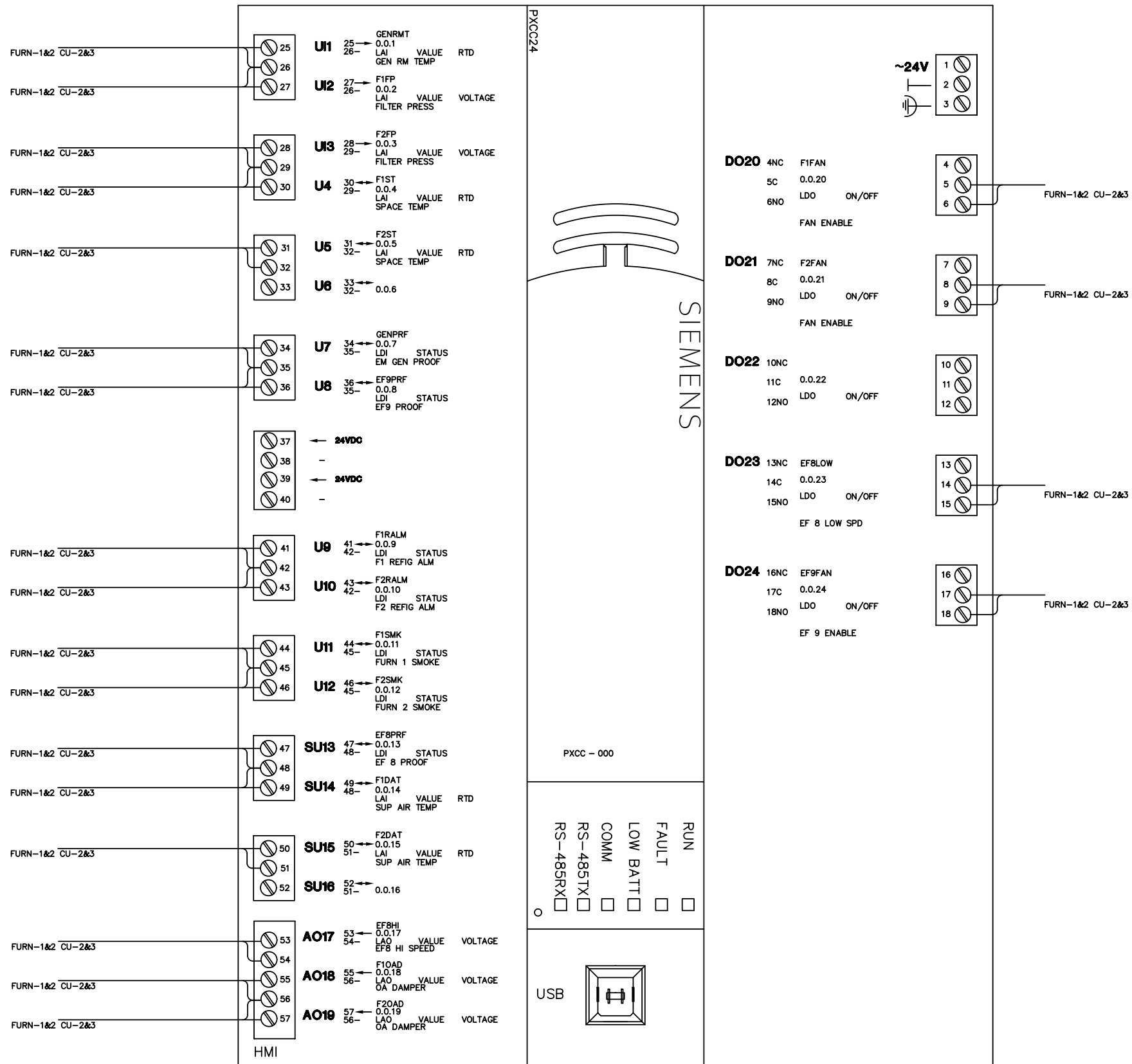
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FURN-1&2 CU-2&3

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FURN-1&2 PXCC

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021

Control Device	Qty	Product Number	Manufacturer	Document Number	Description
Field Mounted Devices					
XFMR 1	1	X050BAA	N/A	N/A	XFormer,50VA,120-24Vac,Ft Single Hub Mnt
Panel Mounted Devices					
PNL 1	1	PXA-UCKIT	SIEMENS	pxauckit	DIN RPLMT KIT FOR UC OR FLNC
PXCC 1	1	PXC24.2-PE.A	SIEMENS	149454	APOGEE 24PT, P2 ETHERNET

INSTALLATION NOTES:

1

REUSE EXISTING CONTROL PANEL.

2

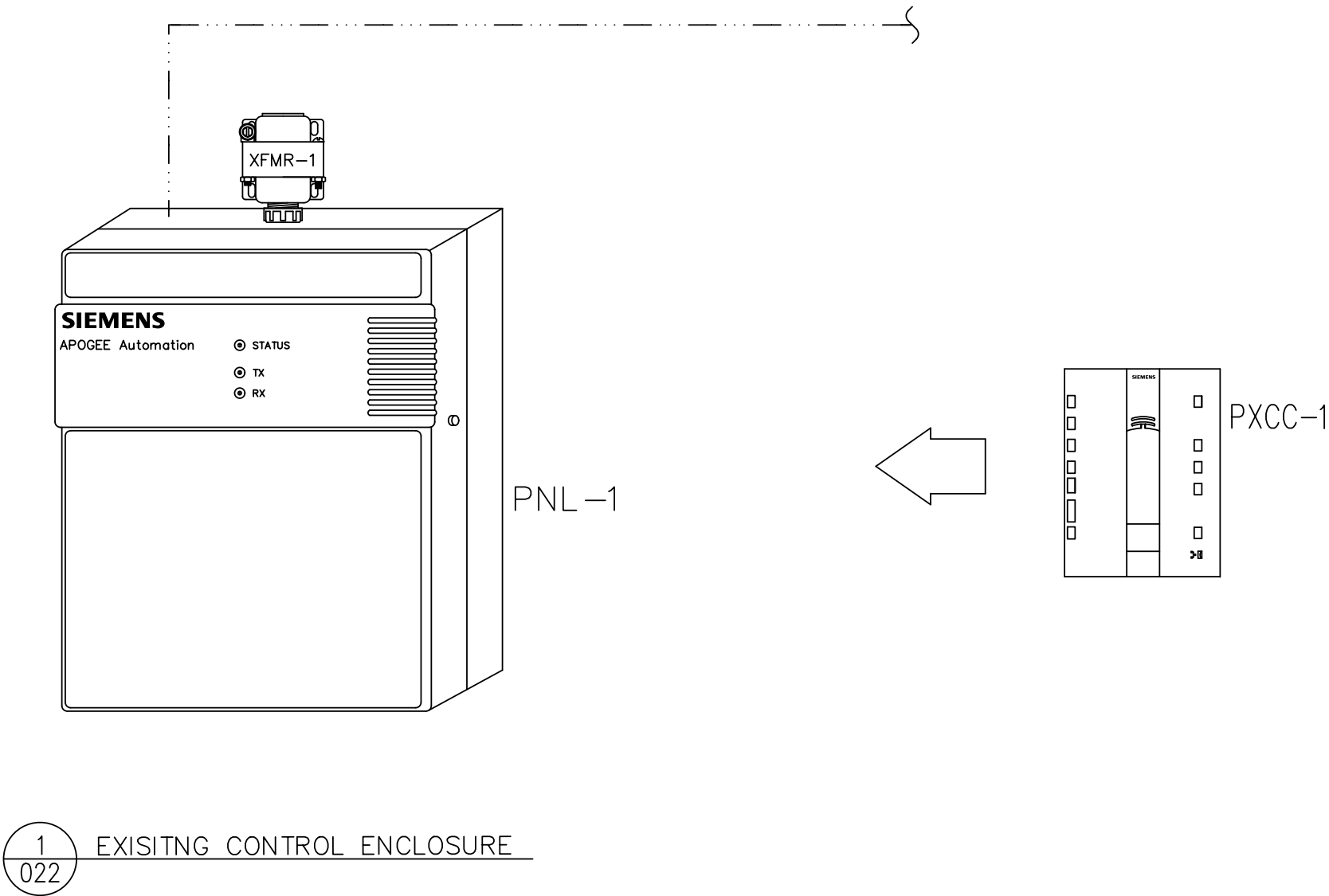
ADD A UC MIGRATION KIT TO THE EXISITNG PANEL.

3

NEW SIEMENS CONTROLLER TO BE MOUNTED IN THE EXISTING PANEL.

4

REUSE EXISTING CONDUIT AND WIRING TO TERMINATE TO TO NEW SIEMENS CONTROLLER.



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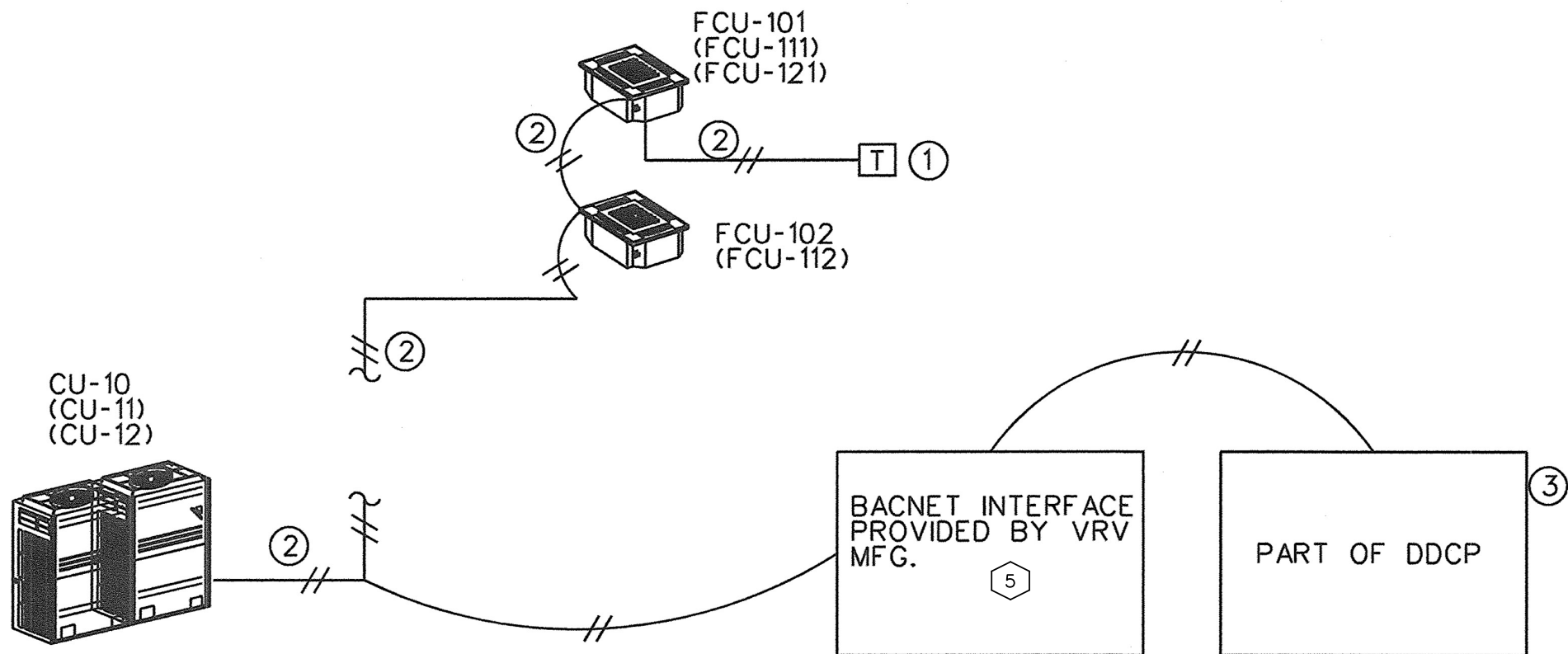
FURN-1&2 CU-2& PANEL

C4431
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022

INSTALLATION NOTES:

- 1 INSTALL AND WIRE VRF MANUFACTURER FURNISHED ROOM THERMOSTATS.
- 2 COMMUNICATION WIRING FROM INDOOR UNITS TO OUTDOOR CONDENSING UNITS BY POWERS.
- 3 BACnet COMMUNICATION TO VRF INTERFACE BY POWERS.
- 4 POWERS TO PROVIDE AND INSTALL NEW COMMUNICATION WIRING FOR THE NEW VRF SYSTEM.
- 5 INSTALL THE VRF MANUFACTURER FURNISHED BACnet INTERAFCE.
- 6 ALL VRF AC EQUIPMENT FURNISHED AND INSTALLED BY OTHERS .



1
023 VRF FLOW DIAGRAM
LOCATION: INTREMIADTE LEVEL
SEE SHEET LIT-ATCT-M05 FOR MORE DETAILS

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VRF

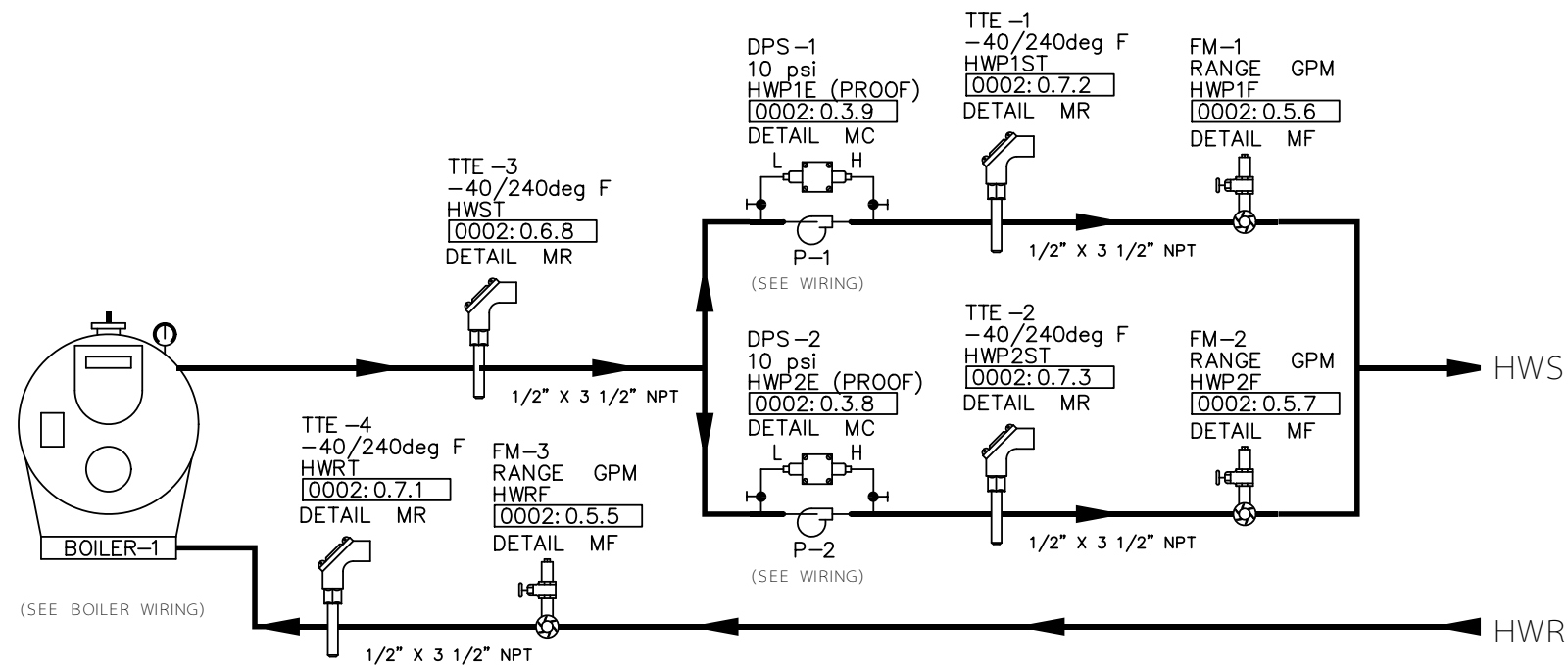
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THE FOLLOWING SHEETS ARE FOR REFERENCE ONLY.

THE FOLLOWING POINTS ARE EXISTING AND TERMINATE IN THE NEW CONTROLLERS.

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			ENGINEER DWJ	DRAFTER DWJ	CHECKED BY JLJ	INITIAL RELEASE 12/11/15	LAST EDIT DATE 12/29/15	
			NOTES					



SEQUENCE OF OPERATION:

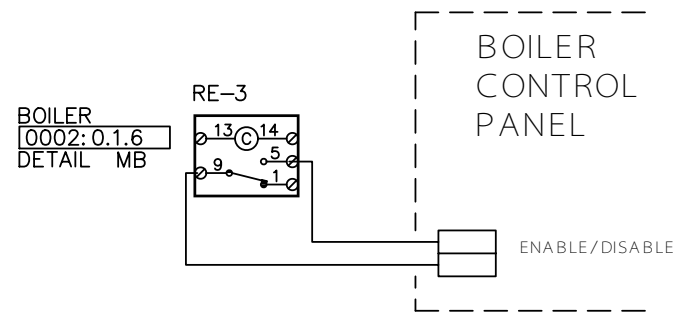
HOT WATER SYSTEM:

THE BOILER WILL BE STARTED MANUALLY OR THRU THE DDC SYSTEM. WHEN THE UNIT IS STARTED THE BOILER SELF-CONTAINED FACTORY MOUNTED CONTROLS WILL CONTROL THE BOILER TO MAINTAIN HOT WATER SUPPLY TEMPERATURE SETPOINT. AT THE HOT WATER PUMPS P-1 AND P-2 WILL OPERATE IN A LEAD AND STANDBY PUMP CONFIGURATION. SHOULD THE LEAD PUMP NOT START AN ALARM WILL BE SENT TO THE DDC SYSTEM AND THE STANDBY PUMP WILL BE STARTED.

UNIT HEATER:

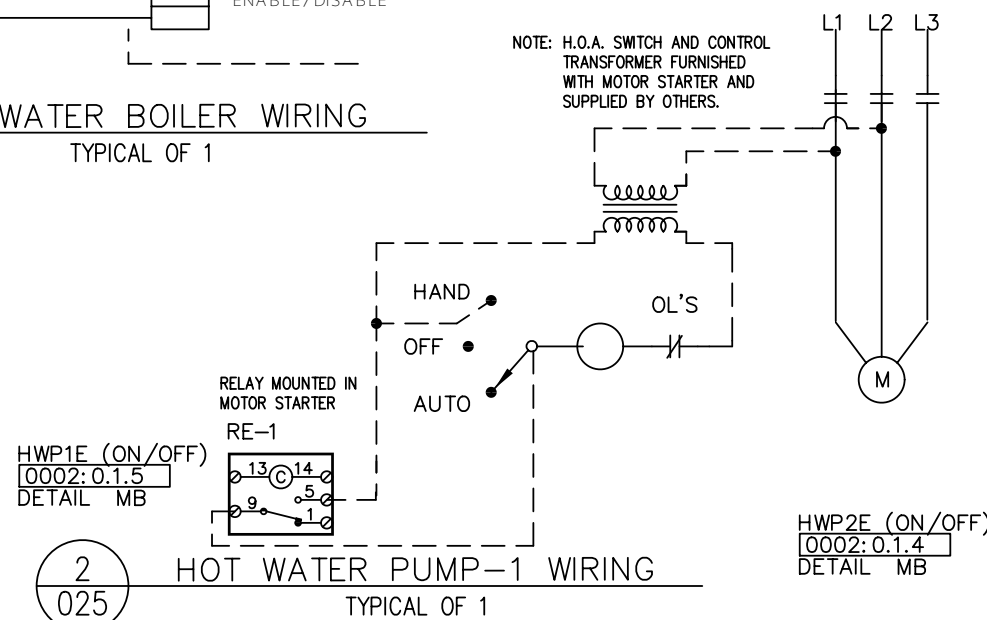
ELECTRIC THERMOSTAT WILL CYCLE UNIT HEATER FAN AND ELECTRIC HEAT ON A TEMPERATURE DROP BELOW SETPOINT.

1 HOT WATER SYSTEM PIPING



4 HOT WATER BOILER WIRING

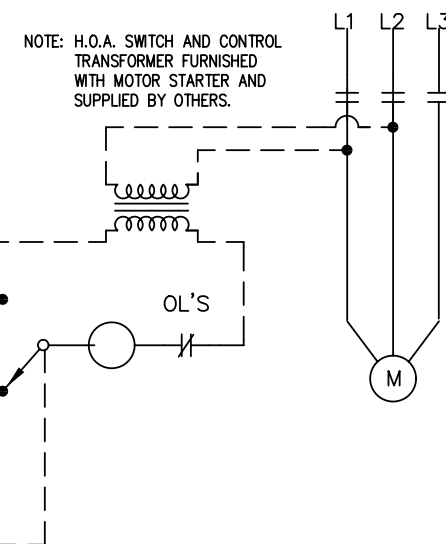
TYPICAL OF 1



2 HOT WATER PUMP-1 WIRING

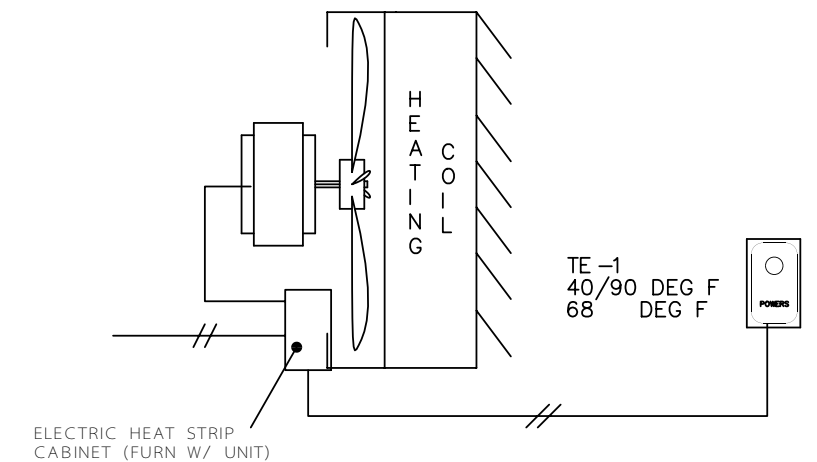
TYPICAL OF 1

NOTE: H.O.A. SWITCH AND CONTROL TRANSFORMER FURNISHED WITH MOTOR STARTER AND SUPPLIED BY OTHERS.



3 HOT WATER PUMP-2 WIRING

TYPICAL OF 1



2 UNIT HEATER-4 CONTROL

TYPICAL OF X

REF#	FIELD PANEL NAME	FIELD PANEL NODE NAME
0002	PXCM1	1

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PHONE: 501-374-5420
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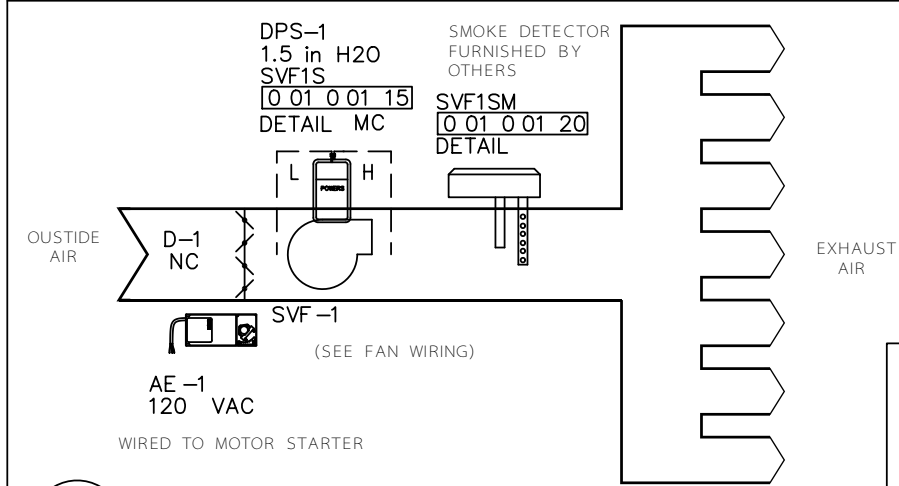
FAA Control Tower Sys Upgrade
Little Rock, AR

ENGINEER	DRAFTER	CHECKED BY	INITIAL RELEASE	LAST EDIT DATE
DWJ	DWJ	JLJ	12/11/15	12/29/15

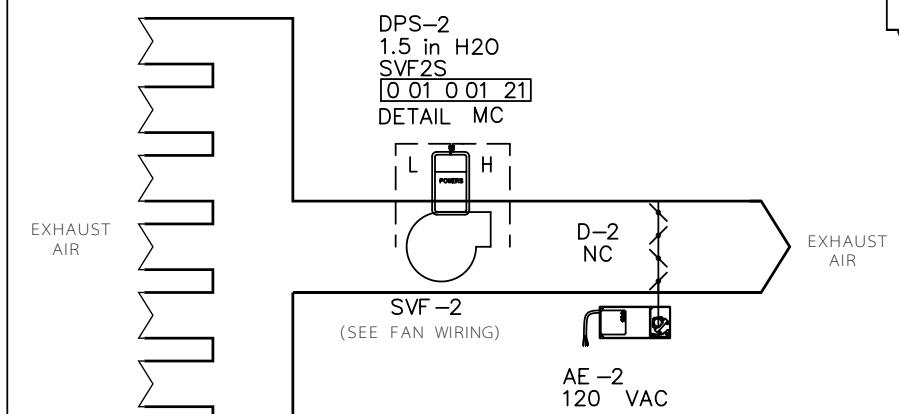
HOT WATER SYSTEM

C4431
0

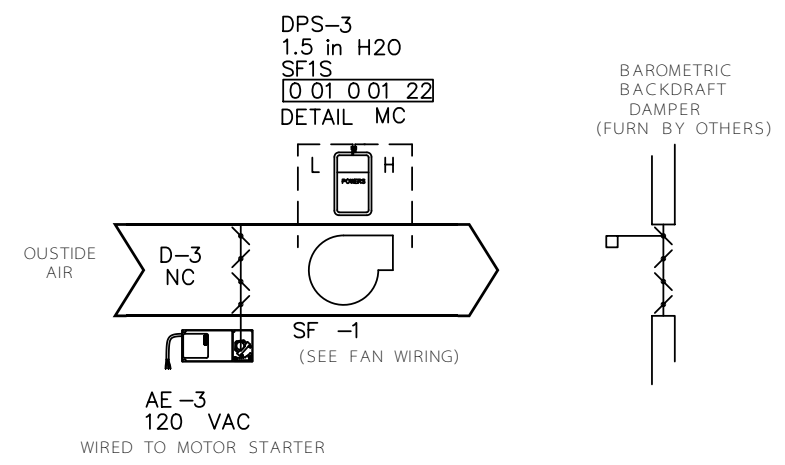
025



1
026 SVF-1 SUP/VENT CONTROL
LOCATED L2 INTERMEDIATE LEVEL



2
026 SVF-2 EXH/VENT CONTROL
LOCATED L3 INTERMEDIATE LEVEL

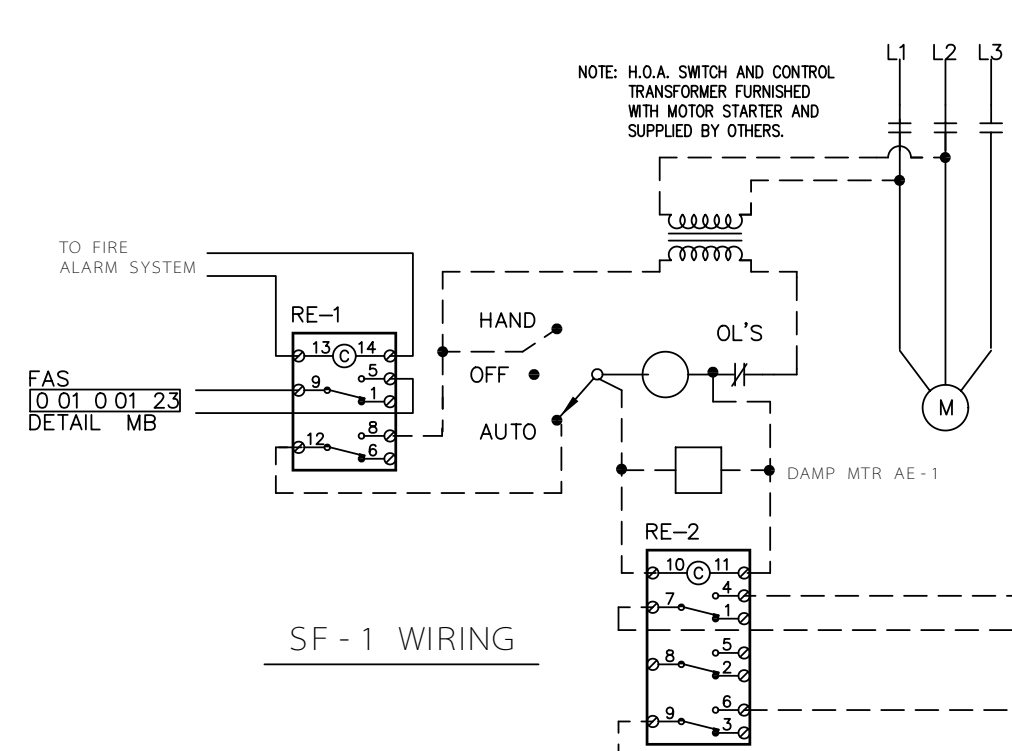


3
026 SF-1 CONTROL
STAIRWELL PRESSURIZATION FAN
LOCATED ROOF ACCESS LEVEL

SEQUENCE OF OPERATION:

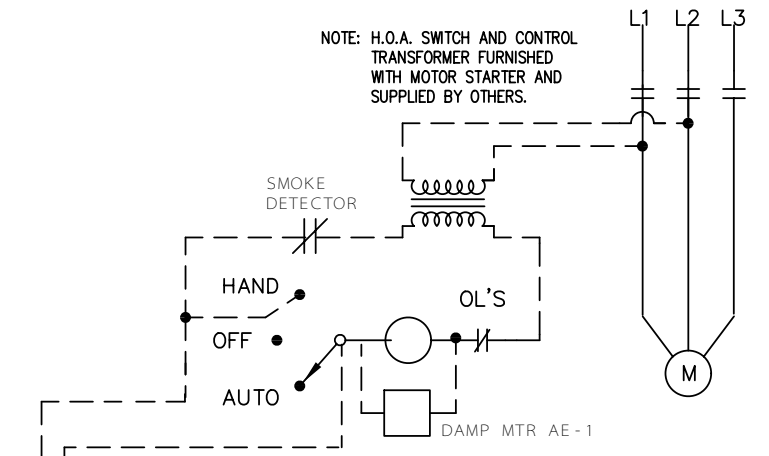
SVF-1,2 AND SF-1:

THE DDC SYSTEM WILL START STAIRWELL VESTIBULE FANS SVF-1 AND 2 WHEN ANY FIRE DETECTION DEVICE INITIATES AND ALARM. THE OSA DAMPERS WILL OPEN AND THE FANS WILL BE STARTED. WHEN EITHER FAN IS RUNNING SF-1 WILL ALSO BE STARTED AND ITS DAMPER WILL BE OPENED. IF SMOKE IS DETECTED IN SVF-1 SUPPLY DUCT THE UNIT WILL AUTOMATICALLY BE STOPPED AND ITS DAMPER WILL BE CLOSED.

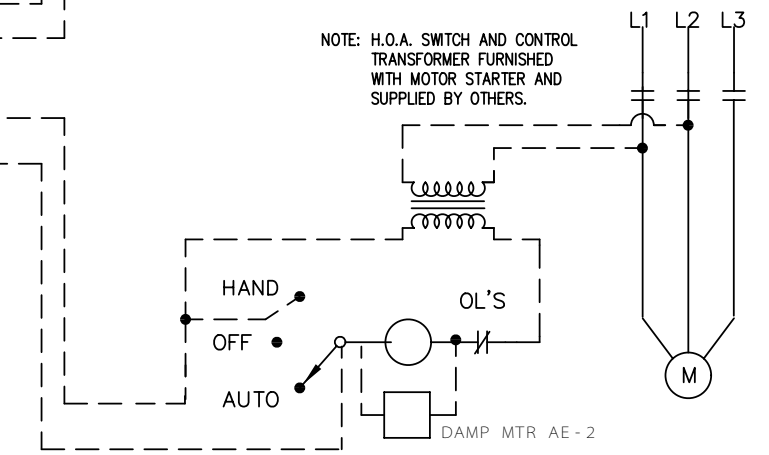


SF - 1 WIRING

4
026 SVF-1,2 & SF-1 STARTER WIRING



SVF - 1 WIRING



SVF - 1 WIRING

Control Device	Qty	Product Number	Manufacturer	SD Number	Document Number	Description
Field Mounted Devices						
AE 1-3	3	SQB12.1	LANDIS & GYR	PC4-8	155 158	2-PDS AE SPR RT DACT ACTUATOR
D						SEE DAMPER SCHEDULE
DPS 1-3	3	141 0518	LANDIS & GYR	PC5-9	155 052	SWITCH,AIR FLOW,1.0/12 WG
RE 1	1	LY2AC24			RE-GP-2	MINI RELAY DPDT 24VAC COIL
RE 2	1	LY3AC24			RE-GP-2	MINI RELAY 3PDT 24VAC COIL

REVISION HISTORY



LANDIS & STAEFA
PHONE: 501-374-5420
FAX: 501-370-9298

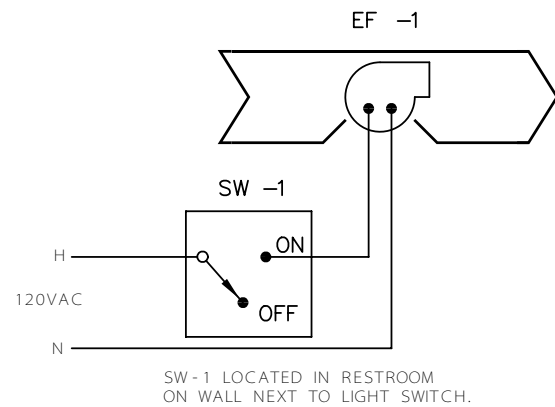
Powers of Arkansas
Controls Division
5440 Northshore Drive
N. Little Rock, AR 72118
USA

JOB NAME FAA Control Tower Sys Upgrade				
JOB LOCATION Little Rock, AR				
ENGINEER DWJ	DRAFTER DWJ	CHECKED BY JLJ	INITIAL RELEASE 09/02/97	LAST EDIT DATE 12/29/15
MISC1				

C4431

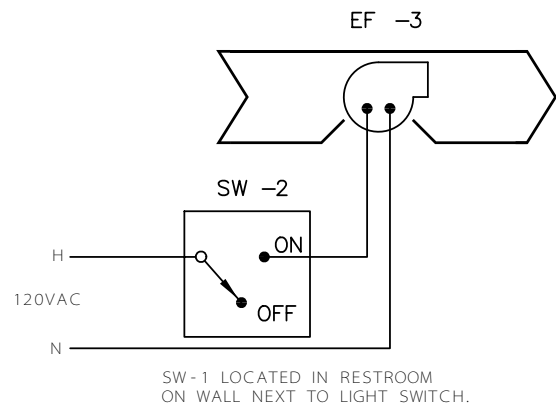
026

DRAWING
NUMBER



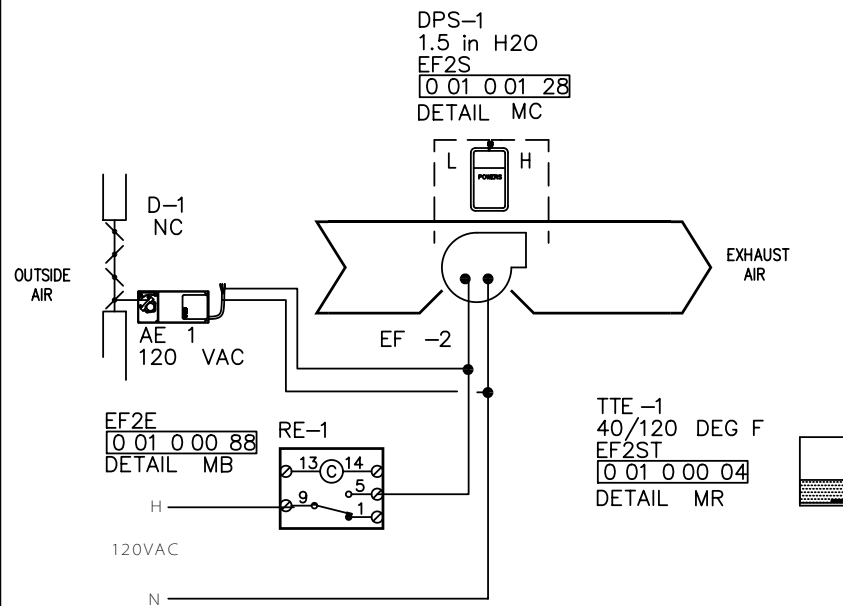
SW-1 LOCATED IN RESTROOM
ON WALL NEXT TO LIGHT SWITCH.

1
027
EXHAUST FAN-1
TYPICAL OF 1
RESTROOM EXHAUST FAN



SW-1 LOCATED IN RESTROOM
ON WALL NEXT TO LIGHT SWITCH.

3
027
EXHAUST FAN-3
TYPICAL OF 1
RESTROOM EXHAUST FAN



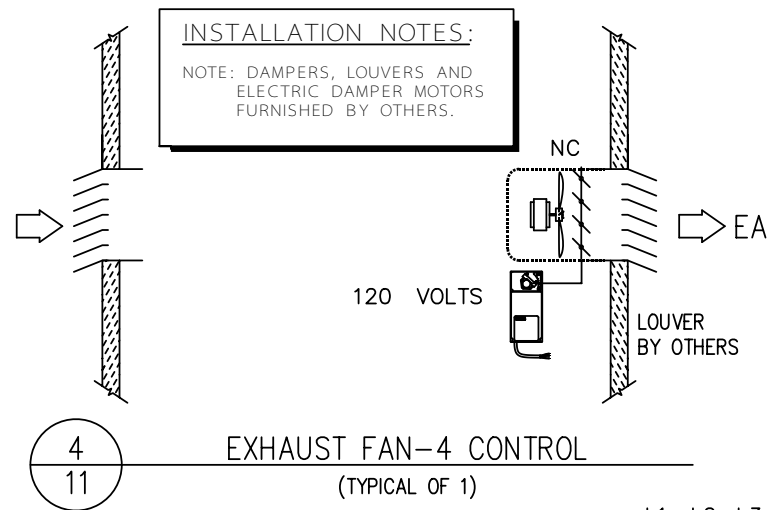
2
027
EXHAUST FAN-2
TYPICAL OF 1
TOP INTERMEDIATE LEVEL

SEQUENCE OF OPERATION:

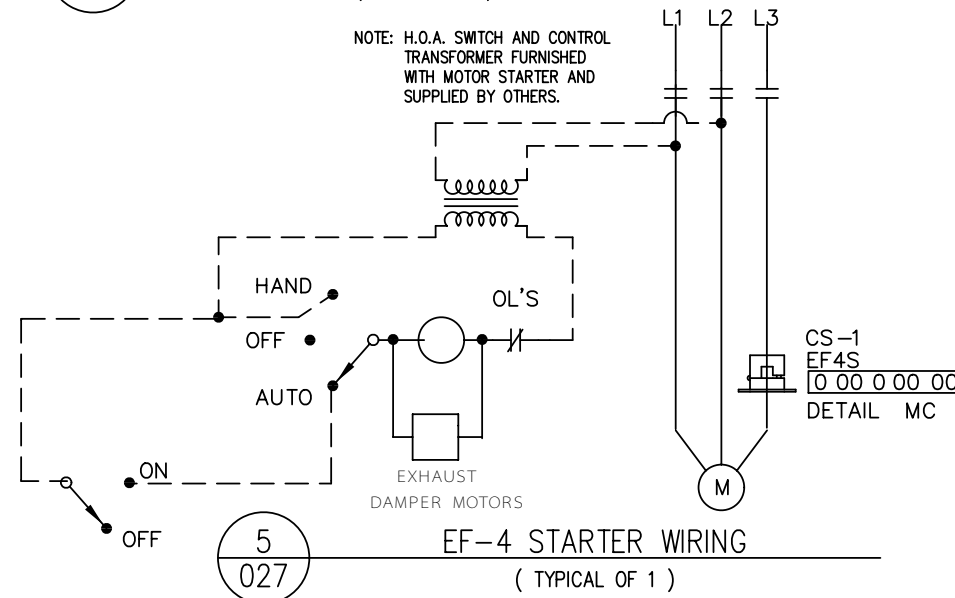
EXHAUST FANS EF-1 AND 3:
THE FANS WILL BE STARTED AND STOPPED BY DEDICATED WALL MOUNTED SWITCH>

EXHAUST FAN EF-2:
WALL MOUNTED THERMOSTAT WILL CYCLE THE FAN AND OPEN THE INTAKE DAMPER AS REQUIRED TO MAINTAIN SETPOINT.

EXHAUST FAN EF-4:
THE EXHAUST FAN WILL BE STARTED AND STOPPED BY A WALL MOUNTED SWITCH MOUNTED IN THE TOWER CAB FOR SMOKE EVACUATION. WHEN THE FAN IS STARTED THE EXHAUST DAMPER WILL BE OPENED AND WILL CLOSE WHEN UNIT IS STOPPED. THE OSA DAMPER LOCATED IN THE OUTSIDE AIR OF SAC-1 AND 2 WILL BE OPEN TO MAXIMUM POSITION WHEN EF-4 IS STARTED AND WILL BE REPOSITIONED TO MINIMUM POSITION WHEN EF-4 IS OFF.



4
11
EXHAUST FAN-4 CONTROL
(TYPICAL OF 1)

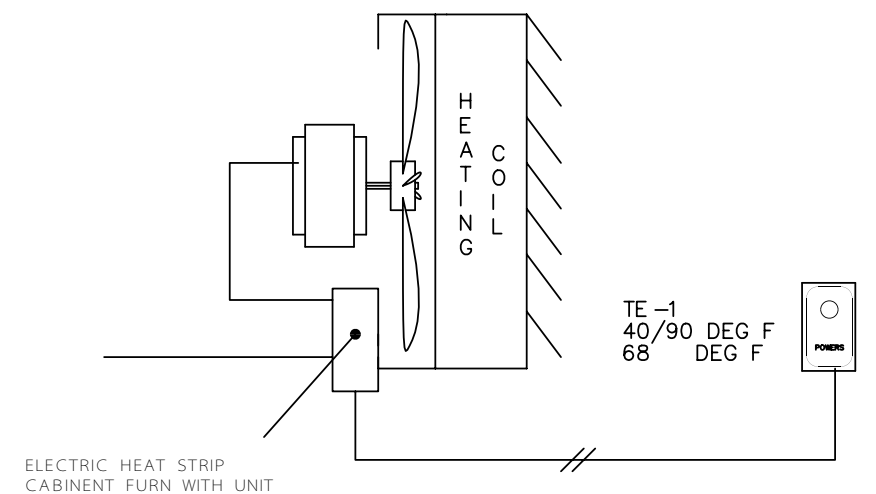


5
027
EF-4 STARTER WIRING
(TYPICAL OF 1)

Control Device	Qty	Product Number	Manufacturer	SD Number	Document Number	Description
Field Mounted Devices						
AE 1	1	SQB12.1	LANDIS & GYR	PC4-8	155 158	2-PDS AE SPR RT DACT ACTUATOR
CS 1	1	H800	VERIS			DIGITAL SOLIDCORE CURRENT SW
DPS 1	1	141 0518	LANDIS & GYR	PC5-9	155 052	SWITCH,AIR FLOW,1.0/12 WG
RE 1	1	V635	VERIS			SOLID STATE RELAY 120/24VAC
SW 1-2	2	ASW210	KELE			2PSN SPSP SWITCH
TTE 1	1	544 760B				1K SENSOR ONLY

SEE "MBC" NEXT SHEET FOR EQUIP. SHOWN ON LIST BELOW

Control Device	Qty	Product Number	Manufacturer	SD Number	Document Number	Description
Panel Mounted Devices						
MBC 001	1	545 142	LANDIS & GYR	S600-01	149 251	MBC-40ENC ASSY W/STYLD DR 115V
	1	545 040	LANDIS & GYR	S600-01	149 251	ADDRESS KEYS 004-064
	1	545 041	LANDIS & GYR	S600-01	149 251	ADDRESS KEYS 068-128
	1	545 042	LANDIS & GYR	S600-01	149 251	ADDRESS KEYS 132-192
	1	545 703	LANDIS & GYR	S600-01	149 251	M-BUS POWER MODULE
	1	545 715	LANDIS & GYR	S600-01	149 251	CTLR MODULE 1.25 MB
	4	PTM6.21420	LANDIS & GYR	S600-04	149 251	2 AI 4-20 MA
	5	PTM6.2P1K	LANDIS & GYR	S600-04	149 251	2 AI 1K PLATINUM RTD
	8	PTM6.2Q250	LANDIS & GYR	S600-04	149 251	2 DO CONTACT
	3	PTM6.2Q250-M	LANDIS & GYR	S600-04	149 251	2 DO,CONTACT W/MANUAL OVERRIDE
	1	PTM6.2Y10S	LANDIS & GYR	S600-04	149 251	2 AO 0-10 VDC
	4	PTM6.4D20	LANDIS & GYR	S600-04	149 251	4 DI DRY CONTACT



2
027
UNIT HEATER-1,2,3 CONTROL
TYPICAL OF 3

REVISION HISTORY

LANDIS & STAEFA
PHONE: 501-374-5420
FAX: 501-370-9298

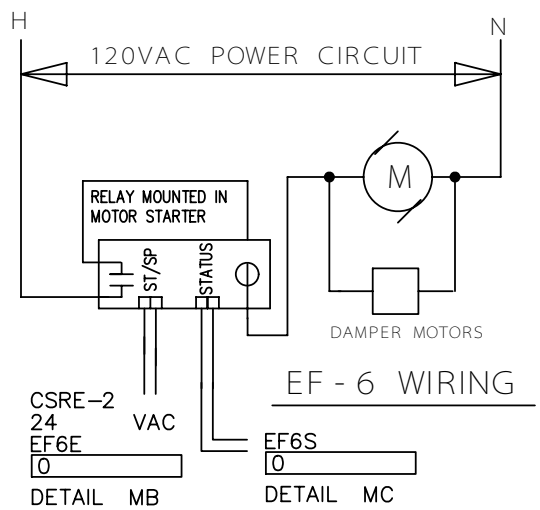
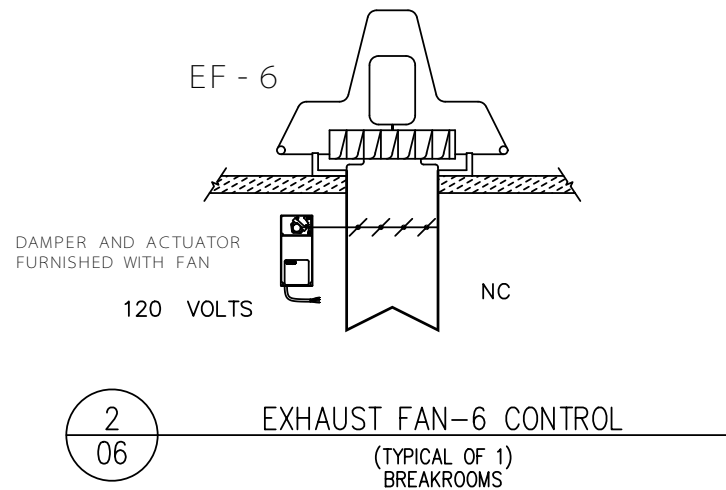
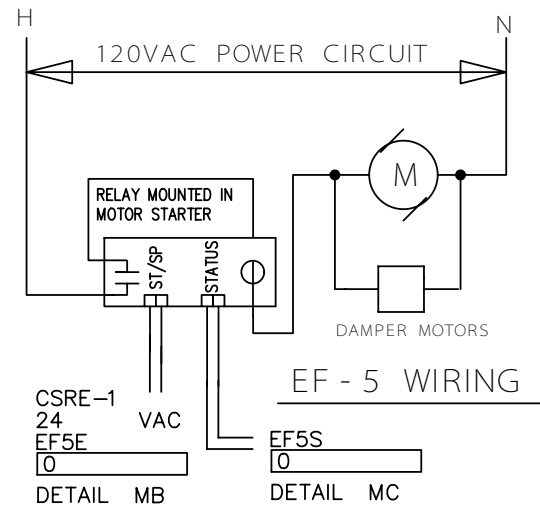
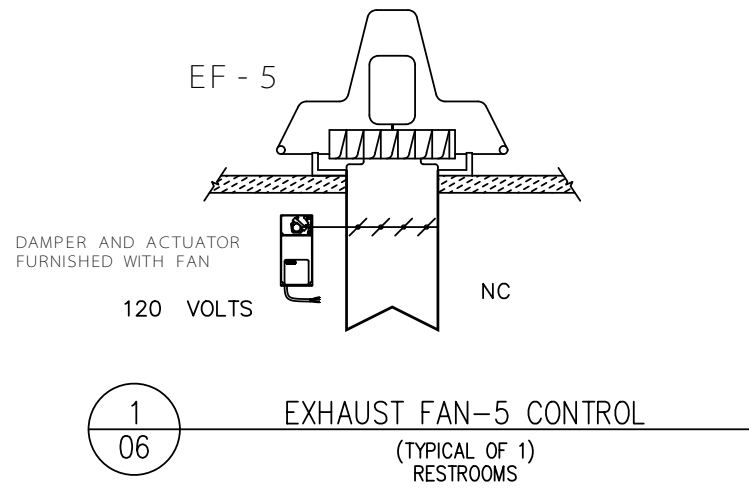
Powers of Arkansas
Controls Division
5440 Northshore Drive
N. Little Rock, AR 72118
USA

JOB NAME FAA Control Tower Sys Upgrade				
JOB LOCATION Little Rock, AR				
ENGINEER DWJ	DRAFTER DWJ	CHECKED BY JLJ	INITIAL RELEASE 12/11/15	LAST EDIT DATE 12/29/15
MISC2				

C4431

027

DRAWING
NUMBER



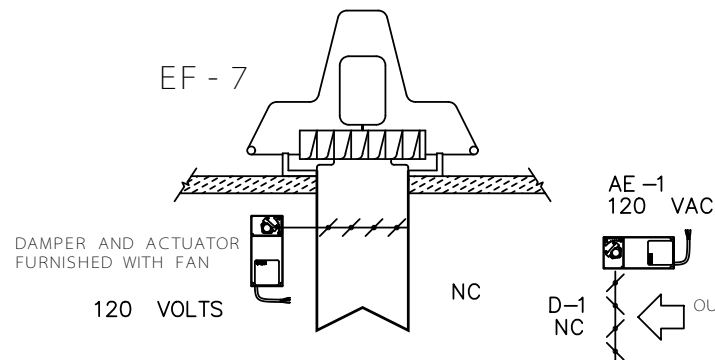
SEQUENCE OF OPERATION:

EXHAUST FANS 5 AND 6:

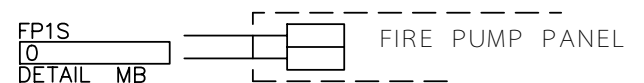
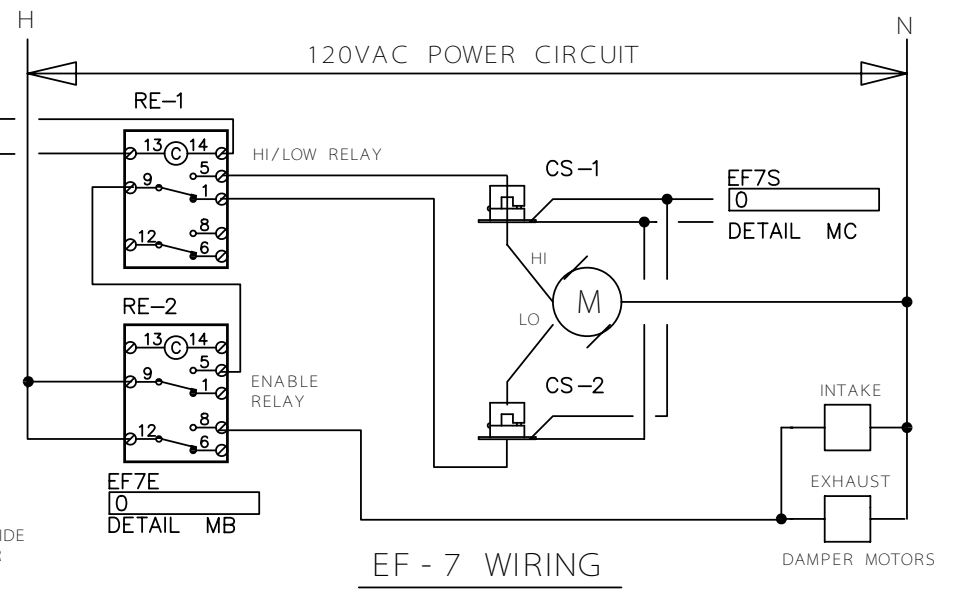
EXHAUST FANS WILL BE STARTED WHEN AHU-1 IS STARTED. WHEN FAN IS STARTED THE INTAKE DAMPER IS OPENED. DDC MONITORS FAN STATUS.

EXHAUST FAN 7:

THE SPACE TEMPERATURE SENSOR WILL CYCLE FAN TO MAINTAIN 85 DEGREE SETPOINT. WHEN FAN IS STARTED THE OSA INTAKE DAMPER AND EXHAUST AIR DAMPER WILL BE OPENED. WHEN THE FIRE PUMP FP-1 IS ON EF-7 WILL OPERATE ON HIGH SPEED.



EF7HL
0
DETAIL MB



FIRE PUMP FP-1 STATUS

Control Device	Qty	Product Number	Manufacturer	SD Number	Document Number	Description
Field Mounted Devices						
CSRE 1,2	2	H735	VERIS			DIGITAL SOLIDCORE CURRENT SW W/RELA
RE 1,2	2	V635	VERIS			120/24AC RELAY
CT 1,2	2	H800	VERIS			CURRENT SWITCH
AE 1	1	SQB12.1	LANDIS AND GYR			120VAC DAMPER MOTOR
D						SEE DAMPER SCHEDULE

SEE SHEET 6 "MBC" FOR EQUIPMENT SHOWN ON LIST BELOW

Control Device	Qty	Product Number	Manufacturer	SD Number	Document Number	Description
Panel Mounted Devices						
MBC 002	1	545 142	LANDIS & GYR	S600-01	149 251	MBC-40ENC ASSY W/STYLD DR 115V
	1	545 040	LANDIS & GYR	S600-01	149 251	ADDRESS KEYS 004-064
	1	545 041	LANDIS & GYR	S600-01	149 251	ADDRESS KEYS 068-128
	1	545 042	LANDIS & GYR	S600-01	149 251	ADDRESS KEYS 132-192
	1	545 714	LANDIS & GYR	S600-01	149 251	M-BUS POWER MODULE
	1	545 715	LANDIS & GYR	S600-01	149 251	OPEN PROCESSOR
	9	PTM6.21420	LANDIS & GYR	S600-04	149 251	2 AI 4-20 MA
	7	PTM6.2N100K	LANDIS & GYR	S600-04	149 251	2 AI 100K THERMISTOR
	7	PTM6.2Q250-M	LANDIS & GYR	S600-04	149 251	2 DO,CONTACT W/MANUAL OVERRIDE
	1	PTM6.2Y10S-M	LANDIS & GYR	S600-04	149 251	2 AO,0-10VDC W/MANUAL OVERRIDE

REVISION HISTORY

LANDIS & STAЕFA

PHONE: 501-374-5420
FAX: 501-370-9298

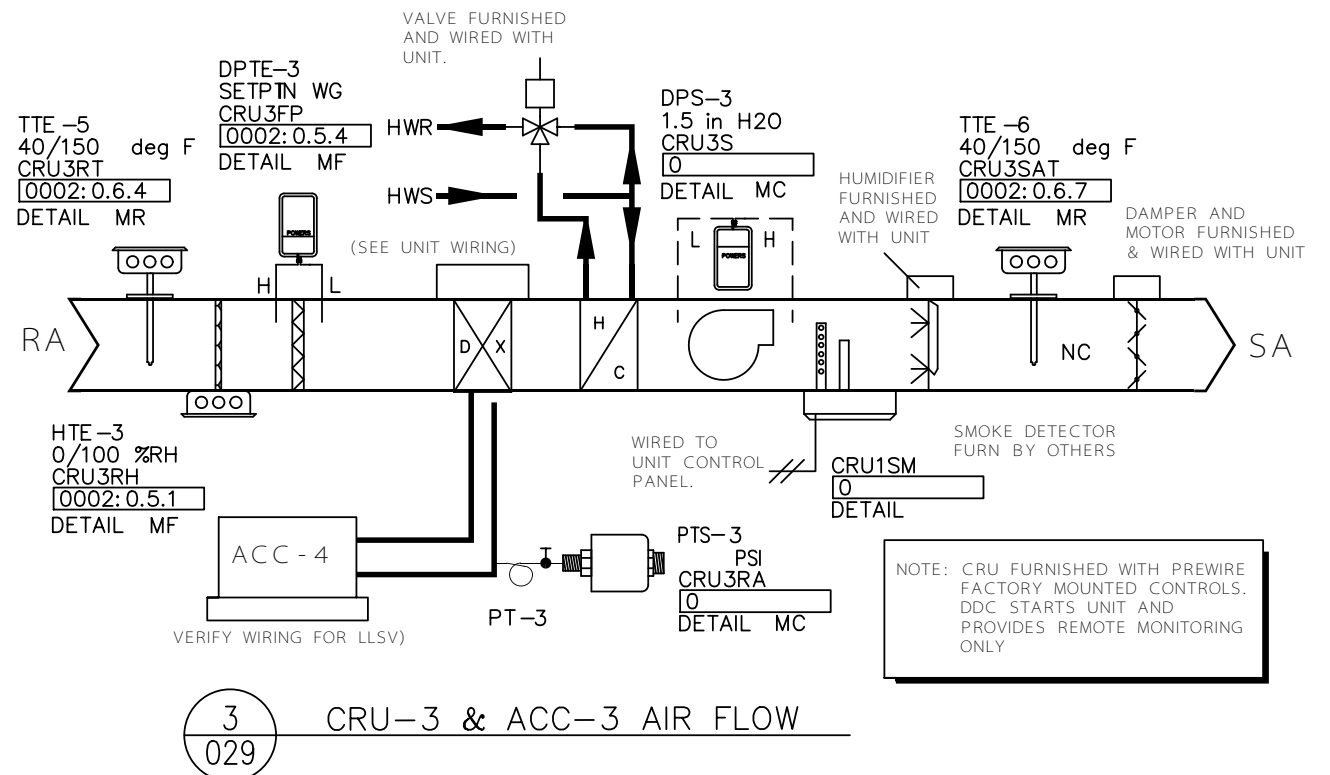
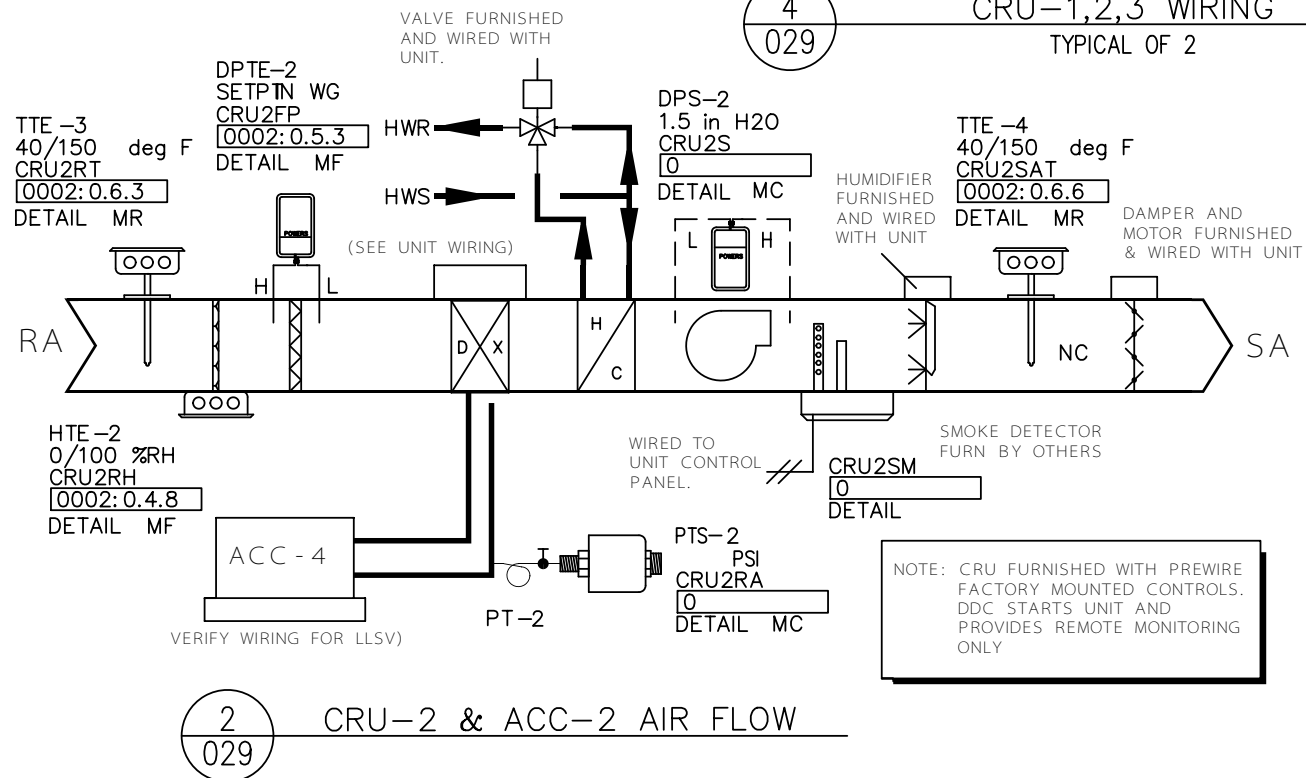
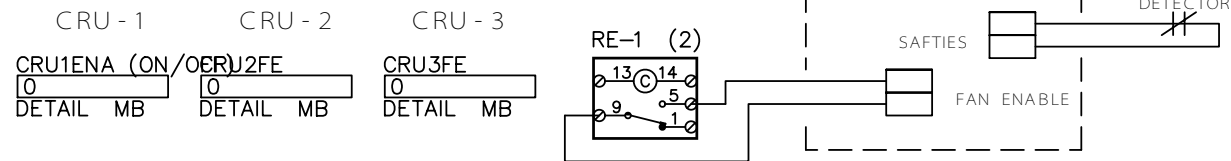
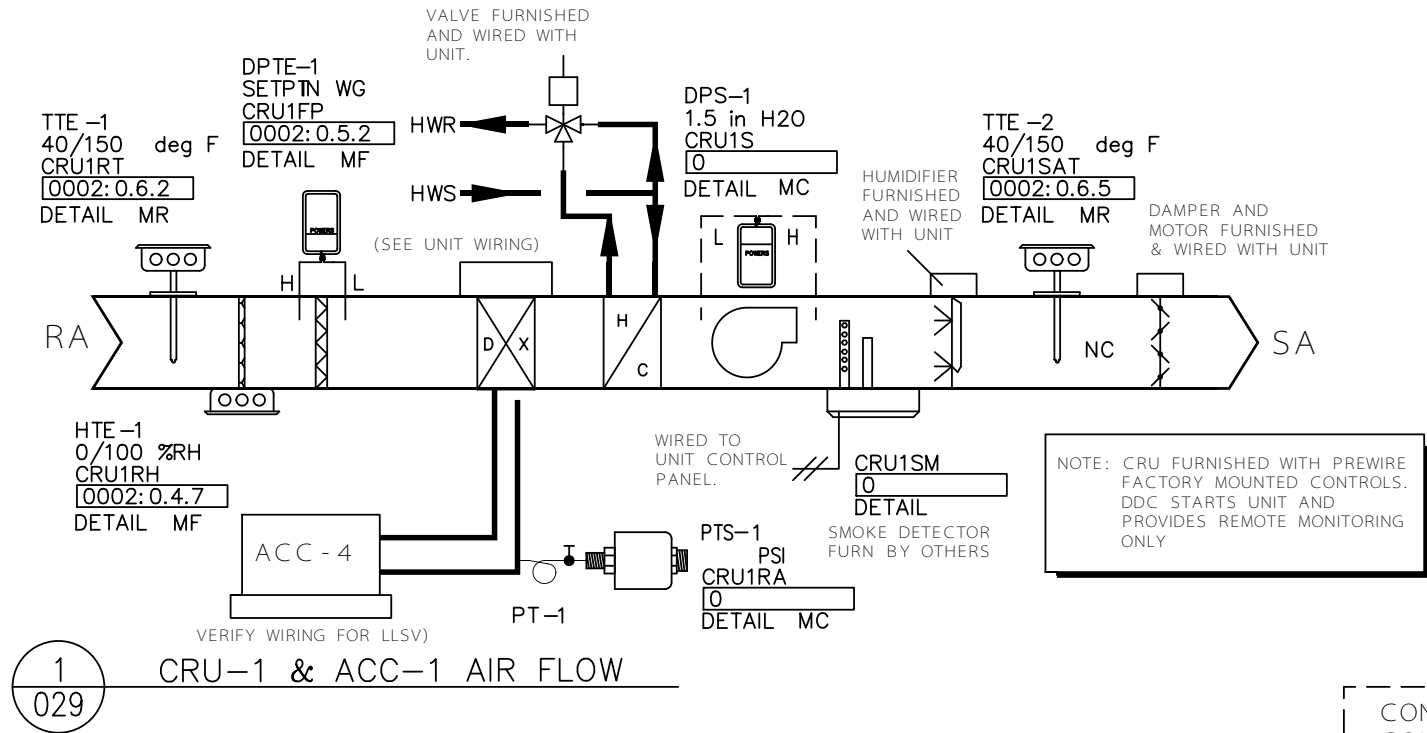
Powers of Arkansas
Controls Division
5440 Northshore Drive
N. Little Rock, AR 72118
USA

JOB NAME FAA Control Tower Sys Upgrade				
JOB LOCATION Little Rock, AR				
ENGINEER DWJ	DRAFTER DWJ	CHECKED BY JLJ	INITIAL RELEASE 12/11/15	LAST EDIT DATE 12/29/15
MISC3				

C4431

028

DRAWING
NUMBER



SEQUENCE OF OPERATION:

CRU-1,2,3:

THE UNITS WILL BE ENABLED AND DISABLED THRU THE DDC SYSTEM. ONLY TWO UNIT WILL RUN AT A TIME AND THE THIRD UNIT WILL ACT AS A STANDBY. WHEN THE UNITS ARE STARTED AND ADJUSTABLE TIME DELAY PERIOD WILL OCCUR BETWEEN STARTUP. THE UNITS WILL OPERATE CONTINUOUSLY UNTIL ALTERNATED. THE STANDBY UNIT WILL BE PROGRAMMED TO ALTERNATE EVERY 7 DAYS. IF ANY UNIT FAILS TO START AN ALARM IS SENT TO THE CONTROL SYSTEM AND THE STANDBY UNIT IS STARTED. THE UNITS SELF-CONTAINED FACTORY MOUNTED CONTROL SYSTEM WILL PROVIDE HEATING AND COOLING AS REQUIRED. THE DDC SYSTEM PROVIDES MONITORING AND ENABLE/DISABLE CONTROL ONLY.

REF#	FIELD PANEL NAME	FIELD PANEL NODE NAME
0002	PXCM1	1

REVISION HISTORY

SIEMENS

Powers of Arkansas
WWW.POWERSAR.COM

Controls Division
5440 Northshore Drive
N. Little Rock, AR 72118
USA
PHONE: 501-374-5420
FAX: 501-370-9298

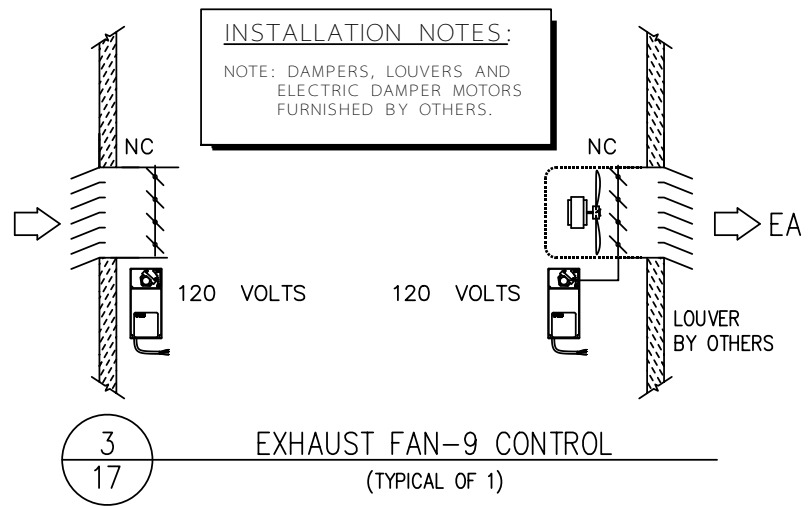
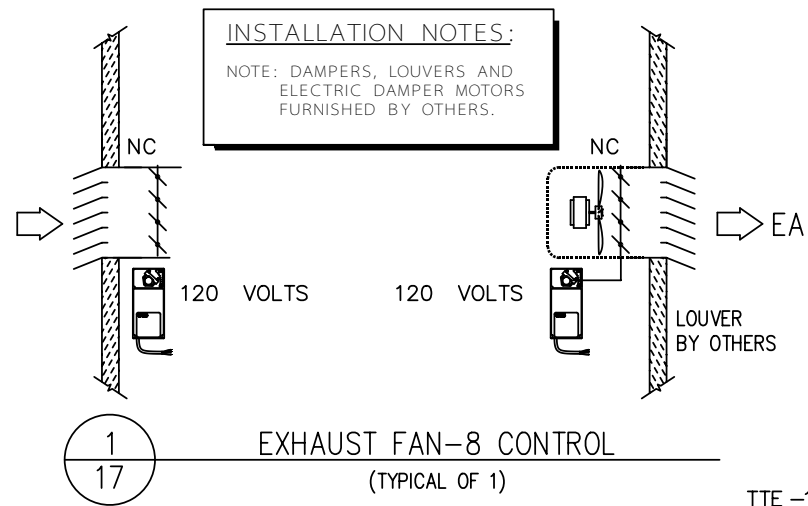
FAA Control Tower Sys Upgrade
Little Rock, AR

ENGINEER	DRAFTER	CHECKED BY	INITIAL RELEASE	LAST EDIT DATE
DWJ	DWJ	JLJ	12/11/15	12/29/15

CRU-1,2,3

C4431
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029



SEQUENCE OF OPERATION:

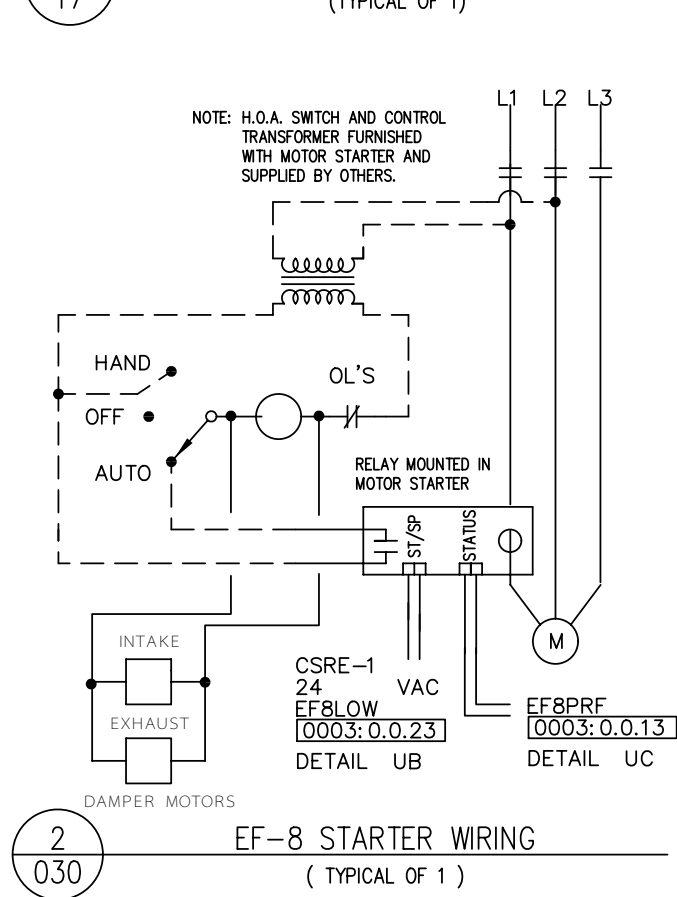
EXHAUST FANS EF-8 AND 9:

IN EMERGENCY MODE ETH EXHAUST FANS WILL BE STARTED. WHEN THE FANS START THE INTAKE AND EXHAUST AIR DAMPERS WILL BE OPENED, AND THEY WILL CLOSE WHEN THE FANS ARE STOPPED. EF-8 WILL ALSO RUNS WHEN THE SPACE TEMPERATURE RISES ABOVE SETPOINT.

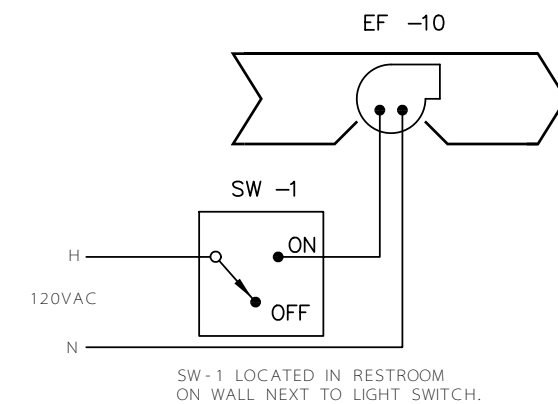
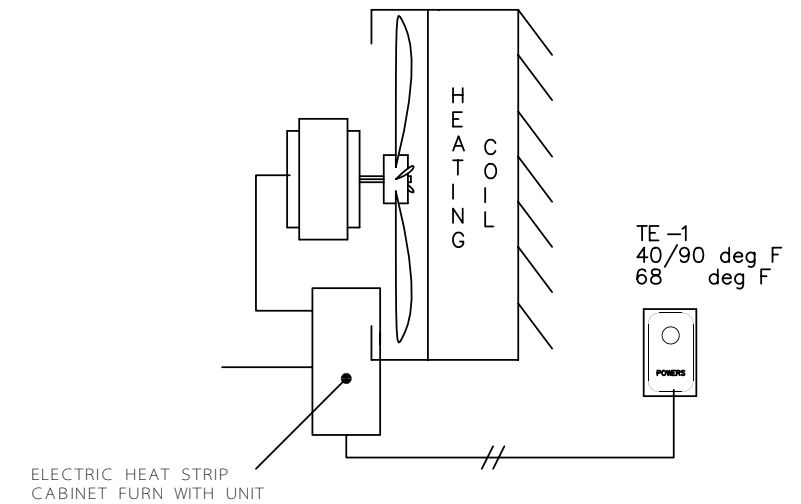
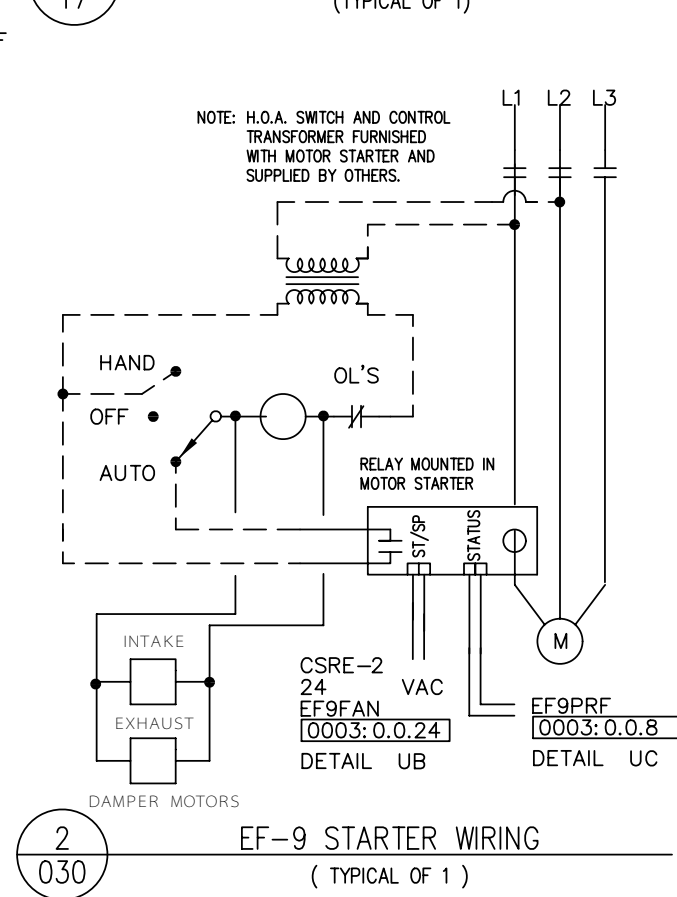
(VERIFY EMERGENCY MODE)

EXHAUST FAN EF-10:

THE FAN WILL START AND STOP BY THE WALL MOUNTED SWITCH LOCATED IN THE RESTROOM.



TTE -1
40/120 DEG F
EFST
0
DETAIL UR



REF#	FIELD PANEL NAME	FIELD PANEL NODE NAME
0003	PXCC1	PXCC1

REVISION HISTORY

SIEMENS

Powers of Arkansas
WWW.POWERSAR.COM

Controls Division
5440 Northshore Drive
N. Little Rock, AR 72118
USA
PHONE: 501-374-5420
FAX: 501-370-9298

FAA Control Tower Sys Upgrade
Little Rock, AR

ENGINEER	DRAFTER	CHECKED BY	INITIAL RELEASE	LAST EDIT DATE
DWJ	DWJ	JLJ	12/11/15	12/29/15

EF-8,9

C4431
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030