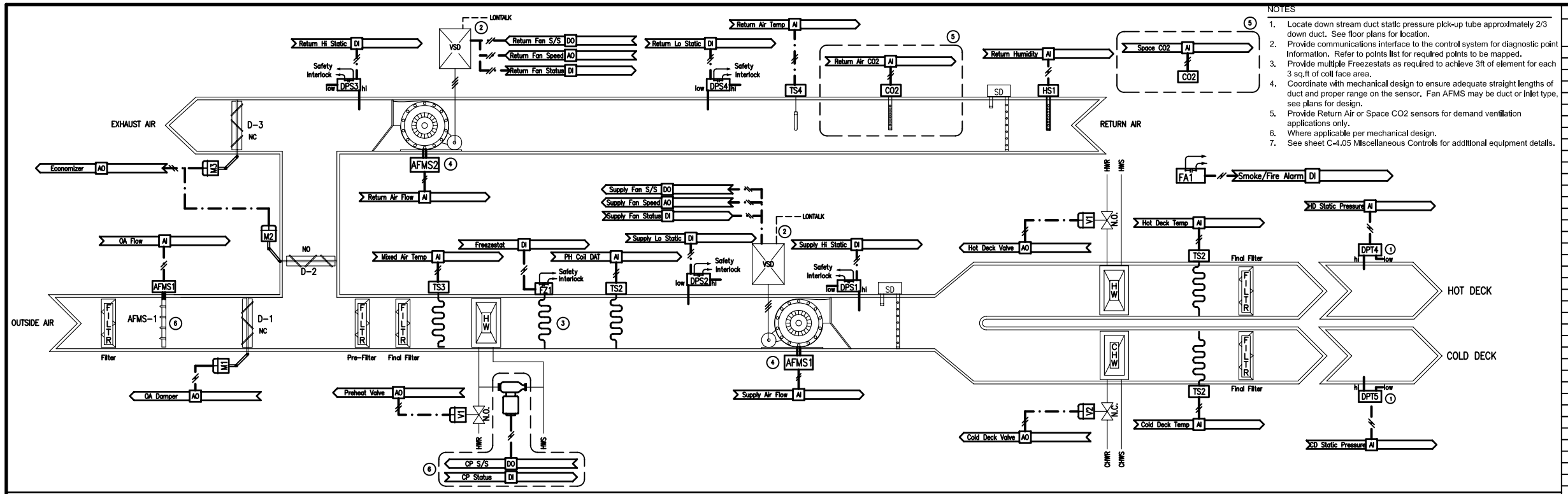
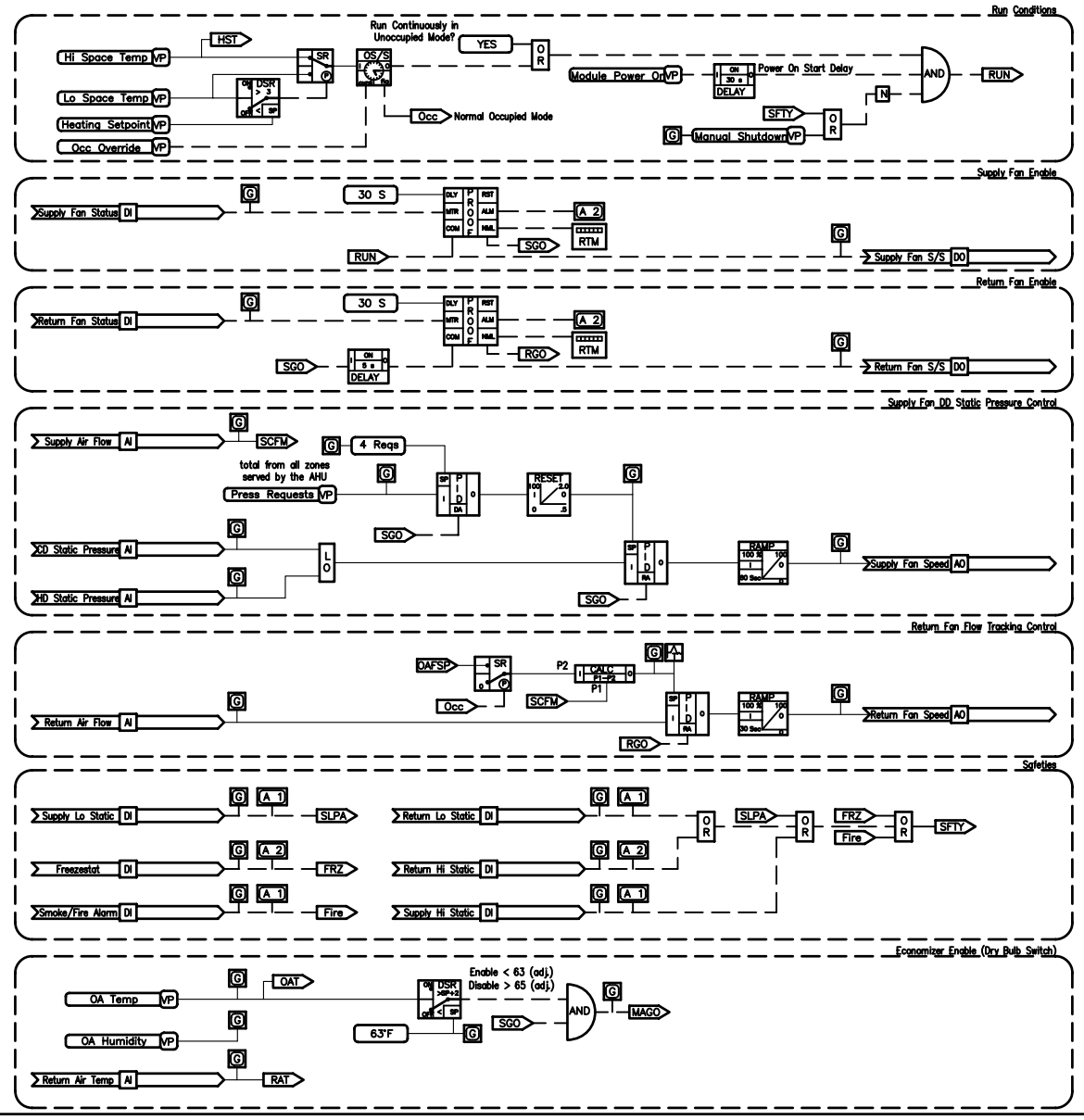


NOTES

1. Locate down stream duct static pressure pick-up tube approximately 2/3 down duct. See floor plans for location.
2. Provide communications interface to the control system for diagnostic point information. Refer to points list for required points to be mapped.
3. Provide multiple Freezestats as required to achieve 3ft of element for each 3 sq.ft of coil face area.
4. Coordinate with mechanical design to ensure adequate straight lengths of duct and proper range on the sensor. Fan AFMS may be duct or inlet type, see plans for design.
5. Provide Return Air or Space CO2 sensors for demand ventilation applications only.
6. Where applicable per mechanical design.
7. See sheet C-4.05 Miscellaneous Controls for additional equipment details.

DUAL DUCT VAV AH CONTROL, NO EXHAUST AT MINIMUM OA FLOW



Software Logic Diagram

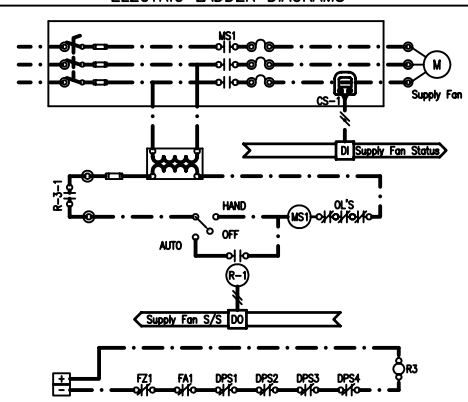
POINTS LIST

ADDRESS	POINT DESCRIPTOR	POINT TYPE DI	AI	DO	AO	VP	REMARKS
	Supply Fan S/S			•			
	Supply Fan Status	•					
	Supply Fan Speed				•		
	Return Fan S/S			•			
	Return Fan Status	•					
	Return Fan Speed				•		
	HD Static Pressure		•				See Note 1
	CD Static Pressure		•				See Note 1
	Hot Deck Temp		•				
	Cold Deck Temp		•				
	PH Coil DAT		•				
	Freezestat	•					
	Mixed Air Temp		•				
	Return Air Temp		•				
	Return Air CO2		•				See Note 5
	Space CO2		•				See Note 5
	Hot Deck Valve				•		
	Cold Deck Valve				•		
	Preheat Valve				•		
	Circ Pump S/S			•			See Note 6
	Circ Pump Status	•					See Note 6
	Economizer				•		
	OA Damper				•		
	OA Flow		•				
	Supply Air Flow		•				
	Return Air Flow		•				
	Smoke/Fire Alarm	•					
	Supply Hi Static	•					
	Supply Lo Static	•					
	Return Hi Static	•					
	Return Lo Static	•					
	VFD Alarm/Fault					•	Interface Pt. (Typ. ea VFD)
	VFD Fault Code					•	Interface Pt. (Typ. ea VFD)
	VFD Spd Feedback					•	Interface Pt. (Typ. ea VFD)
	VFD KW					•	Interface Pt. (Typ. ea VFD)
	VFD In Bypass					•	Interface Pt. (Typ. ea VFD)

LOGIC VARIABLES

BINARY	ANALOG	DESCRIPTION
Occ		ON WHEN OCCUPIED MODE ACTIVE
RUN		ON WHEN UNIT COMMANDED TO START
SBH		ON WHEN SETBACK HEATING MODE ACTIVE
SBC		ON WHEN SETBACK COOLING MODE ACTIVE
WUP		ON WHEN WARM-UP MODE ACTIVE
CDN		ON WHEN COOL-DOWN MODE ACTIVE
SGO		ON WHEN SUPPLY FAN ENERGIZED AND STATUS PROVEN
RGO		ON WHEN RETURN FAN ENERGIZED AND STATUS PROVEN
MAGO		ON WHEN OA CONDITIONS ALLOW ECONOMIZER CONTROL
SLPA		ON WHEN SUPPLY LOW STATIC SAFETY SWITCH IS IN ALARM
FRZ		ON WHEN FREEZESTAT IS IN ALARM
Fire		ON WHEN FIRE ALARM IS ACTIVE
SFTY		ON WHEN ANY UNIT SHUTDOWN ALARM IS ON
	SCFM	VARIABLE VALUE OF SUPPLY AIR FLOW
	HST	VARIABLE CALCULATED VALUE OF HIGHEST SPACE TEMPERATURE
	CDT	VARIABLE VALUE OF COLD DECK SUPPLY AIR TEMPERATURE
	HDT	VARIABLE VALUE OF HOT DECK SUPPLY AIR TEMPERATURE
	OAT	VARIABLE VALUE OF OUTSIDE AIR TEMPERATURE
	MAT	VARIABLE VALUE OF MIXED AIR TEMPERATURE
	CDSP	VARIABLE CALCULATED VALUE OF COLD DECK TEMPERATURE SETPOINT
	MINOA	VARIABLE CALCULATED VALUE OF MINIMUM OA FLOW SETPOINT
	OAFLW	VARIABLE VALUE OF OA FLOW
	EPCT	VARIABLE CALCULATED VALUE OF ECONOMIZER PID OUTPUT

ELECTRIC LADDER DIAGRAMS



SUPPLY FAN VSD (TYPICAL FOR RETURN FAN VSD)

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REVISIONS

NO.	DESCRIPTION	DATE

THE UNIVERSITY of NORTH CAROLINA at CHAPEL HILL

The University of North Carolina
Chapel Hill, North Carolina

Standard Control Drawings

Eng	RR
Drawn	BMV
Chkd	---
Appd	---
Issued	06/06/2010
Job No.	----
Scale	N/A
Proj Code	

REV. 5

DUAL DUCT VAV AH CONTROL

00 OF 00
SHEET NUMBER

C-1.09

DWG NUMBER