

three inches = one foot
 one and one-half inch = one foot
 one inch = one foot
 three-quarters inch = one foot
 one-half inch = one foot
 three-eighths inch = one foot
 one-quarter inch = one foot
 one-eighth inch = one foot

JOB:	POINT LEGEND		SYSTEM OUTPUTS		SYSTEM INPUTS		SYSTEM SOFTWARE/CONTROL		PAGE:
			BINARY	ANALOG	BINARY	ANALOG	ALARM PROCESSING	APPLICATION/FUNCTION	
VA WESTERN NEW YORK HEALTHCARE SYSTEM									
SYSTEM:									
CV AIR HANDLER									
SYSTEM COMPONENT:	POINT ID	ABBREVIATION							REMARKS
	AI-1	PHT							
	AI-2	CCT							
	AI-3	DAH							
	AI-4	RH-12							
	AI-5	RH-13							
	AI-6	RH-14							
	AI-7	RH-15							
	AI-8	RH-16							
	AI-9	RH-17							
	AI-10	RH-18							
	AI-11	RH-19							
	AI-15	RH-14							AVERAGING
	AI-16	RH-15							
	AI-17	RH-19							AVERAGING
	AI-18	RH-12							
	AI-19	RH-13							
	AI-20	RH-14							
	AI-21	RH-15							
	AI-22	RH-16							
	AI-23	RH-17							
	AI-24	RH-18							
	AI-25	RH-19							
	BI-1	SF-SFS							
	BI-2	TSL-1							
	BI-3	SF-ALA							
	AO-1	SF-SPD							FULL COMMUNICATION
	AO-2	OAD D-1							
	AO-3	PHT-V2							
	AO-4	CLG-V1							
	AO-5	HUM-V4							
	AO-6	D-2							
	AO-7	RH-12							
	AO-8	RH-13							
	AO-9	RH-14							
	AO-10	RH-15							
	AO-11	RH-16							
	AO-12	RH-17							
	AO-13	RH-18							
	AO-14	RH-19							
	BO-1	SF-SST							
	BO-2	HUM-ISO-V3							

NOTES

A. REFER TO DWG. M-001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS, AND GENERAL NOTES RELATED TO THIS SHEET.

B. ALL EXISTING PIPING, DUCTWORK, SPRINKLERS, CONDUIT, LIGHTING OR OTHER CONSTRUCTION SHALL BE RELOCATED AS REQUIRED FOR ALL DEMOLITION AND INSTALLATION WORK.

C. REFER TO MH102, MH402, MP102, AND MP402 FOR MECHANICAL HVAC AND PIPING PLANS RELATED TO THIS SHEET.

SEQUENCE OF OPERATION
CONSTANT AIR VOLUME AIR HANDLING UNIT 100% OUTSIDE AIR

1. GENERAL

1.1 UNIT IS NORMALLY STARTED AND STOPPED REMOTELY AT THE ECC. H-0-A SWITCH SHALL BE KEPT IN THE "AUTO" POSITION. "HAND" AND "OFF" POSITIONS SHALL BE USED ONLY FOR MAINTENANCE. WHEN THE UNIT IS "OFF", D-1 SHALL BE FULLY CLOSED. WHEN THE UNIT IS "ON", D-1 SHALL BE FULLY OPEN WITH THE FOLLOWING SEQUENCE.

1.2 EXHAUST FANS SHALL OPERATE AT ALL TIMES (OUTSIDE OF THIS SCOPE).

2. TEMPERATURE CONTROL

2.1 SUPPLY AIR TEMPERATURE, SENSED BY CCT, SHALL BE MAINTAINED AT SETPOINT VIA DIGITAL CONTROL PANEL BY OPENING V-1, MODULATING V-1, V-2, AND D-2 IN SEQUENCE.

2.2 WHEN THE TEMPERATURE OF THE OUTSIDE AIR, SENSED BY OAT, IS ABOVE 55°F (ADJ), THE DIGITAL CONTROL PANEL SHALL MODULATE V-1 TO MAINTAIN THE SUPPLY AIR TEMPERATURE, SENSED BY CCT.

2.3 WHEN THE TEMPERATURE OF THE OUTSIDE AIR IS BELOW THE SUPPLY AIR TEMPERATURE, SETPOINT SENSED BY CCT AND ABOVE 50°F, THE FAN SHALL ONLY OPERATE.

2.4 WHEN THE OUTSIDE AIR TEMPERATURE IS LESS THAN 50°F, V-2 SHALL OPEN, AND D-2 SHALL MODULATE TO MAINTAIN TEMPERATURE, SENSED BY PHT, TO A SETPOINT OF 55°F.

2.5 ON AHU SHUTDOWN, CLOSE D-1 AND MODULATE V-2 TO MAINTAIN A 50°F CABINET TEMPERATURE, AS SENSED BY PHT.

3. AIR FLOW CONTROL

3.1 THE SUPPLY AIR FLOW SHALL BE FIXED TO A CONSTANT VOLUME AT THE DIGITAL CONTROL PANEL AND THE SUPPLY FAN VARIABLE SPEED MOTOR CONTROLLER (FIELD ADJUSTABLE). THIS WILL BE SET IN COORDINATION WITH TAB.

4. HUMIDITY CONTROL

4.1 ROOM HUMIDITY SENSORS SHALL BE MONITORED TO MAINTAIN A MINIMUM OF 30% RH IN ANY ZONE. UPON ANY SPACE REACHING 60% RH, THE HUMIDIFIER SHALL BE DISABLED.

4.2 WHEN THE DIGITAL CONTROL PANEL IS NOT CALLING FOR HUMIDITY, 2-WAY "ON-OFF" CONTROL VALVE V-3 SHALL REMAIN CLOSED. WHEN THE DIGITAL CONTROL PANEL IS CALLING FOR HUMIDITY, V-3 SHALL REMAIN OPEN.

4.3 SPACE HUMIDITY SHALL BE MAINTAINED AT SETPOINT OF 30-60% RH (ADJ) VIA DIGITAL CONTROL PANEL BY ENABLING V-3 AND MODULATING CONTROL VALVE V-4 TO MAINTAIN THE DESIRED HUMIDITY. DCP SHALL CLOSE VALVE V-3 WHENEVER THE SUPPLY FAN IS OFF. VALVE V-4 SHALL BE INTERLOCKED WITH A TEMPERATURE SWITCH TO KEEP THE HUMIDIFIER OFF UNTIL CONDENSATE TEMPERATURE APPROACHES STEAM TEMPERATURE.

5. FREEZE PROTECTION

5.1 IF THE AIR TEMPERATURE AS SENSED BY PWT FALLS BELOW 45°F, AN ALARM SIGNAL SHALL INDICATE AT THE DCP AND ECC. IF THIS TEMPERATURE FALLS BELOW 40°F, AS SENSED BY PWT, THE SUPPLY AND RETURN FANS SHALL SHUT DOWN AND A CRITICAL ALARM SHALL INDICATE AT THE DIGITAL CONTROL PANEL AND ECC. TSL SHALL BE HARDWIRED TO THE SUPPLY FAN UFD AND UNIT SHALL BE SHUTDOWN IN HAND/AUTO OR BYPASS MODE. TSL WILL REQUIRE MANUAL RESET AT THE DEVICE.

6. AUTOMATIC SHUTDOWN/RESTART

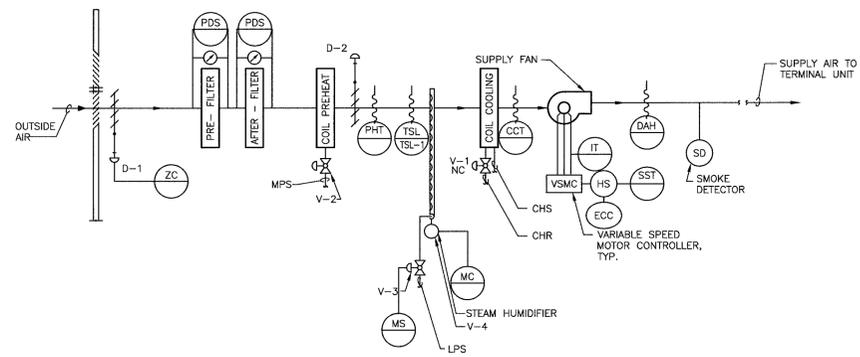
6.1 WHEN SMOKE IS DETECTED BY DUCT SMOKE DETECTOR, SD, THE SUPPLY FAN SHALL SHUT "OFF" AND AN ALARM SIGNAL SHALL BE TRANSMITTED TO THE FIRE ALARM SYSTEM.

6.2 EXHAUST FANS SERVING AREA OF THE SUPPLY FAN SHALL CONTINUE TO RUN. SUPPLY AND RETURN FANS SHALL RESTART WHEN FIRE ALARM CIRCUIT IS RESET.

7. EMERGENCY CONSTANT SPEED OPERATION

7.1 UPON FAILURE OF THE VSMC, THE SUPPLY AND RETURN FANS SHALL BE STARTED/STOPPED MANUALLY AT THE DIGITAL CONTROL PANEL OR THE ECC THROUGH THE BY-PASS STARTER. FANS SHALL THEN BE OPERATED AT CONSTANT SPEED.

D4 POINTS LIST FOR CONSTANT VOLUME AIR HANDLING UNIT WITH MINIMUM OUTSIDE AIR
 NOT TO SCALE



F4 CONSTANT AIR VOLUME AIR HANDLING UNIT 100% OUTSIDE AIR CONTROL DIAGRAM
 NOT TO SCALE

FULLY SPRINKLERED
 BID DOCUMENTS
 FOR CONSTRUCTION

ISSUED FOR BID Revisions	9-7-2017 Date	VA WESTERN NEW YORK HEALTHCARE SYSTEM 3495 BAILEY AVENUE BUFFALO, NEW YORK 14215	 Architecture Engineering Design-Build 200 Envoy Circle, Suite 201 Louisville, KY 40299 www.paradigmusa.com		MANAGER	DATE	ENGINEERING MANAGER	DATE	Drawing Title	Project Title	Date
					INFECTION CONTROL	DATE	MANAGER	DATE	MECHANICAL CONTROL DETAILS	BUFFALO GU AHU	09-07-2017
											Station No.
											528
											Building Number
											1
											Checked
											KLP
											Drawn
											JDM
											Location
											V.A.M.C. BUFFALO, NEW YORK
											17-s06-MH502

