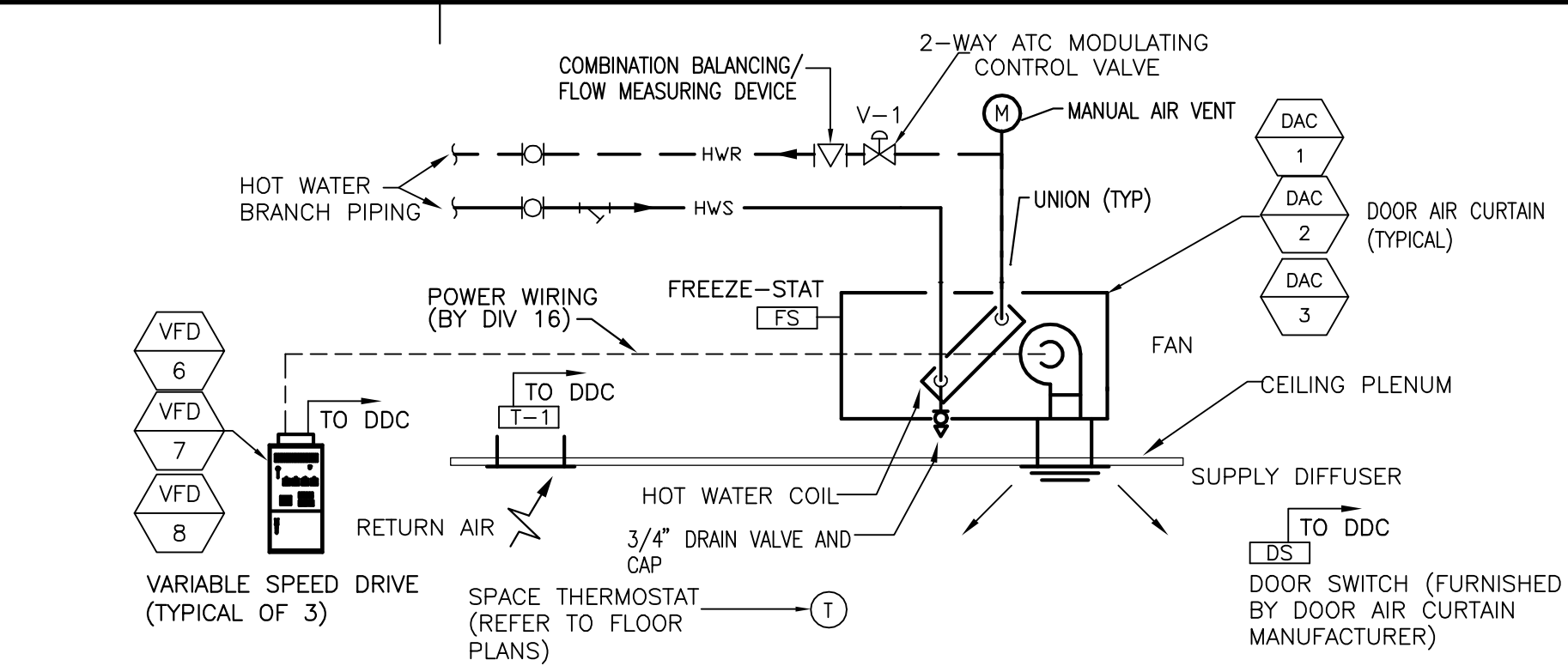


AHU	CONNECTED SUPPLY FAN CFM	CONNECTED RETURN FAN CFM	FIXED OFFSET SUP - RET	RETURN AIRFLOW SCALE %	CORRESPONDING RETURN FAN SETPOINT
AHU-6ED				95	

NOTE: VALUES LISTED ON THIS TABLE ARE FOR CURRENT DESIGN AND WILL CHANGE IN THE FUTURE.

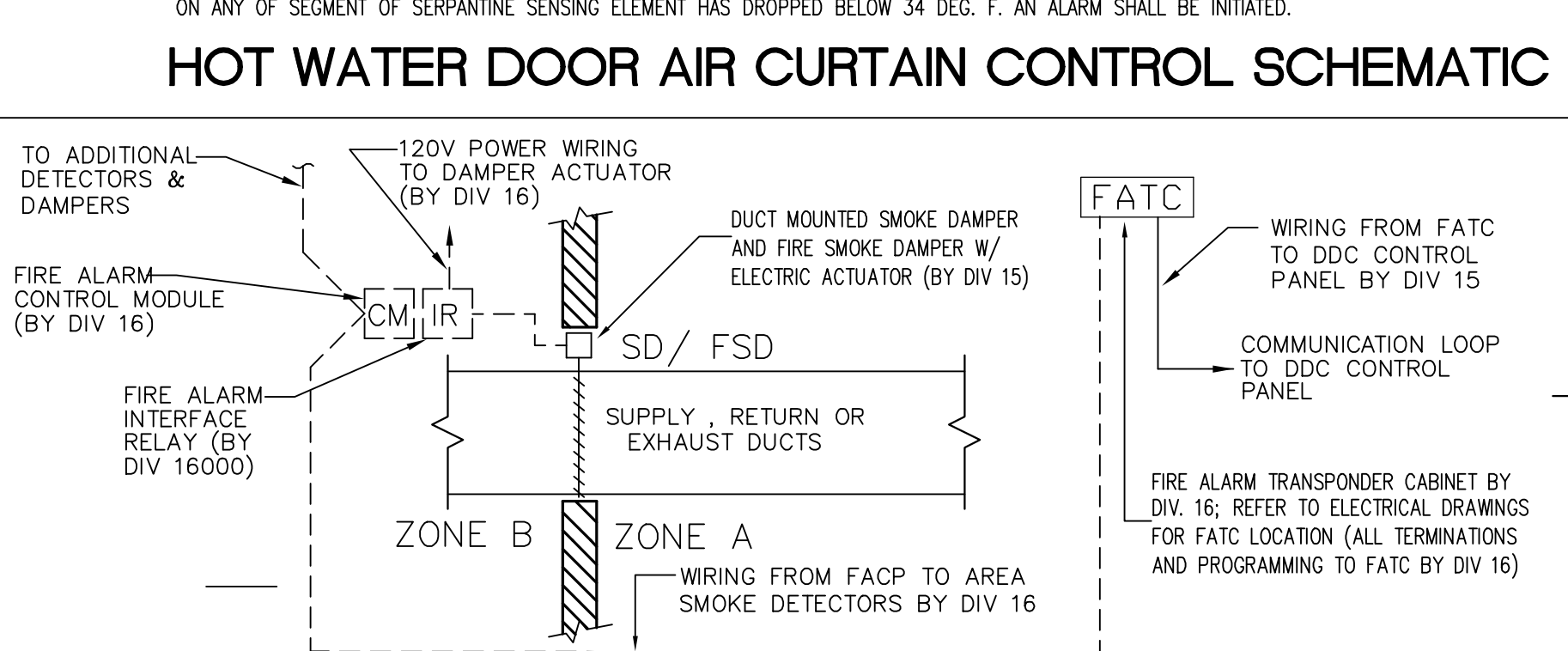
- ONCE SUPPLY FAN (SF-1) AND RETURN FAN (RF-1) HAVE STARTED, MINIMUM OUTDOOR AIR DAMPER (ACD-4) SHALL OPEN AND MODULATE TO MAINTAIN THE MINIMUM OUTDOOR AIRFLOW SETPOINT (AS SENSED BY AFS-1A) BY MODULATING THE MINIMUM OUTDOOR AIR DAMPER (ACD-4) OPEN ON A DROP IN AIRFLOW AND CLOSED ON A RISE IN AIRFLOW.
- THE RELIEF DAMPER (ACD-1) SHALL BE MODULATED TO RELIEVE EXCESS RETURN AIR NOT REQUIRED BY THE AIR HANDLING UNIT. RETURN PRESSURE STATIC PRESSURE (AS SENSED BY SP-4) SHALL BE MAINTAINED AT 0.1" W.G. (ADJUSTABLE) BY MODULATING RELIEF AIR DAMPER (ACD-1) OPEN ON A RISE IN PRESSURE AND CLOSED ON A DROP IN PRESSURE BELOW THE STATIC PRESSURE SETPOINT.
- THE AIR HANDLING UNIT SHALL BE PROVIDED WITH AN ECONOMIZER CONTROL CYCLE. THIS MODE OF OPERATION SHALL BE ENABLED WHENEVER THE OUTDOOR AIR ENTHALPY IS LOWER THAN THE RETURN AIR ENTHALPY. IN ECONOMIZER MODE, THE MIN O.A. DAMPER SHALL MODULATE BETWEEN ITS MIN. O.A. SETPOINT AND ITS MAX. OPEN POSITION TO MAINTAIN THE SUPPLY DISCHARGE AIR TEMPERATURE SETPOINT. WHEN THE MIN O.A. DAMPER IS 100% OPEN AND THE SUPPLY AIR DISCHARGE TEMPERATURE RISES ABOVE SETPOINT THE DDC CONTROLLER SHALL KEEP THE MIN O.A. DAMPER 100% OPEN AND MODULATE ECONOMIZER DAMPER #1 (ACD-3A) OPEN BETWEEN 0% AND 100% WHILE MODULATING THE RETURN AIR DAMPER (ACD-2) CLOSED BETWEEN 0% AND 50% CLOSED TO MAINTAIN SETPOINT. WHEN ECONOMIZER DAMPER #1 IS 100% OPEN AND THE SUPPLY AIR DISCHARGE TEMPERATURE RISES ABOVE SETPOINT THE DDC CONTROLLER SHALL KEEP (ACD-3A) 100% OPEN AND MODULATE ECONOMIZER DAMPER #2 (ACD-3B) OPEN FROM 0% TO 100% WHILE MODULATING THE RETURN AIR DAMPER (ACD-2) CLOSED BETWEEN 50% AND 100% CLOSED TO MAINTAIN SETPOINT. THE RETURN AIR DAMPER 100% OPEN POSITION SHALL BE DETERMINED BY THE BALANCER DURING THE TESTING AND BALANCING PHASE. UPON A DROP BELOW SUPPLY AIR DISCHARGE TEMPERATURE SETPOINT ECONOMIZER DAMPER (ACD-3B) SHALL MODULATE CLOSED AND RETURN AIR DAMPER (ACD-2) SHALL MODULATE OPEN 50%, FOLLOWED BY DAMPER ACD-3A MODULATING CLOSED AND RETURN AIR DAMPER (ACD-2) MODULATING TO FULLY OPEN AS REQUIRED TO MAINTAIN SETPOINT. UPON A FURTHER DROP IN DISCHARGE AIR TEMPERATURE THE MIN O.A. DAMPER SHALL MODULATE DOWN TO ITS MIN O.A. CONTROL SETPOINT.
- WHEN THE SUPPLY AIR TEMPERATURE EXCEEDS SETPOINT BY 2°F FOR 5 MINUTES (ADJ.) AND OUTDOOR AIR ECONOMIZER DAMPERS (ACD-3A AND ACD-3B) ARE AT THEIR FULLY OPEN POSITIONS, MECHANICAL COOLING SHALL BE MODULATED ON TO SUPPLEMENT THE ECONOMIZER, CHILLED WATER VALVE (CV-1) SHALL BE MODULATED OPEN TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT AS SENSED BY (T-3).
- WHEN THE OUTDOOR AIR ENTHALPY AS SENSED BY TEMPERATURE SENSOR (T-1) AND HUMIDITY SENSOR (H-1) EXCEEDS RETURN AIR ENTHALPY (CALCULATED FROM RETURN AIR TEMPERATURE AND HUMIDITY SENSORS (T-4 AND H-2)), THE ECONOMIZER CYCLE SHALL BE LOCKED OUT. ECONOMIZER DAMPERS (ACD-3A AND ACD-3B) SHALL CLOSE COMPLETELY, RETURN AIR DAMPER (ACD-2) SHALL OPEN COMPLETELY, AND MIN O.A. DAMPER ACD-4 SHALL RETURN TO MAINTAIN ITS MINIMUM AIRFLOW SETPOINT.
- WHEN THE ECONOMIZER CYCLE IS LOCKED OUT, CHILLED WATER COIL VALVE (CV-1) SHALL MODULATE TO MAINTAIN SUPPLY AIR DISCHARGE TEMPERATURE AS SENSED BY TEMPERATURE SENSOR (T-3).
- WHEN THE SUPPLY AIR TEMPERATURE DROPS BELOW SETPOINT BY 2°F FOR 5 MINUTES (ADJ.) AND THE CHILLED WATER VALVE (CV-2) HAS MODULATED TO THE FULLY CLOSED POSITION, THEN THE HEATING CYCLE SHALL INITIATE. CONTROL VALVE (CV-3) SHALL MODULATE TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT AS SENSED BY TEMPERATURE SENSOR (T-3). THIS PROCESS SHALL REVERSE AS THE TEMPERATURE RISES ABOVE SETPOINT.
- UPON A DROP IN RETURN AIR RELATIVE HUMIDITY BELOW 30% (ADJUSTABLE) AS SENSED BY RETURN AIR HUMIDITY SENSOR (H-2), STEAM HUMIDIFIER CONTROL VALVE (CV-3) SHALL MODULATE OPEN TO MAINTAIN RETURN AIR RELATIVE HUMIDITY SETPOINT. MINIMUM OUTDOOR AIR FLOW STATION (AFS-1A) SHALL BE USED TO VERIFY AIRFLOW ABOVE A PRESET MINIMUM AND DISABLE THE OUTPUT SIGNAL TO MODULATING CONTROL VALVE (CV-3) WHENEVER AIRFLOW DROPS BELOW 20% OF THE TOTAL AS SENSED BY (AFS-1B & 1C). MAXIMUM SUPPLY DUCT HUMIDITY SHALL BE MAINTAINED AT 85% RH AS SENSED BY SUPPLY DUCT HUMIDITY SENSOR (H-3). IF HUMIDITY SENSOR H-3 SENSES 85% RH, THE HUMIDIFIER CONTROL VALVE (CV-3) SHALL SHUT OFF.
- THE DDC SYSTEM SHALL CONTINUOUSLY MONITOR THE POSITION OF ALL VAV TERMINAL DAMPER POSITIONS AND HOT WATER REHEAT VALVES IN ZONES ASSOCIATED WITH THEIR RESPECTIVE AIR HANDLING UNIT. THE CONTROL SYSTEM SHALL USE THIS INFORMATION TO RESET SUPPLY AIR TEMPERATURE BETWEEN A MINIMUM OF 50°F AND A MAXIMUM OF 65°F, AND TO RESET SUPPLY STATIC PRESSURE SETPOINT. WHEN ALL HOT WATER CONTROL VALVES ARE AT LEAST PARTIALLY OPEN, THE DDC SYSTEM SHALL RESET SUPPLY AIR TEMPERATURE UPWARD 5°F EVERY 20 MINUTES (ADJ.). IF ALL VAV TERMINAL DAMPERS ARE AT LEAST PARTIALLY CLOSED, THE SUPPLY AIR STATIC PRESSURE SHALL BE RESET DOWNWARD 0.1" W.G. EVERY FIVE MINUTES. IF ONE VAV TERMINAL DAMPER IS OPEN FULLY AND IS CALLING FOR FURTHER COOLING, THE SUPPLY AIR STATIC PRESSURE SETPOINT SHALL BE RESET UPWARD TO ITS DESIGN VALUE. IF THE STATIC PRESSURE SETPOINT REACHES ITS DESIGN VALUE AND A TERMINAL IS STILL CALLING FOR ADDITIONAL COOLING, THE SUPPLY AIR TEMPERATURE SHALL BE RESET BACK DOWNWARD TO ITS DESIGN VALUE AT THE SAME RATE IT WAS RESET UPWARD.



DESCRIPTION	INPUTS		OUTPUTS		ALARMS	FEATURES
	ANALOG	BINARY	ANALOG	BINARY		
DAC-1,2 & 3 DOOR SWITCH						SCHEMATIC START/STOP
DOOR AIR CURTAIN THERMOSTAT (TYP. OF 3)						OPTIMIZED START (ADAP.T)
H.W. CONTROL VALVE (TYP. 3)						TEMP. SETBACK/SETUP
VFD-6, VFD-7 & VFD-8						VALVE CONTROL

NOTES: 1. ALL THE TEMPERATURE SENSORS AND ALL CONTROL SET POINTS SHALL BE ADJUSTABLE.

- ### SEQUENCE OF OPERATION (DOOR AIR CURTAINS DAC-1, DAC-2 AND DAC-3)
- OPERATION ABOVE 45 DEG.F OUTDOOR AMBIENT TEMP. THE DOOR AIR CURTAIN SHALL OPERATE PER THE FOLLOWING SEQUENCE OF OPERATION WHENEVER THE OUTDOOR AMBIENT TEMPERATURE IS ABOVE 45°F AS SENSED BY THE OUTDOOR TEMPERATURE SENSOR.
 - THE DOOR AIR CURTAIN FAN SHALL START WHEN THE DOORS BEGON TO OPEN, AS DETECTED BY AN AUTOMATIC DOOR OPERATION SWITCH (FURNISHED BY THE DOOR AIR CURTAIN MANUFACTURER). A TIME DELAY SHALL OCCUR TO ALLOW THE FAN TO RUN AFTER THE DOORS ARE CLOSED. THE TIME DELAY SHALL BE ADJUSTABLE FROM 30 TO 180 SECONDS.
 - WHEN THE DOORS BEGON TO OPEN AS SENSED BY THE DOOR SWITCH (DS) THE VFD SHALL START THE FAN AT 100% SPEED (ADJ.). WHEN A CALL FOR HEAT IS REQUIRED AND THE DOORS ARE CLOSED THE VFD SHALL CONTROL THE FAN SPEED TO MINIMUM SET POSITION 30% (ADJ.).
 - SPACE THERMOSTAT (T-1) SHALL MODULATE 2-WAY CONTROL VALVE (V-1) AND CYCLE DOOR AIR CURTAIN SUPPLY FAN ON AT 30% SPEED TO MAINTAIN TEMPERATURE WHEN THE SPACE TEMPERATURE DROPS BELOW ITS SETPOINT. UPON A RISE IN TEMPERATURE ABOVE THE SET POINT, THE REVERSE SHALL OCCUR.
 - OPERATION BELOW 45 DEG.F OUTDOOR AMBIENT TEMP. THE DOOR AIR CURTAIN SHALL OPERATE PER THE FOLLOWING SEQUENCE OF OPERATION WHENEVER THE OUTDOOR AMBIENT TEMPERATURE IS BELOW 45°F AS SENSED BY THE OUTDOOR TEMPERATURE SENSOR.
 - WHEN OUTDOOR AMBIENT TEMP IS BELOW 45°F THE DOOR AIR CURTAIN FAN SHALL RUN CONTINUOUSLY AT 50% SPEED (ADJ.). FOR EACH 1°F DROP IN OUTDOOR AMBIENT TEMPERATURE THE RUNNING FAN SPEED SHALL INCREASE BY 1%.
 - SPACE THERMOSTAT (T-1) SHALL MODULATE 2-WAY CONTROL VALVE (V-1) TO MAINTAIN TEMPERATURE WHEN THE SPACE TEMPERATURE DROPS BELOW ITS SETPOINT. UPON A RISE IN TEMPERATURE ABOVE THE SET POINT, THE REVERSE SHALL OCCUR.
 - WHEN THE DOORS BEGON TO OPEN AS SENSED BY DOOR SWITCH (DS) THE VFD SHALL SWITCH THE FAN SPEED TO 100% (ADJ.) WHEN THE DOORS CLOSE THE FAN SHALL RETURN TO ITS PREVIOUSLY CALCULATED SPEED.



- ### SEQUENCE OF OPERATION - AREA SMOKE DAMPERS
- SUPPLY DUCT STATIC PRESSURE SENSOR (SP-2) SHALL PLACE AHU-1 IN DISABLED MODE WHEN DUCT STATIC PRESSURE EXCEEDS 6" WG POSITIVE PRESSURE. RETURN DUCT STATIC PRESSURE SENSOR (SP-3) SHALL SHUT DOWN RETURN FAN (RF-1) WHEN RETURN DUCT NEGATIVE STATIC PRESSURE EXCEEDS 4" WG.
 - WHEN SUPPLY OR RETURN FANS ARE SHUT DOWN ON HIGH OR LOW STATIC PRESSURE SAFETIES, AN ALARM SHALL BE INITIATED AT THE CENTRAL DDC COMPUTER AND AT THE LOCAL CONTROL PANEL. IN ADDITION, AN AUDIBLE ALARM SHALL BE INITIATED IN THE PENTHOUSE.
 - SUPPLY AND RETURN FAN MONITORING AND ALARM (SF-1, RF-1)
 - THE CONTROL SYSTEM SHALL MONITOR THE STATUS OF THE SUPPLY AND RETURN FANS VIA THE RESPECTIVE CURRENT TRANSFORMERS (CT-1 & CT-2). IF ANYTIME THE SUPPLY OR RETURN FANS ARE "ENABLED" AND AFTER A 20 SECOND DELAY THE CONTROL SYSTEM SENSES NO FLUCTUATION IN SIGNAL (ADJ. SET POINT) ACROSS THE FAN, AN ALARM SHALL BE INITIATED.
 - DISCHARGE AIR TEMPERATURE MONITORING AND ALARM (T-3)
 - THE DDC CONTROL SYSTEM SHALL MONITOR THE DISCHARGE AIR TEMPERATURE VIA A TEMPERATURE SENSOR (T-3) LOCATED IN THE SUPPLY DUCT. IF THE DISCHARGE AIR TEMPERATURE DEVIATES MORE THAN 5°F ABOVE OR BELOW SETPOINT FOR A PERIOD OF 5 MINUTES WHILE THE UNIT IS OPERATING, AN ALARM SHALL BE INITIATED AND A MESSAGE SHALL APPEAR AT THE DDC OPERATOR WORKSTATION.
 - VARIABLE FREQUENCY DRIVED (VFD'S) SHALL RESPOND TO SAFETIES IN EITHER NORMAL OR BY-PASS MODE.

DESCRIPTION	INPUTS		OUTPUTS		ALARMS	FEATURES
	ANALOG	BINARY	ANALOG	BINARY		
AREA SMOKE DAMPERS (SD)						SCHEMATIC START/STOP
AREA FIRE/SMOKE DAMPERS (FSD)						OPTIMIZED START (ADAP.T)
						TEMPERATURE SETBACK/SETUP
						VALVE CONTROL



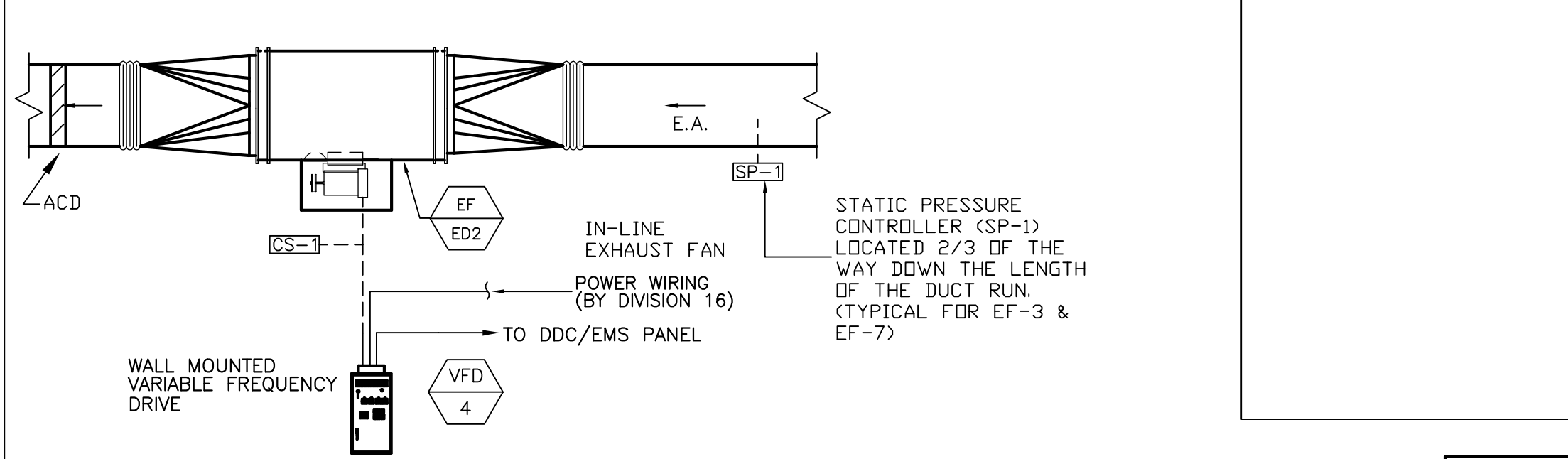
DESCRIPTION	INPUTS		OUTPUTS		ALARMS	FEATURES
	ANALOG	BINARY	ANALOG	BINARY		
EDR: FAN (EF-ED3) (ACD) (CS-1) (VFD-4)						SCHEMATIC START/STOP
DUCT STATIC PRESSURE SP-1						OPTIMIZED START (ADAP.T)
						TEMPERATURE SETBACK/SETUP
						VALVE CONTROL

NOTES: 1. ALL SENSOR SETPOINTS AND ALL CONTROL DEVICES SAHLL BE ADJUSTABLE.

DESCRIPTION	QTY	INPUTS		OUTPUTS		ALARMS	FEATURES	NOTES
		ANALOG	BINARY	ANALOG	BINARY			
AHU FEATURES (AHU-6 ED)	1							
SUPPLY FAN VFD (VFD-1) (CT-1)	1							
RETURN FAN VFD (VFD-2) (CT-2)	1							
AFS MIN O.A. (AFS-1A)	1							
AFS RETURN FAN (AFS-1RA)	1							
AFS SUPPLY FAN INLET #1 (AFS-1A)	1							
AFS SUPPLY FAN INLET #2 (AFS-1B)	1							
OUTDOOR AIR TEMP (T-1)	1							
MIXED AIR TEMP (T-2)	1							
DISCH AIR TEMP (T-3)	1							NOTE 1
RET AIR TEMP (T-4)	1							NOTE 1
COIL FACE AIR TEMP (T-5)	1							NOTE 1
COIL FACE AIR TEMP (T-6)	1							NOTE 1
COIL FACE AIR TEMP (T-7)	1							NOTE 1
ECON DAMPER (ACD-3A)	1							
ECON DAMPER (ACD-3B)	1							
MIN O.A. DAMP (ACD-4)	1							
RET AIR DAMP (ACD-2 / SD-1B)	1							
RELIEF AIR DAMP (ACD-1)	1							
ROUGHING FILTER (OP-5)	1							
PREFILTER (OP-3)	1							
FINAL FILTER (OP-4)	1							
H.W. WATER VALVE (CV-1)	1							
STEAM PRE-HEAT VALVE (CV-2)	1							
HUMIDIFIER (CV-3)	1							
SUP SMOKE DETECTOR	1							
RET SMOKE DETECTOR	1							
SUP SMOKE DAMPER (SD-1)	1							
RET SMOKE DAMPER (SD-2)	1							
DUCT STATIC PRESS (SP-1A & SP-1B)	2							
DISCH STATIC (SP-2)	1							
RET STATIC (SP-3)	1							
RET PLENUM STATIC PRESS (SP-4)	1							
O.A. HUMIDITY (H-1)	1							
SUP HUMIDITY (H-3)	1							
RET HUMIDITY (H-2)	1							

NOTES: 1. TEMPERATURE SENSOR SHALL BE AVERAGING SERPENTINE ELEMENT TYPE (17"-0" MIN LENGTH).
2. INPUTS, OUTPUTS, AND/OR FEATURES NOT LISTED IN THE TABLE, BUT REQUIRED TO ACCOMPLISH THE SEQUENCE OF OPERATION ON THIS DRAWING SHALL BE PROVIDED.

- ### AIR HANDLING UNIT SUPPLY AND RETURN AIR SYSTEMS SEQUENCE OF OPERATION - AIR HANDLING UNITS AHU-6ED AND RF-6ED
- A. GENERAL
- THE SEQUENCE LISTED BELOW APPLIES TO EACH AIR HANDLING UNIT (AHU-ED). WHERE A REFERENCE IS MADE TO A COMPONENT IN AHU-1 IT SHALL BE IMPLIED THAT IT APPLIES TO THE CORRESPONDING COMPONENT IN ALL OTHER AIR HANDLING UNITS.
 - THE UNIT SHALL BE ENABLED AND DISABLED FROM A DIRECT DIGITAL CONTROL PANEL LOCATED IN THE PENTHOUSE. THE UNIT SHALL TYPICALLY RUN CONTINUOUSLY. ALL CONTROL FUNCTIONS SHALL BE ACCOMPLISHED THROUGH THE NEW DIRECT DIGITAL CONTROL SYSTEM.
- B. DISABLED MODE
- WHEN THE UNIT IS DISABLED SUPPLY FAN (SF-1) SHALL BE OFF AND RETURN FAN (RF-1) SHALL BE OFF. ALL OF THE ASSOCIATED SUPPLY SMOKE DAMPERS AND RETURN AIR SMOKE DAMPERS SHALL BE CLOSED. THE RELIEF AIR DAMPER (ACD-1), RETURN AIR DAMPER (ACD-2), ECONOMIZER DAMPERS (ACD-3), AND MINIMUM OUTDOOR AIR DAMPER (ACD-4) SHALL BE CLOSED. MODULATING HUMIDIFIER VALVE (CV-3) SHALL BE CLOSED. CHILLED WATER CONTROL VALVE (CV-1) SHALL BE CLOSED. STEAM PRE-HEAT COIL CONTROL VALVE (CV-2) SHALL BE OPEN.
- C. NORMAL OPERATING MODE AHU'S-1ED
- WHEN THE UNIT IS ENABLED, ALL OF THE ASSOCIATED DUCT MOUNTED SUPPLY AND RETURN SMOKE DAMPERS (SD-1 AND SD-2/SD-1B), RETURN AIR DAMPER (ACD-2), AND MINIMUM OUTDOOR AIR DAMPER (ACD-4) SHALL OPEN. AFTER A 60 SECOND TIME DELAY AND SUPPLY AND RETURN AIR SMOKE DAMPERS HAVE PROVEN OPEN VIA THEIR END SWITCHES, SUPPLY FAN (SF-1) AND RETURN FAN (RF-1) SHALL START AND THEIR RESPECTIVE VARIABLE FREQUENCY DRIVES SHALL RAMP UP THE SPEED OF THE FANS AT A RATE NO GREATER THAN 0.5 HERTZ PER SECOND (ADJUSTABLE THROUGH SOFTWARE). THE FANS SHALL THEN BE PLACED UNDER SUPPLY STATIC PRESSURE/RETURN CFM CONTROL. THE SPEED OF SUPPLY FAN (SF-1) SHALL BE MODULATED TO MAINTAIN STATIC PRESSURE SETPOINT FOR DUCT STATIC PRESSURE SENSOR (SP-1). THE SETPOINT SHALL BE DETERMINED DURING THE TESTING AND BALANCING PHASE (INITIAL SETPOINT SHALL BE 1.0" W.C. UNTIL A FINAL VALUE IS DETERMINED THROUGH TESTING AND BALANCING).
 - THE RETURN FAN SPEED SHALL BE MODULATED TO TRACK SUPPLY AIRFLOW AS SENSED BY AIRFLOW MEASURING STATIONS (AFS-1B & 1C) (SUPPLY) AND (AFS-1A) (RETURN). THE DDC SYSTEM SHALL MONITOR SUPPLY CFM AS SENSED BY SUMMING (AFS-1B & 1C) AND CALCULATE A RETURN AIRFLOW SETPOINT BY SUBTRACTING A FIXED OFFSET AND SCALING THE RESULT BY A FIXED ADJUSTABLE PERCENTAGE FOR PRESSURATION. THE FIXED ADJUSTABLE PERCENTAGE SHALL BE INITIALLY SET AT 90%. THE INITIAL RETURN FAN SETPOINTS FOR THE AIR HANDLERS UNDER THIS PROJECT ARE SHOWN ON THE TABLE BELOW AND SHOULD BE VERIFIED BY THE PROJECT BALANCING CONTRACTOR. THE SUPPLY AND RETURN AIR CONNECTED CFM'S SHALL BE DETERMINED BY THE BALANCER THROUGH INSPECTION OF THE CONSTRUCTION DOCUMENTS PER SPECIFICATION SECTION 15990. THE CALCULATED RETURN AIR FLOW SETPOINT SHALL BE MAINTAINED BY MODULATING THE SPEED OF RETURN AIR FAN (RF-1) VIA ITS VARIABLE FREQUENCY DRIVE TO SATISFY THE RETURN AIRFLOW SETPOINT AS SENSED BY AIRFLOW STATION (AFS-1RA). THE FAN SPEED SHALL INCREASE ON A DROP IN AIRFLOW BELOW SETPOINT AND SHALL DECREASE ON A RISE IN AIRFLOW ABOVE SETPOINT.



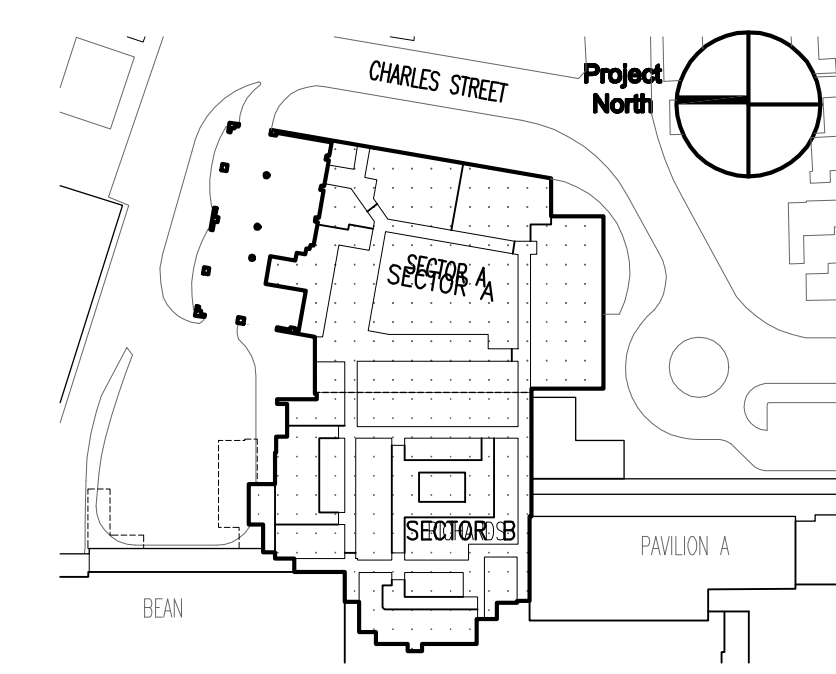
- ### SEQUENCE OF OPERATION - DECONTAMATION EXHAUST SYSTEMS (EF-ED3)
- A. THE ISOLATION ROOM EXHAUST FANS SHALL BE ENABLED AND DISABLED FROM THE DDC CONTROL PANEL. THE FAN SHALL TYPICALLY RUN CONTINUOUSLY.
- DISABLED MODE:
- WHEN THE EXHAUST FANS EF-ED3 ARE DISABLED, THE FAN SHALL BE OFF AND THE AUTOMATIC CONTROL DAMPER (ACD) SHALL CLOSE.
- B. NORMAL OPERATING MODE:
- WHEN THE FANS ARE COMMANDED TO START, THE CONTROL DAMPER ACD SHALL OPEN. ONCE THE DAMPERS HAS BEEN PROVED OPEN VIA THE ASSOCIATED END SWITCH, THE EF-ED3 FAN SHALL START.
 - WHEN THE VFD-4 HAND/OFF/AUTOMATIC SWITCH (HOA) IS IN THE AUTO POSITION THEN THE EXHAUST FAN VARIABLE FREQUENCY DRIVE SHALL RAMP UP THE SPEED OF THE EF-ED3 FAN FROM 0HZ TO 60 HZ NO GREATER THAN 0.5 HZ PER SECOND. THE STATIC PRESSURE CONTROLLER SHALL BE SET DURING THE TESTING, ADJUSTING, & BALANCING BY THE TAB CONTRACTOR. INITIALLY SET FOR 0.7" IN. W.C. WITH ADJUSTED BY TAB TO MAINTAIN 100 CFM EXHAUST AIR FLOW WITH ALL EXHAUST TB BOXES 100% MAXIMUM. THE STATIC PRESSURE CONTROLLER SHALL HAVE AN ADJUSTABLE RANGE FROM 0.5" TO 3" IN. W.C. WHENEVER THE VFD DRIVES HAND/OFF/AUTOMATIC HOA SWITCH IS IN THE HAND POSITION THE FAN WILL BE PLACED IN MANUAL OPERATION FULL DRIVE SPEED, AND WHENEVER THE (HOA) SWITCH IS PLACED IN OFF POSITION THE FAN SHALL BE DEENERGIZED. WHENEVER THE INDOOR DECONTAMATION ROOM PRESSURE CONTROLLER/MONITOR SENSING A DROP IN ROOM PLACED IN OFF POSITION THE FAN SHALL BE LOWER. THE VFD-3 SHALL BE COMMANDED BY THE DDC CONTROL SYSTEM TO INCREASE THE SPEED OF THE EXHAUST FAN UNTIL ROOM PRESSURE SET POINT OF -0.01 INCH W.C. (ADJ.) IS SATISFIED.
- C. SAFETIES, MONITORING, AND ALARMS:
- THE DDC/EMS CONTROL SYSTEM SHALL MONITOR THE STATUS OF EACH EXHAUST FAN EF-ED3 VIA THE ASSOCIATED CURRENT SENSOR. IF ANYTIME THE EXHAUST FANS ARE STARTED AND AFTER A 20-SECOND DELAY THE CONTROL SYSTEM SENSES SENSES LOW OR ZERO CURRENT, THEN AN ALARM SHALL BE INITIATED. THE CURRENT SENSOR SHALL BE CONTINUOUSLY MONITORING AND SHALL INITIATE AN ALARM IF THERE IS A CHANGE IN FAN STATUS DURING THE NORMAL OPERATION.

DECONTAMATION ROOM EXHAUST SYSTEMS CONTROL SCHEMATIC

General Notes:

MARK	ISSUE DATE	DESCRIPTION
A1	01/10/08	ADDENDUM NO. 1
BID	12/14/07	BID SET

Issue Log



Key Plan

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Maine Medical Center
ED Expansion and Renovation
Portland, Maine MMC Project No. 21843

Drawing Title
HVAC AIR HANDLING UNIT CONTROL SEQUENCE AND POINTS LIST

Drawn by MJC Commission No. 4696
Approved by MJC Date Issued 12/14/07

Phase / Package Number Sheet Number
H500

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