

Maine Endwell High School 2010

Binghamton , New York

Application Engineering by Randy Langille

Engineer/Architect Bearsch Compeau Knudson



Mechanical Contractor Evans Mechanical

Job Number P7932

AUTOMATEDLOGIC[®]
C O R P O R A T I O N

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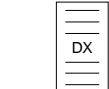
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 AIR TEMP HEATING & AIR CONDITIONING, INC. A LINC SERVICE ® CONTRACTOR			
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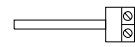
Symbol Legend



Supply Fan



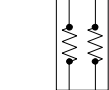
DX Cooling Coil



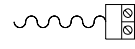
Duct Temperature Sensor



Exhaust Fan



Electric Heating Coil



Averaging Duct Temperature Sensor



Return Fan



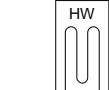
Gas Heating



Duct Humidity Sensor



Fan w/ Inlet Vane Control



Hot Water Heating Coil



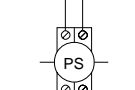
Immersion Temperature Sensor w/ Well



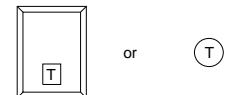
Pump



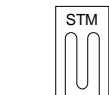
Chilled Water Cooling Coil



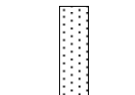
Pressure Sensor



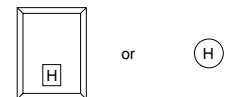
Room Temperature Sensor



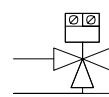
Steam Heating Coil



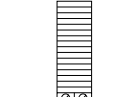
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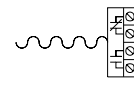
Room Humidity Sensor



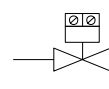
3 - Way Valve



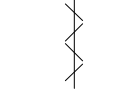
Air Flow Station



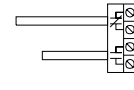
FreezeStat



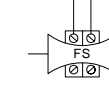
2 - Way Valve



Damper



Smoke Detector



Flow Sensor

Common Abbreviations:

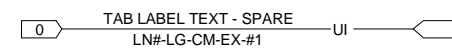
AC - Air Conditioning
 ACU - Air Conditioning Unit
 AHU - Air Handling Unit
 AI - Analog Input
 AO - Analog Output
 AUTO - Automatic
 AUX - Auxiliary
 C - Common
 CHW - Chilled Water
 CHWP - Chilled Water Pump
 CHWR - Chilled Water Return
 CHWS - Chilled Water Supply
 COND - Condenser
 CW - Condenser Water
 CWP - Condenser Water Pump
 CWR - Condenser Water Return
 CWS - Condenser Water Supply
 DA - Discharge Air
 DI - Digital Input
 DO - Digital Output
 EA - Exhaust Air
 EF - Exhaust Fan

EVAP - Evaporator
 F - Fahrenheit
 FCU - Fan Coil Unit
 HOA - Hand / Off / Auto
 HP - Heat Pump
 HRU - Heat Recovery Unit
 HTEX - Heat Exchanger
 HW - Hot Water
 HWP - Hot Water Pump
 HWR - Hot Water Return
 HWS - Hot Water Supply
 MAX - Maximum
 MIN - Minimum
 MISC - Miscellaneous
 NC - Normally Closed
 NO - Normally Open
 OA - Outdoor Air
 PIU - Powered Induction Unit
 RA - Return Air
 RF - Return Fan
 RH - Relative Humidity
 RTU - Roof-top Unit

SA - Supply Air
 SF - Supply Fan
 SP - Static Pressure
 TEMP - Temperature
 UH - Unit Heater
 UV - Unit Ventilator
 VAV - Variable Air Volume
 VVTU - Variable Volume Terminal Unit
 W/ - with
 W/O - without
 WSHP - Water-Source Heat Pump

General Notes:

- All control modules are drawn using standard ALC module representations.
- Electrical points are identified by a tagged method (LN# - LG - CM - EX - Z0):





LN# - The line number (optional).
 LG - The gateway number (optional).
 CM - The control module address.
 EX - The expander module number.
 #1 - The channel number.

These tags include wiring for all AI's, DI's, AO's and DO's. Points using pneumatic tubing follow the same convention.

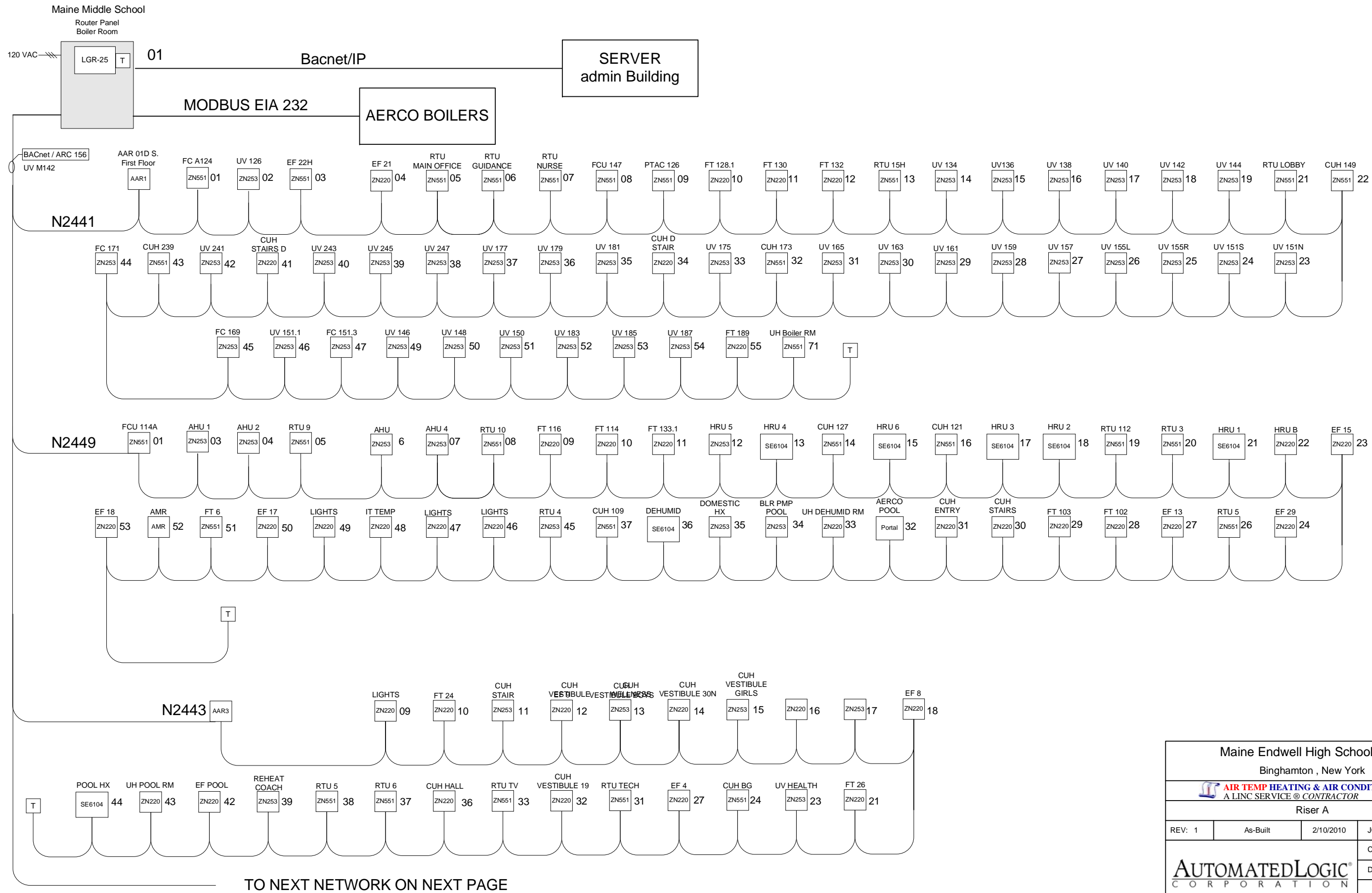
Maine Endwell High School 2010 Binghamton, New York			
AIR TEMP HEATING & AIR CONDITIONING, INC. A LINC SERVICE @ CONTRACTOR			
Symbol Legend			
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Summary Bill of Materials

Summary Bill of Materials				
DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
AMR	ROUTER	ALC	AMR	1 ea
BAI4	WELLS	BAPI	BAI4	17 ea
FS-C	FLOW SWITCH (STANDARD FLOW RATE - SPDT)	JOHNSON CONTROLS	F61KB-11	3 ea
FS-D	TEMP LOW LIMIT MAN. RESET DPDT	LANDIS STEAFA	1341504	30 ea
IAQ-AB	CO SPACE SENSOR 0-200 PPM 4-20MA	R.E. TECH	WCO-1B	1 ea
LGR	LAN GATE ROUTER	AUTOMATED LOGIC	LGR25	1 ea
LGR250	LGR250	AUTOMATED LOGIC	LGR250	1 ea
LSPLUS	LOGISTAT 10K ROOM SENSOR W/ SETP ADJ, TLO, COMM	BAPI	LSPLUS	1 ea
MELGR	LAN GATE ROUTER	AUTOMATED LOGIC	MELGR	1 ea
SE6104a	SE6104A	AUTOMATED LOGIC	SE6104A	8 ea
SE6166	SE6166	AUTOMATED LOGIC	SE6166	1 ea
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	284 ea
WebPRTL	WEBPRTL	AUTOMATED LOGIC	WEBPRTL	2 ea
ZN220	ZN220	AUTOMATED LOGIC	ZN220	54 ea
ZN253	ZN253	AUTOMATED LOGIC	ZN253	83 ea
ZN551	ZN551	AUTOMATED LOGIC	ZN551	47 ea
a10kcpa12	DUCT 10K THERMISTOR AVERAGING 8 FT.	ALPS	A10KCPA8	4 ea
a10kcpa8	DUCT 10K THERMISTOR AVERAGING 8 FT.	ALPS	A10KCPA8	78 ea
a10kcpdo8	DUCT 10K THERMISTOR PROBE 8 IN.	ALPS	A10KCPDO8	168 ea
af24srus	SR PROPORTIONAL 133 IN-LB 2-10VDC	BELIMO	AF24SRUS	23 ea
af24us	SR OPEN/CLOSE 133 IN-LB 24V	BELIMO	AF24US	57 ea
ba10kri4	INSERTIONSENSOR	BAPI	BA10KRI4	15 ea
ba10kwall	SENSOR	BAPI	BA10KWALL	2 ea
bapitemp/h	TEMP HUMIDITY COMBO	BAPI	BAPI	1 ea
lf24srus	0-10 ACTUATOR	BELIMO	LF24SRUS	8 ea
lf24us	2 POS ACTUATOR	BELIMO	LF24US	28 ea
ribu1c	PILOT RELAY 24 VAC DPDT W/ LED	FUNCTIONAL	RIBU1C	179 ea
ribxkf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	230 ea
rs	SPACE TEMP	ALC	RS	46 ea
rsplus	RS 10K ROOM SENSOR W/ SETP ADJ, TLO, COMM	ALC	RSPLUS	160 ea

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Summary Bill of Materials			
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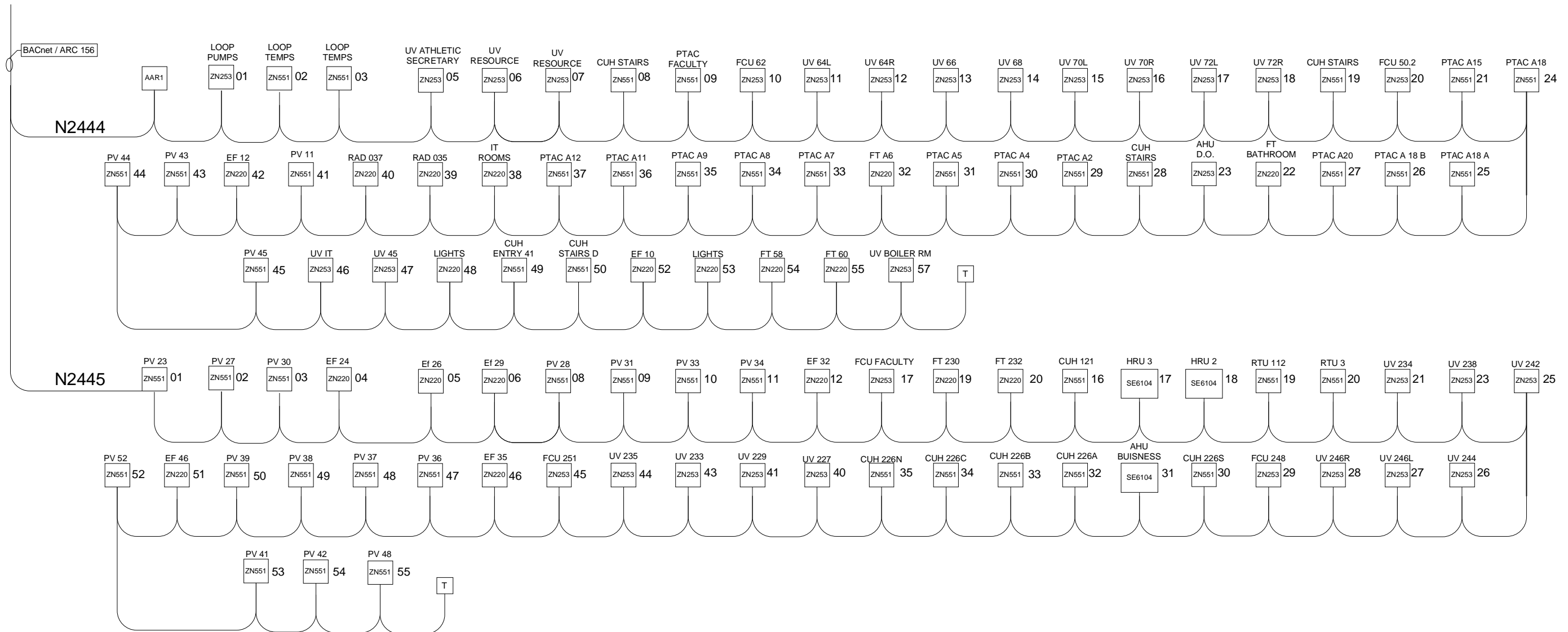
Riser A





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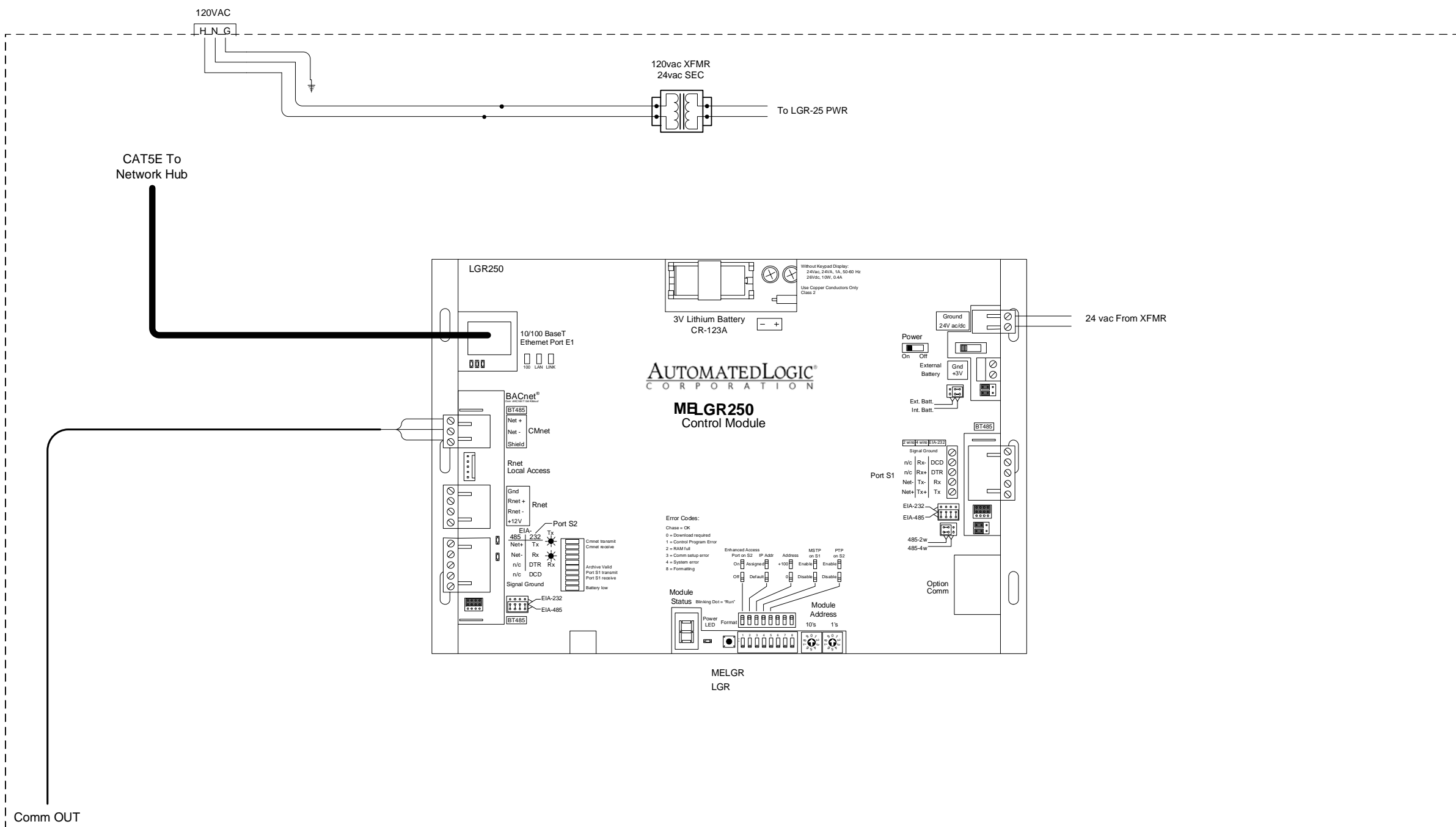
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A LINC SERVICE @ CONTRACTOR			
Riser A			
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Riser B



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Riser B			
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Bill of Materials				
DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
LGR	LAN GATE ROUTER	AUTOMATED LOGIC	LGR25	1 ea
LGR250	LGR250	AUTOMATED LOGIC	LGR250	1 ea
MELGR	LAN GATE ROUTER	AUTOMATED LOGIC	MELGR	1 ea



General Notes:

All ARC156 wiring shall be 22AWG single twisted pair, low capacitance (12.5pF/ft), shielded, plenum rated cable. ALC recommends Magnum Cable Corporation Product number A3ARC156.

Each ARC156 segment must be wired in a daisy chain configuration. Branching requires the use of a REP485.

Each ARC156 segment should have one (1) PROT485 installed to provide protection from electrical surges.

Each ARC156 segment end must be terminated with a TERM485 (120 ohm) terminating resistor.

The ARC156 network segment must have at least one (1) DIAG485 installed to supply bias.

Do not strip back shielded cable sheath more than 1" in order to keep 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 a module.

Routing of communications cabling and control module locations shall be field verified.

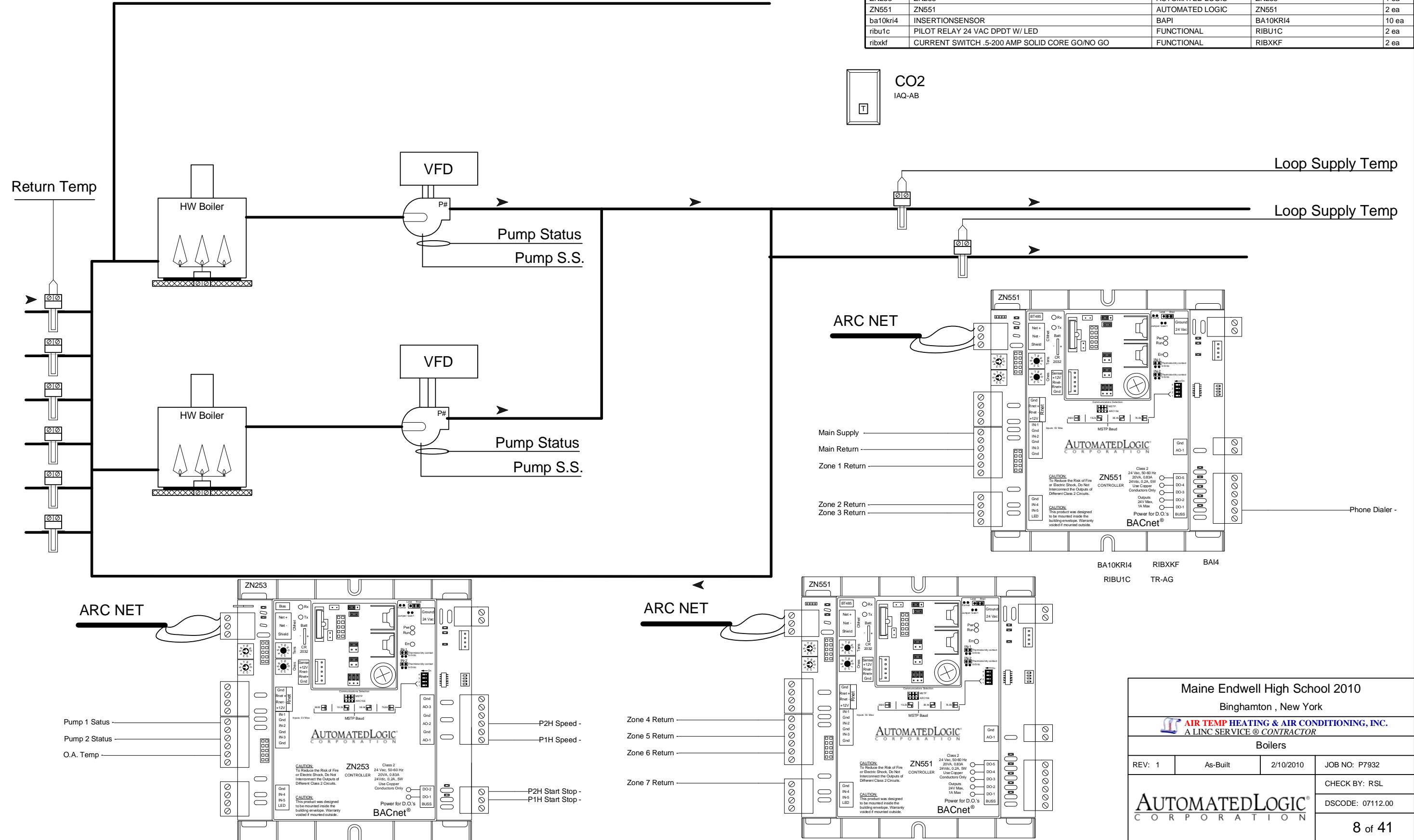
Maine Endwell High School 2010 Binghamton, New York			
AIR TEMP HEATING & AIR CONDITIONING, INC. A LINC SERVICE @ CONTRACTOR			
LGR			
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Boilers

Boilers to be controlled by factory Aercu Boiler Panel C-MORE PANEL-MODBUS

Boiler Controls to be integrated to Automated Logic Via EQPRTL MODBUS to BACnet

Bill of Materials				
DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
BAI4	WELLS	BAPI	BAI4	10 ea
FS-C	FLOW SWITCH (STANDARD FLOW RATE - SPDT)	JOHNSON CONTROLS	F61KB-11	3 ea
IAQ-AB	CO SPACE SENSOR 0-200 PPM 4-20MA	R.E. TECH	WCO-1B	1 ea
TR-AG	TRANSFORMER, 120/24VAC 150VA WCCT BREAKER	CORE COMPONENTS	LE-124	3 ea
ZN253	ZN253	AUTOMATED LOGIC	ZN253	1 ea
ZN551	ZN551	AUTOMATED LOGIC	ZN551	2 ea
ba10kri4	INSERTIONSENSOR	BAPI	BA10KRI4	10 ea
ribu1c	PILOT RELAY 24 VAC DPDT W/ LED	FUNCTIONAL	RIBU1C	2 ea
ribxkf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	2 ea



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Boilers

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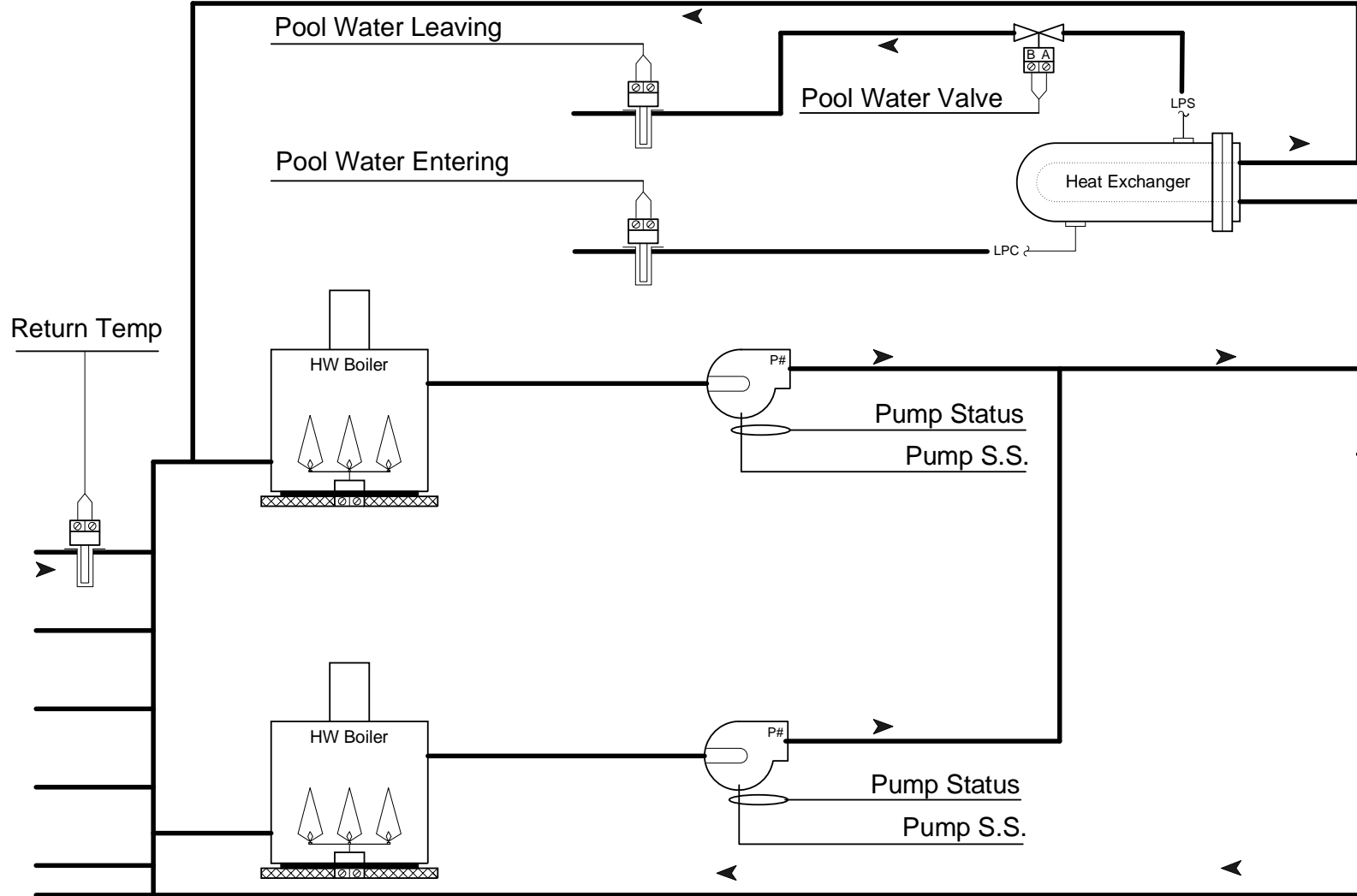
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CORPORATION

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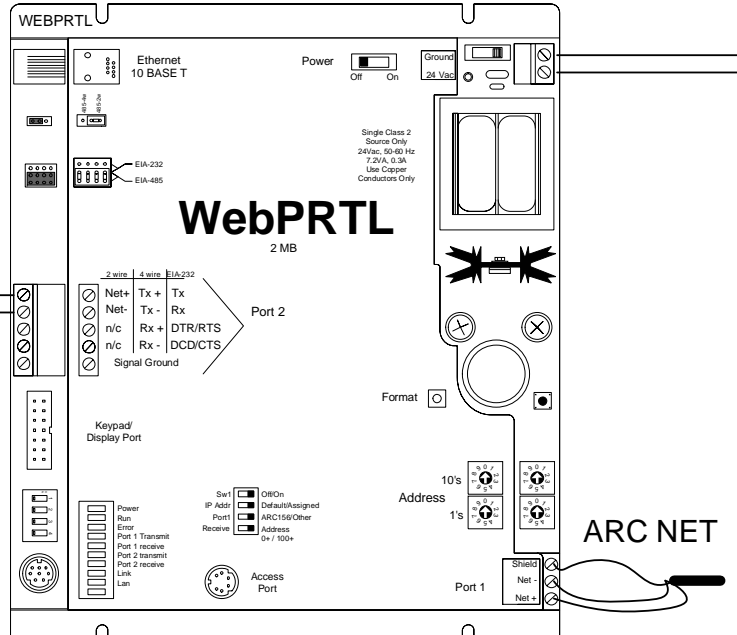
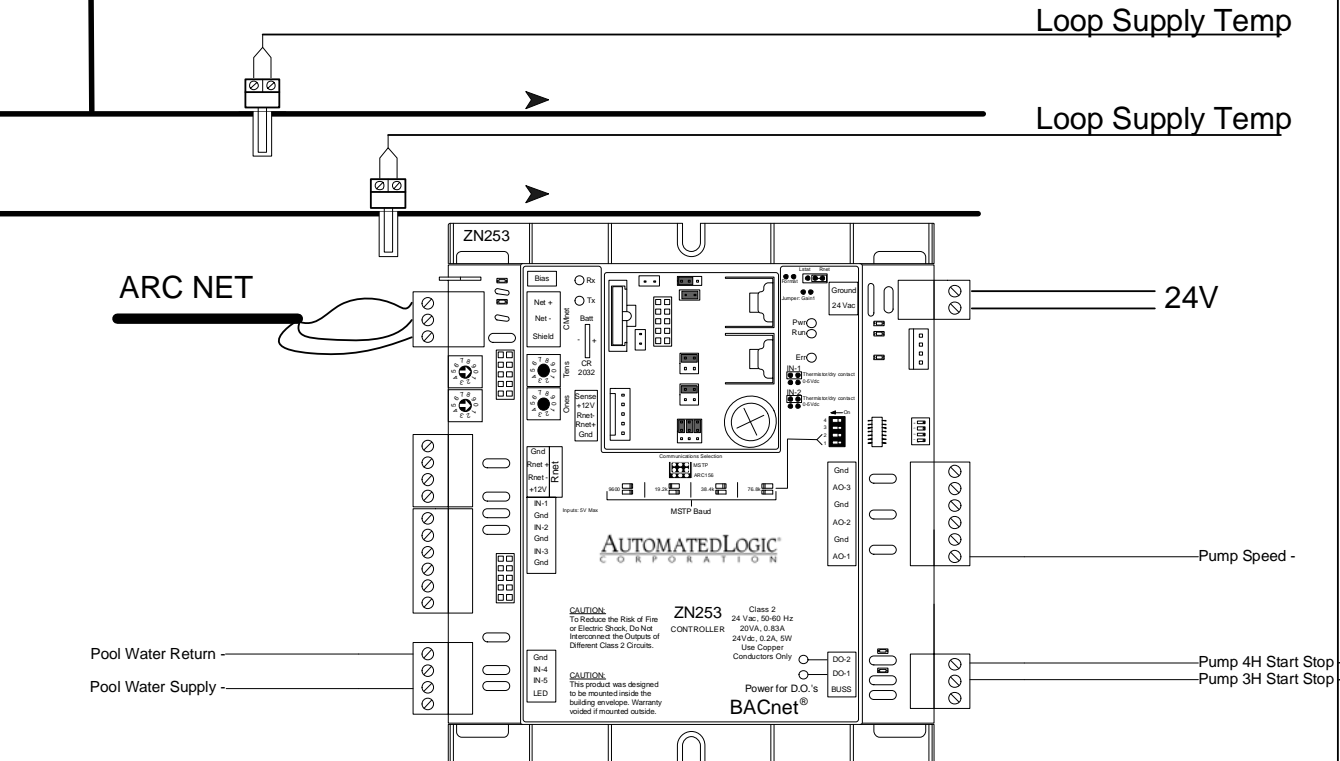
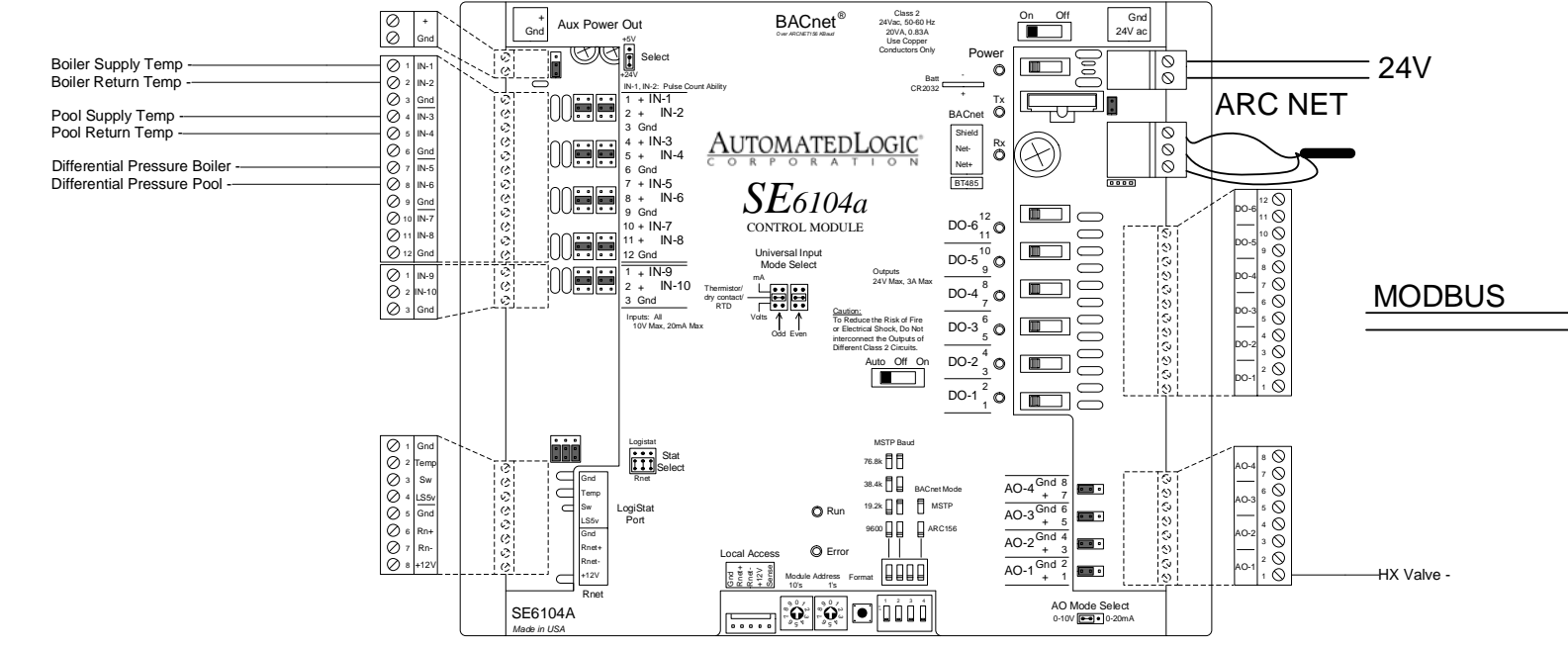
Boiler Pool

Boilers to be controlled by factory Aerco Boiler Panel C-MORE PANEL-MODBUS

Boiler Controls to be integrated to Automated Logic Via Web PRTL BACNET MSTP



Bill of Materials				
DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
BAI4	WELLS	BAPI	BAI4	5 ea
SE6104a	SE6104A	AUTOMATED LOGIC	SE6104A	1 ea
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	3 ea
WebPRTL	WEBPRTL	AUTOMATED LOGIC	WEBPRTL	2 ea
ZN253	ZN253	AUTOMATED LOGIC	ZN253	1 ea
ba10kri4	INSERTIONSENSOR	BAPI	BA10KR14	5 ea
ribu1c	PILOT RELAY 24 VAC DPDT W/ LED	FUNCTIONAL	RIBU1C	2 ea
ribxkf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	1 ea



- BA10KR14
- RIBXKF
- BAI4
- RIBU1C
- TR-AG

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Boiler Pool

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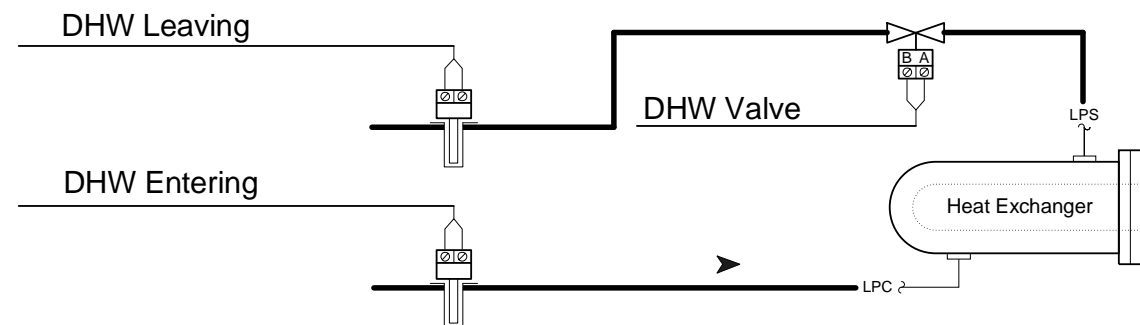
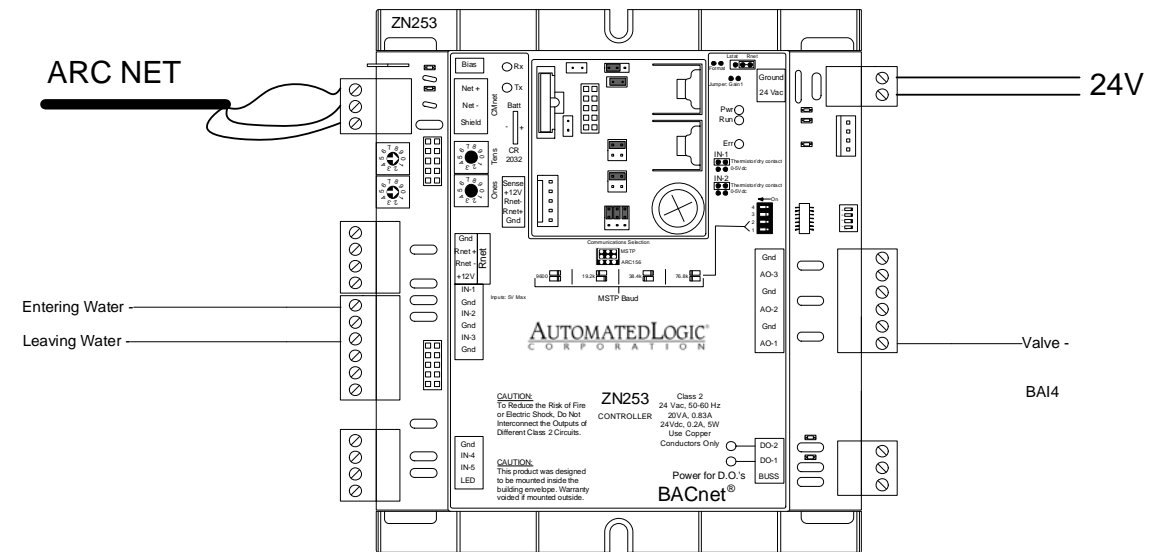
AUTOMATED LOGIC CORPORATION

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Domestic HW

Bill of Materials

DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
BA14	WELLS	BAPI	BA14	2 ea
ZN253	ZN253	AUTOMATED LOGIC	ZN253	1 ea



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Domestic HW

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AHU 1H,2H,3H,4H

Outdoor Air Damper

Redundant Outdoor Air Damper

Return Air Damper

Status

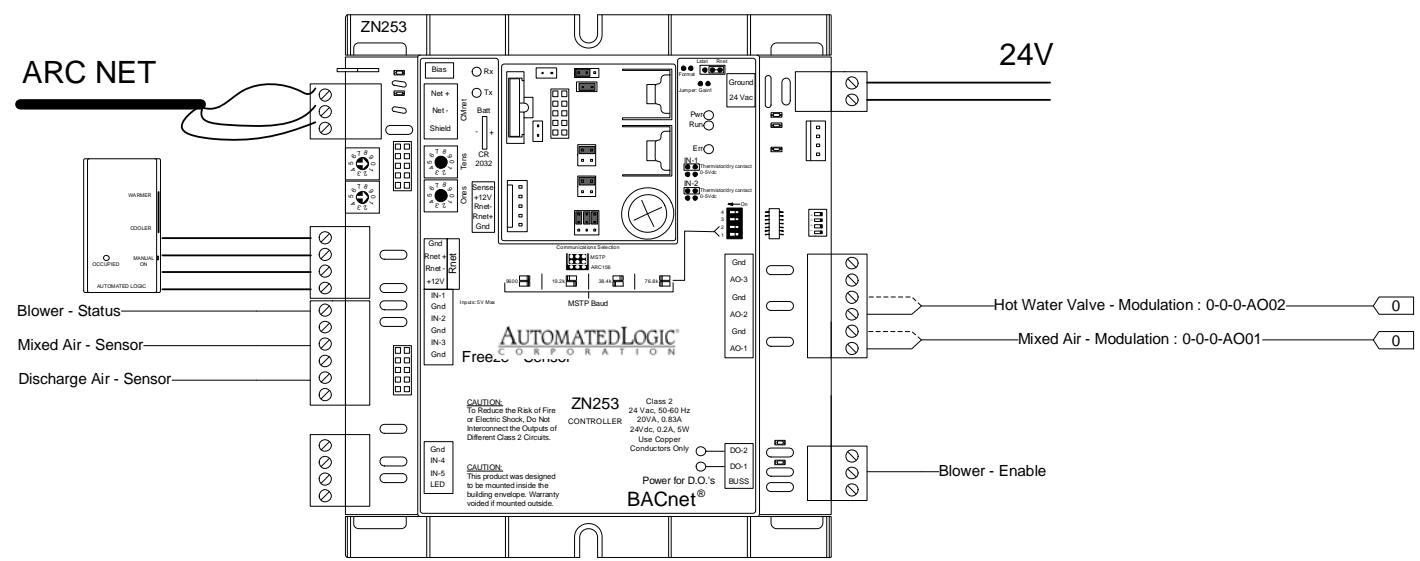
Freeze to Fan Control Circuit

Fan Start Stop
H.O.A.

Supply Air Temp.

Heating
Mixed Air temp

Bill of Materials				
DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
FS-D	TEMP LOW LIMIT MAN. RESET DPDT	LANDIS STEAFA	1341504	1 ea
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	1 ea
ZN253	ZN253	AUTOMATED LOGIC	ZN253	3 ea
a10kcpa8	DUCT 10K THERMISTOR AVERAGING 8 FT.	ALPS	A10KCPA8	1 ea
a10kcpdo8	DUCT 10K THERMISTOR PROBE 8 IN.	ALPS	A10KCPDO8	1 ea
af24srus	SR PROPORTIONAL 133 IN-LB 2-10VDC	BELIMO	AF24SRUS	4 ea
af24us	SR OPEN/CLOSE 133 IN-LB 24V	BELIMO	AF24US	4 ea
ribu1c	PILOT RELAY 24 VAC DPDT W/ LED	FUNCTIONAL	RIBU1C	4 ea
ribxkf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	1 ea
rsplus	RS 10K ROOM SENSOR W/ SETP ADJ, TLO, COMM	ALC	RSPLUS	4 ea



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AHU 1H,2H,3H,4H

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AHU 5H

Outdoor Air Damper

Redundant Outdoor Air Damper

Return Air Damper

Status

Freeze to Fan Control Circuit

Fan Start Stop
H.O.A.

Supply Air Temp.

Cooling 2

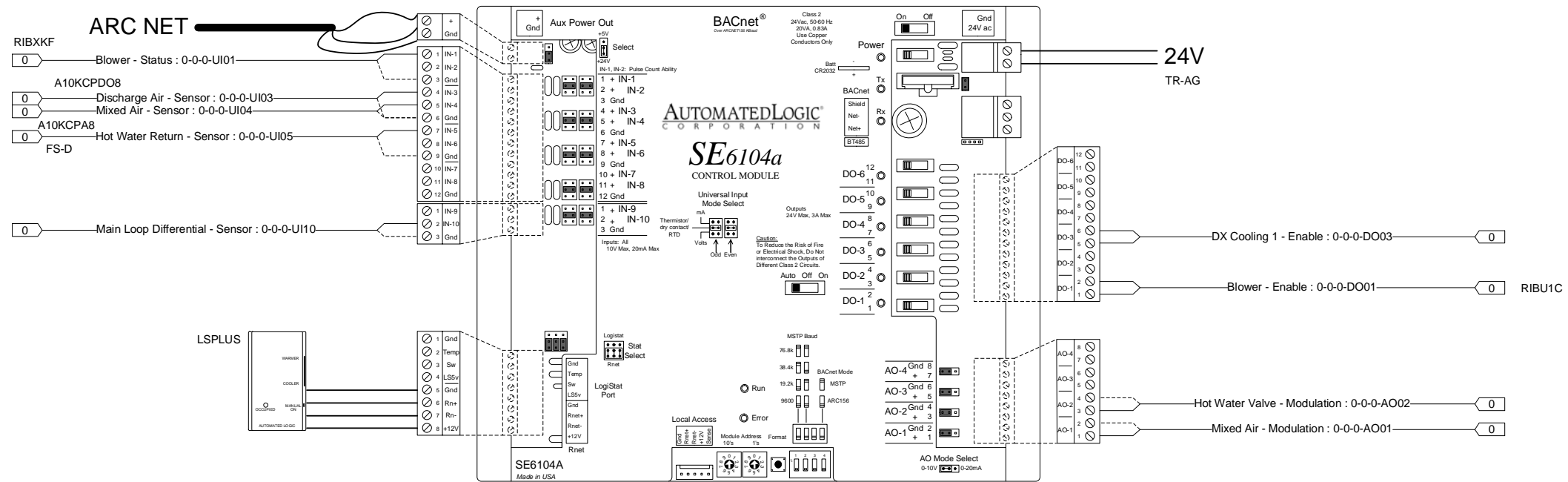
Cooling 1

Heating

Mixed Air temp

Bill of Materials

DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
FS-D	TEMP LOW LIMIT MAN. RESET DPTD	LANDIS STEAFA	1341504	1 ea
LSPLUS	LOGISTAT 10K ROOM SENSOR W/ SETP ADJ, TLO, COMM	BAPI	LSPLUS	1 ea
SE6104a	SE6104A	AUTOMATED LOGIC	SE6104A	1 ea
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	1 ea
a10kcpa8	DUCT 10K THERMISTOR AVERAGING 8 FT.	ALPS	A10KCPA8	1 ea
a10kcpdo8	DUCT 10K THERMISTOR PROBE 8 IN.	ALPS	A10KCPDO8	1 ea
af24srus	SR PROPORTIONAL 133 IN-LB 2-10VDC	BELIMO	AF24SRUS	1 ea
af24us	SR OPEN/CLOSE 133 IN-LB 24V	BELIMO	AF24US	1 ea
ribu1c	PILOT RELAY 24 VAC DPDT W/ LED	FUNCTIONAL	RIBU1C	3 ea
ribxkf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	1 ea



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AHU 5H

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AHU District Office

Outdoor Air Damper

Redundant Outdoor Air Damper

Return Air Damper

Status

Freeze to Fan Control Circuit

Fan Start Stop
H.O.A.

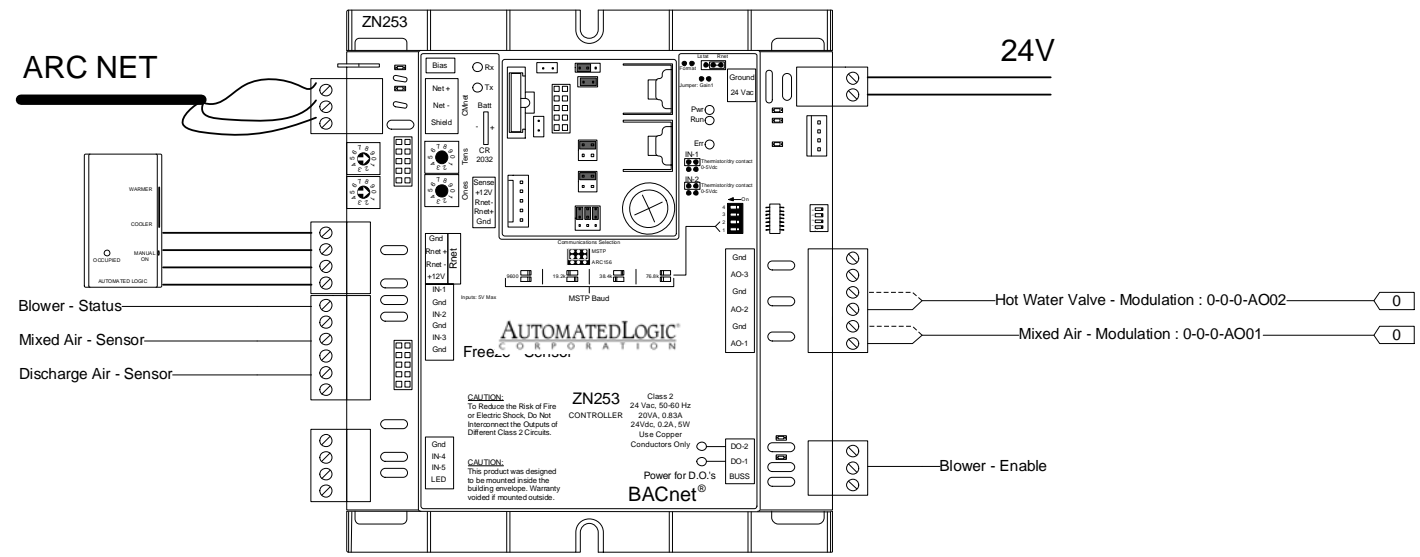
Supply Air Temp.

Heating

Mixed Air temp

Bill of Materials

DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
FS-D	TEMP LOW LIMIT MAN. RESET DPTD	LANDIS STEAFA	1341504	1 ea
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	1 ea
ZN253	ZN253	AUTOMATED LOGIC	ZN253	3 ea
a10kcpa8	DUCT 10K THERMISTOR AVERAGING 8 FT.	ALPS	A10KCPA8	1 ea
a10kcpdo8	DUCT 10K THERMISTOR PROBE 8 IN.	ALPS	A10KCPDO8	1 ea
af24srus	SR PROPORTIONAL 133 IN-LB 2-10VDC	BELIMO	AF24SRUS	4 ea
af24us	SR OPEN/CLOSE 133 IN-LB 24V	BELIMO	AF24US	4 ea
ribu1c	PILOT RELAY 24 VAC DPDT W/ LED	FUNCTIONAL	RIBU1C	1 ea
ribxkf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	1 ea
rsplus	RS 10K ROOM SENSOR W/ SETP ADJ, TLO, COMM	ALC	RSPLUS	4 ea



Maine Endwell High School 2010

Binghamton, New York

AIR TEMP HEATING & AIR CONDITIONING, INC.
A LINC SERVICE @ CONTRACTOR

AHU District Office

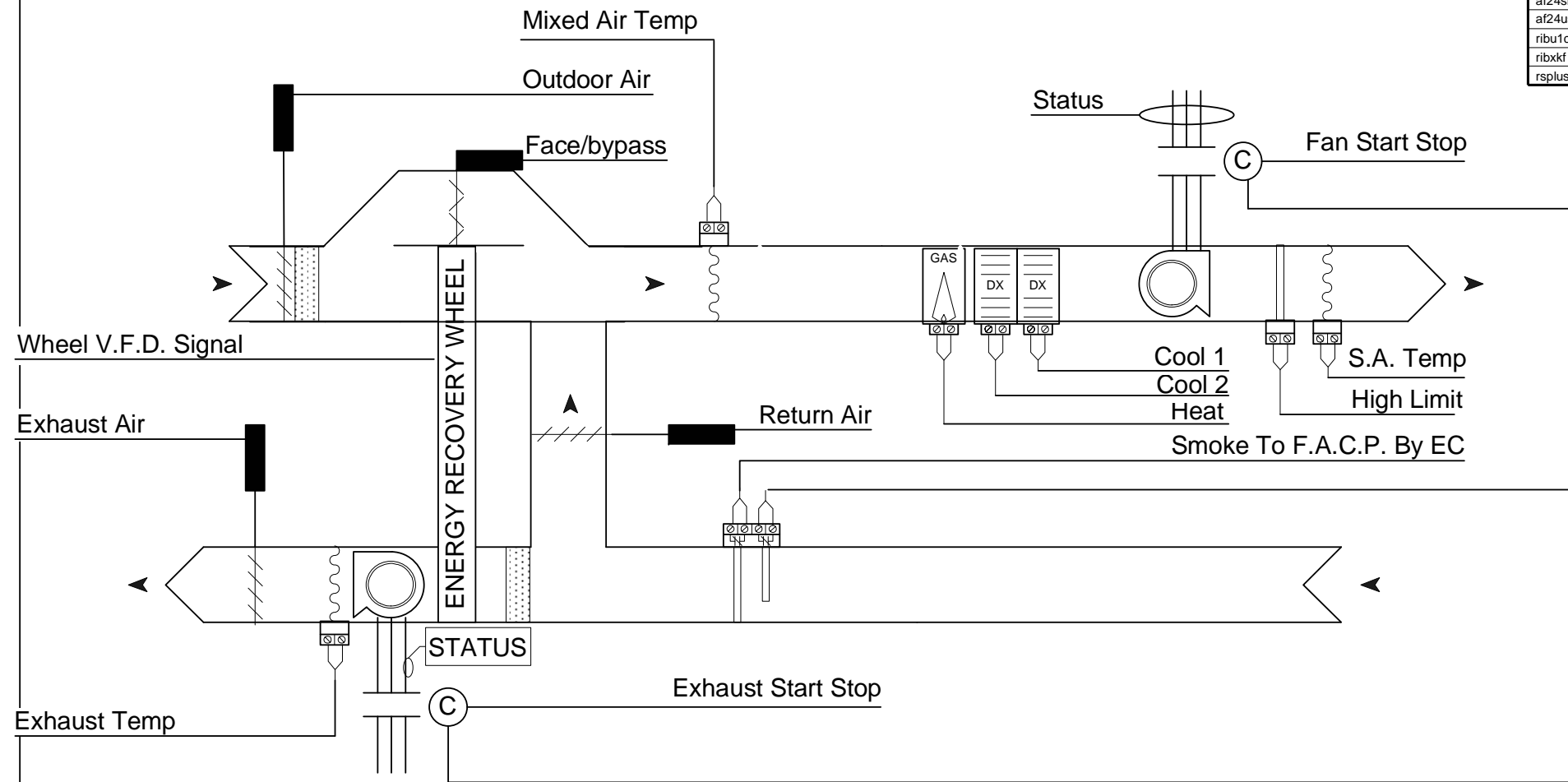
REV: 1	As-Built	2/10/2010	JOB NO: P7932
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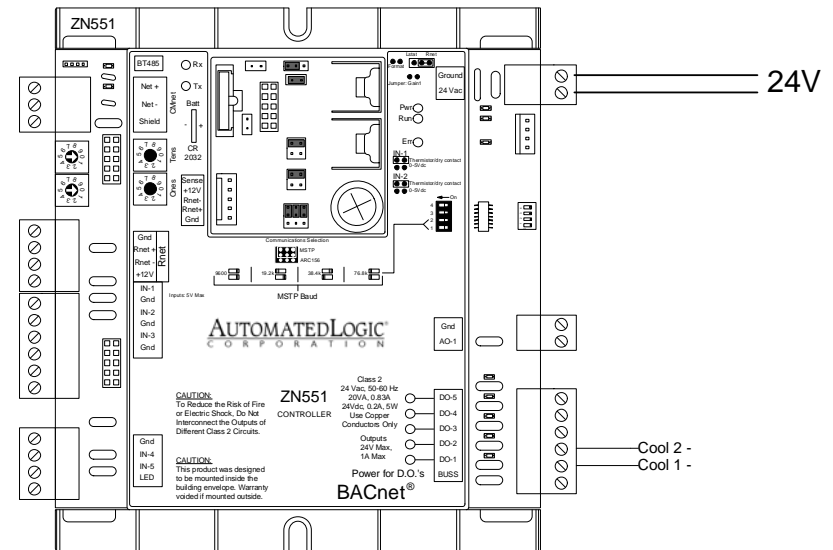
AUTOMATED LOGIC
CORPORATION

DSCODE: 07112.00

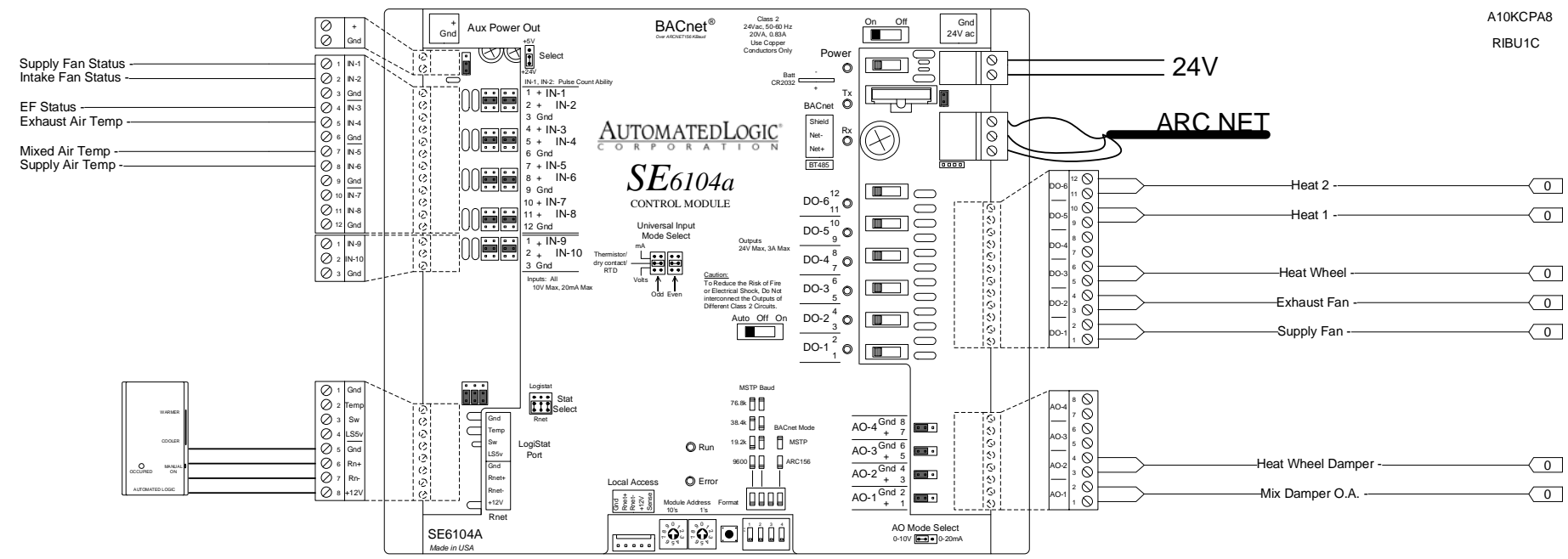
HRU 1



Bill of Materials				
DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
FS-D	TEMP LOW LIMIT MAN. RESET DPDT	LANDIS STEAFA	1341504	6 ea
SE6104a	SE6104A	AUTOMATED LOGIC	SE6104A	1 ea
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	6 ea
ZN551	ZN551	AUTOMATED LOGIC	ZN551	1 ea
a10kcpa8	DUCT 10K THERMISTOR AVERAGING 8 FT.	ALPS	A10KCPA8	12 ea
a10kcpdo8	DUCT 10K THERMISTOR PROBE 8 IN.	ALPS	A10KCPDO8	6 ea
af24srus	SR PROPORTIONAL 133 IN-LB 2-10VDC	BELIMO	AF24SRUS	12 ea
af24us	SR OPEN/CLOSE 133 IN-LB 24V	BELIMO	AF24US	6 ea
ribu1c	PILOT RELAY 24 VAC DPDT W/ LED	FUNCTIONAL	RIBU1C	12 ea
ribxkf	CURRENT SWITCH -5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	12 ea
rsplus	RS 10K ROOM SENSOR W/ SETP ADJ. TLO. COMM	ALC	RSPLUS	6 ea



- A10KCPA8 RIBXKF A10KCPDO8 FS-D RSPLUS
- RIBU1C TR-AG AF24SRUS AF24US



Maine Endwell High School 2010
Binghamton, New York

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A LINC SERVICE @ CONTRACTOR

HRU 1

REV: 1	As-Built	2/10/2010	JOB NO: P7932
CHECK BY: RSL			DSCODE: 07112.00

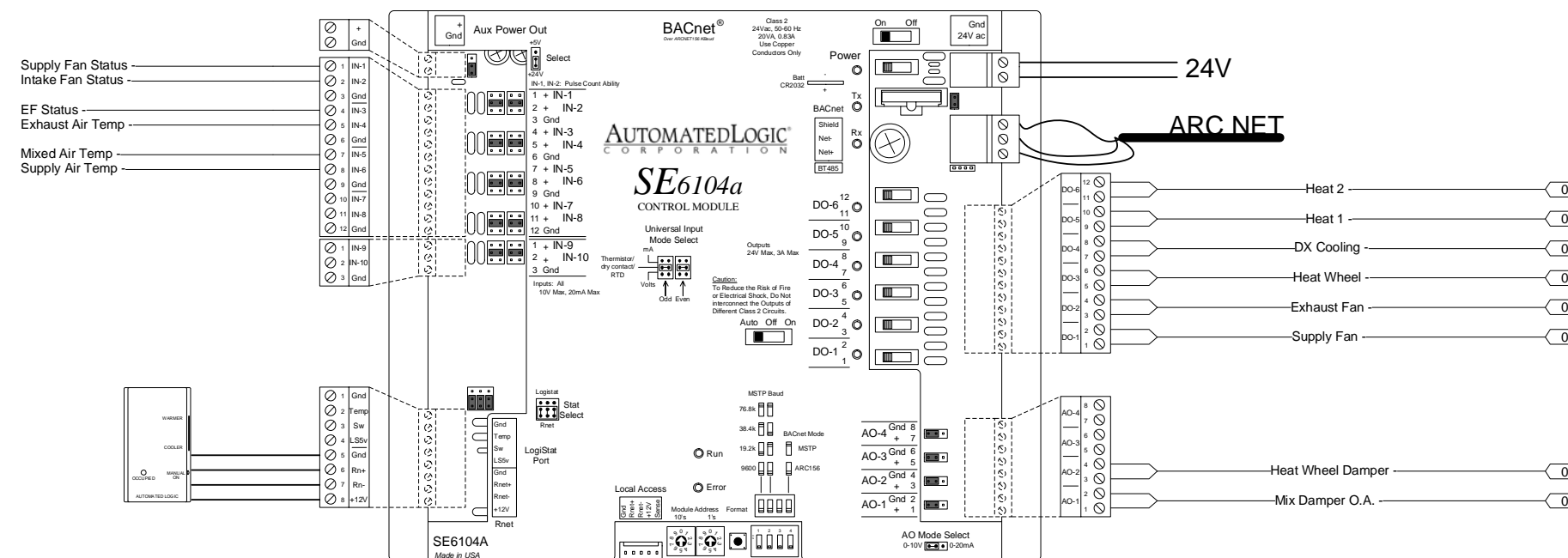
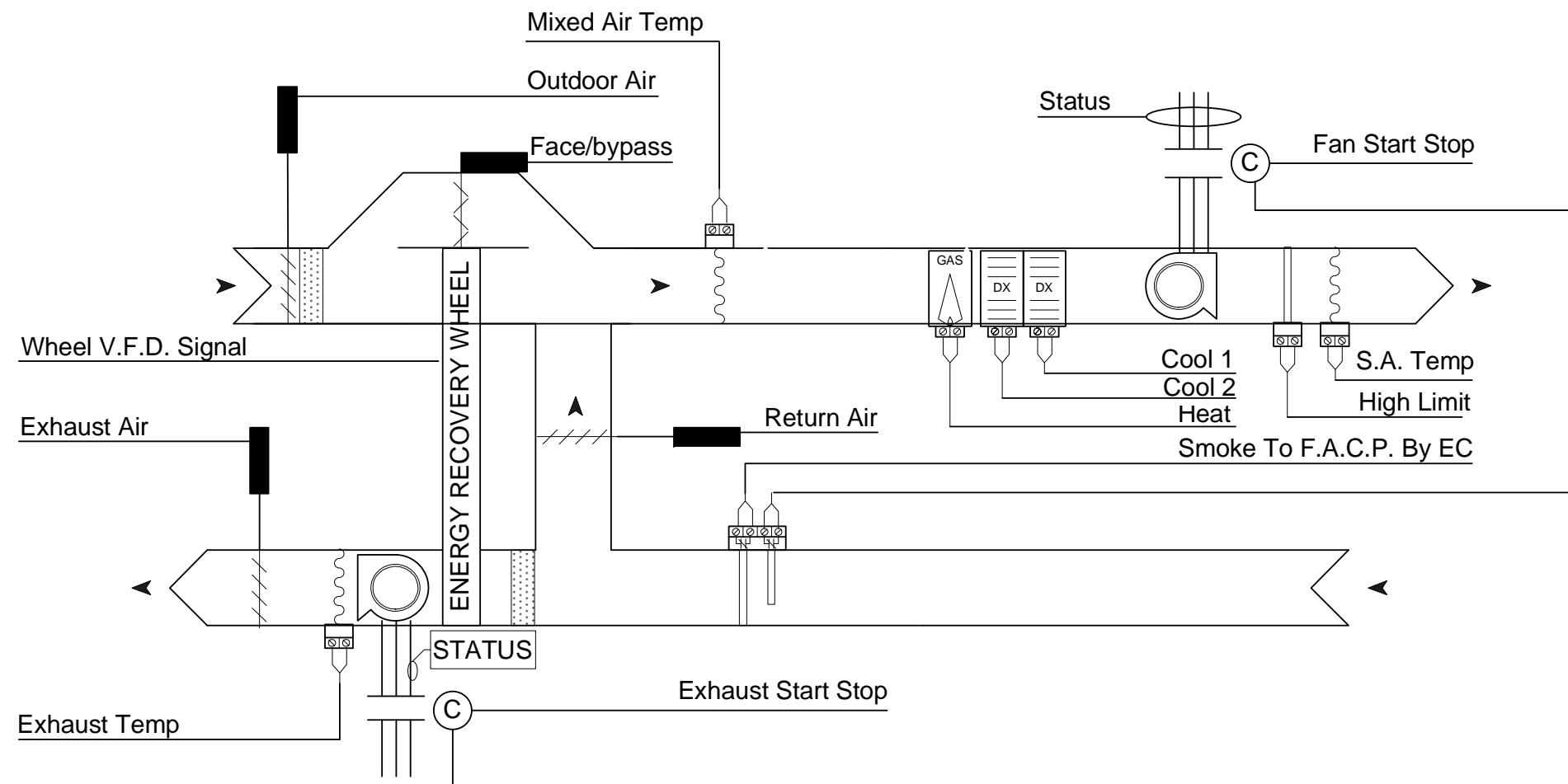
AUTOMATED LOGIC
CORPORATION

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HRU 2

Bill of Materials

DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
SE6104a	SE6104A	AUTOMATED LOGIC	SE6104A	1 ea



Maine Endwell High School 2010
Binghamton, New York

AIR TEMP HEATING & AIR CONDITIONING, INC.
A LINC SERVICE @ CONTRACTOR

HRU 2

REV: 1	As-Built	2/10/2010	JOB NO: P7932
CHECK BY: RSL			DSCODE: 07112.00

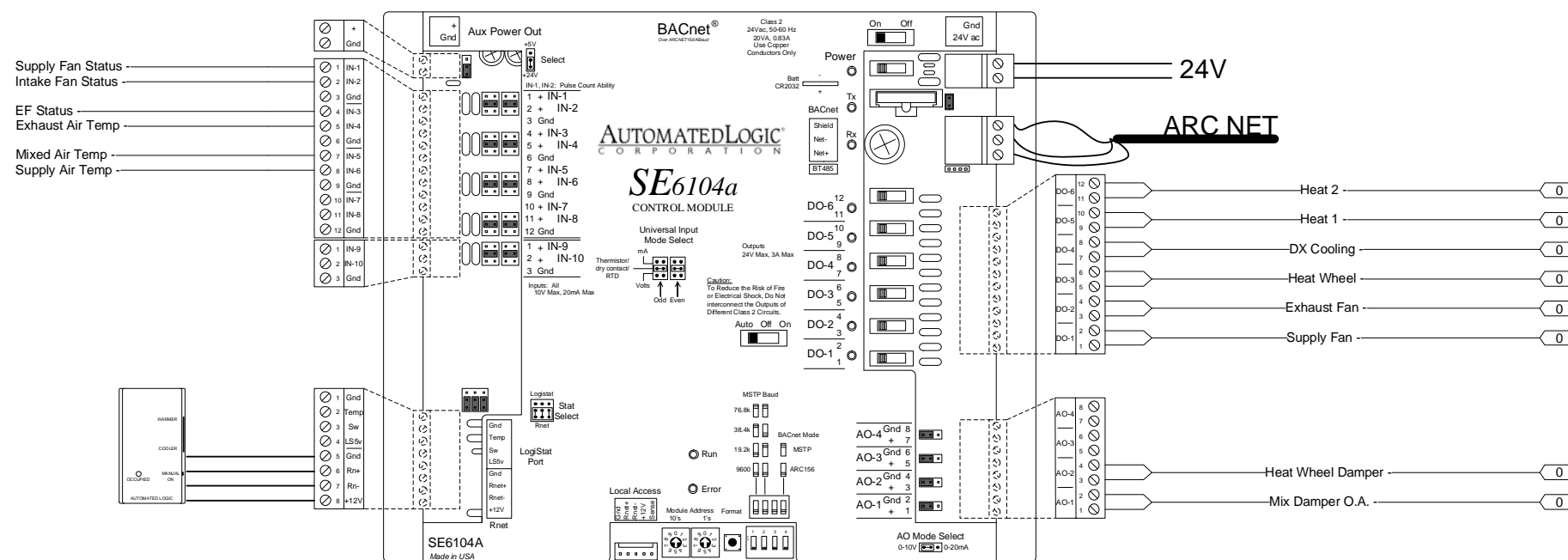
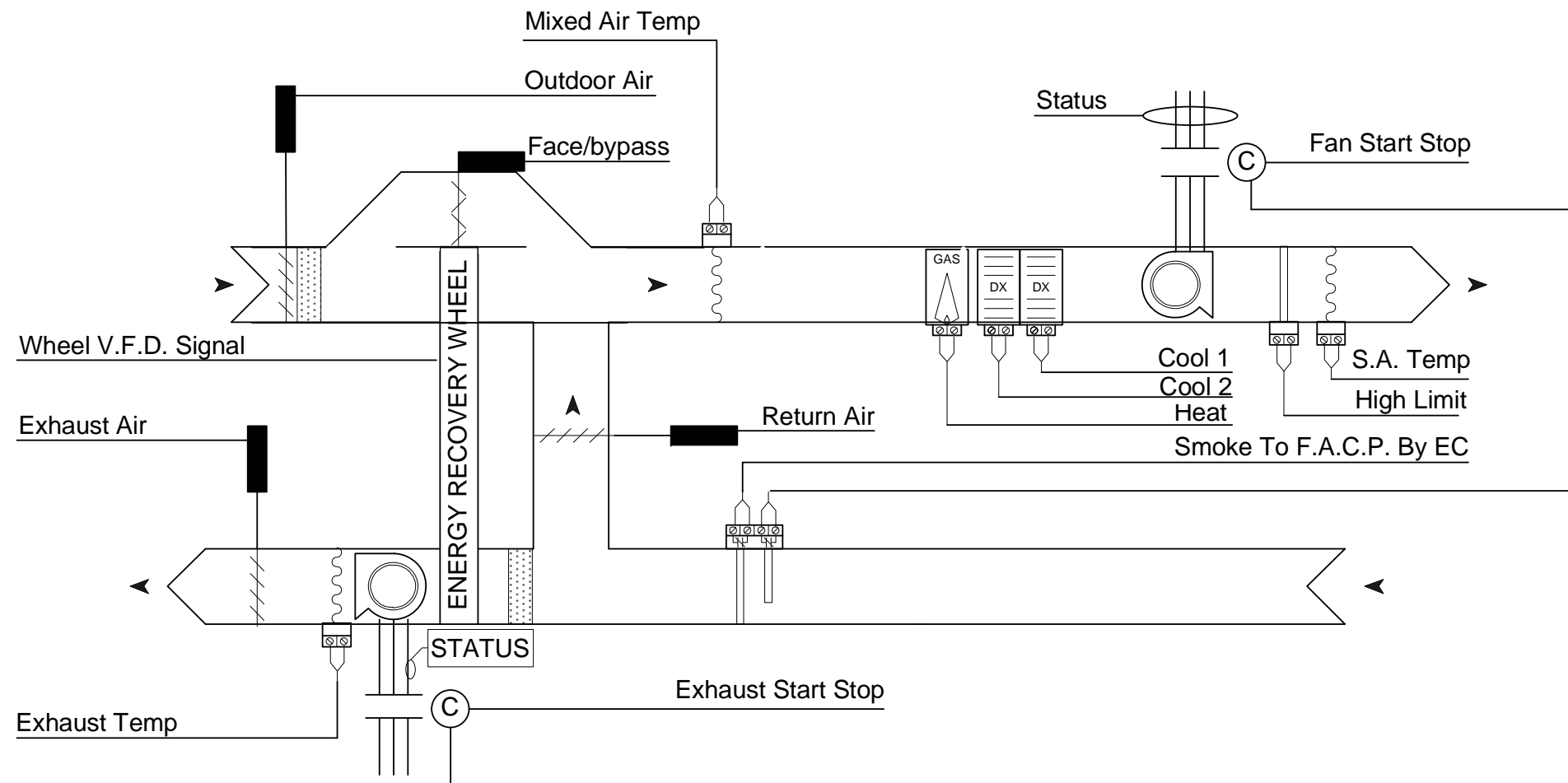
AUTOMATED LOGIC
CORPORATION

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HRU 3

Bill of Materials

DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
SE6104a	SE6104A	AUTOMATED LOGIC	SE6104A	1 ea

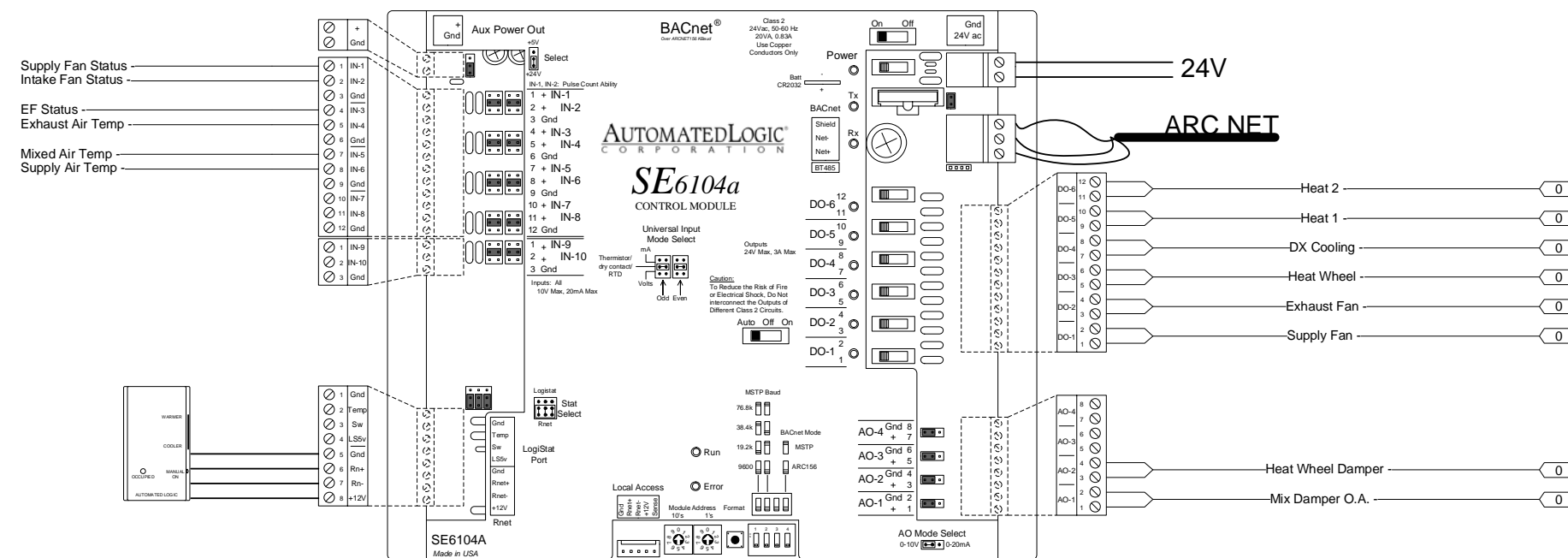
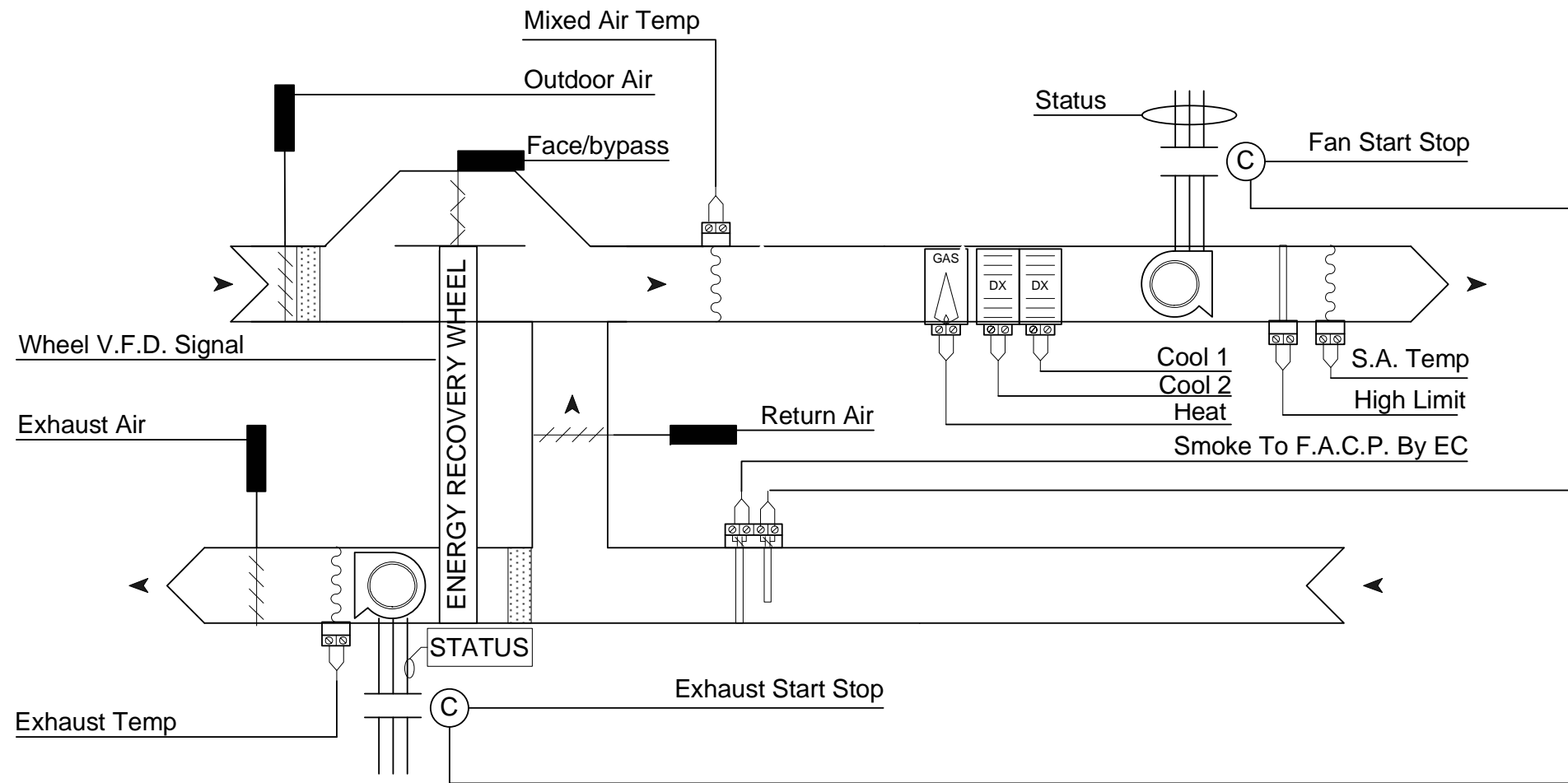


Maine Endwell High School 2010 Binghamton, New York AIR TEMP HEATING & AIR CONDITIONING, INC. A LINC SERVICE @ CONTRACTOR			
HRU 3			
REV: 1	As-Built	2/10/2010	JOB NO: P7932
AUTOMATED LOGIC CORPORATION			CHECK BY: RSL
			DSCODE: 07112.00
			16 of 41

HRU 4

Bill of Materials

DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
SE6104a	SE6104A	AUTOMATED LOGIC	SE6104A	1 ea



Maine Endwell High School 2010
Binghamton, New York

AIR TEMP HEATING & AIR CONDITIONING, INC.
A LINC SERVICE @ CONTRACTOR

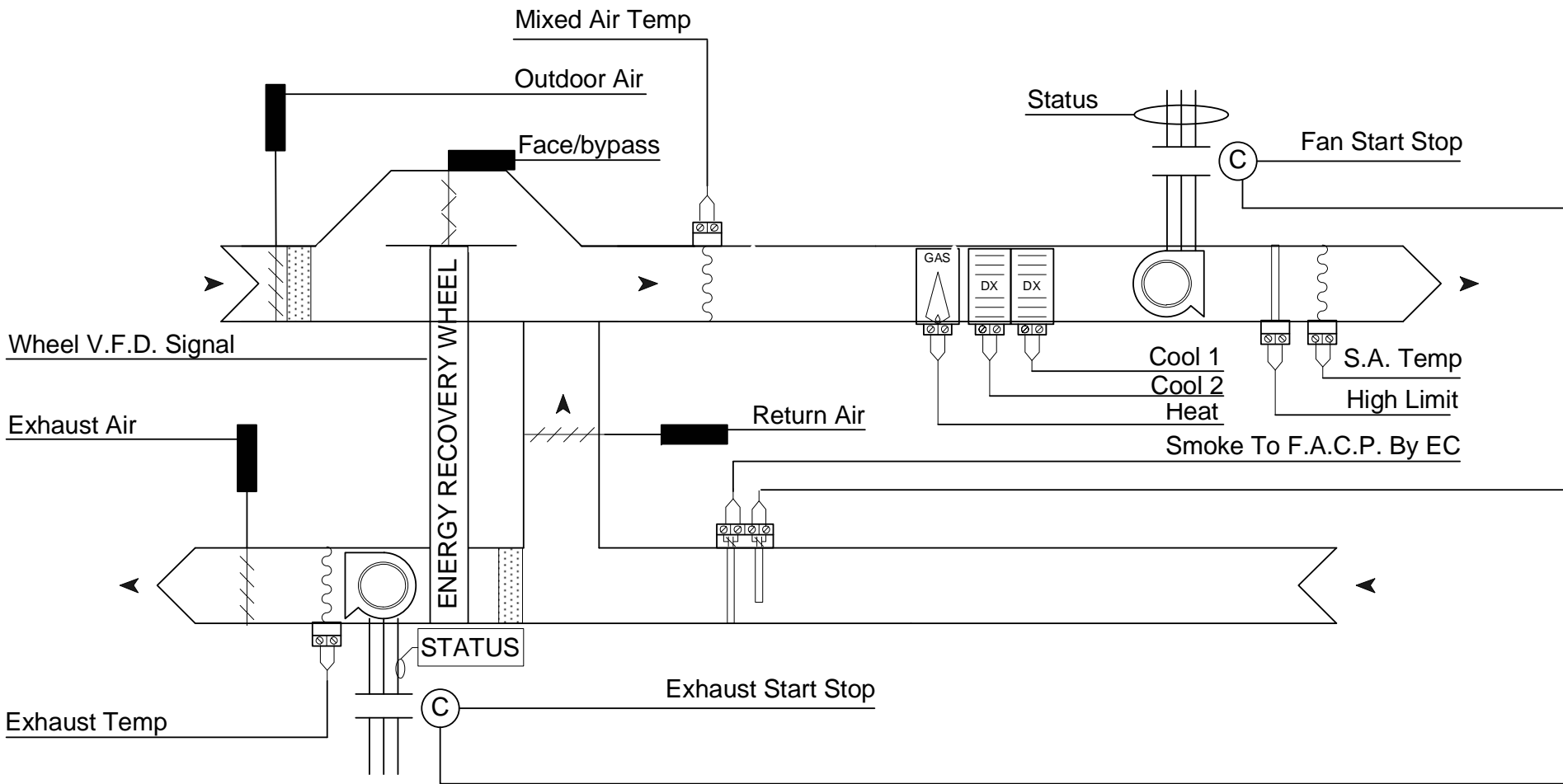
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CHECK BY: RSL			DSCODE: 07112.00

AUTOMATED LOGIC
CORPORATION

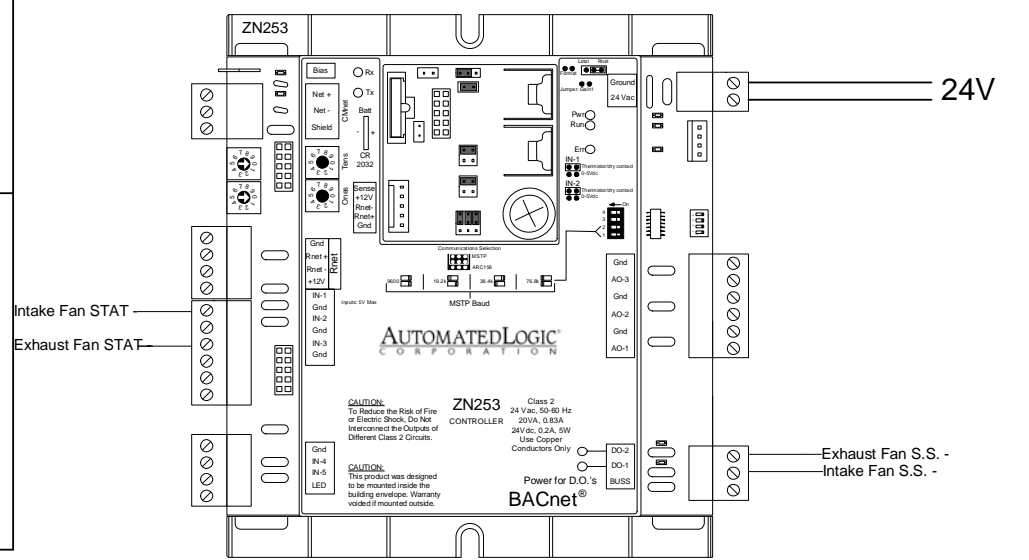
17 of 41

HRU 5



Bill of Materials				
DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
AMR	ROUTER	ALC	AMR	1 ea
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	1 ea
ZN253	ZN253	AUTOMATED LOGIC	ZN253	1 ea
af24srus	SR PROPORTIONAL 133 IN-LB 2-10VDC	BELIMO	AF24SRUS	2 ea
ribu1c	PILOT RELAY 24 VAC DPDT W/ LED	FUNCTIONAL	RIBU1C	2 ea
ribxkf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	6 ea
rsplus	RS 10K ROOM SENSOR W/ SETP ADJ, TLO, COMM	ALC	RSPLUS	1 ea

HRU 5 4 STG Cool 4 STG Heat



RIBXKF RIBU1C RSPLUS
 TR-AG AF24SRUS
 AMR

THIS UNIT IS INTEGRATED BACNET/MSTP

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 Binghamton, New York

AIR TEMP HEATING & AIR CONDITIONING, INC.
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HRU 5

REV: 1	As-Built	2/10/2010	JOB NO: P7932
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CHECK BY: RSL
 DSCODE: 07112.00

AUTOMATED LOGIC
 CORPORATION

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HRU 6

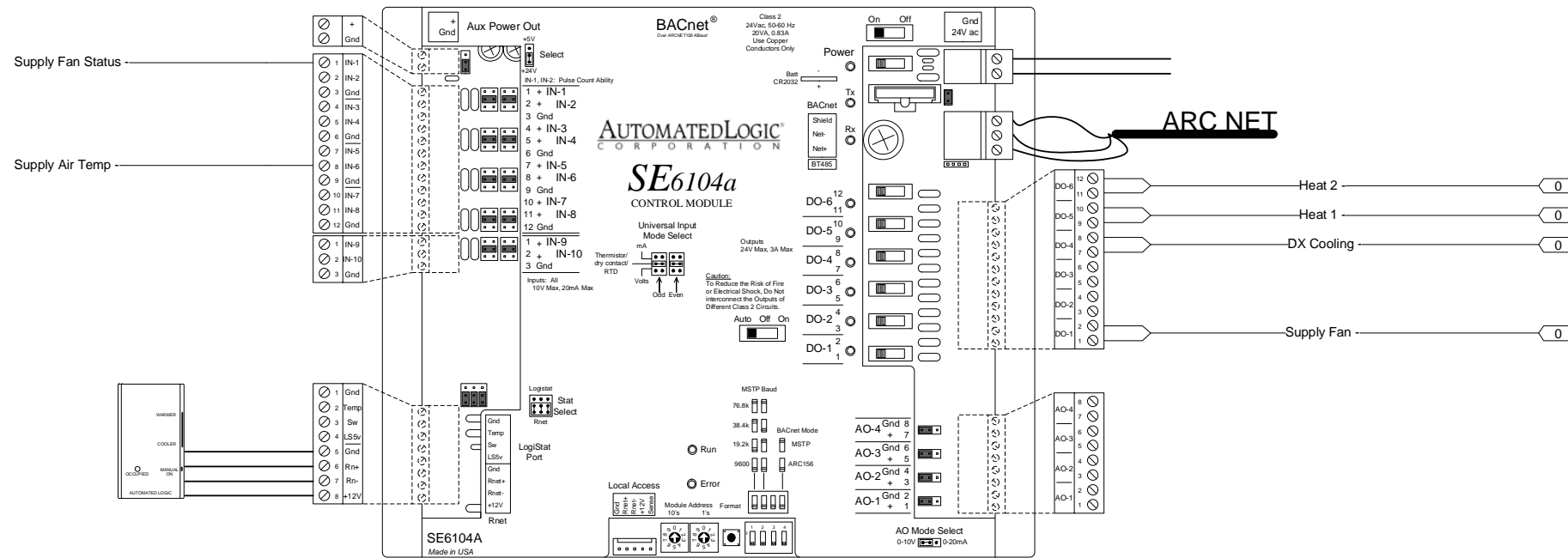
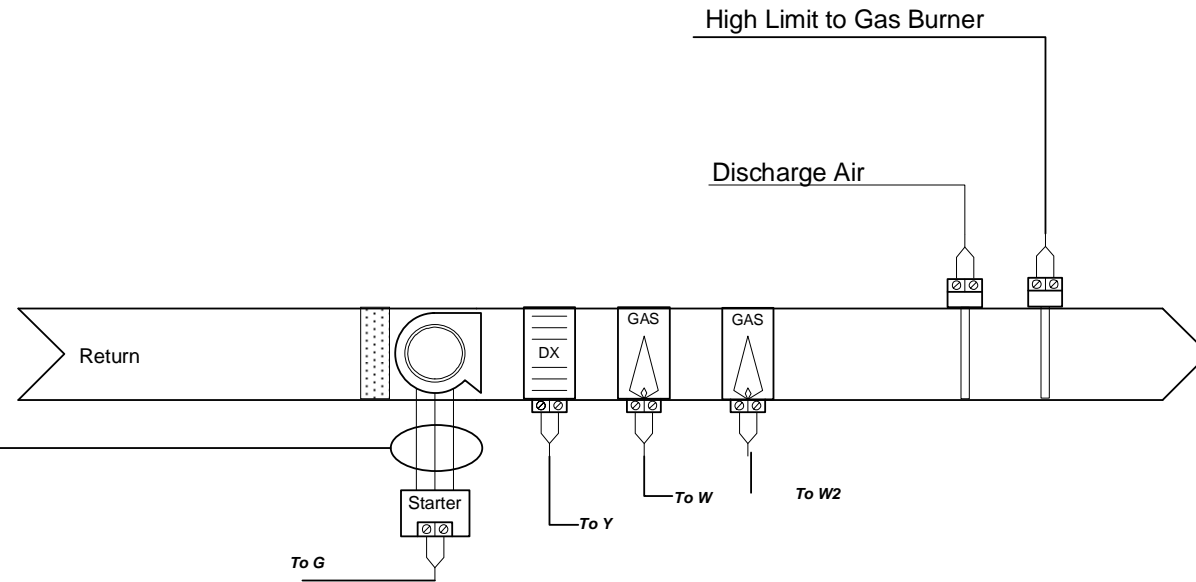
Bill of Materials

DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
SE6104a	SE6104A	AUTOMATED LOGIC	SE6104A	1 ea

NOTE 1

This unit was scheduled to be an HRU
 This unit is currently an RTU with no economizor
 The HRU hardware is no presenet

Blower Status



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 Binghamton , New York

AIR TEMP HEATING & AIR CONDITIONING, INC.
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HRU 6

REV: 1	As-Built	2/10/2010	JOB NO: P7932
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CHECK BY: RSL
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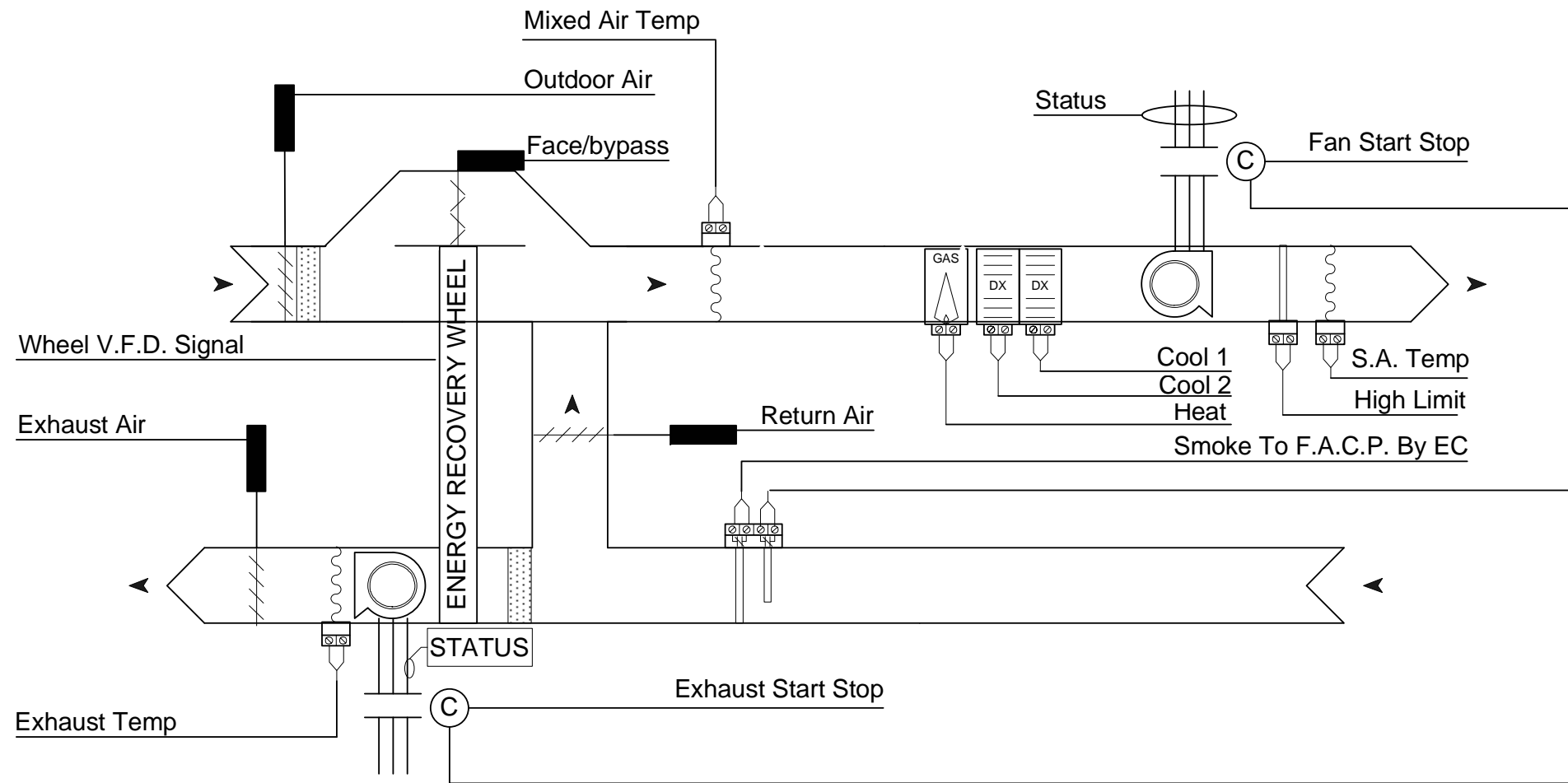
AUTOMATED LOGIC
 CORPORATION

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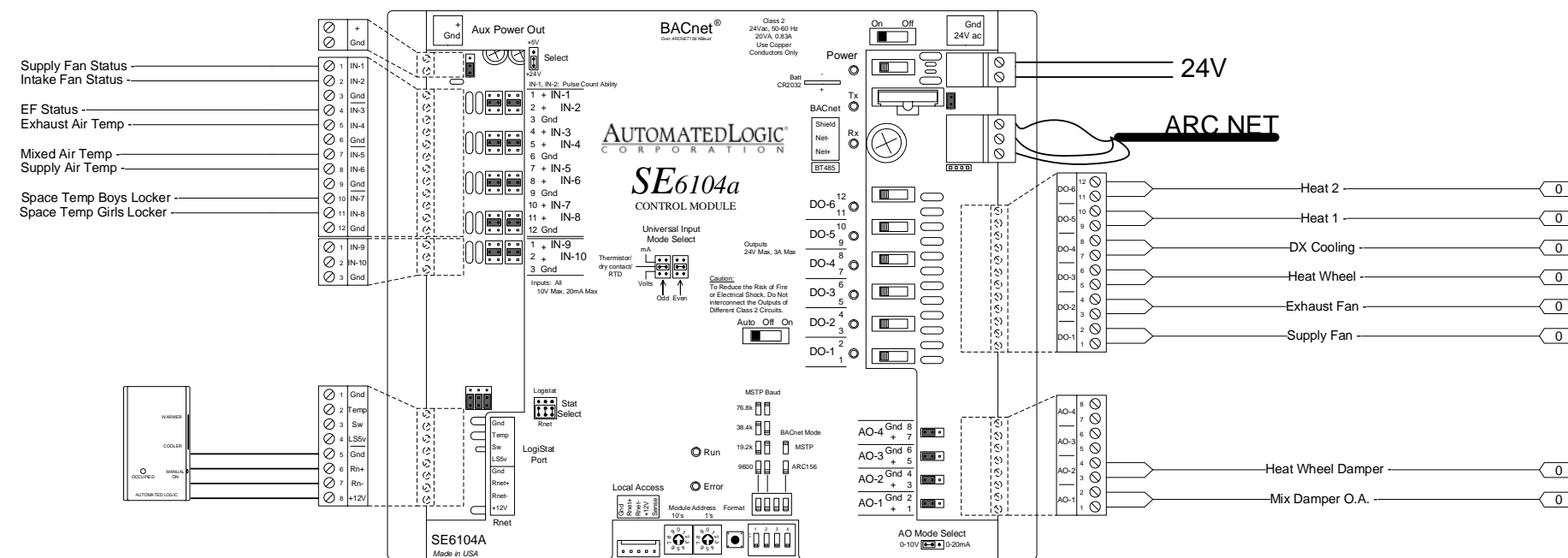
HRU 7

Bill of Materials

DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
SE6104a	SE6104A	AUTOMATED LOGIC	SE6104A	1 ea
ba10kwall	SENSOR	BAPI	BA10KWALL	2 ea



BA10KWALL



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Binghamton, New York

AIR TEMP HEATING & AIR CONDITIONING, INC.
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HRU 7

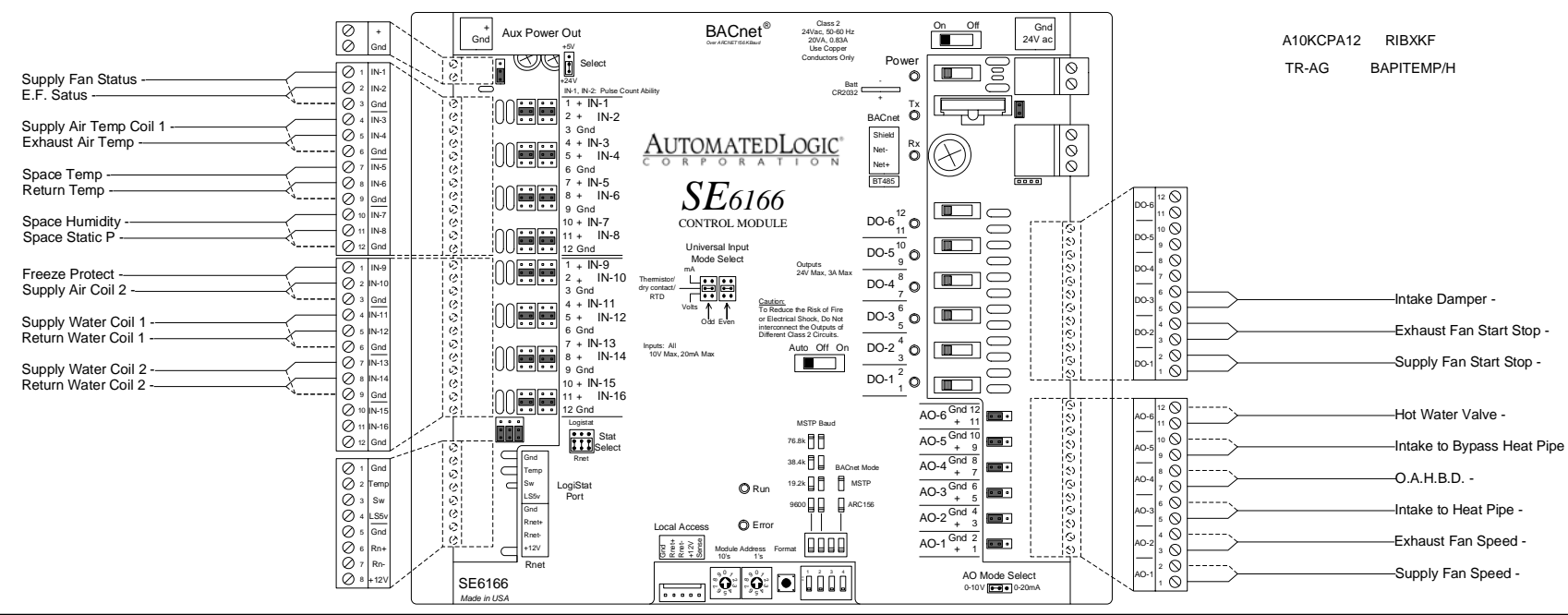
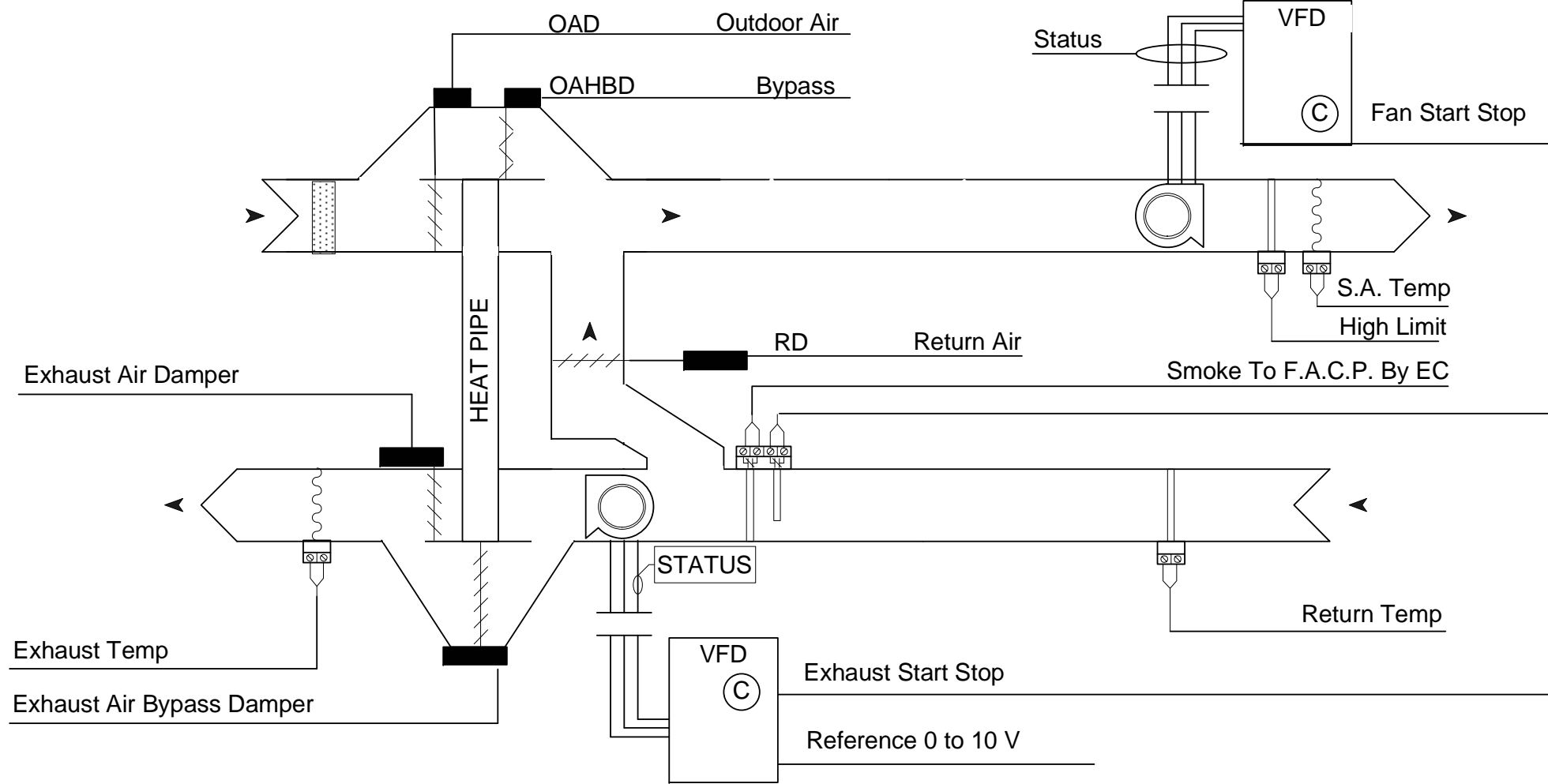
REV: 1	As-Built	2/10/2010	JOB NO: P7932
CHECK BY: RSL			DSCODE: 07112.00
AUTOMATED LOGIC CORPORATION			

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Dehumid

Bill of Materials

DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
SE6166	SE6166	AUTOMATED LOGIC	SE6166	1 ea
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	1 ea
a10kcpa12	DUCT 10K THERMISTOR AVERAGING 8 FT.	ALPS	A10KCPA8	4 ea
bapitemp/h	TEMP HUMIDITY COMBO	BAPI	BAPI	1 ea
ribxkf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	2 ea



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AIR TEMP HEATING & AIR CONDITIONING, INC.
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Dehumid

REV: 1	As-Built	2/10/2010	JOB NO: P7932
			CHECK BY: RSL
			DSCODE: 07112.00

AUTOMATED LOGIC CORPORATION

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RTU's A

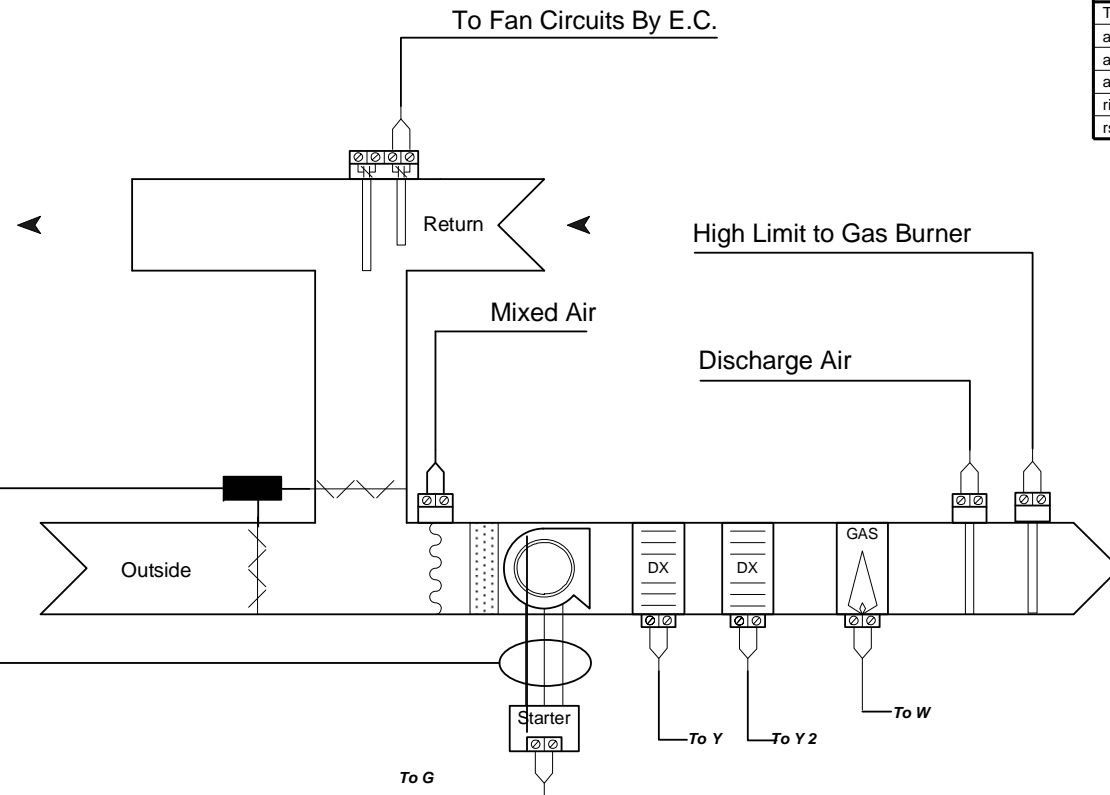
RTU's

- 02
- 03
- 04
- 05
- 06
- 07
- 12
- 13
- 14
- 15

Math 112

Mixed Air Damper

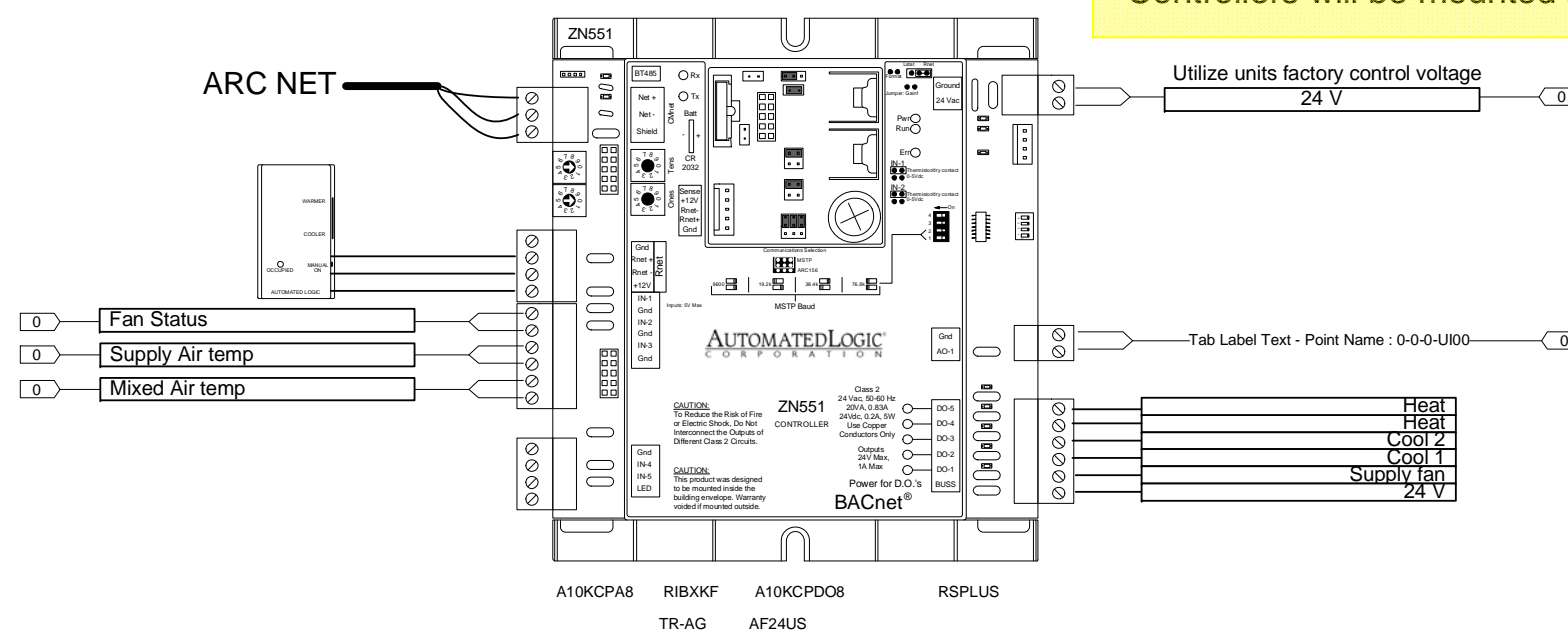
Blower Status



Bill of Materials

DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	14 ea
a10kcpa8	DUCT 10K THERMISTOR AVERAGING 8 FT.	ALPS	A10KCPA8	14 ea
a10kcpdo8	DUCT 10K THERMISTOR PROBE 8 IN.	ALPS	A10KCPDO8	14 ea
af24us	SR OPEN/CLOSE 133 IN-LB 24V	BELIMO	AF24US	14 ea
ribxf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	14 ea
rsplus	RS 10K ROOM SENSOR W/ SETP ADJ. TLO. COMM	ALC	RSPLUS	14 ea

All Field mounted Automated Logic Controllers will be mounted indoors



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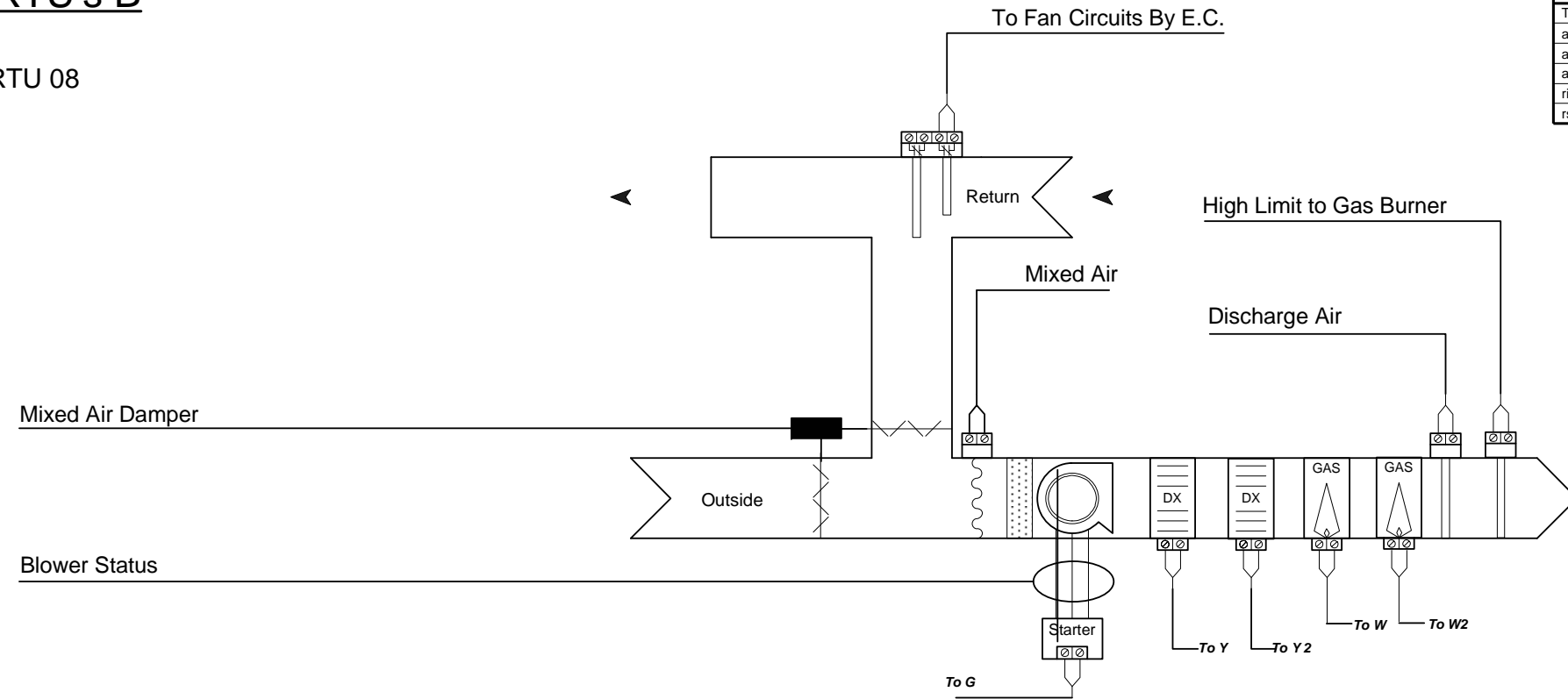
RTU's A

REV: 1	As-Built	2/10/2010	JOB NO: P7932
AUTOMATEDLOGIC CORPORATION			CHECK BY: RSL
			DSCODE: 07112.00

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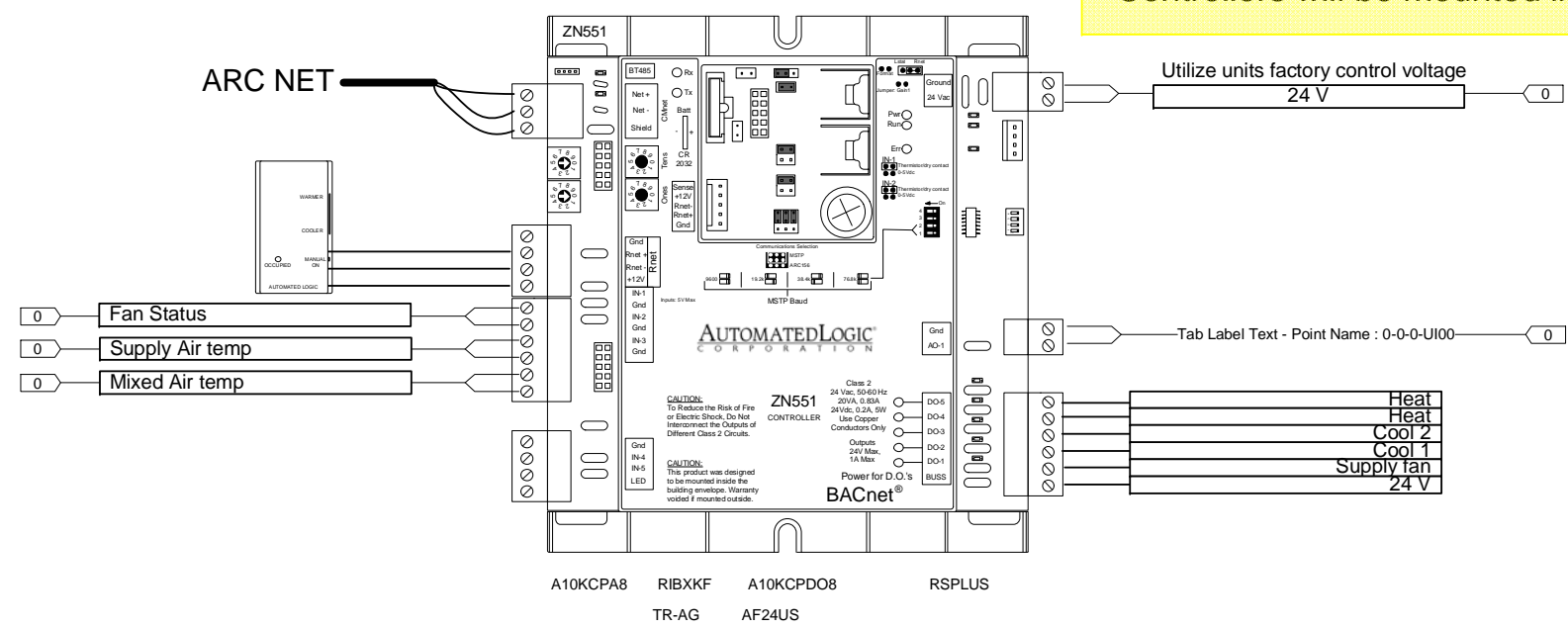
RTU's B

RTU 08



Bill of Materials				
DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	14 ea
a10kcpa8	DUCT 10K THERMISTOR AVERAGING 8 FT.	ALPS	A10KCPA8	14 ea
a10kcpdo8	DUCT 10K THERMISTOR PROBE 8 IN.	ALPS	A10KCPDO8	14 ea
af24us	SR OPEN/CLOSE 133 IN-LB 24V	BELIMO	AF24US	14 ea
ribxkf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	14 ea
rsplus	RS 10K ROOM SENSOR W/ SETP ADJ. TLO. COMM	ALC	RSPLUS	14 ea

All Field mounted Automated Logic Controllers will be mounted indoors



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AIR TEMP HEATING & AIR CONDITIONING, INC.
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RTU's B

REV: 1	As-Built	2/10/2010	JOB NO: P7932
CHECK BY: RSL			DSCODE: 07112.00

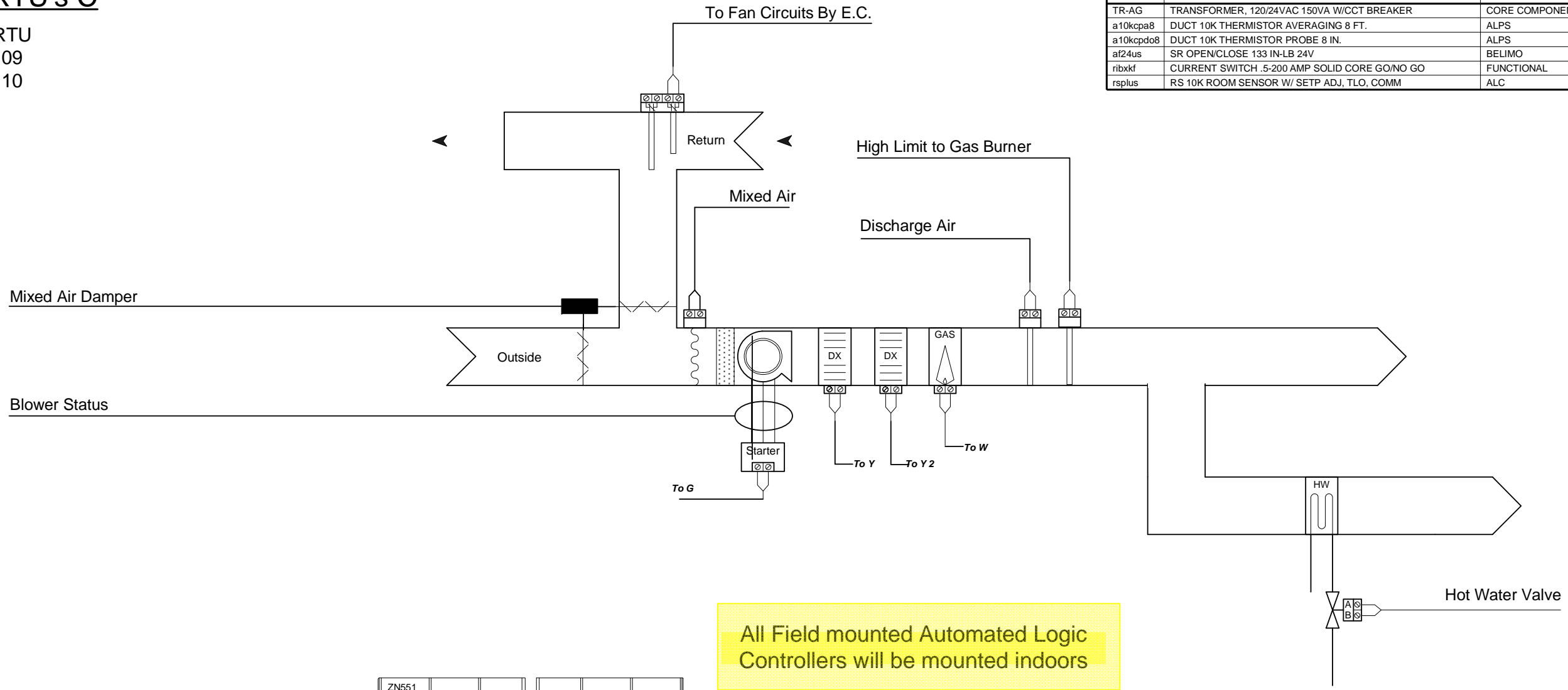
AUTOMATEDLOGIC
 CORPORATION

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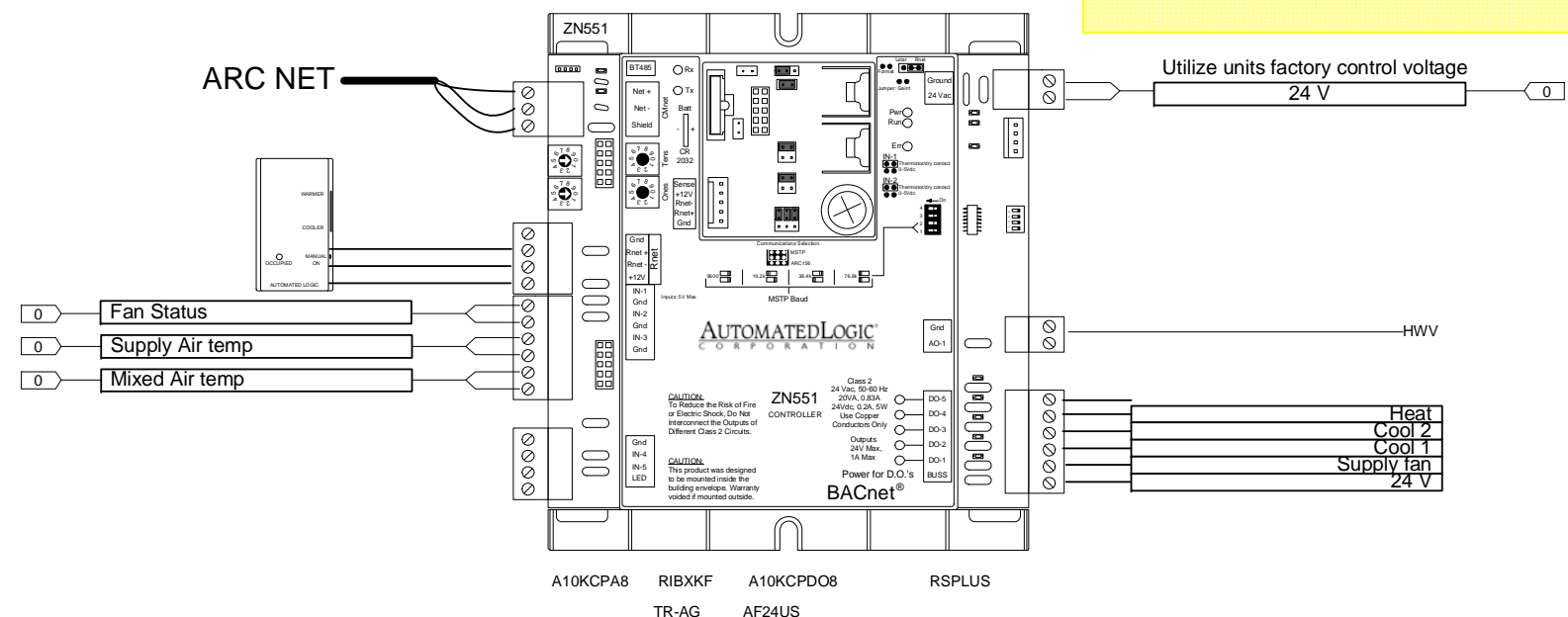
RTU's C

RTU
09
10

Bill of Materials				
DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	14 ea
a10kcpa8	DUCT 10K THERMISTOR AVERAGING 8 FT.	ALPS	A10KCPA8	14 ea
a10kcpdo8	DUCT 10K THERMISTOR PROBE 8 IN.	ALPS	A10KCPDO8	14 ea
af24us	SR OPEN/CLOSE 133 IN-LB 24V	BELIMO	AF24US	14 ea
ribxkf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	14 ea
rsplus	RS 10K ROOM SENSOR W/ SETP ADJ. TLO. COMM	ALC	RSPLUS	14 ea



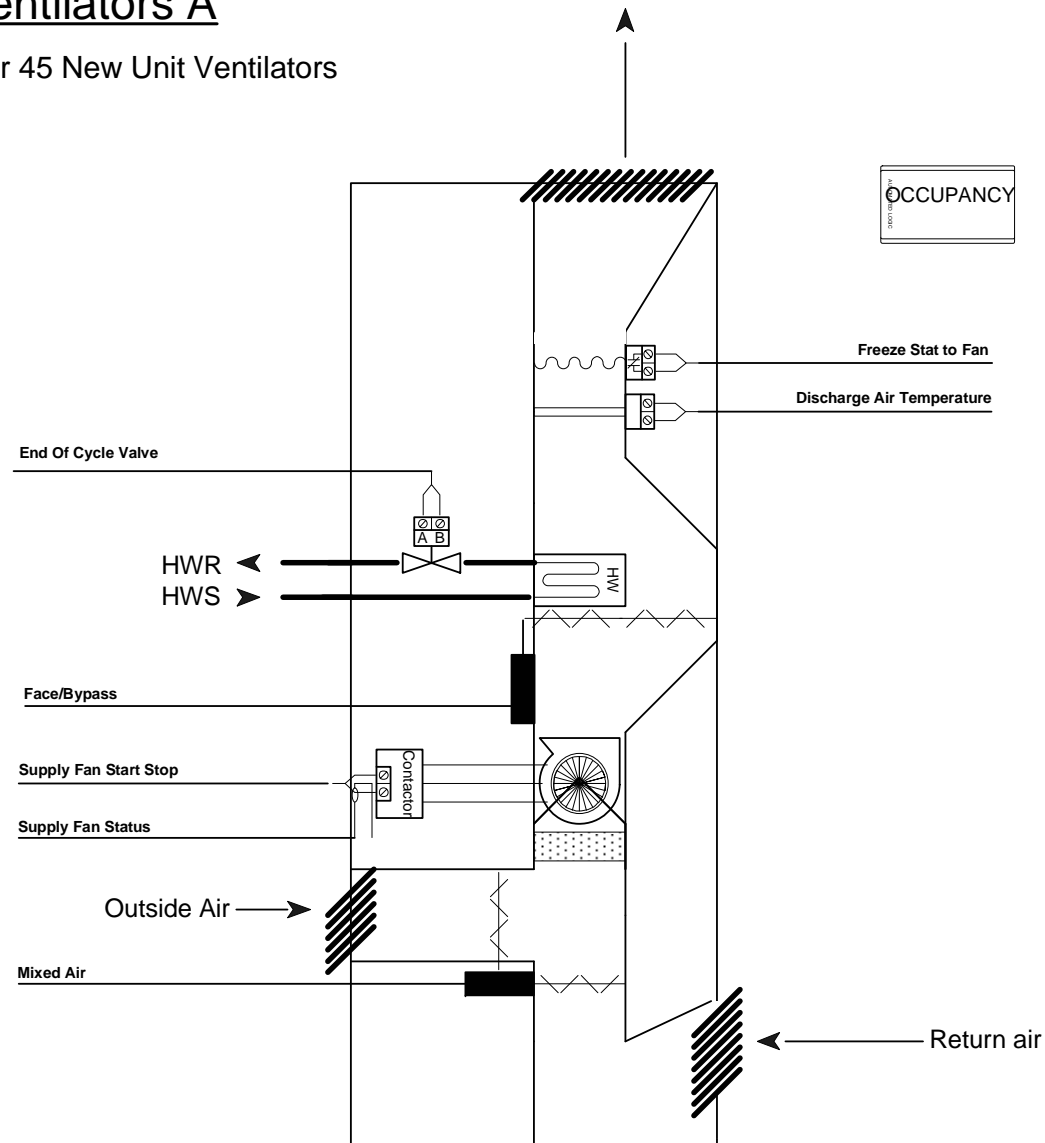
All Field mounted Automated Logic Controllers will be mounted indoors



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AIR TEMP HEATING & AIR CONDITIONING, INC. A LINC SERVICE @ CONTRACTOR			
RTU's C			
REV: 1	As-Built	2/10/2010	JOB NO: P7932
AUTOMATEDLOGIC CORPORATION			CHECK BY: RSL
			DSCODE: 07112.00
			24 of 41

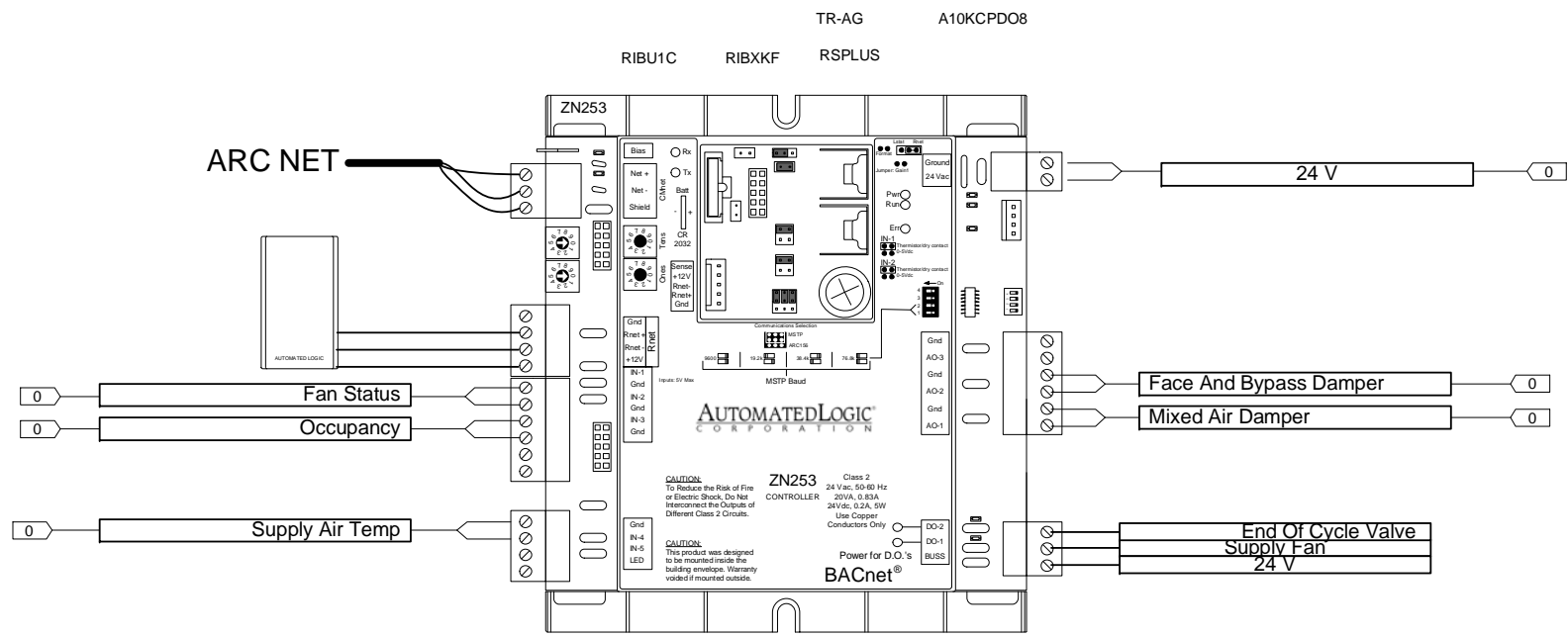
Unit Ventilators A

Typical For 45 New Unit Ventilators



Where Indicated on Electrical Drawings

Bill of Materials				
DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	47 ea
ZN253	ZN253	AUTOMATED LOGIC	ZN253	47 ea
a10kcpdo8	DUCT 10K THERMISTOR PROBE 8 IN.	ALPS	A10KCPDO8	47 ea
ribu1c	PILOT RELAY 24 VAC DPDT W/ LED	FUNCTIONAL	RIBU1C	47 ea
ribxkf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	47 ea
rsplus	RS 10K ROOM SENSOR W/ SETP ADJ. TLO. COMM	ALC	RSPLUS	47 ea



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Unit Ventilators A

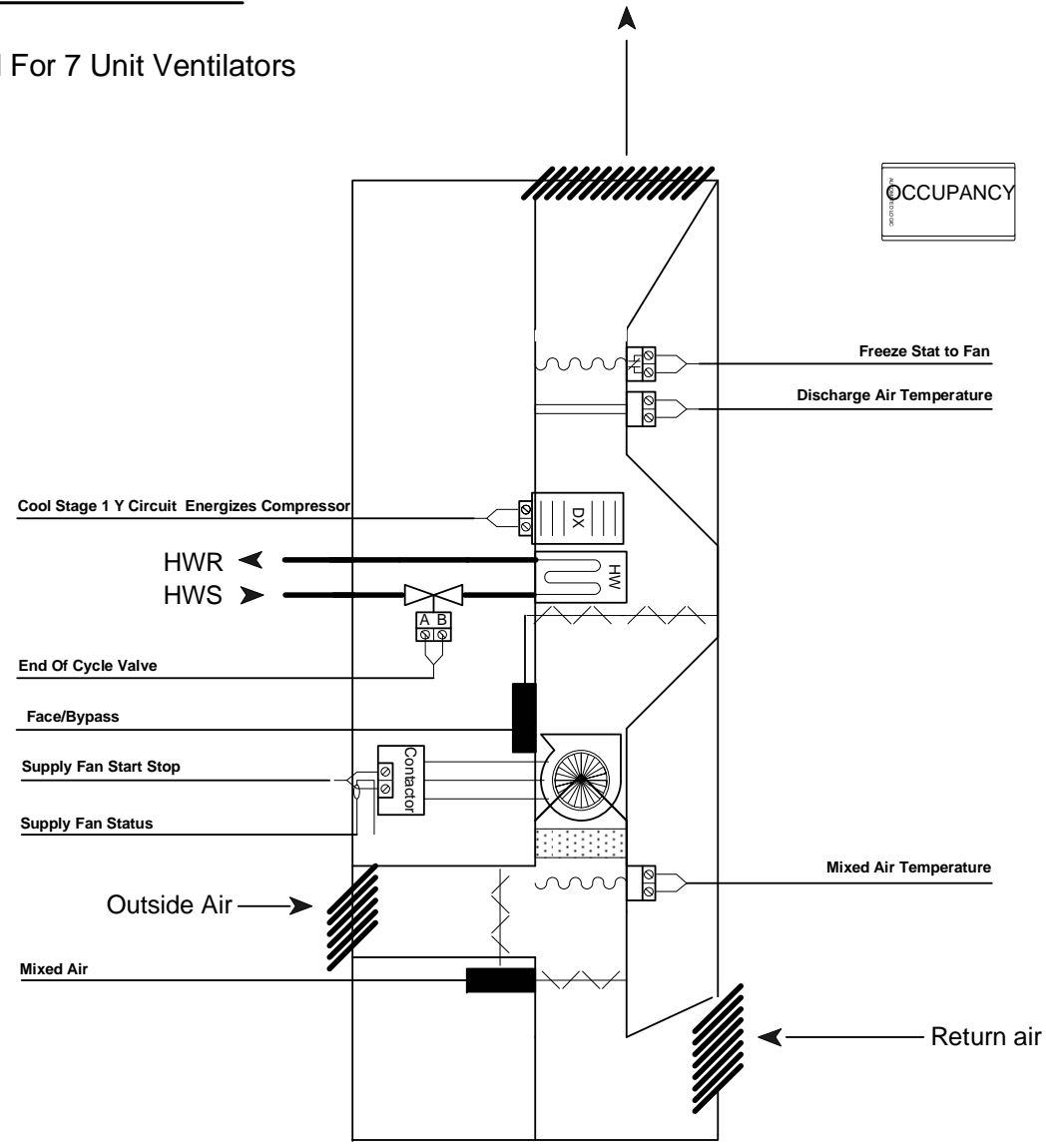
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			DSCODE: 07112.00

AUTOMATED LOGIC
CORPORATION

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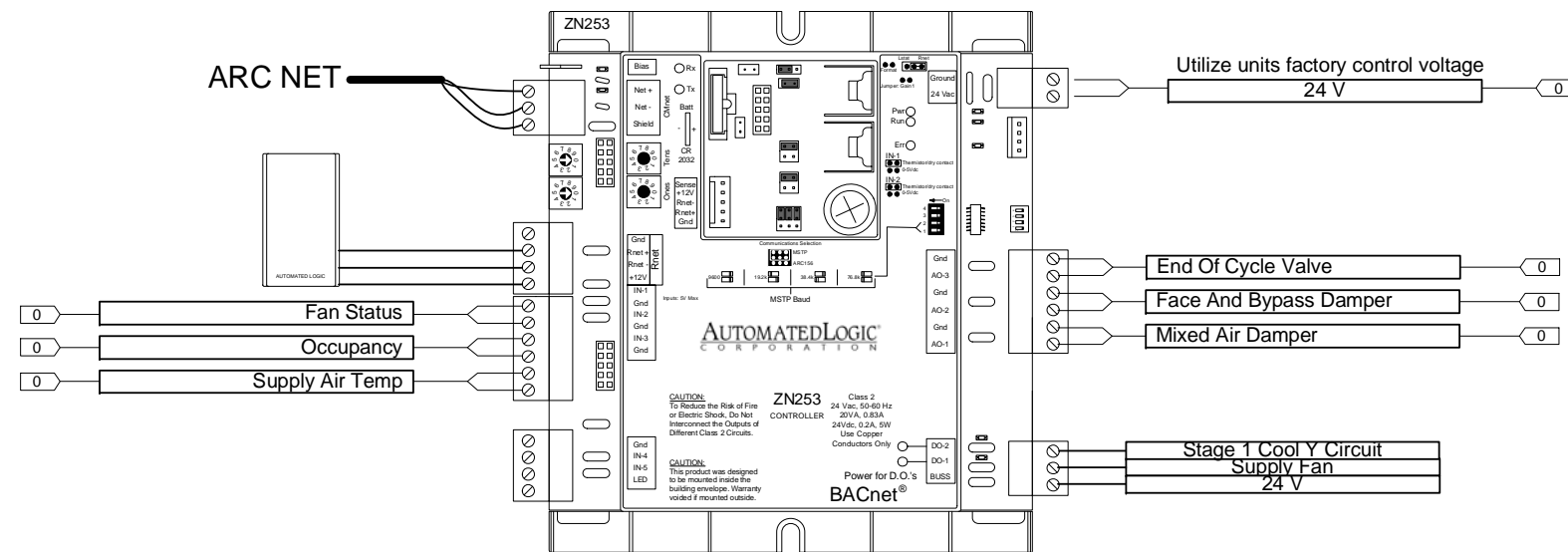
Unit Ventilators B

Typical For 7 Unit Ventilators



Where Indicated on Electrical Drawings

TR-AG A10KCPD08
LF24SRUS RIBU1C RIBXKF RSPLUS



Bill of Materials

DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	3 ea
ZN253	ZN253	AUTOMATED LOGIC	ZN253	3 ea
a10kcpdo8	DUCT 10K THERMISTOR PROBE 8 IN.	ALPS	A10KCPD08	3 ea
lf24srus	0-10 ACTUATOR	BELIMO	LF24SRUS	6 ea
ribu1c	PILOT RELAY 24 VAC DPDT W/ LED	FUNCTIONAL	RIBU1C	3 ea
ribxf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	3 ea
rsplus	RS 10K ROOM SENSOR W/ SETP ADJ, TLO, COMM	ALC	RSPLUS	3 ea

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Binghamton, New York

AIR TEMP HEATING & AIR CONDITIONING, INC.
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Unit Ventilators B

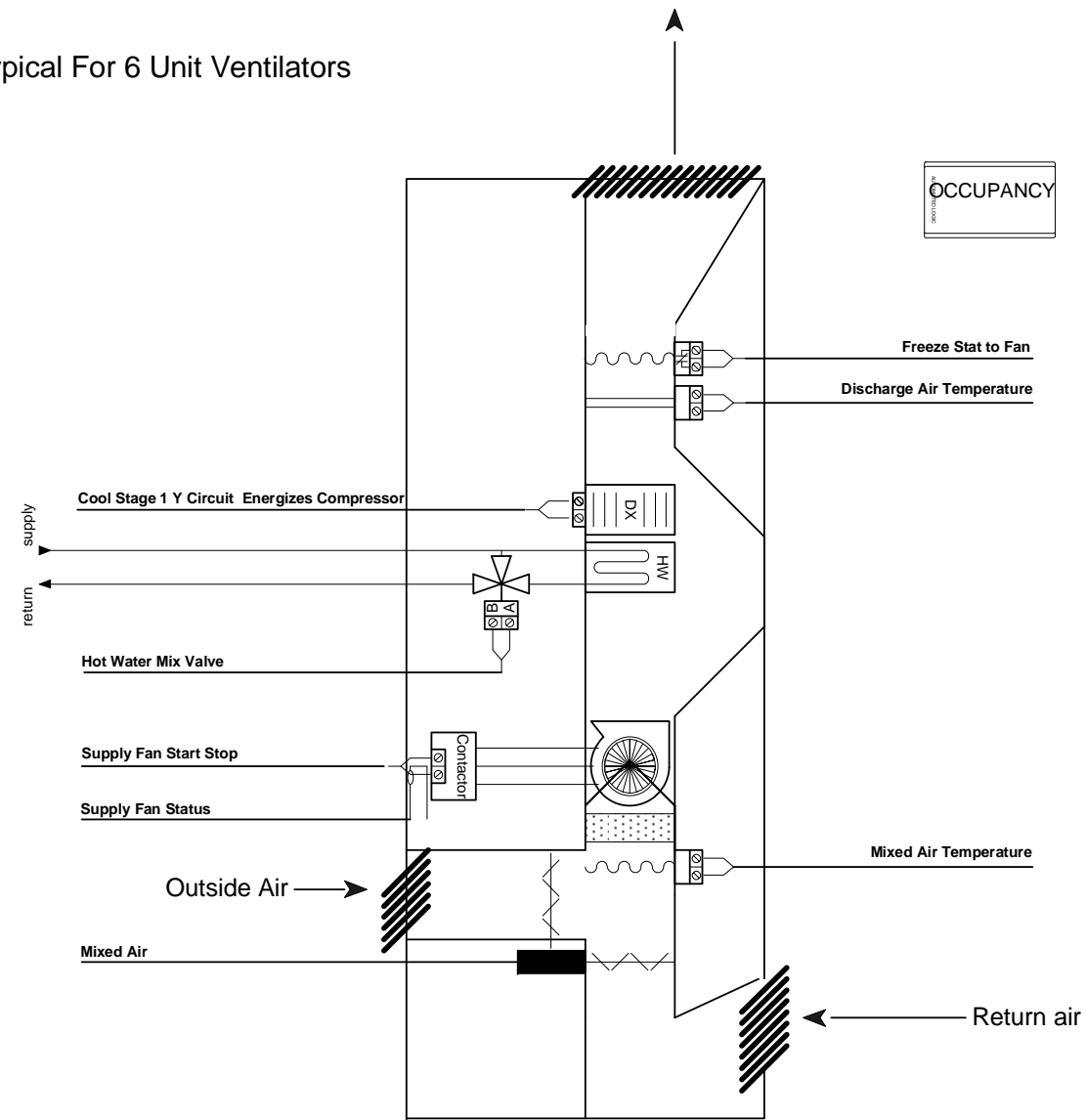
REV: 1	As-Built	2/10/2010	JOB NO: P7932
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CHECK BY: RSL

AUTOMATED LOGIC CORPORATION	DSCODE: 07112.00
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Unit Ventilators C

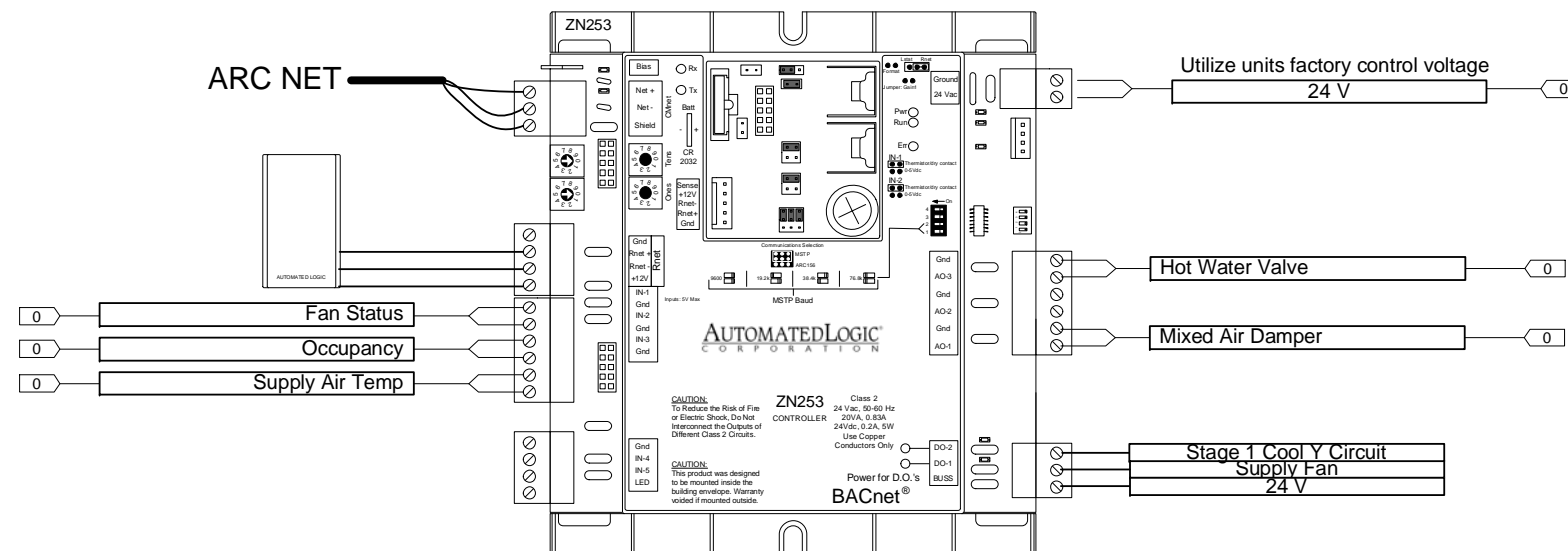
Typical For 6 Unit Ventilators



Where Indicated on Electrical Drawings

Bill of Materials				
DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	2 ea
ZN253	ZN253	AUTOMATED LOGIC	ZN253	2 ea
a10kcpdo8	DUCT 10K THERMISTOR PROBE 8 IN.	ALPS	A10KCPDO8	2 ea
lf24srus	0-10 ACTUATOR	BELIMO	LF24SRUS	2 ea
ribu1c	PILOT RELAY 24 VAC DPDT W/ LED	FUNCTIONAL	RIBU1C	2 ea
ribxkf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	2 ea
rsplus	RS 10K ROOM SENSOR W/ SETP ADJ, TLO, COMM	ALC	RSPLUS	2 ea

TR-AG A10KCPDO8
 LF24SRUS RIBU1C RIBXKF RSPLUS



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 Binghamton , New York

AIR TEMP HEATING & AIR CONDITIONING, INC.
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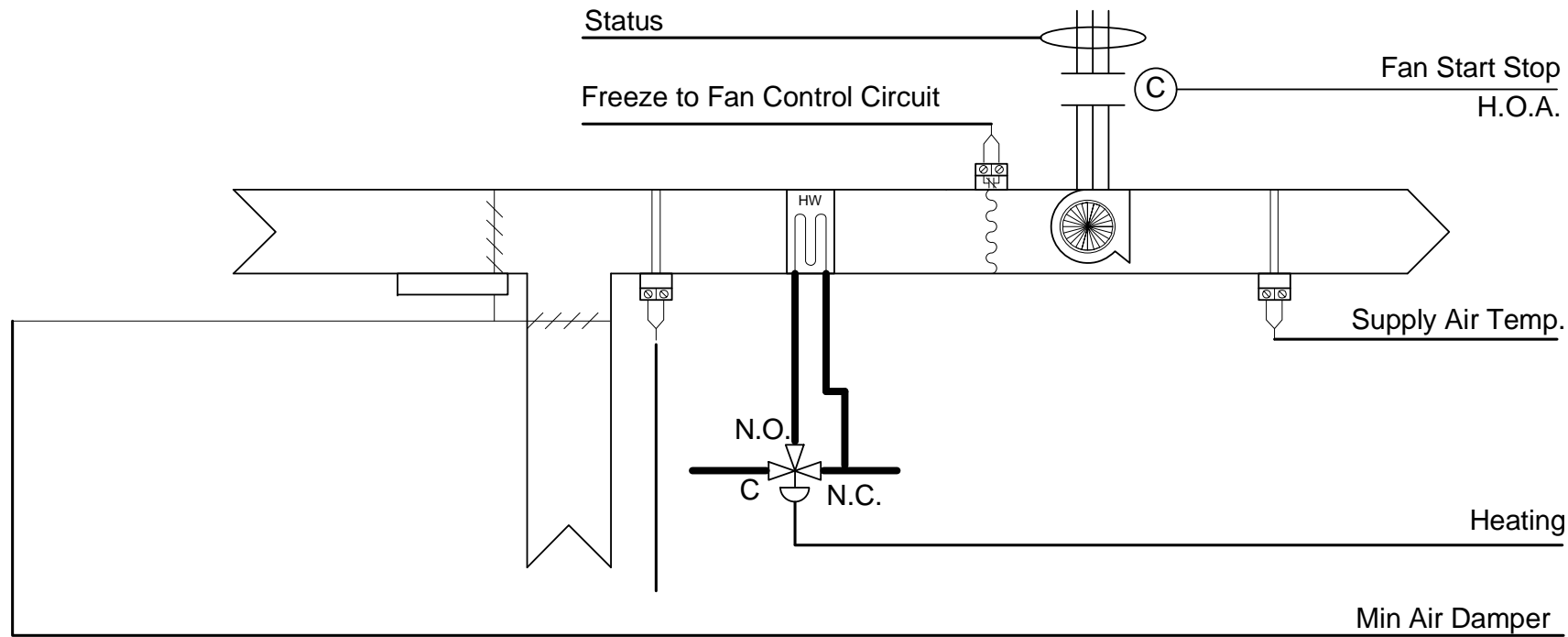
Unit Ventilators C

REV: 1	As-Built	2/10/2010	JOB NO: P7932
AUTOMATED LOGIC CORPORATION			CHECK BY: RSL
			DSCODE: 07112.00

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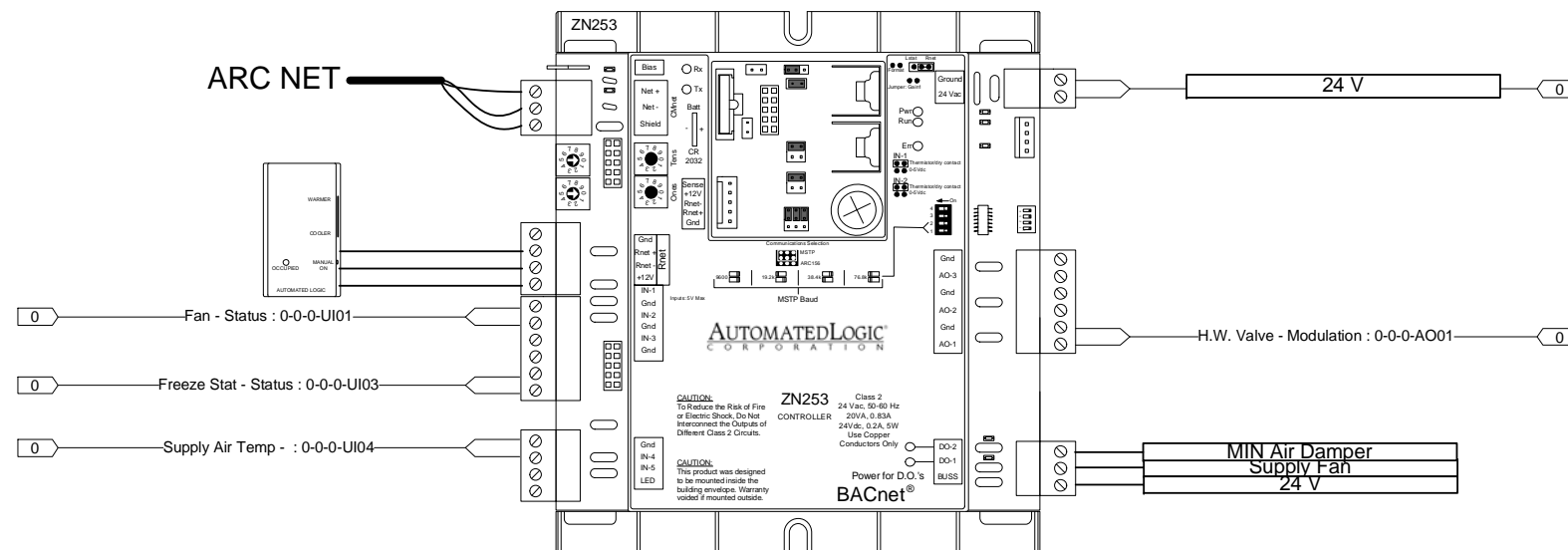
Fan Coils No DX

Typical For 5



Bill of Materials

DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
FS-D	TEMP LOW LIMIT MAN. RESET DPDT	LANDIS STEAFA	1341504	5 ea
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	5 ea
ZN253	ZN253	AUTOMATED LOGIC	ZN253	5 ea
a10kcpa8	DUCT 10K THERMISTOR AVERAGING 8 FT.	ALPS	A10KCPA8	5 ea
a10kcpdo8	DUCT 10K THERMISTOR PROBE 8 IN.	ALPS	A10KCPDO8	5 ea
lf24us	2 POS ACTUATOR	BELIMO	LF24US	5 ea
ribu1c	PILOT RELAY 24 VAC DPDT W/ LED	FUNCTIONAL	RIBU1C	5 ea
ribxkf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	5 ea
rsplus	RS 10K ROOM SENSOR W/ SETP ADJ, TLO, COMM	ALC	RSPLUS	5 ea

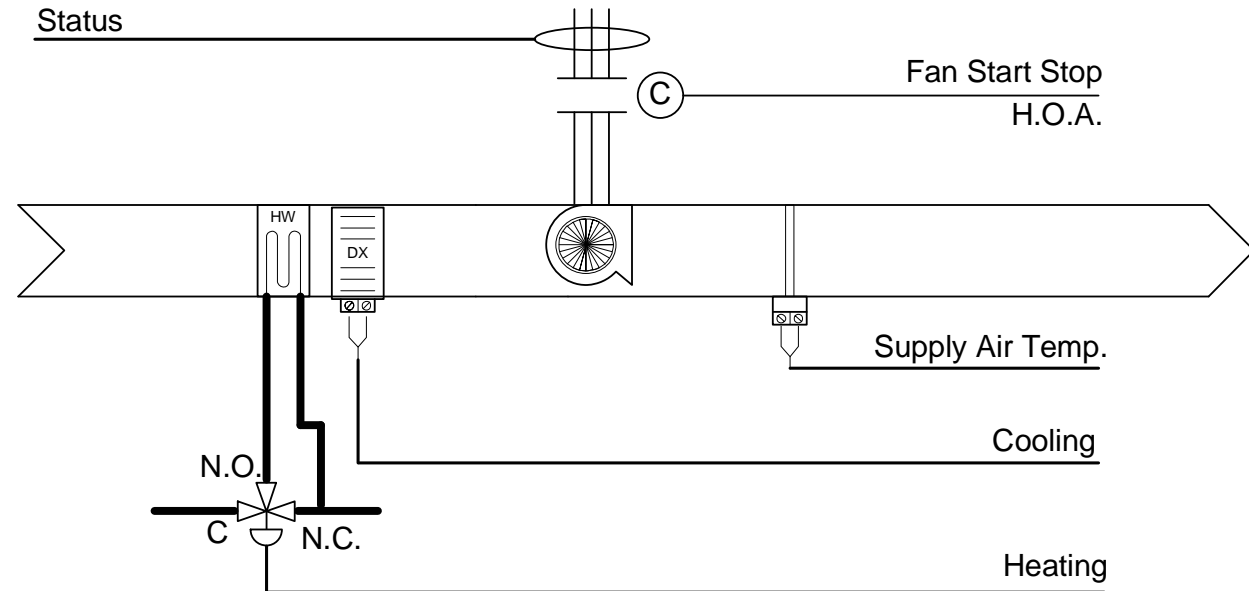


A10KCPA8 RIBXKF A10KCPDO8 FS-D RSPLUS
RIBU1C TR-AG LF24US

Maine Endwell High School 2010 Binghamton, New York			
 A LINC SERVICE @ CONTRACTOR			
Fan Coils No DX			
REV: 1	As-Built	2/10/2010	JOB NO: P7932
			CHECK BY: RSL
			DSCODE: 07112.00
			28 of 41

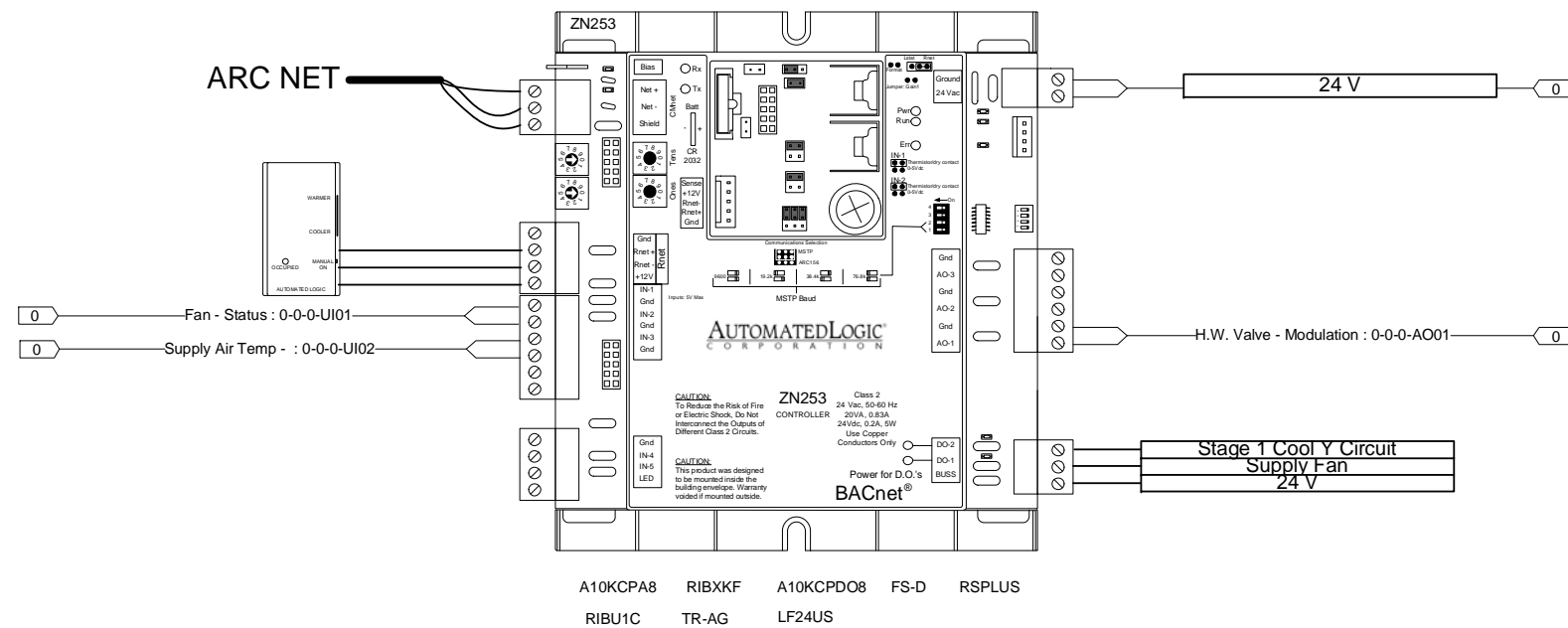
Fan Coils With DX A

Typical For 1



Bill of Materials

DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
FS-D	TEMP LOW LIMIT MAN. RESET DPTD	LANDIS STEAFA	1341504	6 ea
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	6 ea
ZN253	ZN253	AUTOMATED LOGIC	ZN253	6 ea
a10kcpa8	DUCT 10K THERMISTOR AVERAGING 8 FT.	ALPS	A10KCPA8	6 ea
a10kcpdo8	DUCT 10K THERMISTOR PROBE 8 IN.	ALPS	A10KCPDO8	6 ea
lf24us	2 POS ACTUATOR	BELIMO	LF24US	6 ea
ribu1c	PILOT RELAY 24 VAC DPDT W/ LED	FUNCTIONAL	RIBU1C	6 ea
ribxkf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	6 ea
rsplus	RS 10K ROOM SENSOR W/ SETP ADJ, TLO, COMM	ALC	RSPLUS	6 ea



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AIR TEMP HEATING & AIR CONDITIONING, INC.
A LINC SERVICE @ CONTRACTOR

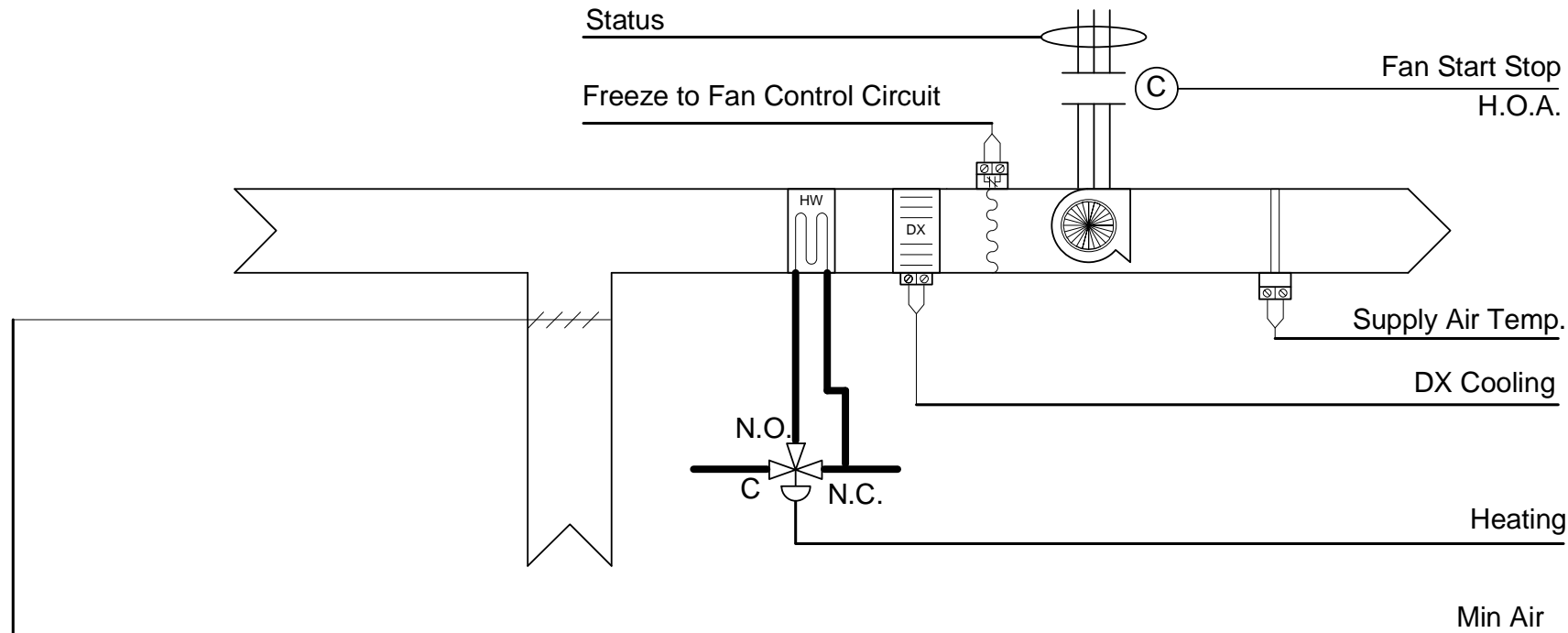
Fan Coils With DX A

REV: 1	As-Built	2/10/2010	JOB NO: P7932
AUTOMATED LOGIC CORPORATION			CHECK BY: RSL
			DSCODE: 07112.00

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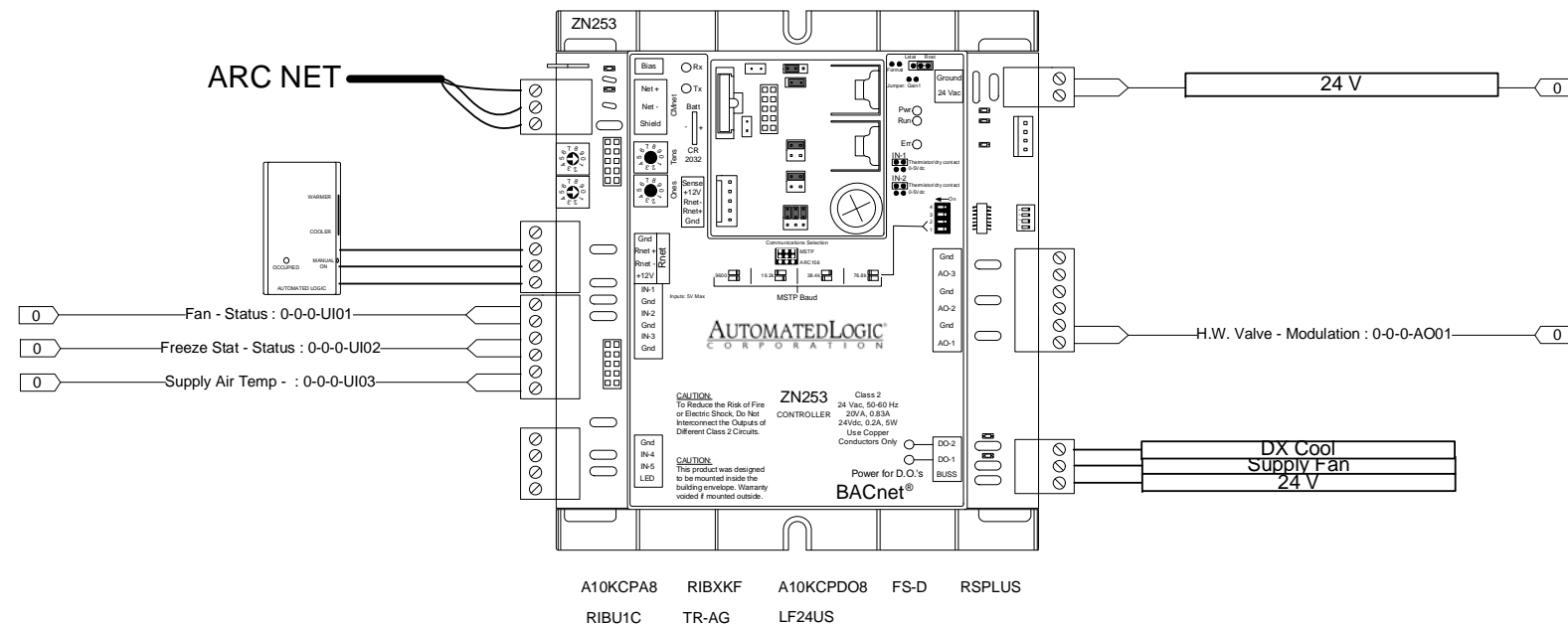
Fan Coils With DX B

Typical For 4



Bill of Materials

DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
FS-D	TEMP LOW LIMIT MAN. RESET DPDT	LANDIS STEAFA	1341504	5 ea
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	5 ea
ZN253	ZN253	AUTOMATED LOGIC	ZN253	5 ea
a10kcpa8	DUCT 10K THERMISTOR AVERAGING 8 FT.	ALPS	A10KCPA8	5 ea
a10kcpdo8	DUCT 10K THERMISTOR PROBE 8 IN.	ALPS	A10KCPDO8	5 ea
lf24us	2 POS ACTUATOR	BELIMO	LF24US	5 ea
ribu1c	PILOT RELAY 24 VAC DPDT W/ LED	FUNCTIONAL	RIBU1C	5 ea
ribxkf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	5 ea
rsplus	RS 10K ROOM SENSOR W/ SETP ADJ, TLO, COMM	ALC	RSPLUS	5 ea



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AIR TEMP HEATING & AIR CONDITIONING, INC.
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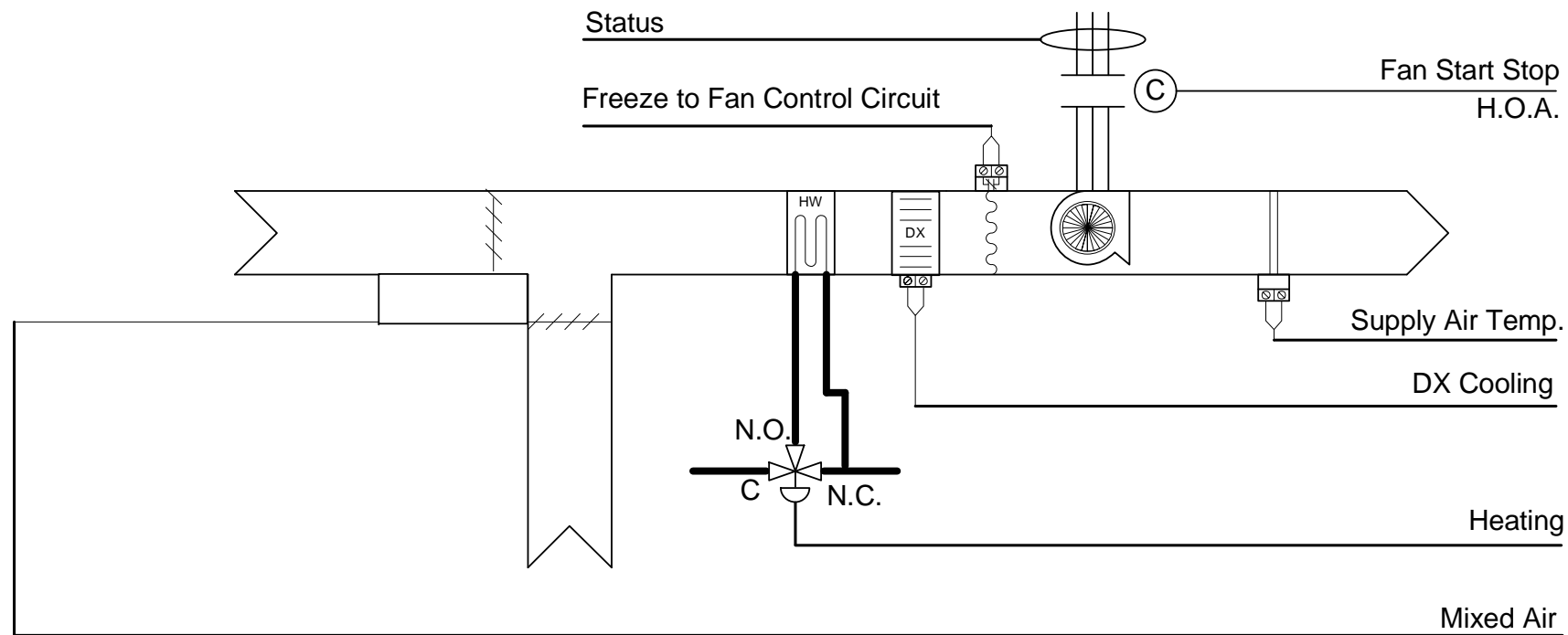
Fan Coils With DX B

REV: 1	As-Built	2/10/2010	JOB NO: P7932
AUTOMATED LOGIC CORPORATION			CHECK BY: RSL
			DSCODE: 07112.00

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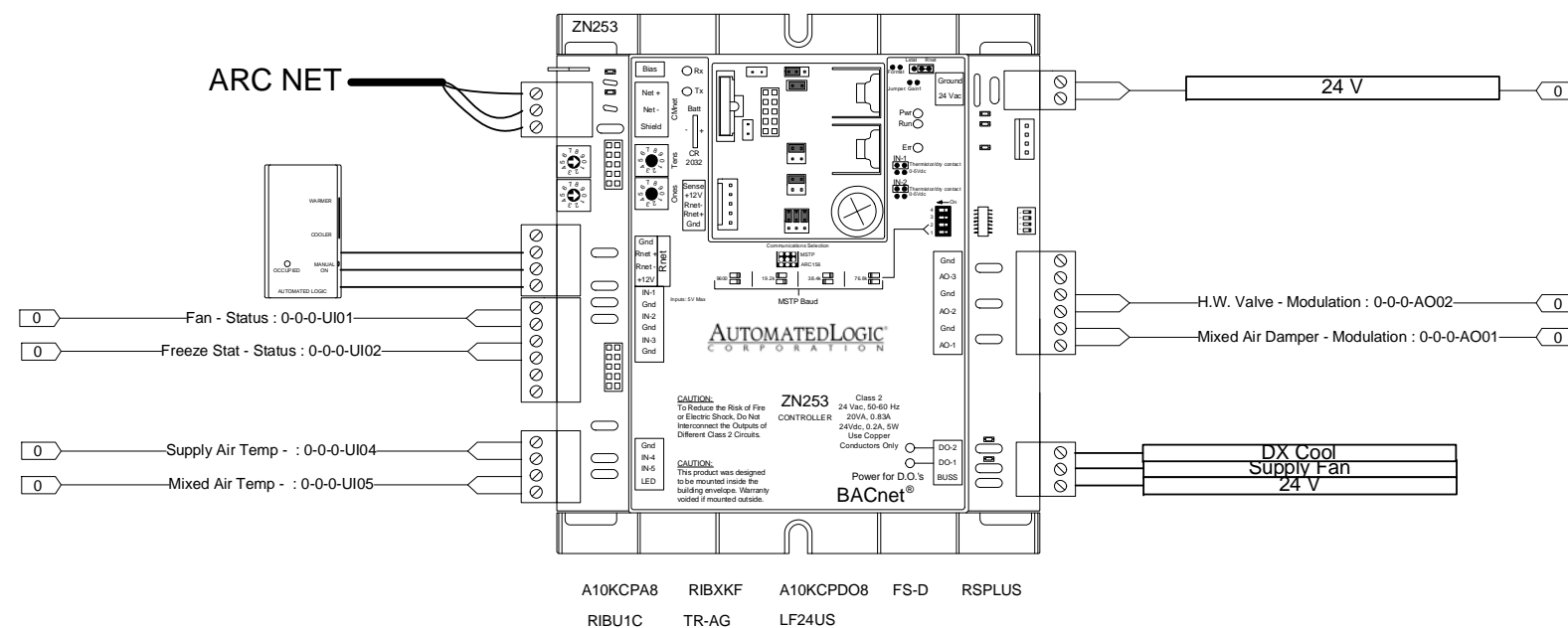
Fan Coils With DX C

Typical For 1



Bill of Materials

DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
FS-D	TEMP LOW LIMIT MAN. RESET DPDT	LANDIS STEAFA	1341504	5 ea
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	5 ea
ZN253	ZN253	AUTOMATED LOGIC	ZN253	5 ea
a10kcpa8	DUCT 10K THERMISTOR AVERAGING 8 FT.	ALPS	A10KCPA8	5 ea
a10kcpdo8	DUCT 10K THERMISTOR PROBE 8 IN.	ALPS	A10KCPDO8	5 ea
lf24us	2 POS ACTUATOR	BELIMO	LF24US	5 ea
ribu1c	PILOT RELAY 24 VAC DPDT W/ LED	FUNCTIONAL	RIBU1C	5 ea
ribxkf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	5 ea
rsplus	RS 10K ROOM SENSOR W/ SETP ADJ. TLO, COMM	ALC	RSPLUS	5 ea



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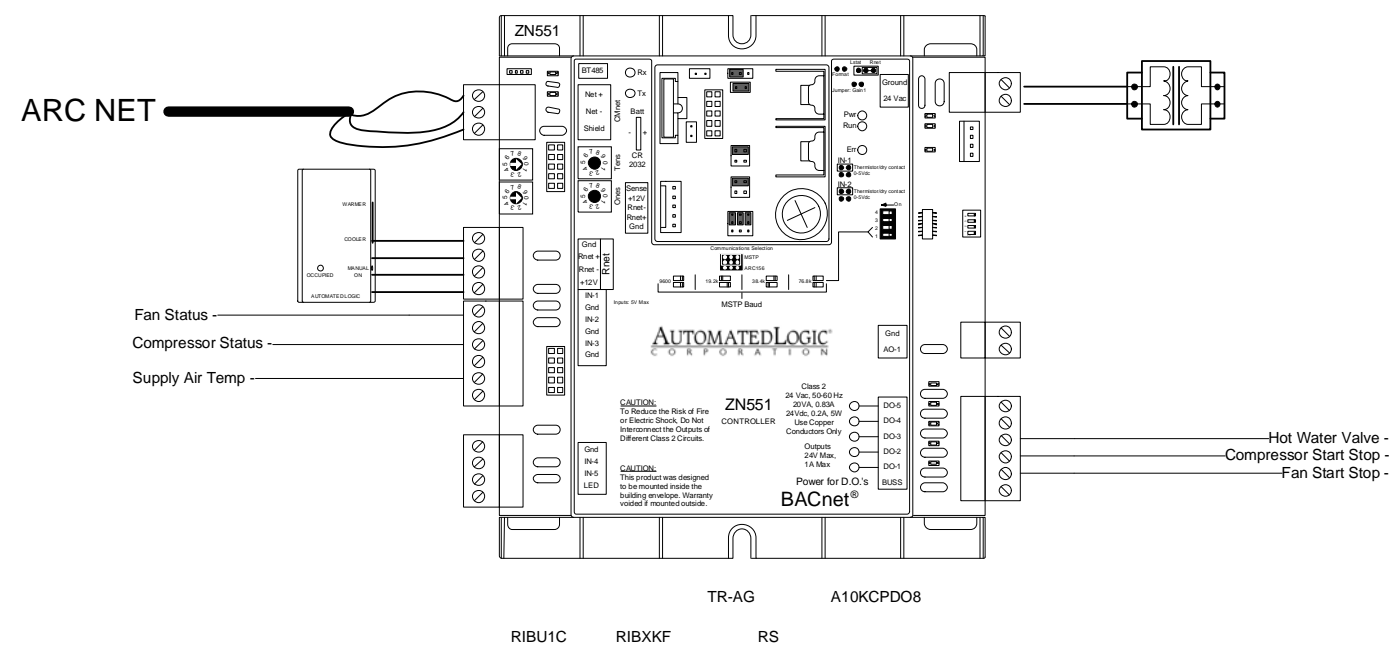
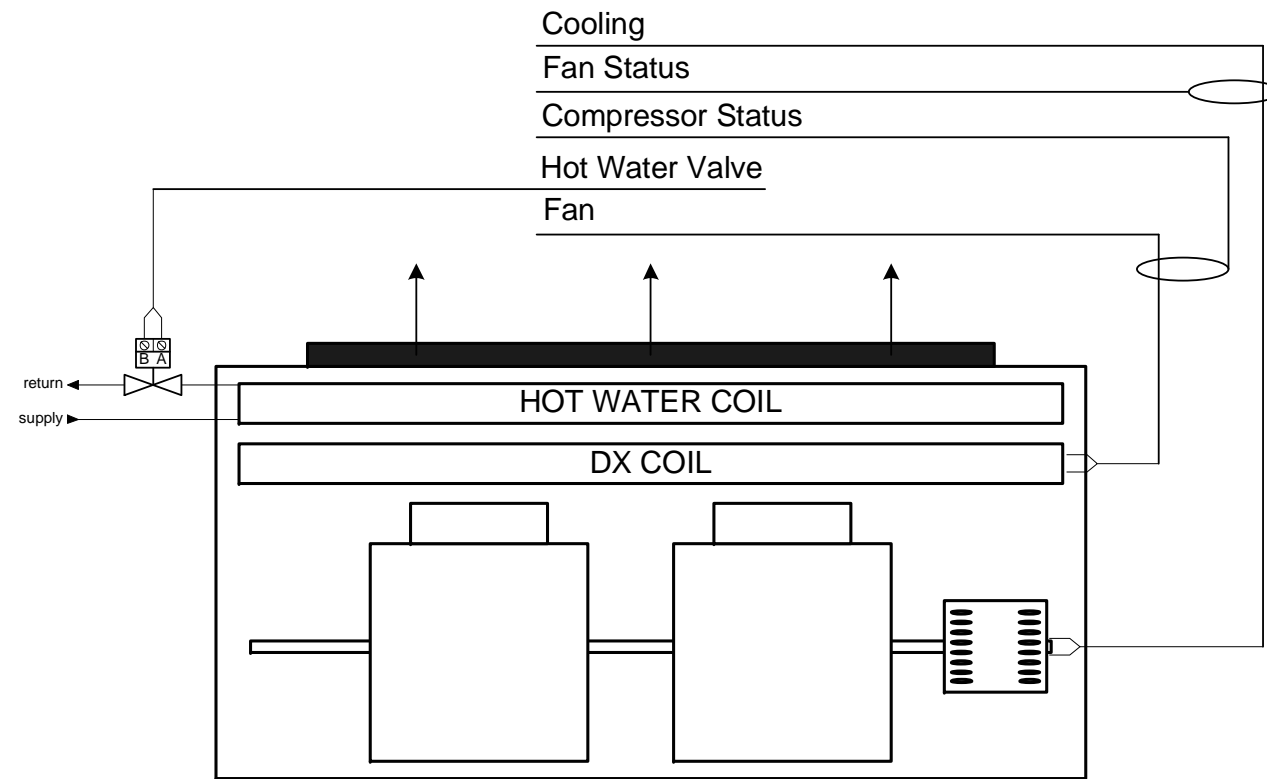
Fan Coils With DX C

REV: 1	As-Built	2/10/2010	JOB NO: P7932
AUTOMATED LOGIC CORPORATION			CHECK BY: RSL
			DSCODE: 07112.00

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PTAC

Typical For 9



Bill of Materials

DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	9 ea
ZN551	ZN551	AUTOMATED LOGIC	ZN551	9 ea
a10kcpdo8	DUCT 10K THERMISTOR PROBE 8 IN.	ALPS	A10KCPDO8	9 ea
ribu1c	PILOT RELAY 24 VAC DPDT W/ LED	FUNCTIONAL	RIBU1C	9 ea
ribxkf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	18 ea
rs	SPACE TEMP	ALC	RS	9 ea

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PTAC

REV: 1	As-Built	2/10/2010	JOB NO: P7932
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AUTOMATED LOGIC
CORPORATION

CHECK BY: RSL

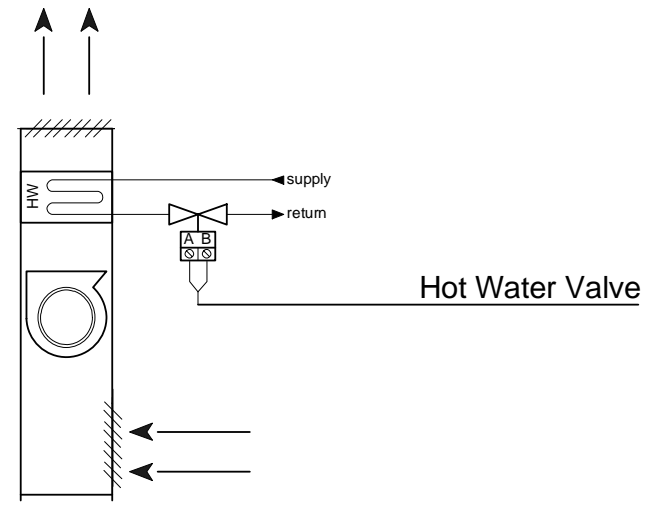
DSCODE: 07112.00

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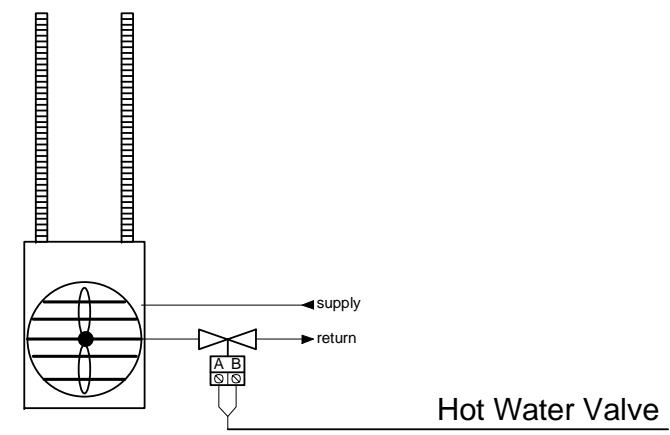
CUH/UH

Typical For 22 CUH's
Typical For 2 UH's

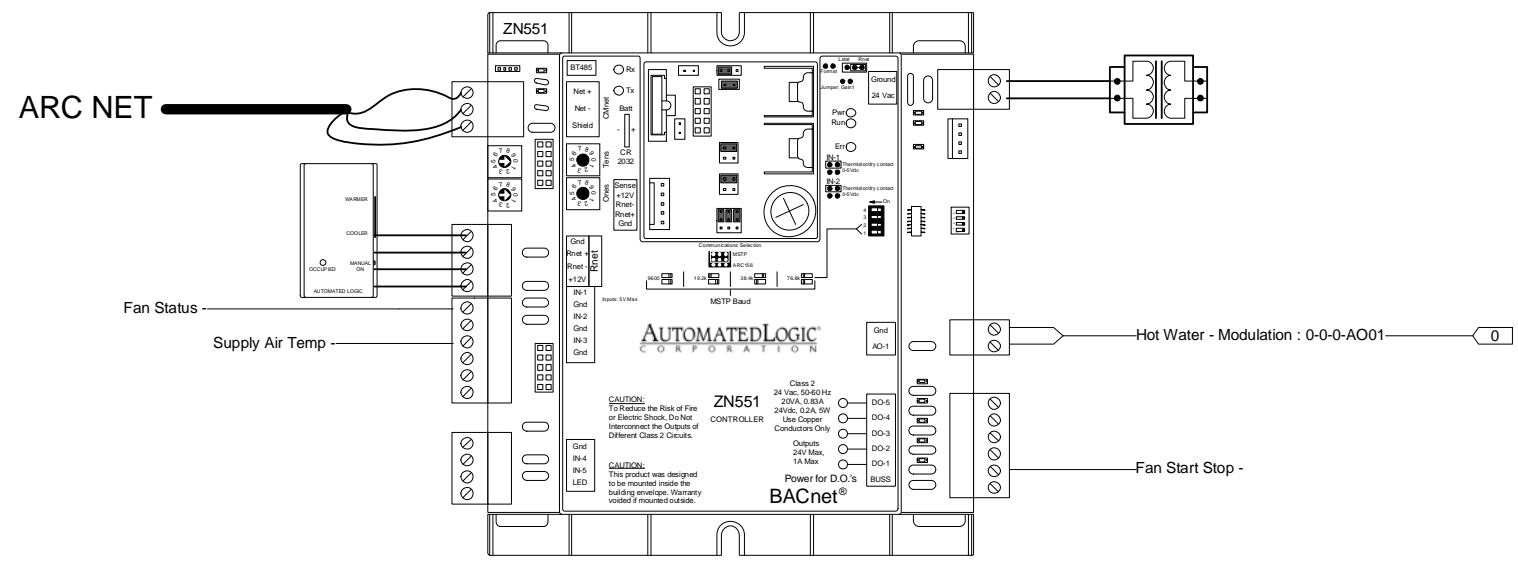
Bill of Materials				
DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	24 ea
ZN551	ZN551	AUTOMATED LOGIC	ZN551	24 ea
a10kcpdo8	DUCT 10K THERMISTOR PROBE 8 IN.	ALPS	A10KCPDO8	24 ea
ribu1c	PILOT RELAY 24 VAC DPDT W/ LED	FUNCTIONAL	RIBU1C	24 ea
ribxkf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	24 ea
rs	SPACE TEMP	ALC	RS	24 ea



CABINET HEATER



UNIT HEATER



TR-AG A10KCPDO8
RIBU1C RIBXKF RS

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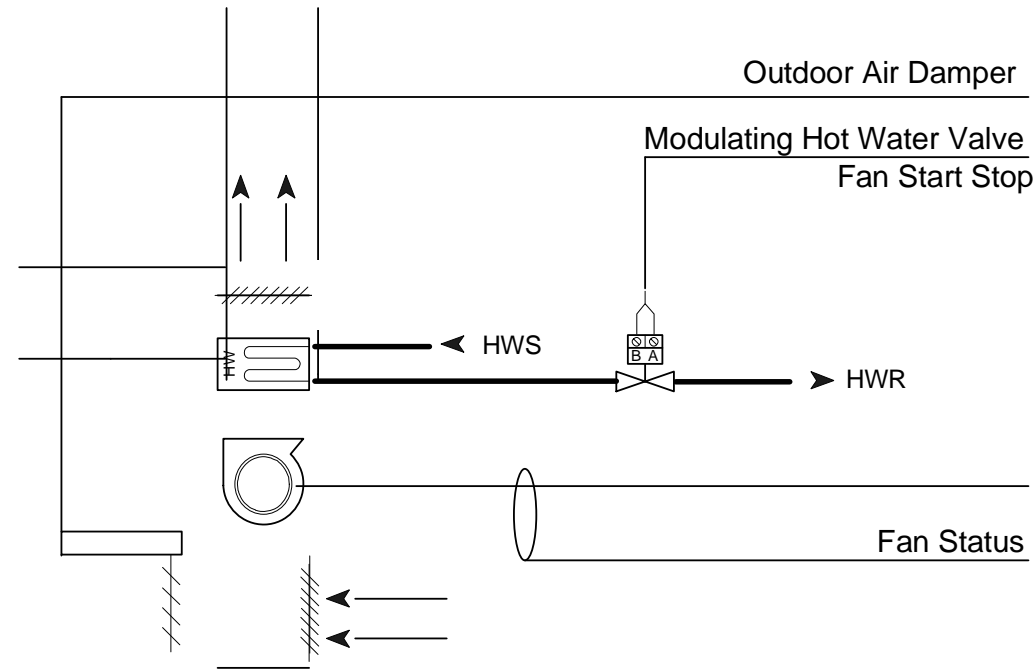
CUH/UH

REV: 1	As-Built	2/10/2010	JOB NO: P7932
AUTOMATED LOGIC CORPORATION			CHECK BY: RSL
			DSCODE: 07112.00

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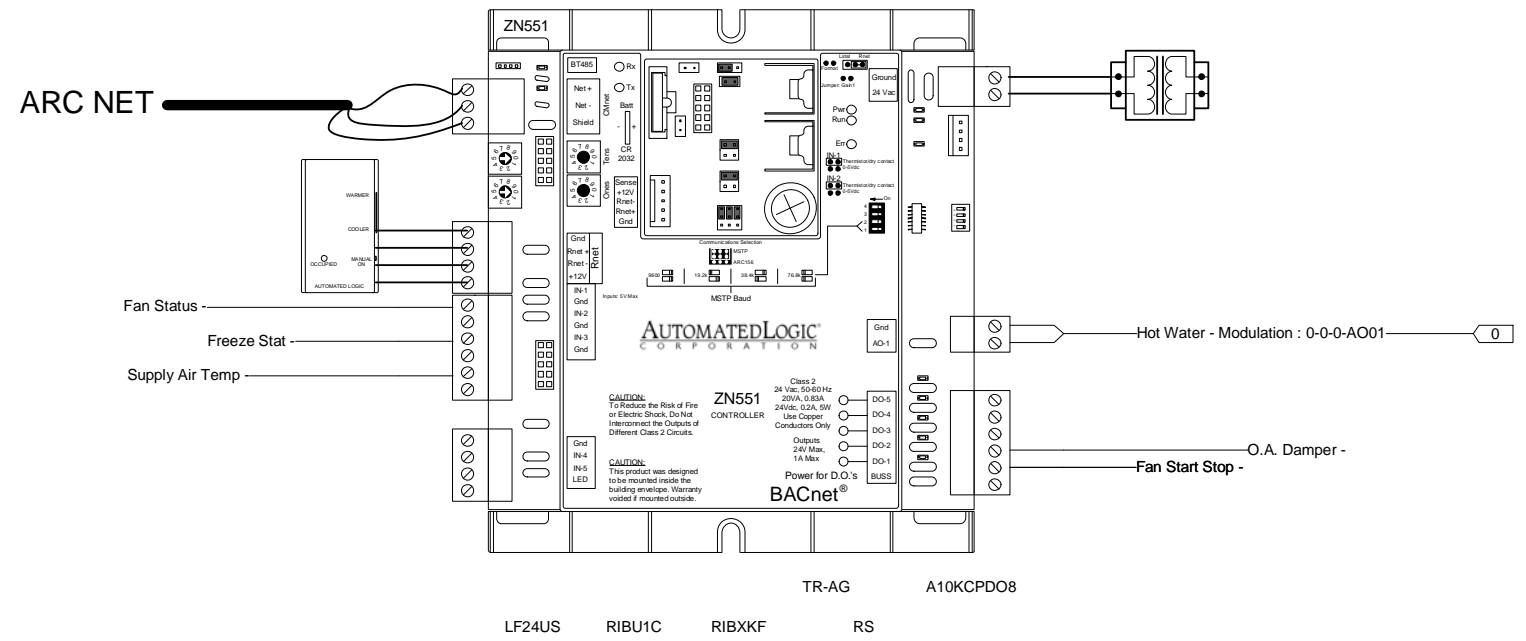
CUH OUTDOOR AIR

Typical For 7 CUH's



CABINET HEATER

Bill of Materials				
DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	7 ea
ZN551	ZN551	AUTOMATED LOGIC	ZN551	7 ea
a10kcpdo8	DUCT 10K THERMISTOR PROBE 8 IN.	ALPS	A10KCPDO8	7 ea
lf24us	2 POS ACTUATOR	BELIMO	LF24US	7 ea
ribu1c	PILOT RELAY 24 VAC DPDT W/ LED	FUNCTIONAL	RIBU1C	7 ea
ribxkf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	7 ea
rs	SPACE TEMP	ALC	RS	7 ea



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CUH OUTDOOR AIR

REV: 1	As-Built	2/10/2010	JOB NO: P7932
AUTOMATEDLOGIC CORPORATION			CHECK BY: RSL
			DSCODE: 07112.00

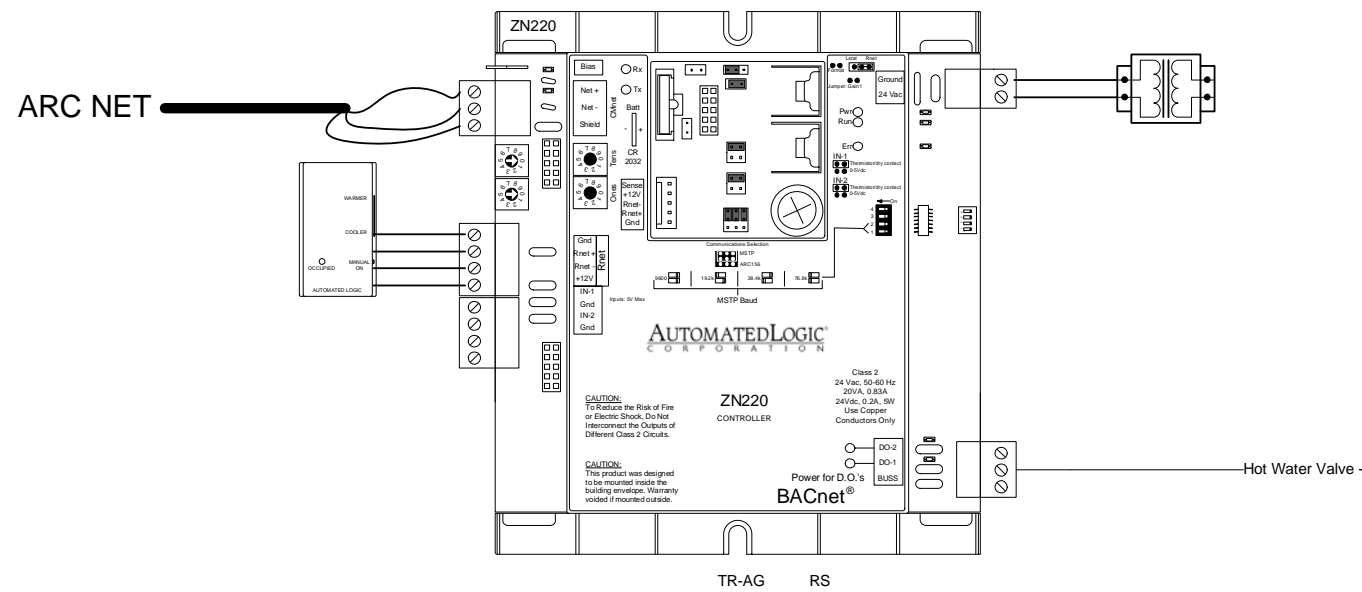
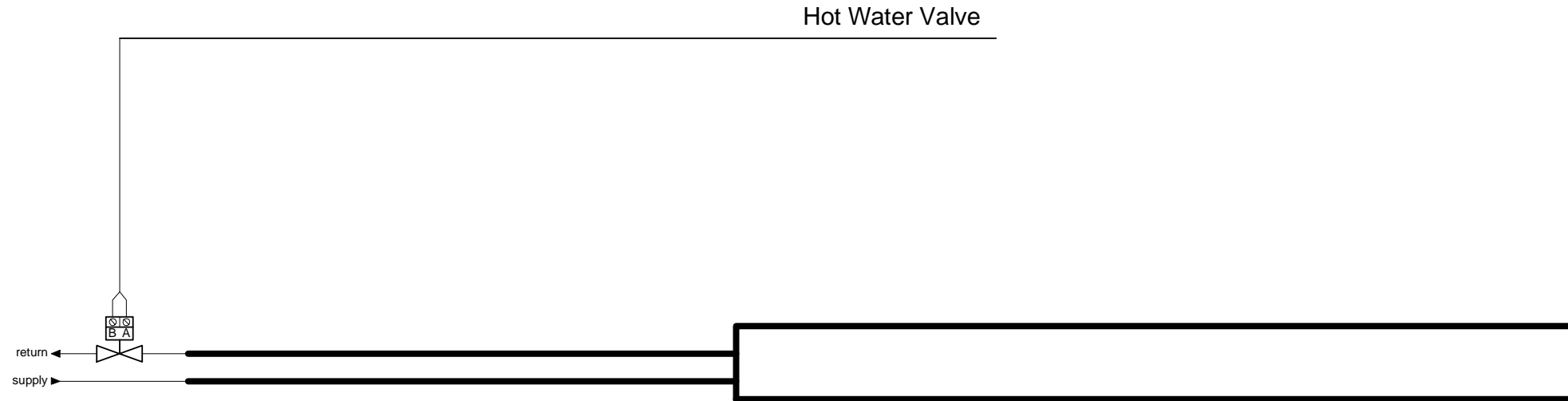
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Radiant Panel

Typical for 2

Bill of Materials

DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	2 ea
ZN220	ZN220	AUTOMATED LOGIC	ZN220	2 ea
rs	SPACE TEMP	ALC	RS	2 ea

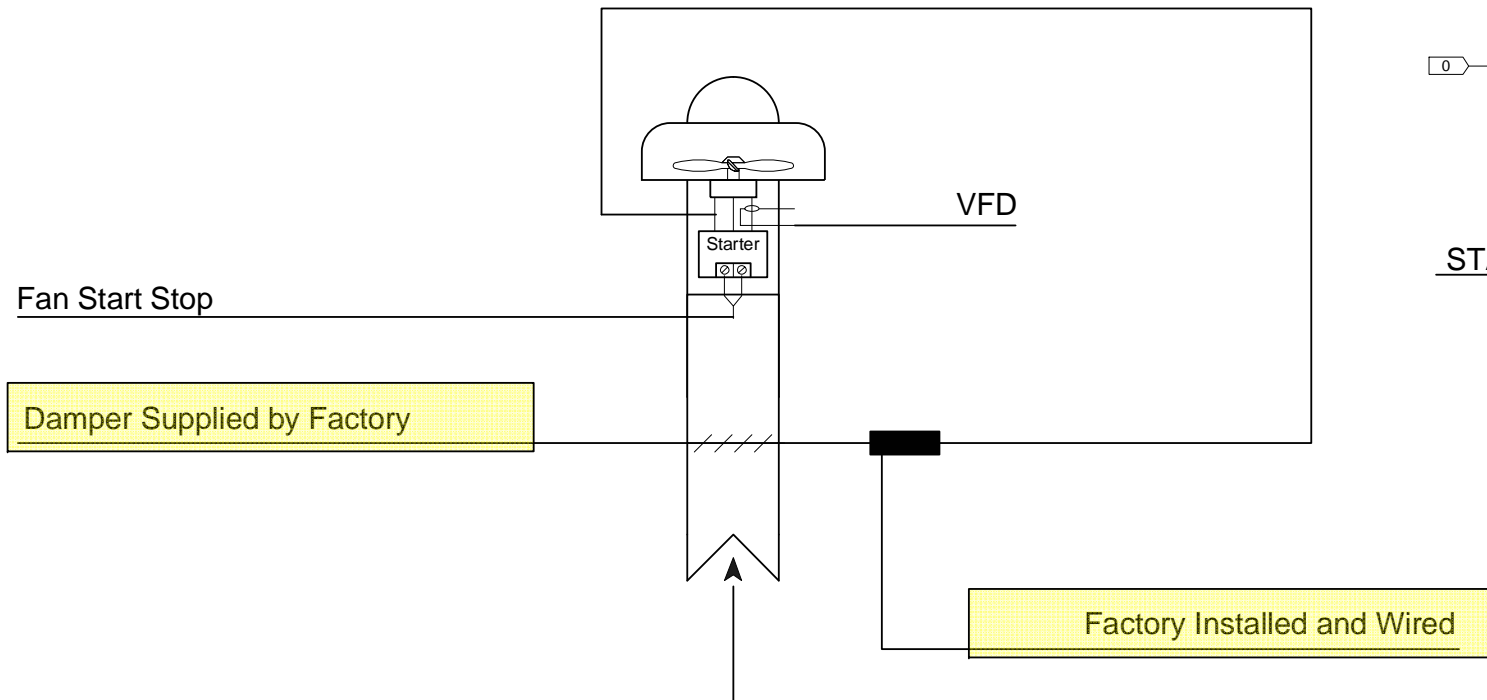


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 AIR TEMP HEATING & AIR CONDITIONING, INC. A LINC SERVICE @ CONTRACTOR			
Radiant Panel			
REV: 1	As-Built	2/10/2010	JOB NO: P7932
			CHECK BY: RSL
			DSCODE: 07112.00
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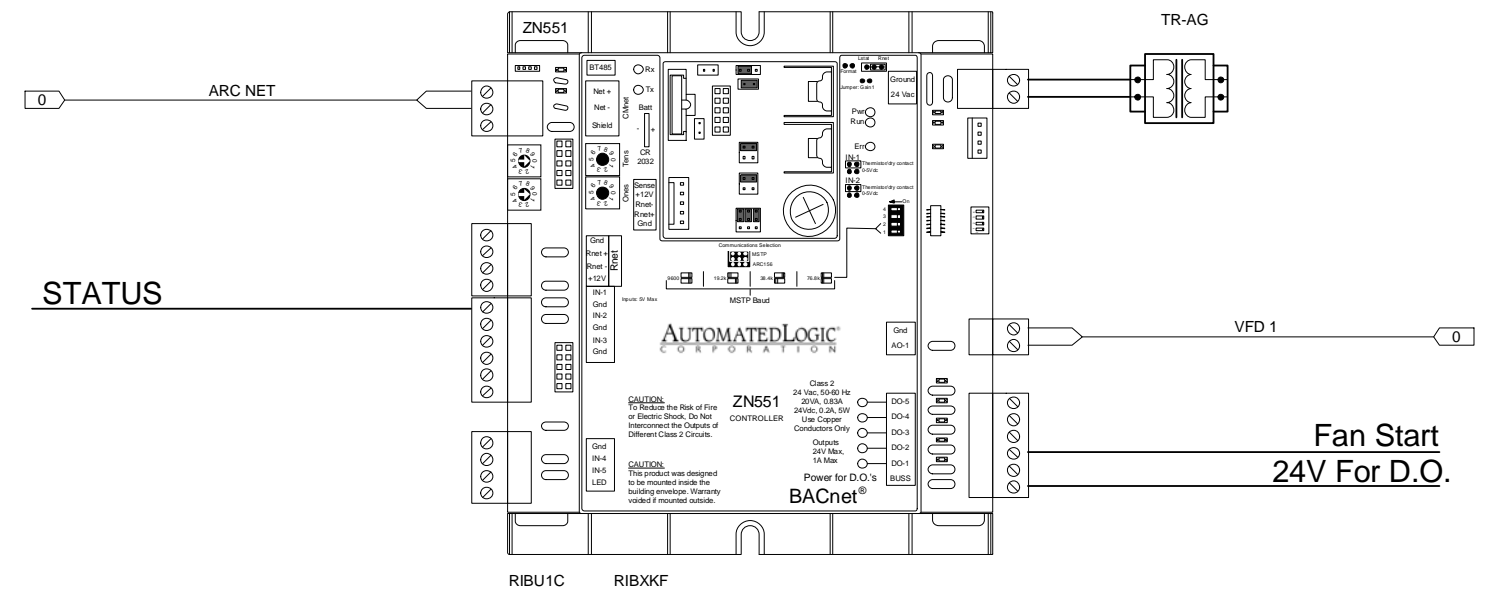
Power Relief

Typical for 23

Bill of Materials				
DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	23 ea
ribu1c	PILOT RELAY 24 VAC DPDT W/ LED	FUNCTIONAL	RIBU1C	23 ea
ribxkf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	23 ea



Associated UV Damper Positions to be Networked in

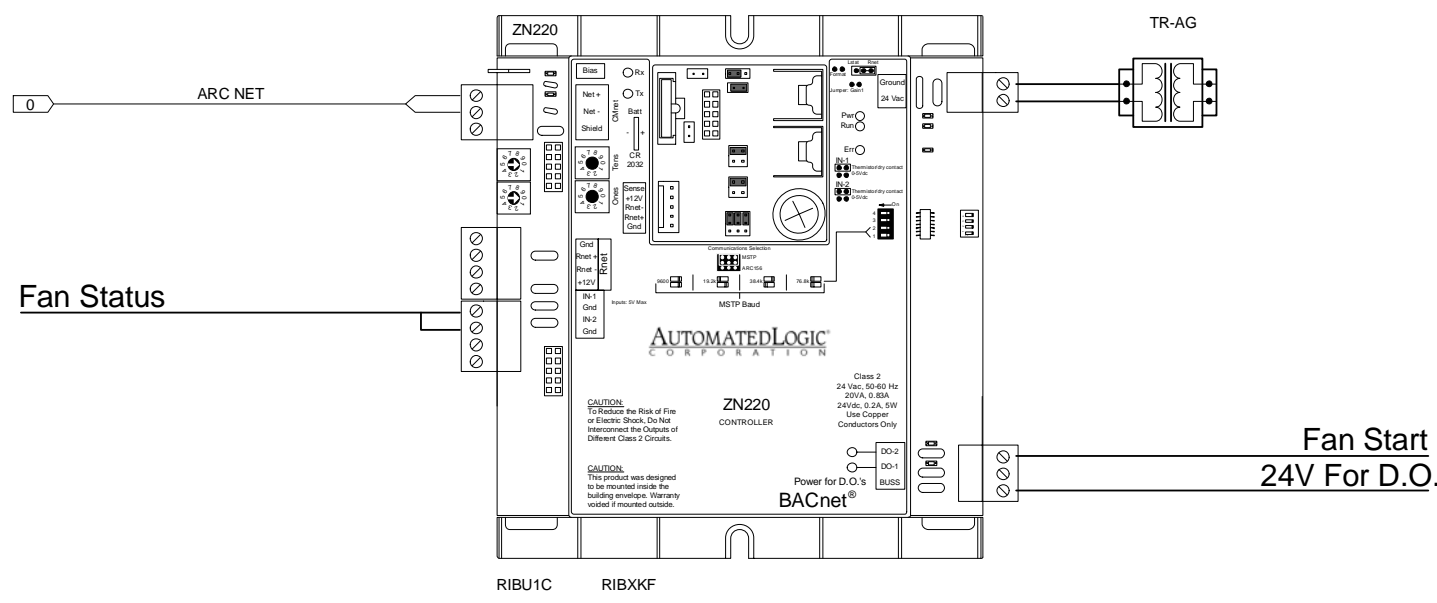
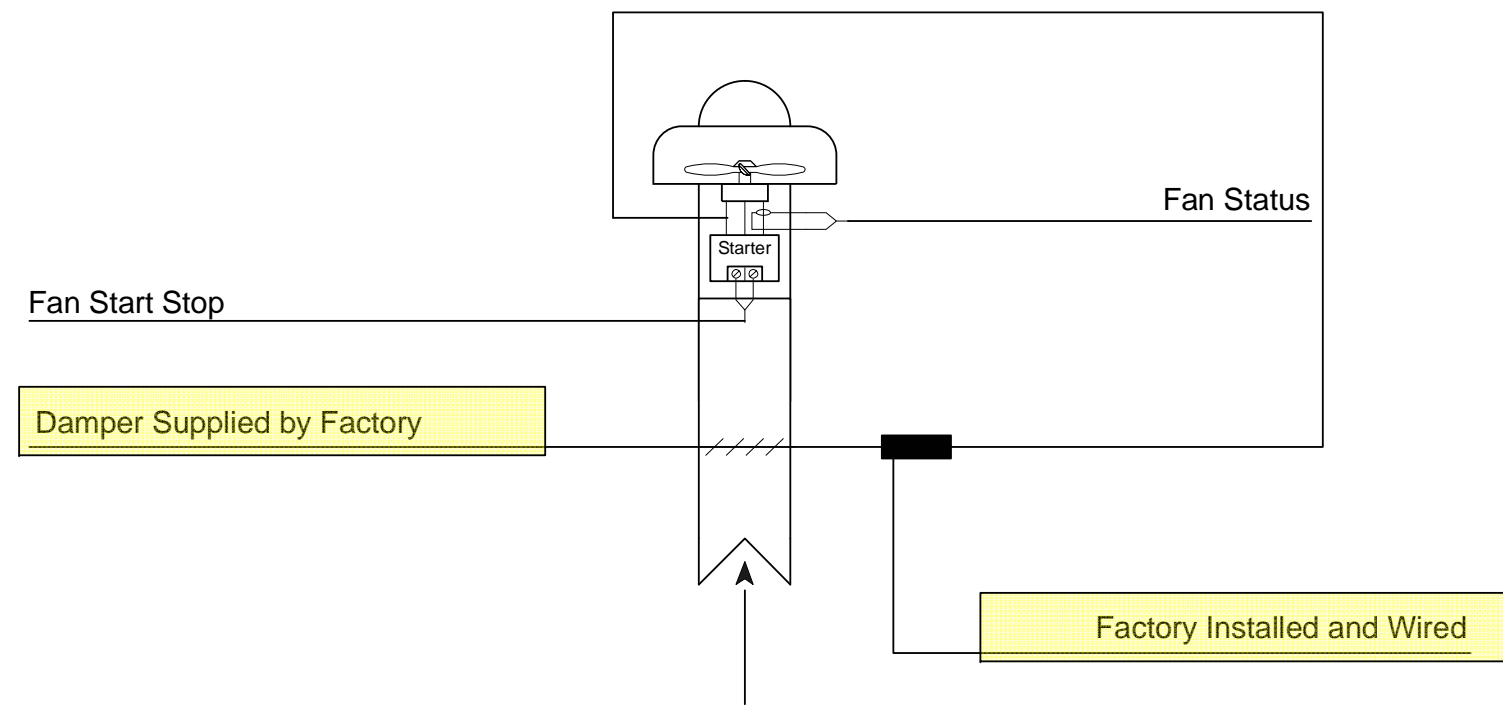


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 A LINC SERVICE @ CONTRACTOR			
Power Relief			
REV: 1	As-Built	2/10/2010	JOB NO: P7932
			CHECK BY: RSL
			DSCODE: 07112.00
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Exhaust Fans

Typical for 17

Bill of Materials				
DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	17 ea
ZN220	ZN220	AUTOMATED LOGIC	ZN220	17 ea
ribu1c	PILOT RELAY 24 VAC DPDT W/ LED	FUNCTIONAL	RIBU1C	17 ea
ribxkf	CURRENT SWITCH .5-200 AMP SOLID CORE GO/NO GO	FUNCTIONAL	RIBXKF	17 ea



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Binghamton , New York

AIR TEMP HEATING & AIR CONDITIONING, INC.
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Exhaust Fans

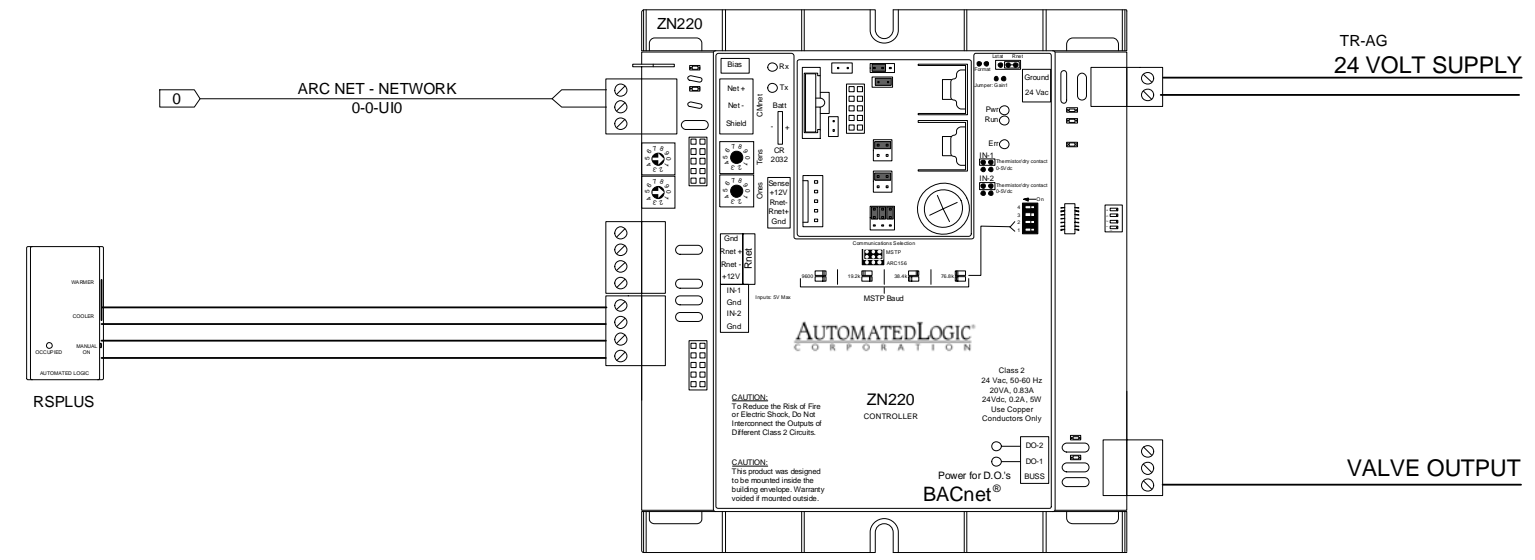
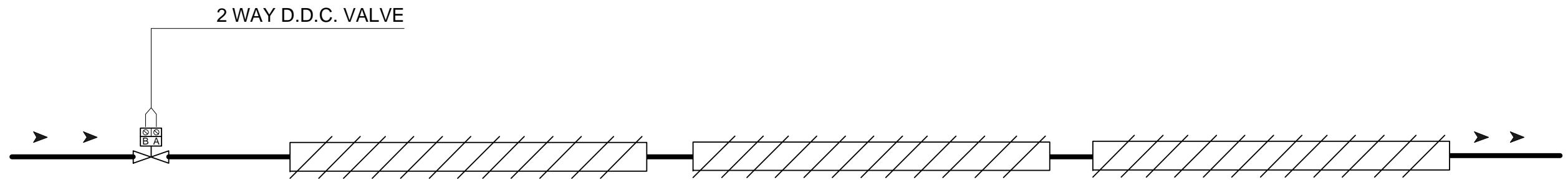
REV: 1	As-Built	2/10/2010	JOB NO: P7932
AUTOMATED LOGIC CORPORATION			CHECK BY: RSL
			DSCODE: 07112.00

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Fin Tube

Typical for 19

Bill of Materials				
DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	66 ea
ZN220	ZN220	AUTOMATED LOGIC	ZN220	30 ea
rsplus	RS 10K ROOM SENSOR W/ SETP ADJ, TLO, COMM	ALC	RSPLUS	30 ea



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Fin Tube

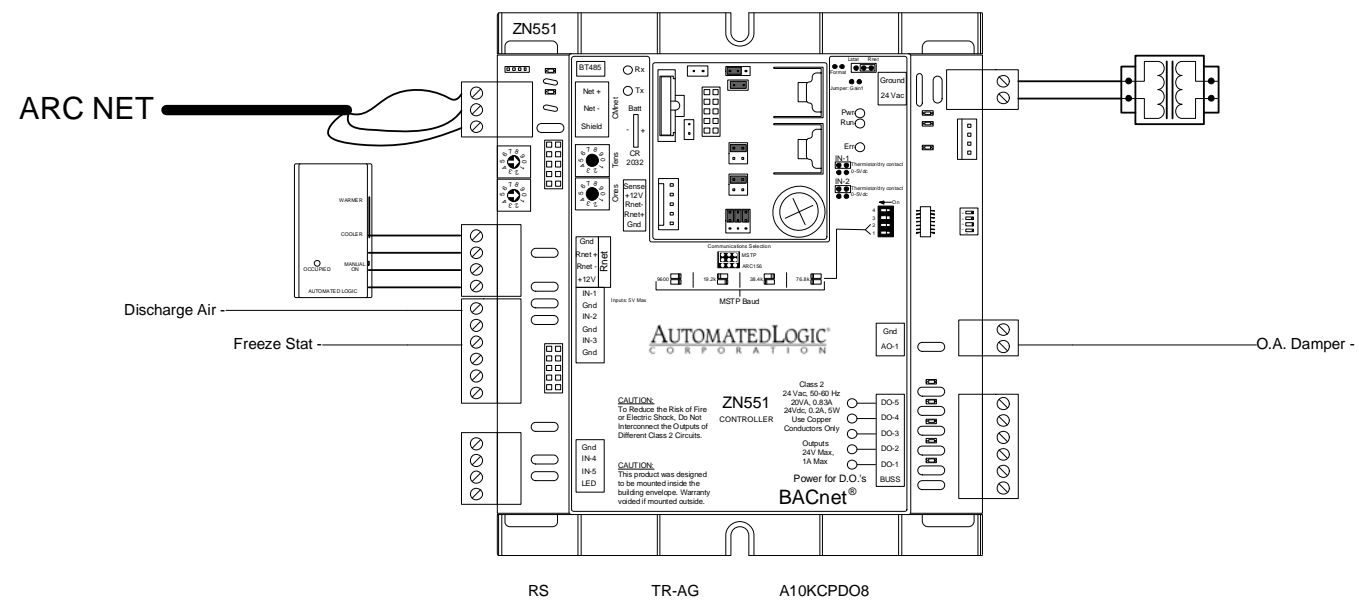
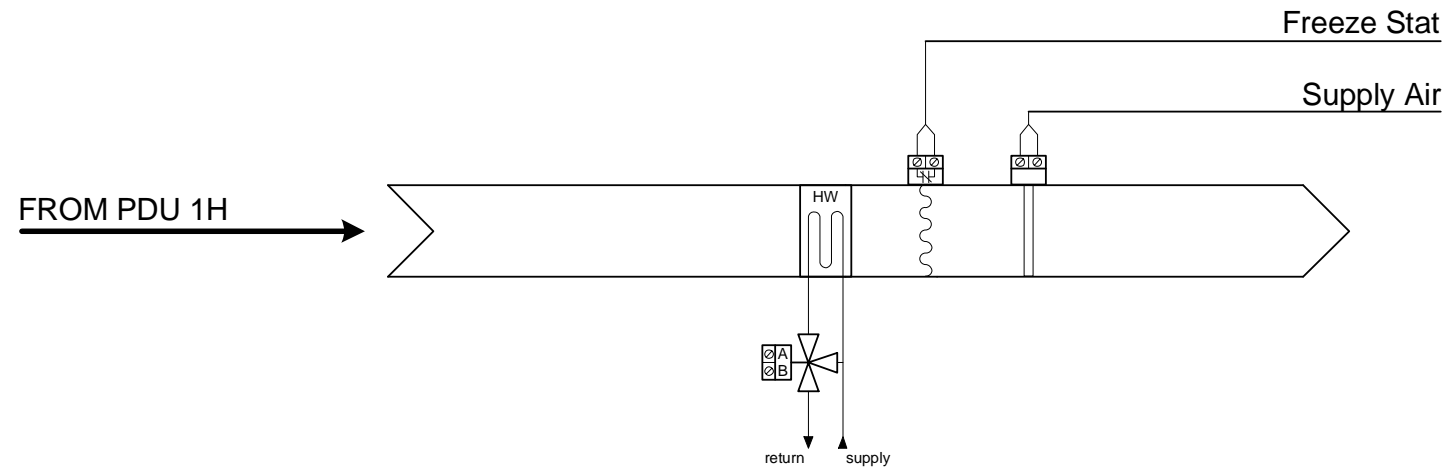
REV: 1	As-Built	2/10/2010	JOB NO: P7932
AUTOMATED LOGIC CORPORATION			CHECK BY: RSL
			DSCODE: 07112.00



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Heating Coils

Typical for three

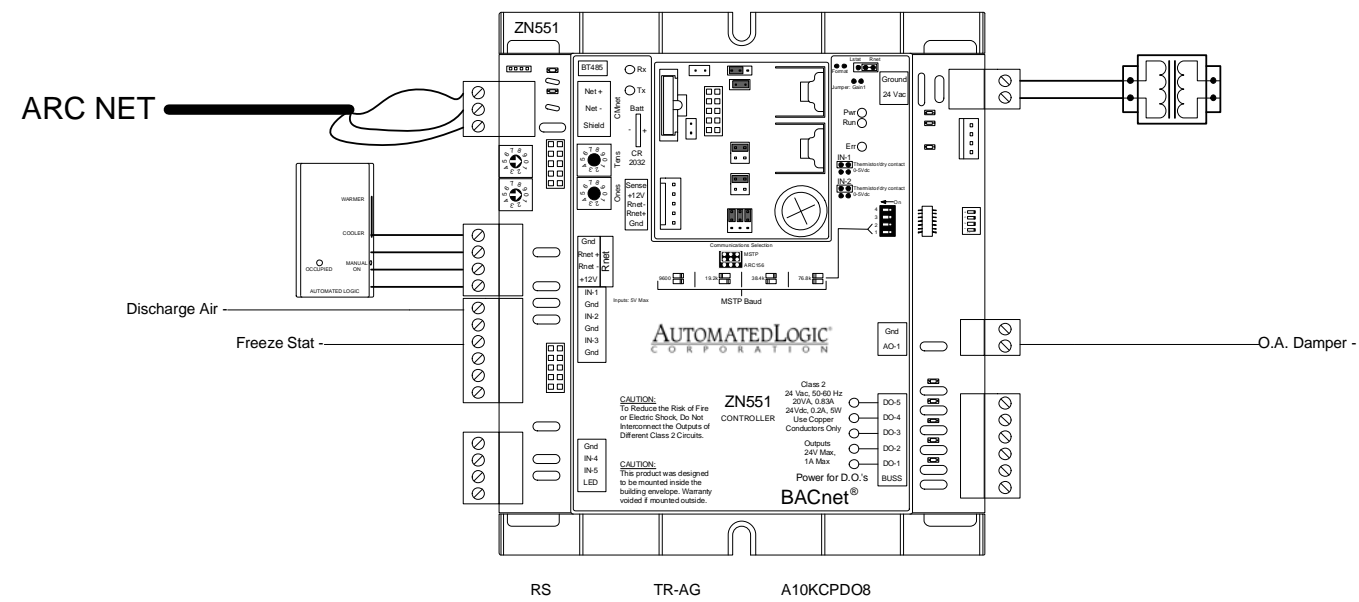
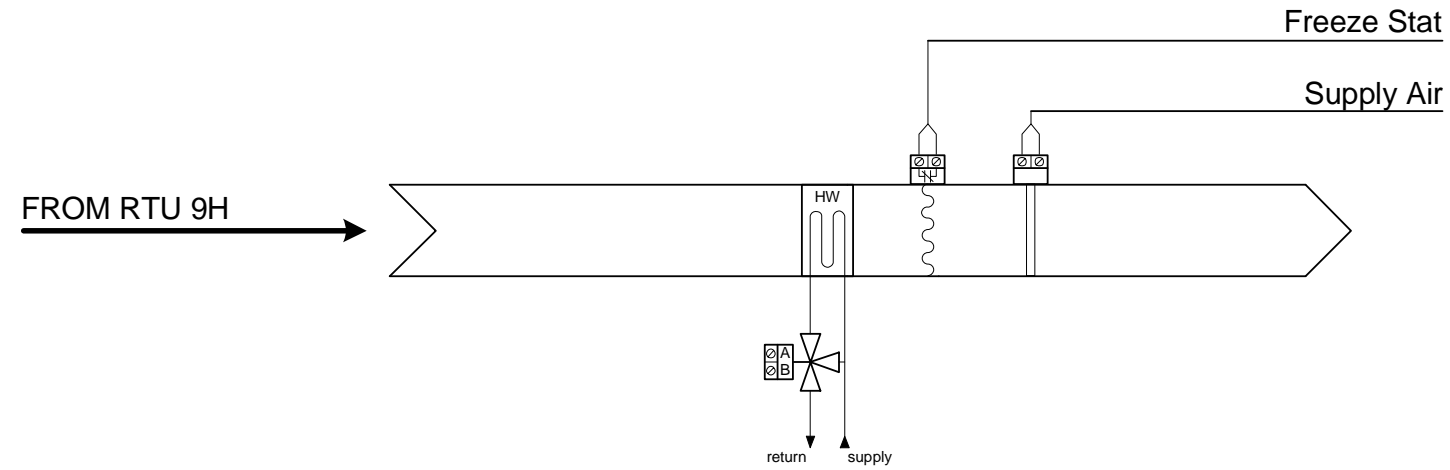
Bill of Materials				
DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	2 ea
ZN551	ZN551	AUTOMATED LOGIC	ZN551	2 ea
a10kcpdo8	DUCT 10K THERMISTOR PROBE 8 IN.	ALPS	A10KCPDO8	2 ea
rs	SPACE TEMP	ALC	RS	2 ea



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 AIR TEMP HEATING & AIR CONDITIONING, INC. A LINC SERVICE @ CONTRACTOR			
Heating Coils			
REV: 1	As-Built	2/10/2010	JOB NO: P7932
			CHECK BY: RSL
			DSCODE: 07112.00
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Heating Coils 3H & 4H

Bill of Materials				
DID	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
TR-AG	TRANSFORMER, 120/24VAC 150VA W/CCT BREAKER	CORE COMPONENTS	LE-124	2 ea
ZN551	ZN551	AUTOMATED LOGIC	ZN551	2 ea
a10kcpdo8	DUCT 10K THERMISTOR PROBE 8 IN.	ALPS	A10KCPDO8	2 ea
rs	SPACE TEMP	ALC	RS	2 ea



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Heating Coils 3H & 4H

REV: 1	As-Built	2/10/2010	JOB NO: P7932
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CHECK BY: RSL

DSCODE: 07112.00

AUTOMATED LOGIC
CORPORATION

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