

Lee Health - Cape Coral Hospital Complex Care Clinic

708 Del Prado Blvd S, Suite 14
Cape Coral, FL 33990

As Prepared By:



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PROJECT TEAM

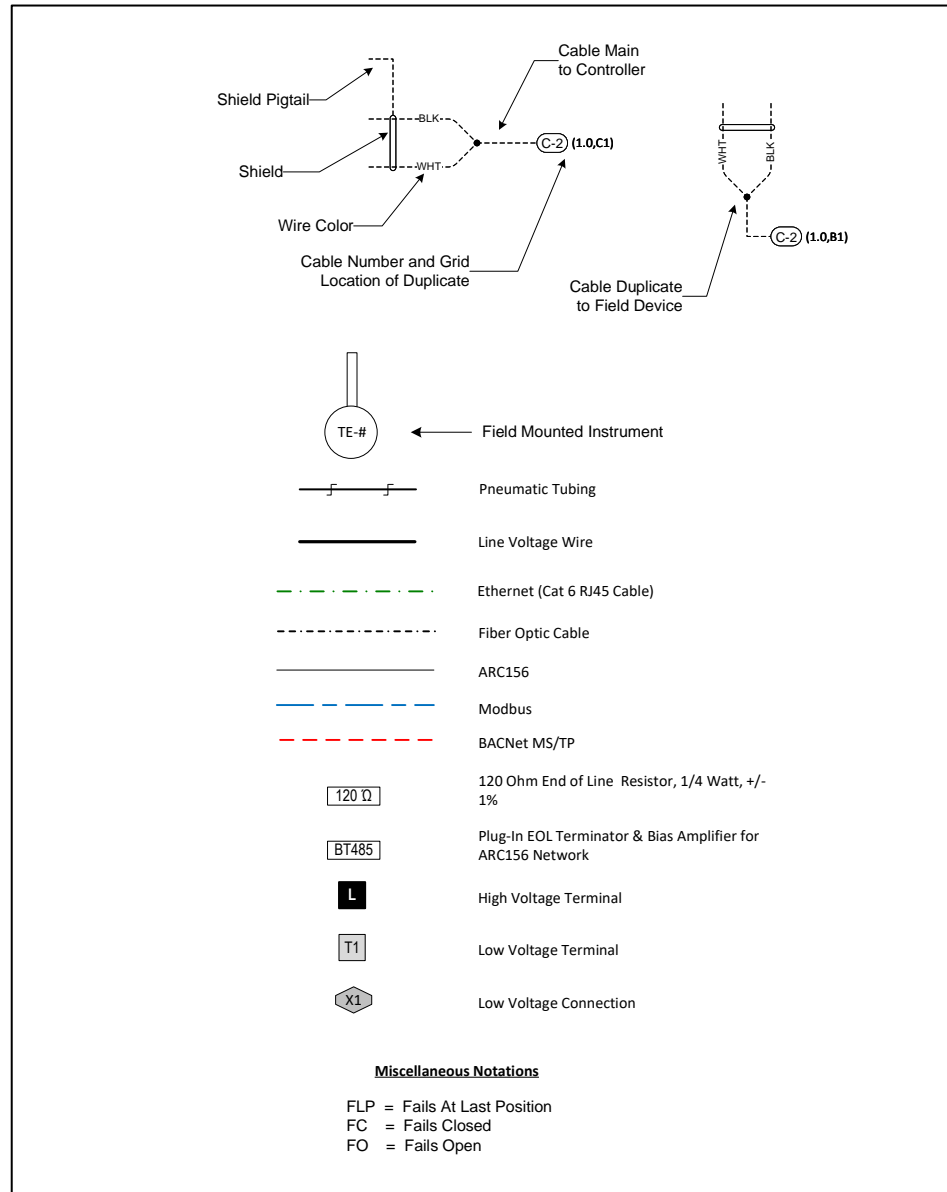
Client Name:	Cape Coral Hospital Complex Care Clinic
Owner:	Lee Health
Architect:	Plunkett Raysich Architects, LLP
MEP Engineer:	APG Engineering

ALC Design Engineer:	Dennis Schnellman
ALC Project Manager:	Patrick Doyle Jr.

Project Number:	240007E
Drawing Designation:	Submittal
Drawing Date:	4/18/2024

<u>DRAWING NO.</u>	<u>DRAWING NAME</u>
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LEGEND



TAG DESCRIPTIONS

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

TIA-485 (Arcnet, MS/TP, Modbus RTU) Wire Specification

Description	Single twisted pair, low capacitance (12pF), CL2P, 22 AWG (7x30), TC foam FEP, plenum rated cable
Conductor	22 AWG (7x30) stranded copper (tin plated) 0.030 in. (0.762 mm) O.D. NOTE 24 AWG can be used for segments <200 ft. (6.7 m).
Insulation	Foamed FEP 0.015 in. (0.381 mm) wall 0.060 in. (1.524 mm) O.D.
Color code	Black/white
Twist lay	2 in. (50.8 mm) lay on pair 6 twists/foot (20 twists/meter) nominal
Shielding	Aluminum/Mylar shield with 24 AWG (7x32) TC drain wire
Jacket	SmokeGard (SmokeGard PVC) 0.021 in. (0.5334 mm) wall 0.175 in. (4.445 mm) O.D. Halar (E-CTFE) 0.010 in. (0.254 mm) wall 0.144 in. (3.6576 mm) O.D.
DC resistance	15.2 Ohms/1000 feet (50 Ohms/km) nominal
Capacitance	12.5 pF/ft (41 pF/meter) nominal conductor to conductor
Characteristic impedance	100 Ohms nominal
Weight	12 lb/1000 feet (17.9 kg/km)
UL temperature rating	SmokeGard 167°F (75°C) Halar -40 to 302°F (-40 to 150°C)
Voltage	300 Vac, power limited
Listing	UL: NEC CL2P, or better

Rnet Wire Specification

Description	4 conductor, shielded or unshielded, CMP, plenum rated cable
Conductor	22 AWG (7x0096) bare copper if Rnet has only sensors 18 AWG (7x0152) bare copper if Rnet has a BACview® device
Maximum length	500 feet (152 meters)
Insulation	Low-smoke PVC (or equivalent)
Color Code	Black, white, green, red
Shielding	If shielded, Aluminum/Mylar shield (100% coverage) with TC drain wire, terminated at controller
UL temperature rating	32–167°F (0–75°C)
Voltage	300 Vac, power limited
Listing	UL: NEC CL2P, or better

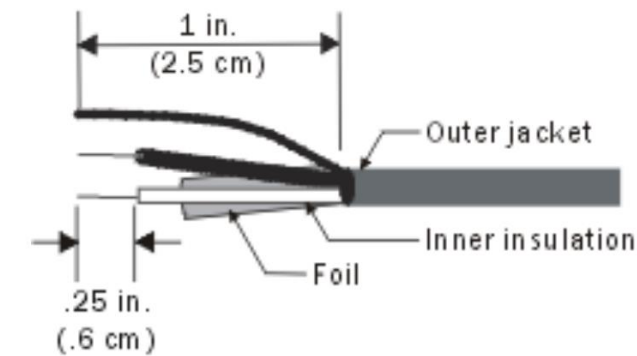
RS-485 Cable Wiring Instructions (Typical for ARC156, MS/TP, Modbus RTU)

1. Partially cut, then bend and pull off 1" of the outer jacket of the cable(s). Do not nick the inner insulation.
2. Strip about 0.25 inch (0.6 cm) of the inner insulation from each wire.
3. If wiring two cables to the controller, twist together the shield wires from both cables.
4. Insert the wires into the terminal block.

CAUTION! Do not allow more than .125 inch (.3 cm) bare communication wire to protrude.

NOTE: Do not ground the shield to earth ground or to the controller's power ground. The PROT485 and the individual controllers allow the shield to float a limited amount so that there are no ground loops. If the voltage on the shield becomes too great relative to the earth ground, then the excess voltage is bled off with protective devices on the PROT485 or on the controllers.

If bare communication wire contacts the cable's foil shield, shield wire, or a metal surface other than the terminal block, communications may fail.



Communication Bus Wiring Installation Detail

Ethernet Wire Specification

All Ethernet cabling shall be to CAT6 standards with jacket either CMR or CMP as required by installation location and local building codes.

Code Requirements

Install all wiring to local electrical code requirements. The wiring requirements detailed here are a minimum – any additional requirements to meet the code in use at the time of installation will supersede these wiring specifications. If there is a conflict between the wire specifications here and local code requirements, contact Automated Logic for further guidance.

A

B

C

D

E

F

G

H

Bill of Material - Master

Vendor	Part Number	Product Description	Manufacturer	Panel Or Field	Quantity
Automated Logic	AMR	ARCnet to MS/TP Router	Automated Logic	P	1
Automated Logic	NSB-10K-2-D-4-NB-15-A	Duct, 4" Insertion, 15' Leads	Automated Logic	F	4
Automated Logic	NSB-10K-2-H200-D-BB2-A	Humidity, Duct, 2% w/ Temperature Sensor	Automated Logic	F	2
Automated Logic	PROT485	ARCNET156 Protection Board	Automated Logic	P	2
Automated Logic	SE6166sp	Control Module, 6DO, 16UI, 6AO, Single Program	Automated Logic	P	2
Automated Logic	ZN220	Zone Controller, 2DO, 2UI	Automated Logic	P	2
Automated Logic	ZN341A	Zone Controller for VAV w/ Actuator, 3DO, 4UI, 1AO	Automated Logic	F	4
Automated Logic	ZS2P-ALC	ZS Pro Space Temp Sensor, Rnet, LCD, SP Adj, Ovr	Automated Logic	F	1
Automated Logic	ZS2P-H-ALC	ZS Pro Space Temp Sensor w/Humidity, Rnet, LCD, SP Adj, Ovr	Automated Logic	F	4
BAPI	BA/ZPS-ACC13	Pressure Pickup Port, 3.5" Static Pressure Probe	BAPI	F	4
Kele	AFS-460-DSS	Differential Pressure Switch, 2-12 in. WC, 2-SPST, Man. Reset (NC, NC)	Cleveland	F	4
ALPS	PSH100A100AB10	Enclosed Dual Pwr Supply, 2x100VA	Functional Devices	P	1
ALPS	PSH40A	Enclosed Single Pwr Supply, 40VA	Functional Devices	P	2
ALPS	RIBX24SBF	Current Switch w/Power Relay, SPST (Jumper NO/NC), HOA	Functional Devices	F	1
Panel Fab	A20N20ALP+GREY+A-L12AR	Hoffman Enclosure - 20in x 20in x 6.62 in,lock, hinge, NEMA 1	Hoffman	P	1
Panel Fab	A20R208HCLO	Hoffman Enclosure - 20in x 20in x 8in, Lift off hinge, NEMA 3R	Hoffman	P	2
Grainger	WGNDKT	Ground Lug	Hubbell-Wiegmann	P	3
Kele	SD-R01	Spot Leak Detector, Low Profile, Auto Reset if 24VAC Powered	Kele	F	1
ALPS	C1LG6	1" Grey Wireway Cover	Panduit	P	2
ALPS	F1X2LG6	1" x 2" Grey Wireway	Panduit	P	2

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REV	DESCRIPTION	DATE	BY
 2460 Highlands Rd Punta Gorda, FL 33983			
PROJECT: Lee Health - Cape Coral Hospital Complex Care Clinic 708 Del Prado Blvd S, Suite 14 Cape Coral, FL 33990			
CONTRACT NO: 240007E	SE: MJ	DE: DS	PR: MJF
FILENAME: 0.1 Summary BOM			
DRAWING NAME: Summary Bill of Materials			
DRAWING NO.: 0.1			

240007E Lee Health Cape Coral Hospital Complex Care Clinic - Valve Schedule

Item	General Tag	Equipment Type	Service	Specific Valve Tag	Mfg	Quantity	Valve Type	Valve Config	Flow (gpm)	DP Max Design (psi)	DP Actual (psi)	Close Off (psi)	Req'd Min Cv	Valve Cv	Normal Position (2 VDC)	Fail Position	Valve Size (in.)	Line Size (in.)	Control Signal	Voltage	Valve Part #	Actuator Part #	Clip Position	Valve Assembly Part Number
1	VAV HW 1	VAV	HW	VAV-5-1	Belimo	1	QCV	2-WAY	1.00	3	2.78	200	0.58	0.60	NC	N/A	1/2	3/4	2-10 VDC	24 VAC/VDC	Z2050QPT-B	CQB24-SR-R	6+	Z2050QPT-B+CQB24-SR-R
2	VAV HW 2	VAV	HW	VAV-5-2	Belimo	1	QCV	2-WAY	2.00	3	2.78	200	1.15	1.20	NC	N/A	1/2	3/4	2-10 VDC	24 VAC/VDC	Z2050QPT-D	CQB24-SR-R	6-	Z2050QPT-D+CQB24-SR-R
3	VAV HW 0.75	VAV	HW	VAV-6-1	Belimo	1	QCV	2-WAY	0.75	3	2.25	200	0.43	0.50	NC	N/A	1/2	3/4	2-10 VDC	24 VAC/VDC	Z2050QPT-B	CQB24-SR-R	6-	Z2050QPT-B+CQB24-SR-R
4	VAV HW 1.5	VAV	HW	VAV-6-2	Belimo	1	QCV	2-WAY	1.50	3	2.78	200	0.87	0.90	NC	N/A	1/2	3/4	2-10 VDC	24VAC/VDC	Z2050QPT-D	CQB24-SR-R	5	Z2050QPT-D+CQB24-SR-R



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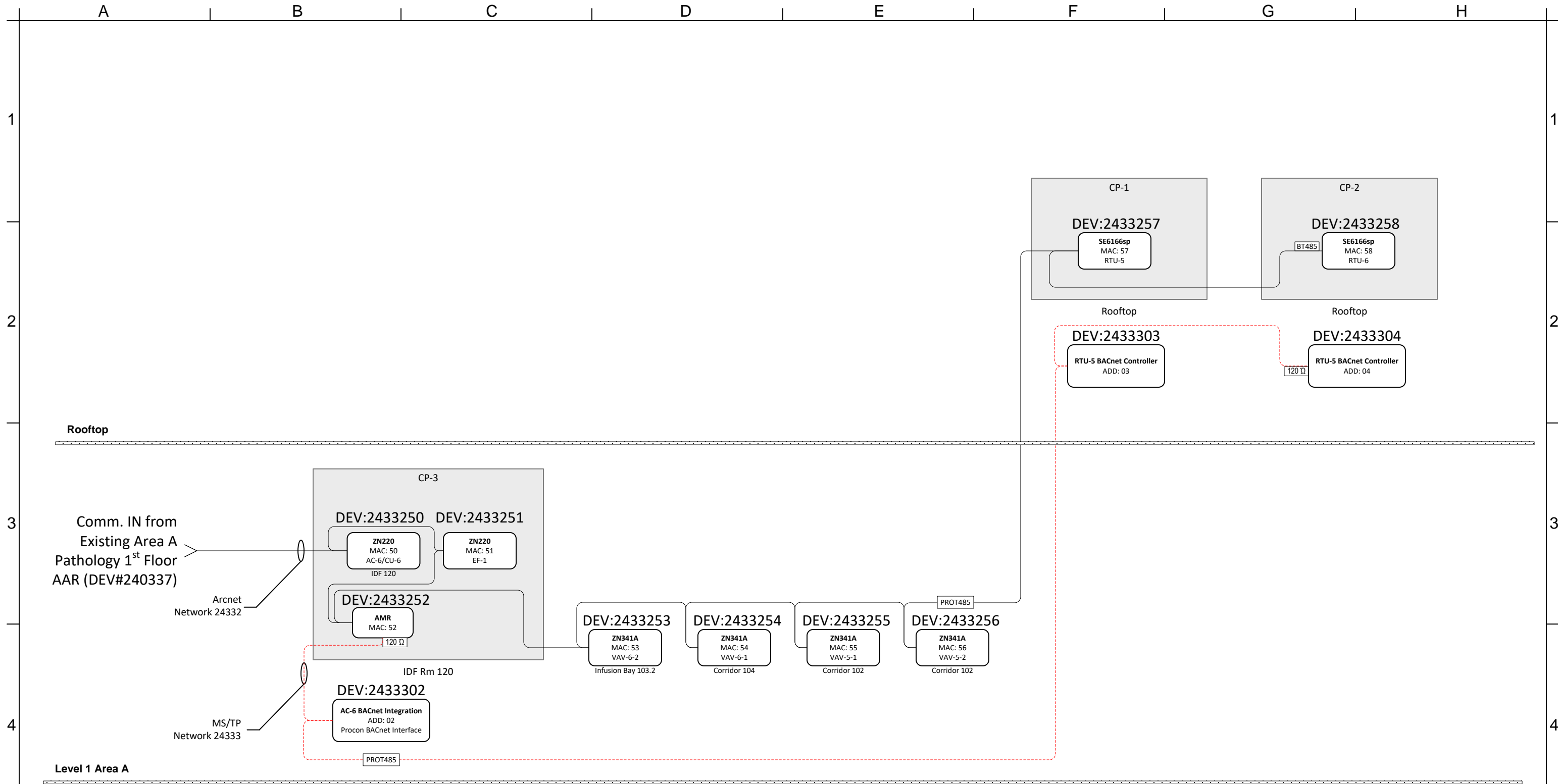
FILENAME: 0.21 Valve Schedule

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REV	DESCRIPTION	DATE	BY

DRAWING NAME:
Valve Schedule

CONTRACT NO: 240007E SE: MJ DE: DS PR: MJF

DRAWING NO.: 1.1



- Notes:**
- The BMS network layout is intended only to provide an overview of the system architecture. DDC devices are not intended to be wired in exactly the order shown. Optimal wiring runs to be determined in field.
 - All devices are to be wired in a daisy chain configuration.
 - 120 VAC to control panels shall be provided by others
 - Ethernet connection at BACnet router panel by others, Static IP required

- Field Installation/Design Notes:**
- Limit network segments to 2000 feet and 32 modules
 - No splicing or wire nuts allowed
 - Ground all PROT485s and REP485s properly

LEGEND	
-----	Space Sensor Wiring
-----	Ethernet Wiring
-----	ARCNET Wiring
-----	MODBUS Wiring
-----	BACnet MS/TP Wiring
-----	Fiber Optic Wiring
-----	Line Voltage Wiring

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FILENAME: 1.1 Network Riser

REV	DESCRIPTION	DATE	BY

DRAWING NAME:
Network Riser

CONTRACT NO: 240007E SE: MJ DE: DS PR: MJF

DRAWING NO.: 1.1

Network Schedule 24332				
Network Number	MAC Address	Controller	Equipment Tag/Name	Device Instance
24332		2 SE6166	RTU-1	2433202
24332		3 ZN551	RCH L1-1	2433203
24332		4 ZN551	RCH L1-2	2433204
24332		5 ZN551	RCH L1-3	2433205
24332		6 ZN551	RCH L1-4	2433206
24332		7 ZN551	RCH L1-5	2433207
24332		8 ZN551	RCH L2-1	2433208
24332		9 ZN551	RCH L2-2	2433209
24332		10 ZN551	RCH L2-3	2433210
24332		11 ZN551	RCH L2-4	2433211
24332		12 ZN551	RCH L2-5	2433212
24332		13 ZN551	RCH L2-6	2433213
24332		14 ZN551	RCH L2-7	2433214
24332		15 SE6166	RTU-2	240166
24332		16 SE6104a	RTU-4	2433216
24332		17 ZN551	RCH L4-1	2433217
24332		18 ZN551	RCH L4-2	2433218
24332		19 ZN551	RCH L4-3	2433219
24332		20 ZN551	RCH L4-4	2433220
24332		21 ZN551	RCH L4-5	2433221
24332		23 AMR	RTU 1C	2433223
24332		24 ZN551	UPS Heat Pump	2433224
24332		25 ME812u	Panel 6	2433225
24332		26 ME812u	RTU 1-3	2433226
24332		27 ZN341A	ATU 3-1	2433227
24332		28 ZN341A	ATU 3-2	2433228
24332		29 ZN341A	ATU 3-3	2433229
24332		30 ZN341A	ATU 3-4	2433230
24332		31 ZN341A	ATU 3-5	2433231
24332		32 ZN551	RCH L3-1	2433232
24332		33 ZN551	RCH L3-2	2433233
24332		35 ZN341A	ATU 46-1	2433235
24332		36 ZN341A	ATU 46-2	2433236
24332		37 ZN341A	ATU 46-3	2433237
24332		38 ZN341A	ATU 46-4	2433238
24332		39 AMR	RTU 1-4	2433239
24332		40 ZN341A	ATU 46-5	2433240
24332		41 ZN341A	ATU 46-6	2433241
24332		42 ZN341A	ATU 46-7	2433242
24332		43 ZN341A	ATU 46-8	2433243
24332		44 ZN341A	ATU 46-9	2433244
24332		45 ZN341A	ATU 46-10	2433245
24332		46 OF1628-NR	RTU-46	2433246
24332		47 ZN551	HP 40	2433247
24332		49 ZN220	Data Room DX Unit	2433249
24332		50 ZN220	AC-6/CU-6	2433250
24332		51 ZN220	EF-1	2433251
24332		52 AMR	MS/TP - AC-6/RTU-5/RTU-6	2433252
24332		53 ZN341A	VAV-6-2	2433253
24332		54 ZN341A	VAV-6-1	2433254
24332		55 ZN341A	VAV-5-1	2433255
24332		56 ZN341A	VAV-5-2	2433256
24332		57 SE6166sp	RTU-5	2433257
24332		58 SE6166sp	RTU-6	2433258

Network Schedule 24333				
Network Number	MAC Address	Controller	Equipment Tag/Name	Device Instance
24333		2 Third Party Integration	AC-6/CU-6	2433302
24333		3 Third Party Integration	RTU-5	2433303
24333		4 Third Party Integration	RTU-6	2433304

Drawing Notes:	
1	Network 24332 located under AAR Device 36: AAR 1 st Floor Area A
2	Network 24333 located under AMR Device 52: AMR 1 st Floor Area A
3	Orange color indicates new controller added to network.

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FILENAME: 1.1 Network Riser

REV	DESCRIPTION	DATE	BY

DRAWING NAME:
Network Schedule

CONTRACT NO: 240007E SE: MJ DE: DS PR: MJF

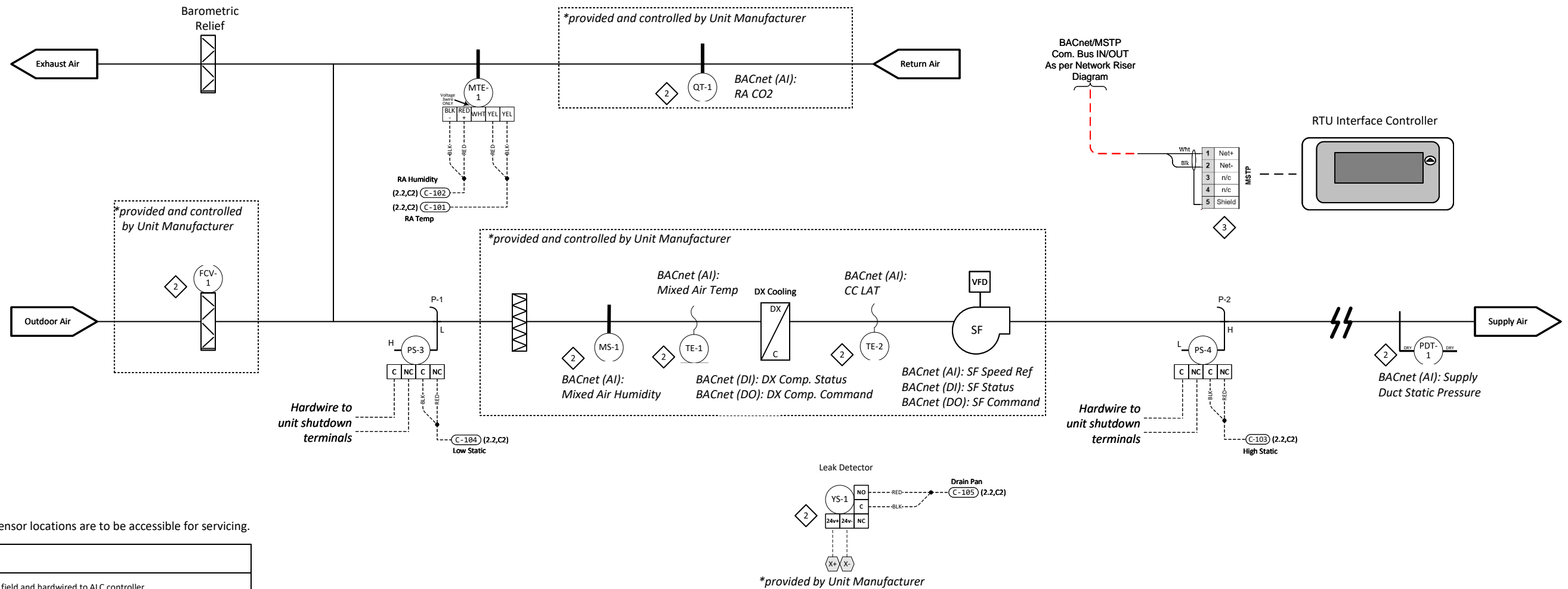
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Air Handling Unit Schedule								
Unit Tag	Area Served	Unit Type	Select SA CFM	Design SA CFM	Select OA CFM	Design OA CFM	Dehumid. Air CFM	Cooling
RTU-5	West Zone	Rooftop Packaged Unit	1750	1750	175	175	1750	DX
RTU-6	East Zone	Rooftop Packaged Unit	1400	1400	150	150	1400	DX

Typical of 2

Instrument List					
Tag	Qty.	Manufacturer	Vendor	Part Number	Product Description
MTE-1	2	Automated Logic	Automated Logic	NSB-10K-2-H200-D-BB2-A	Humidity, Duct, 2% w/ Temperature Sensor
P-1	2	BAPI	BAPI	BA/ZPS-ACC13	Pressure Pickup Port, 3.5" Static Pressure Probe
P-2	2	BAPI	BAPI	BA/ZPS-ACC13	Pressure Pickup Port, 3.5" Static Pressure Probe
PDT-1	2	Veris	Veris	PX3ULX05	Pressure, Dry, Univ, LCD
PS-1	2	Cleveland	Kele	AFS-460	Differential Pressure Switch, 0-12 in. WC, SPST, Man. Reset (NC)
PS-2	2	Cleveland	Kele	AFS-460	Differential Pressure Switch, 0-12 in. WC, SPST, Man. Reset (NC)
YS-1	2	Kele	Kele	SD-R01	Spot Leak Detector, Low Profile, Auto Reset if 24VAC Powered

BACnet Points List		
Point Type	Point Name	Method
AI	Cooling Coil Leaving Air Temperature	BACnet
AI	Supply Fan Speed Ref. (HZ)	BACnet
AI	Supply Duct Static Pressure	BACnet
AO	Supply Duct Static Pressure Setpoint	BACnet
AO	Supply Air Temperature Setpoint	BACnet
DO	Occupancy Enable	BACnet
DI	Supply Fan Status	BACnet
DO	Supply Fan Command	BACnet
DI	DX Compressor Status	BACnet
DO	DX Compressor Enable	BACnet
AO	Outside Air Damper Command	BACnet
AI	Outside Air Damper Feedback	BACnet
AI	Mixed Air Temperature	BACnet
AI	Mixed Air Humidity	BACnet
AI	Return Air CO2	BACnet



General Notes:
 1. All factory mounted sensor locations are to be accessible for servicing.

Drawing Notes:	
1	Device to be installed in field and hardwired to ALC controller.
2	Device provided by unit manufacturer. BAS integration to pull in value.
3	Factory provided RTU Interface controller. BAS integration to device.

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FILENAME: 2.1 RTUs

REV	DESCRIPTION	DATE	BY

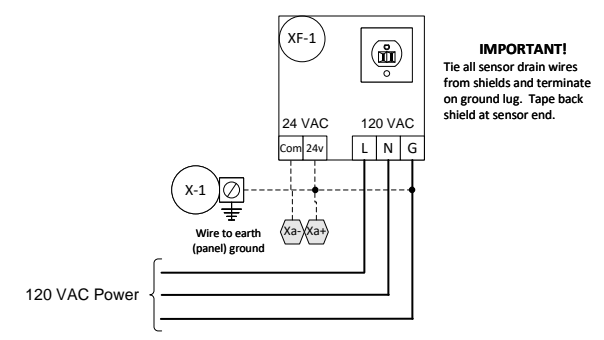
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RTU Flow Diagram

CONTRACT NO: 240007E SE: MJ DE: DS PR: MJF

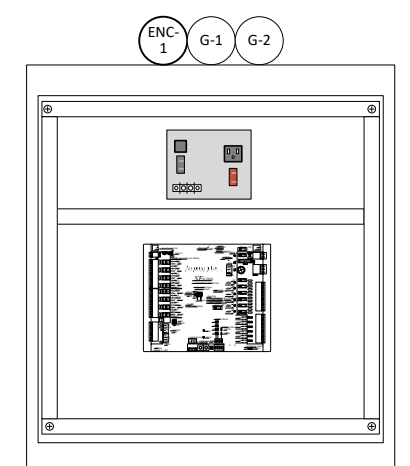
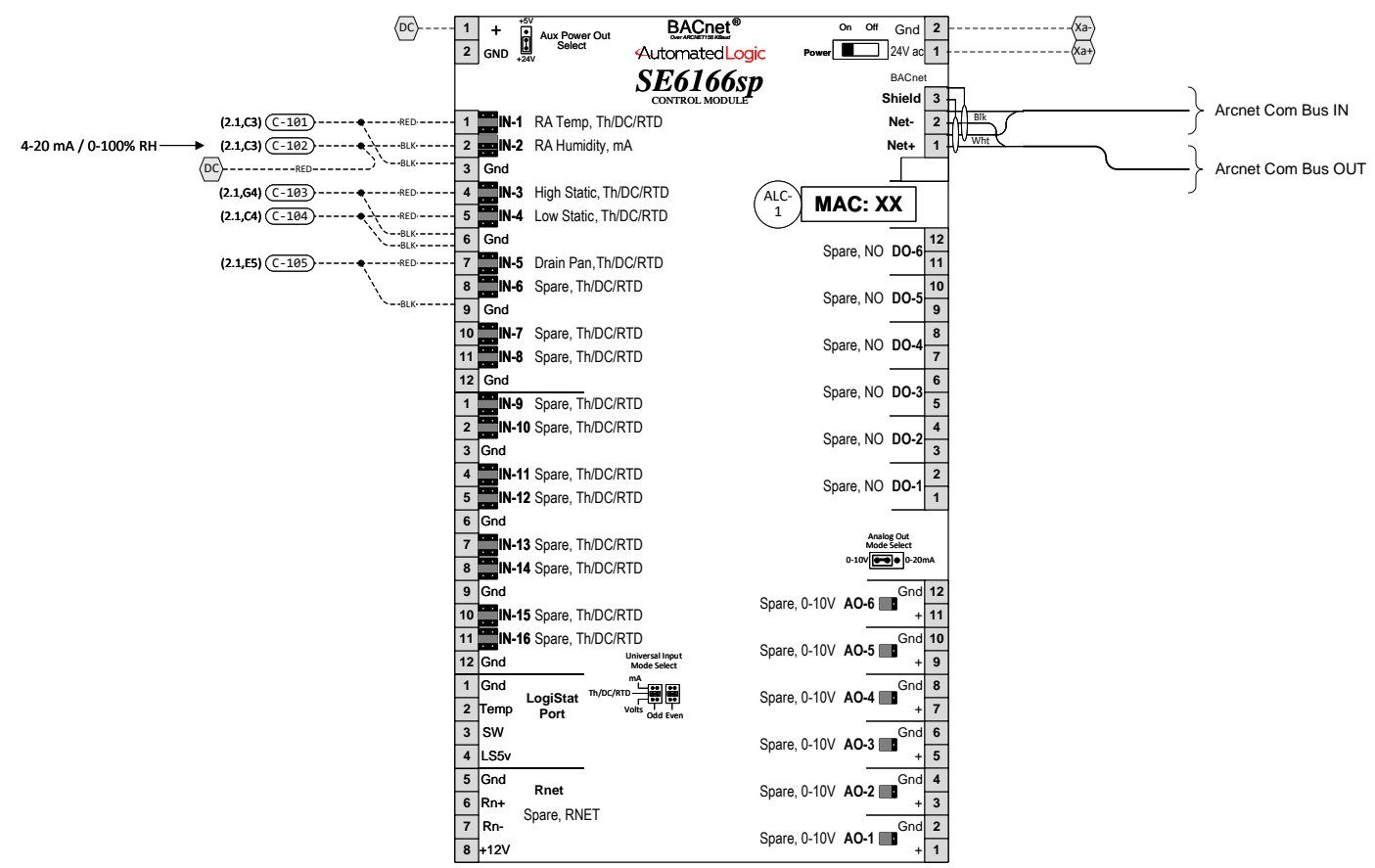
DRAWING NO.: 2.1

Instrument List					
Tag	Qty.	Manufacturer	Vendor	Part Number	Product Description
ALC-1	2	Automated Logic	Automated Logic	SE6166sp	Control Module, 6DO, 16UI, 6AO, Single Program
ENC-1	2	Hoffman	Panel Fab	A20R208HCL0	Hoffman Enclosure - 20in x 20in x 8in, Lift off hinge, NEMA 3R
G-1	2	Panduit	ALPS	C1LG6	1" Grey Wireway Cover
G-2	2	Panduit	ALPS	F1X2LG6	1" x 2" Grey Wireway
X-1	2	Hubbell-Wiegmann	Grainger	WGNDKT	Ground Lug
XF-1	2	Functional Devices	ALPS	PSH40A	Enclosed Single Pwr Supply, 40VA

Points List - Active		
Point Number	Point Name	Setup
IN-01	RA Temp	Th/DC/RTD
IN-02	RA Humidity	mA
IN-03	High Static	Th/DC/RTD
IN-04	Low Static	Th/DC/RTD
IN-05	Drain Pan	Th/DC/RTD



Typical of 2



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FILENAME: 2.1 RTUs

REV	DESCRIPTION	DATE	BY

DRAWING NAME:
RTU Module Diagram

CONTRACT NO: 240007E SE: MJ DE: DS PR: MJF

DRAWING NO.: 2.2

Points List - Active		
Point Number	Point Name	Setup
AO-01	HW Valve Mod.	0-10V
IN-01	DA Temp	Th/DC
RNET	Zone Temp & Humidity	RNET

Typical of 4

Instrument List					
Tag	Qty.	Manufacturer	Vendor	Part Number	Product Description
ALC-1	4	Automated Logic	Automated Logic	ZN341A	Zone Controller for VAV w/ Actuator, 3DO, 4UI, 1AO
ALC-2	1	Automated Logic	Automated Logic	PROT485	ARCNET156 Protection Board
TE-1	4	Automated Logic	Automated Logic	NSB-10K-2-D-4-NB-15-A	Duct, 4" Insertion, 15' Leads
TE-2	4	Automated Logic	Automated Logic	ZS2P-H-ALC	ZS Pro Space Temp Sensor w/Humidity, Rnet, LCD, SP Adj, Ovr
V-1	4	See Valve Schedule	See Valve Schedule	See Valve Schedule	See Valve Schedule

Run Conditions - Scheduled:

The unit will run according to a user definable time schedule in the following modes:

- Occupied Mode: The unit will maintain
 - A 75°F (adj.) cooling setpoint
 - A 70°F (adj.) heating setpoint

Unoccupied Mode (night setback): The unit will maintain

- A 85°F (adj.) cooling setpoint
- A 55°F (adj.) heating setpoint

Alarms will be provided as follows:

- High Zone Temp: If the zone temperature is greater than the cooling setpoint by a user definable amount (adj.).
- Low Zone Temp: If the zone temperature is less than the heating setpoint by a user definable amount (adj.).

Pressure Request:

The zone controller will control and monitor the position of the terminal damper. If the position of the damper is greater than 95% open, the terminal unit will send a pressure request to its supply AHU until the zone damper closes to 85% open.

Zone Setpoint Adjust:

The occupant will be able to adjust the zone temperature heating and cooling setpoints at the zone sensor.

Zone Optimal Start:

The unit will use an optimal start algorithm for morning start-up. This algorithm will minimize the unoccupied warm-up or cool-down period while still achieving comfort conditions by the start of scheduled occupied period.

Zone Unoccupied Override:

A timed local override control will allow an occupant to override the schedule and place the unit into an occupied mode for an adjustable period of time. At the expiration of this time, control of the unit will automatically return to the schedule.

Reversing Variable Volume Terminal Unit - Flow Control:

The unit will maintain zone setpoints by controlling the airflow through one of the following:

Occupied:

- The VAV will be enabled to run anytime the associated AHU is operating. When zone temperature is greater than its cooling setpoint, the zone damper will modulate between the minimum occupied airflow (adj.) and the maximum cooling airflow (adj.) until the zone is satisfied.
- When the zone temperature is between the cooling setpoint and the heating setpoint, the zone damper will maintain the minimum required zone ventilation (adj.).
- When zone temperature is less than its heating setpoint, the controller will enable heating to maintain the zone temperature at its heating setpoint. Additionally, if warm air is available from the AHU, the zone damper will modulate between the minimum occupied airflow (adj.) and the maximum heating airflow (adj.) until the zone is satisfied.

Unoccupied:

- When the zone is unoccupied the zone damper will control to its minimum unoccupied airflow (adj.).
- When the zone temperature is greater than its cooling setpoint, the zone damper will modulate between the minimum unoccupied airflow (adj.) and the maximum cooling airflow (adj.) until the zone is satisfied.
- When zone temperature is less than its unoccupied heating setpoint, the controller will enable heating to maintain the zone temperature at the setpoint. Additionally, if warm air is available from the AHU, the zone damper will modulate between the minimum unoccupied airflow (adj.) and the auxiliary heating airflow (adj.) until the zone is satisfied.

Power/Communication Failure:

The VAV will remain in the open state upon power failure or loss of communication.

Reheating Coil Valve:

The controller will measure the zone temperature and modulate the reheating coil valve open on dropping temperature to maintain its heating setpoint.

Reheating - High Discharge Air Temperature Limit:

The controller will measure the discharge air temperature and limit reheating if the discharge air temperature is more than 15°F (adj.) above the zone temperature.

Dehumidification Mode:

The controller will monitor the zone humidity and send a dehumidification request to the AHU upon rise in relative humidity above setpoint of 58%RH (adj.). Dehumidification mode will seek 54%RH (adj.) with a minimum runtime of 30 minutes (adj.). The AHU will maintain cooling discharge air temperature setpoint and the VAV will modulate to maintain space temperature setpoint until the zone humidity falls below setpoint for 5 minutes (adj.).

Alarms will be provided as follows:

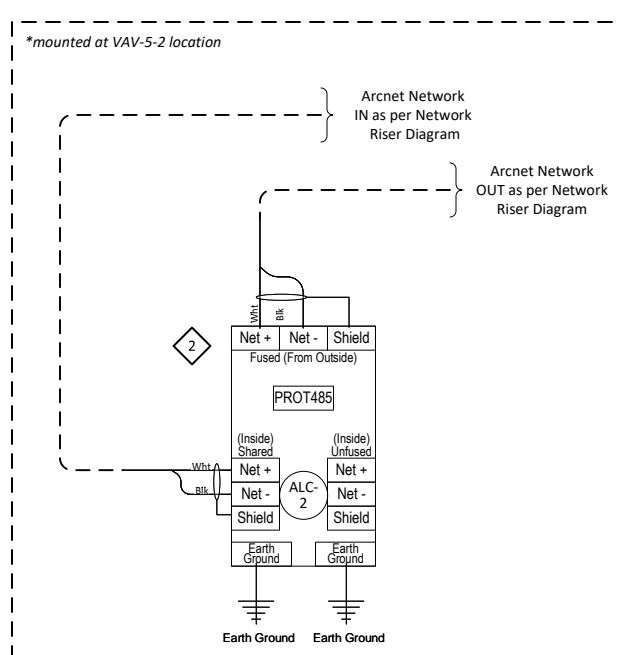
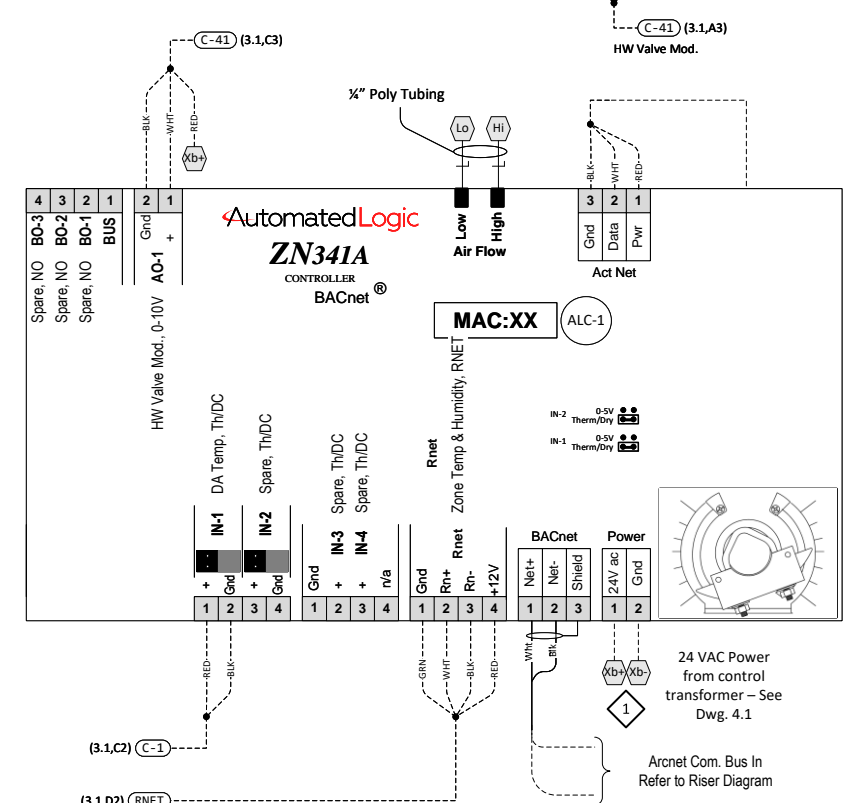
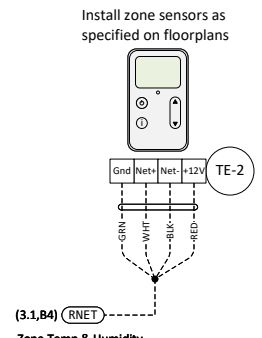
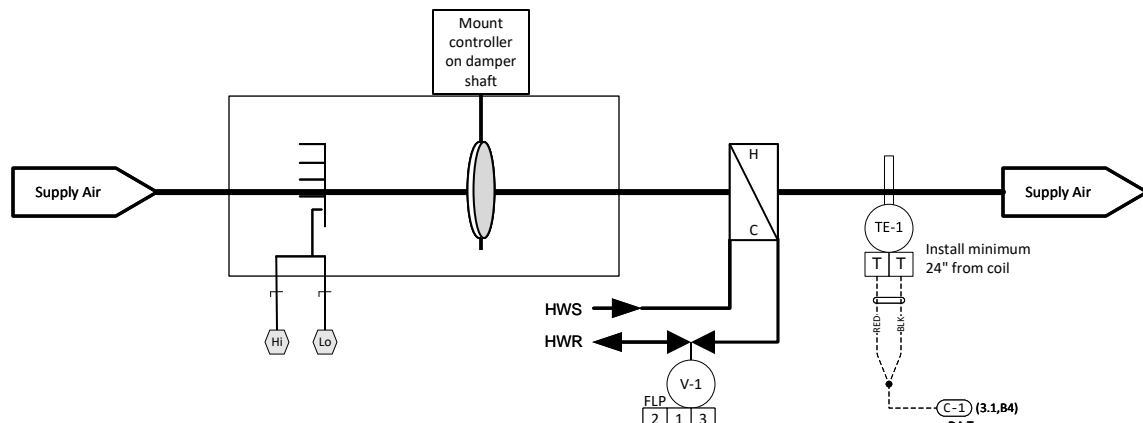
- High Zone Humidity: If the zone humidity exceeds 60%RH (adj.) for 10 minutes (adj.).

Discharge Air Temperature:

The controller will monitor the discharge air temperature.

Alarms will be provided as follows:

- High Discharge Air Temp: If the discharge air temperature is greater than 120°F (adj.).
- Low Discharge Air Temp: If the discharge air temperature is less than 40°F (adj.).



Drawing Notes:

1	24VAC control transformer located in IDF Rm 120. Refer to Dwg. 4.1.
2	PROT485 to be mounted at VAV-5-2. Utilize Fused side outgoing to Rooftop.

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PROJECT:
Lee Health - Cape Coral Hospital Complex Care Clinic
 708 Del Prado Blvd S, Suite 14
 Cape Coral, FL 33990

FILENAME: 3.1 VAV HW

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0					
0					
0					
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REV	DESCRIPTION	DATE	BY	DRAWING NO.: 3.1	

DRAWING NAME:
VAV w/ HW Valve

CONTRACT NO: 240007E SE: MJ DE: DS PR: MJF

A

B

C

D

E

F

G

H

VAV Box Schedule

Box Tag	Box Location	Floor Served	Room #'s Served	Cooling CFM		Heating CFM	Unocc. Min.	Inlet Size	Air Source
				Max	Min				
VAV-5-1	Corridor 102	1st Floor	102/111/112/113/114	625	325	325	0	8	RTU-5
VAV-5-2	Corridor 102	1st Floor	100/115/116/117/119/1000	1125	600	600	0	10	RTU-5
VAV-6-1	Corridor 104	1st Floor	108/109/110	450	225	225	0	6	RTU-6
VAV-6-2	Infusion Bay 103.2	1st Floor	103/103.1/103.2/104/104.1/107	950	475	475	0	10	RTU-6

1

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5



PROJECT:
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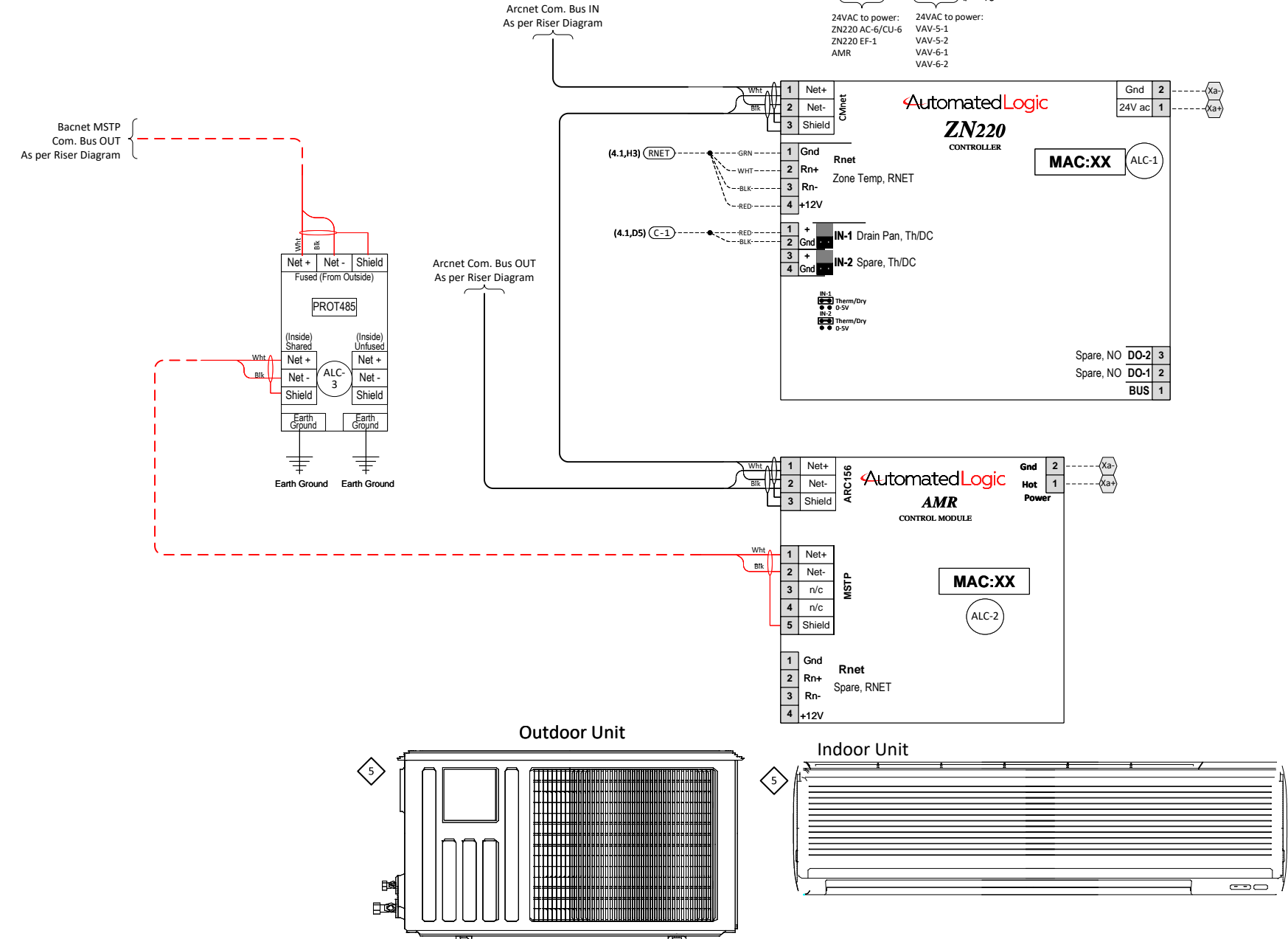
FILENAME: 3.1 VAV HW

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REV	DESCRIPTION	DATE	BY

DRAWING NAME:
VAV w/ HW Valve Schedule
CONTRACT NO: 240007E SE: MJ DE: DS PR: MJF

DRAWING NO.: 3.2

Points List - Active		
Point Number	Point Name	Setup
IN-01	Drain Pan	Th/DC
RNET	Zone Temp	RNET



Drawing Notes:	
1	Wiring between indoor and outdoor unit by the others
2	Mount panel in IDF Rm 120
3	Install the remote controller provided with the unit next to the zone sensor. Mount the zone temperature sensors where shown on the Mechanical Plans.
4	Verify outdoor unit voltage and wire transformer appropriately.
5	Device provided by unit manufacturer
6	Transformer used for powering VAV controllers: VAV-5-1, VAV-5-2, VAV-6-1, VAV-6-2

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PROJECT:
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FILENAME: 4.1 Ductless Split (DSS)

Instrument List					
Tag	Qty.	Manufacturer	Vendor	Part Number	Product Description
ALC-1	1	Automated Logic	Automated Logic	ZN220	Zone Controller, 2DO, 2UI
ALC-2	1	Automated Logic	Automated Logic	AMR	ARCnet to MS/TP Router
ALC-3	1	Automated Logic	Automated Logic	PROT485	ARCNET156 Protection Board
ENC-1	1	Hoffman	Panel Fab	A20N20ALP+GREY+A-L12AR	Hoffman Enclosure - 20in x 20in x 6.62 in,lock, hinge, NEMA 1
G-1	1	Panduit	ALPS	C1LG6	1" Grey Wireway Cover
G-2	1	Panduit	ALPS	F1X2LG6	1" x 2" Grey Wireway
TE-1	1	Automated Logic	Automated Logic	ZS2P-ALC	ZS Pro Space Temp Sensor, Rnet, LCD, SP Adj, Ovrld
X-1	1	Hubbell-Wiegmann	Grainger	WGNDKT	Ground Lug
XF-1	1	Functional Devices	ALPS	PSH100A100AB10	Enclosed Dual Pwr Supply, 2x100VA
YS-1	1	Kele	Kele	SD-R01	Spot Leak Detector, Low Profile, Auto Reset if 24VAC Powered

Ductless Split System

Zone Temp Monitoring:

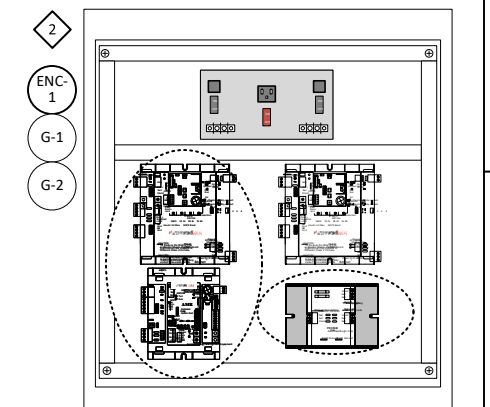
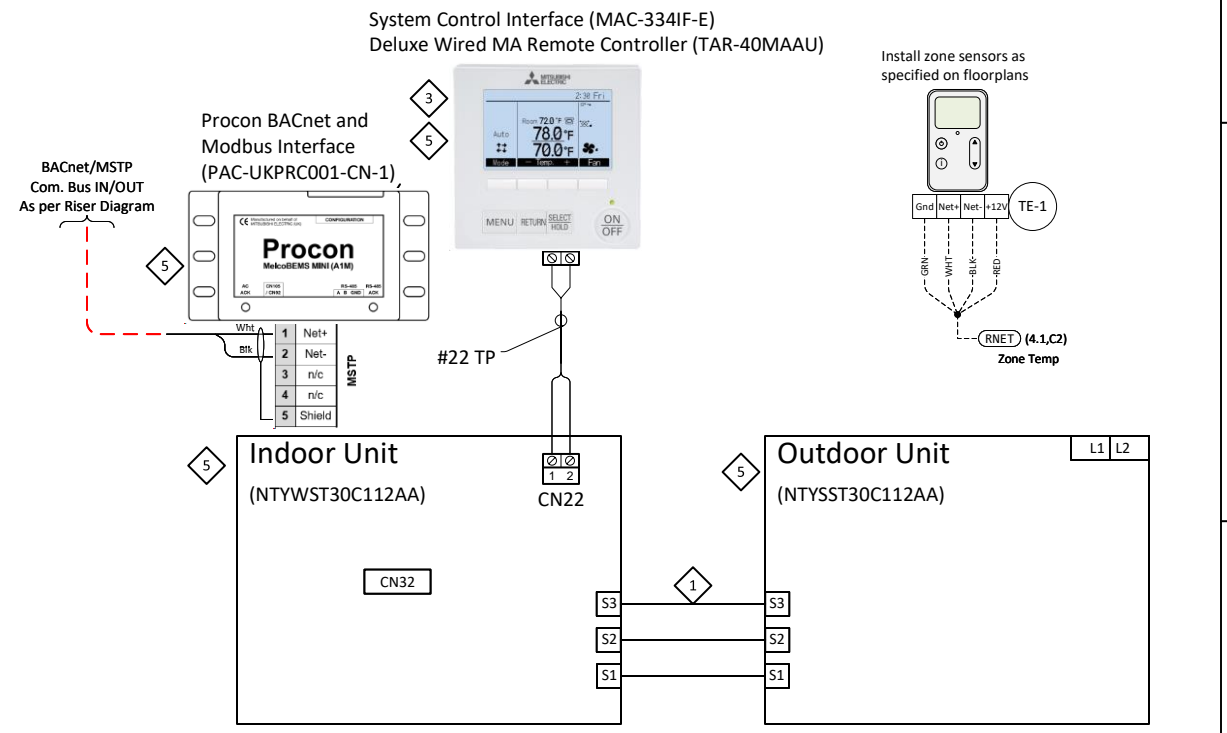
The unit will run continuously monitor the zone temperature.

Alarms will be provided as follows:

High Zone Temp: If the zone temperature is greater than the cooling setpoint of 72°F (adj.) by a user definable amount (adj.).

Drain Pan Shutdown:

The controller will monitor the condensate drain pan level and generate an alarm upon receiving a drain pan alarm status. Drain pan sensor shall be wired to shutdown unit directly.



REV	DESCRIPTION	DATE	BY

DRAWING NAME:
Ductless Split System AC-6/CU-6

CONTRACT NO: 240007E SE: MJ DE: DS PR: MJF

DRAWING NO.: 4.1

Points List - Active		
Point Number	Point Name	Setup
DO-01	EF-1 Start/Stop	NO
IN-01	EF-1 Status	Th/DC

Instrument List				
Tag	Manufacturer	Vendor	Part Number	Product Description
ALC-3	Automated Logic	Automated Logic	ZN220	Zone Controller, 2DO, 2UI
IS-1	Functional Devices	ALPS	RIBX24SBF	Current Switch w/Power Relay, SPST (Jumper NO/NC), HOA

Exhaust Fan

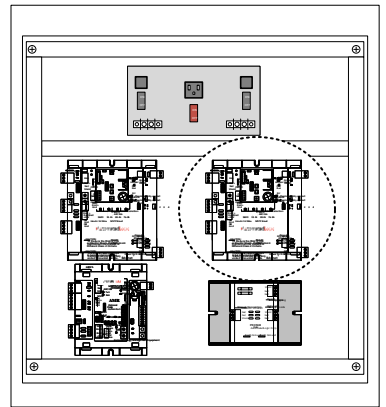
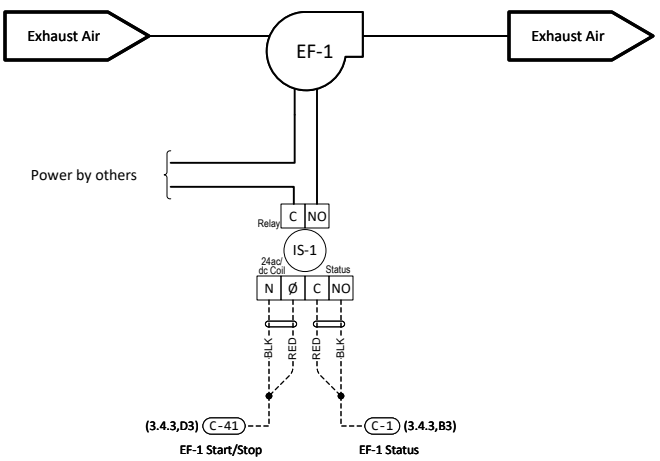
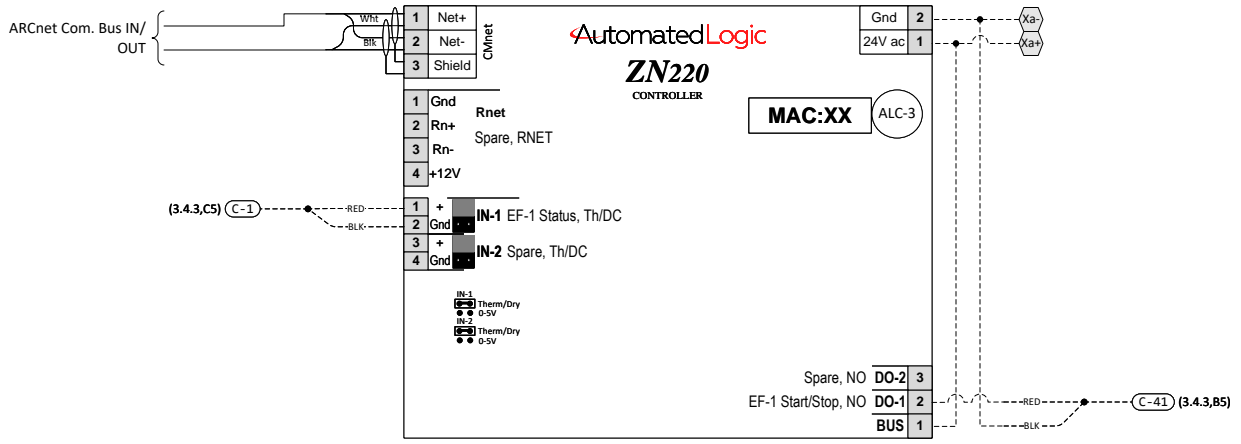
Run Conditions - Interlocked:
The fan will run whenever RTU- and RTU-2 are operating.

Fan:
The fan will run anytime the zone temperature rises above cooling setpoint, unless shutdown on safeties.

Fan Status:
The controller will monitor the fan status.

Alarms will be provided as follows:

- Fan Failure: Commanded on, but the status is off.
- Fan in Hand: Commanded off, but the status is on.
- Fan Runtime Exceeded: Fan status runtime exceeds a user definable limit (adj.).



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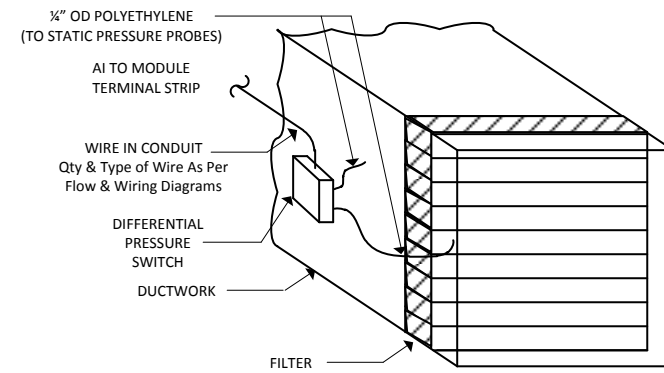
PROJECT:
Lee Health - Cape Coral Hospital Complex Care Clinic
708 Del Prado Blvd S, Suite 14
Cape Coral, FL 33990
FILENAME: 4.1 Ductless Split (DSS)

REV	DESCRIPTION	DATE	BY

DRAWING NAME:
EF-1 Flow Module Diagram
CONTRACT NO: 240007E SE: MJ DE: DS PR: MJF
DRAWING NO.: 4.2

DETAILS.1

DUCT MOUNTED DIFFERENTIAL PRESSURE SWITCH - FILTER



MOUNTING INSTRUCTIONS – DP SWITCH

1. SELECT A LOCATION THAT IS FREE FROM VIBRATION, CORROSIVE ATMOSPHERE AND WHERE THE AMBIENT TEMPERATURE IS WITHIN THE LIMITS FOR THE SWITCH.
2. MOUNT STANDARD SWITCH WITH THE DIAPHRAM IN A VERTICAL PLANE AND WITH SWITCH LETTING AND NAMEPLATE IN AN UPRIGHT POSITION. SOME SWITCHES MAY NOT RESET PROPERLY IF MOUNTED IN THE WRONG POSITION.
3. CONNECT SWITCH TO SOURCE OF PRESSURE VACUUM OR DIFFERENTIAL PRESSURE. POLY TUBING WITH 1/4" O.D. IS RECOMMENDED. CONNECT TO THE (2) 1/8" NPT FEMALE PRESSURE PORTS AS NOTED BELOW:
 - a. DIFFERENTIAL PRESSURE-CONNECT PIPES OR TUBES FROM SOURCE OF GREATER PRESSURE TO HIGH PRESSURE PORT MARKED HI-PR AND FROM SOURCE OF LOWER PRESSURE TO LOW PRESSURE PORT MARKED LO-PR.
4. ELECTRICAL CONNECTION TO THE SPDT SNAP SWITCH ARE PROVIDED BY MEANS OF SCREW TERMINALS.

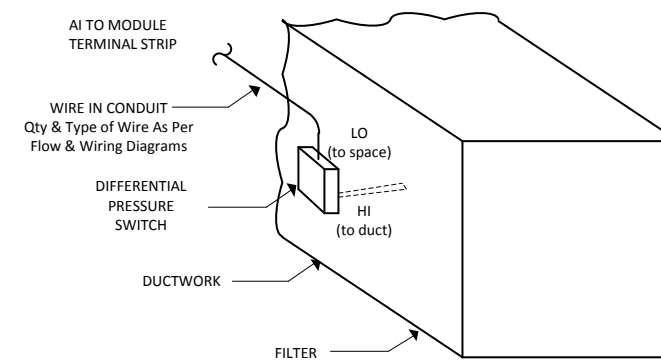
MOUNTING INSTRUCTIONS – STATIC PRESSURE PROBES

INSTALLATION IS COMPLETED BY DRILLING A 1/4" HOLE IN THE SHEET METAL, INSERTING THE PROBE AND SECURING THE ASSEMBLY BY USING THE MOUNTING FLANGE AS A TEMPLATE TO MARK AND DRILL (2) HOLES FOR THE SELF TAPPING SHEET METAL SCREWS.

NOTE:

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

DUCT MOUNTED DIFFERENTIAL PRESSURE SWITCH - HIGH/LOW SHUTDOWN



MOUNTING INSTRUCTIONS – DP SWITCH

1. SELECT A LOCATION THAT IS FREE FROM VIBRATION, CORROSIVE ATMOSPHERE AND WHERE THE AMBIENT TEMPERATURE IS WITHIN THE LIMITS FOR THE SWITCH.
2. MOUNT STANDARD SWITCH WITH THE DIAPHRAM IN A VERTICAL PLANE AND WITH SWITCH LETTING AND NAMEPLATE IN AN UPRIGHT POSITION. SOME SWITCHES MAY NOT RESET PROPERLY IF MOUNTED IN THE WRONG POSITION.
3. CONNECT SWITCH TO SOURCE OF PRESSURE VACUUM OR DIFFERENTIAL PRESSURE. POLY TUBING WITH 1/4" O.D. IS RECOMMENDED. CONNECT TO THE (2) 1/8" NPT FEMALE PRESSURE PORTS AS NOTED BELOW:
 - a. PRESSURE ONLY-CONNECT TUBE FROM SOURCE OF PRESSURE TO HIGH PRESSURE PORT. THE LOW PRESSURE PORT IS LEFT OPEN TO ATMOSPHERE.
 - b. VACUUM ONLY-CONNECT TUBE FROM SOURCE OF VACUUM TO LOW PRESSURE PORT. THE HIGH PRESSURE PORT IS LEFT OPEN TO ATMOSPHERE.
4. ELECTRICAL CONNECTION TO THE SPDT SNAP SWITCH ARE PROVIDED BY MEANS OF SCREW TERMINALS.

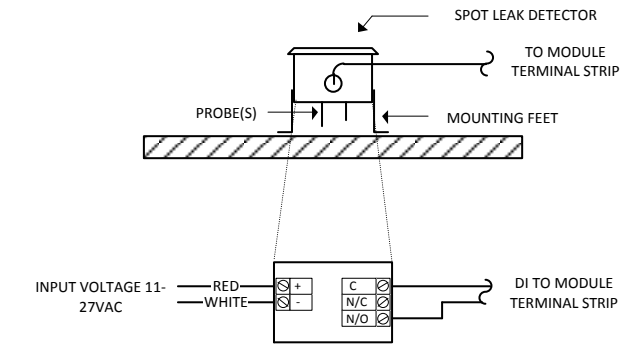
MOUNTING INSTRUCTIONS – STATIC PRESSURE PROBES

INSTALLATION IS COMPLETED BY DRILLING A 1/4" HOLE IN THE SHEET METAL, INSERTING THE PROBE AND SECURING THE ASSEMBLY BY USING THE MOUNTING FLANGE AS A TEMPLATE TO MARK AND DRILL (2) HOLES FOR THE SELF TAPPING SHEET METAL SCREWS.

NOTE:

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

SPOT LEAK DETECTOR SENSOR



MOUNTING INSTRUCTIONS

SECURE BY APPLYING A SILICONE ADHESIVE TO THE MOUNTING FEET AND PLACING THE SENSOR IN THE AREA TO BE PROTECTED. FOR MORE PERMANENT INSTALLATIONS, FASTEN THE SENSOR USING THE HOLES PROVIDED IN THE MOUNTING FEET. THE LEGS ARE ADJUSTABLE FOR PRECISE WATER LEVEL SIGNALING. IF GROUNDED AC POWER IS USED, THE GROUNDED POWER SUPPLY LEAD MUST BE CONNECTED TO THE WHITE LEAD ON THE WD-1B, OR THE UNIT MAY FAIL TO OPERATE.

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