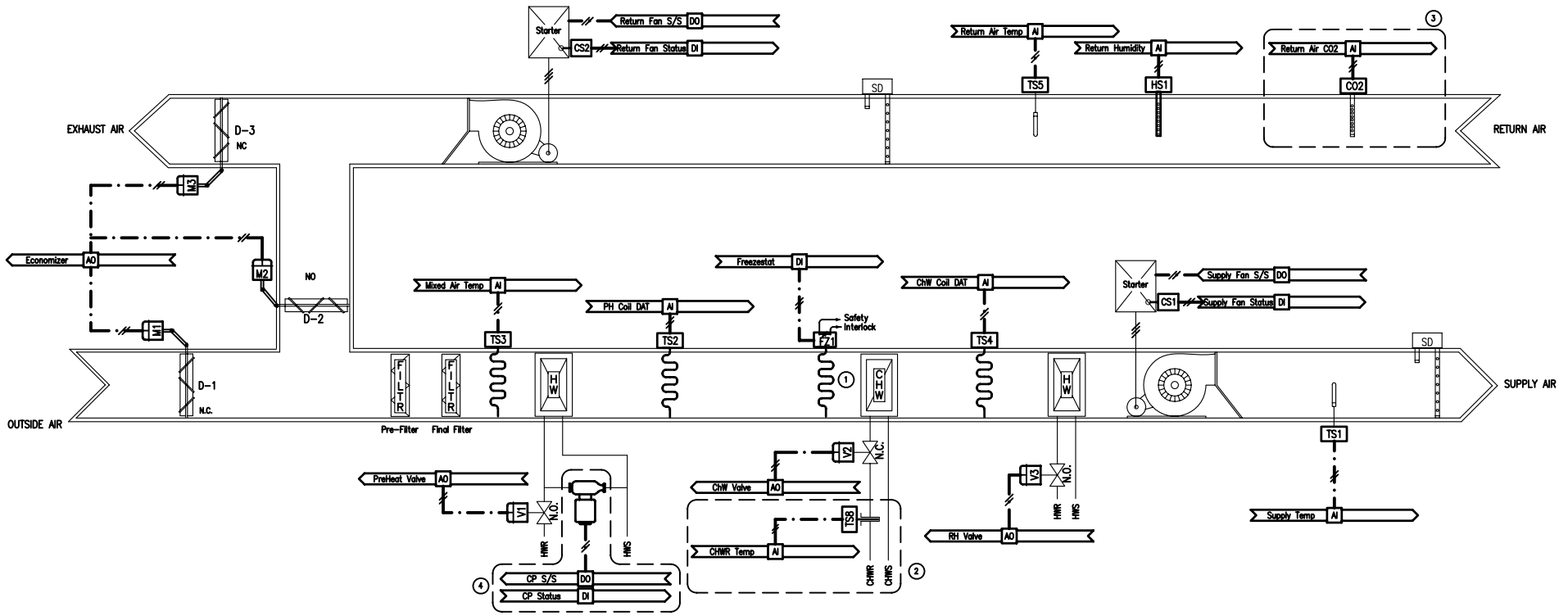
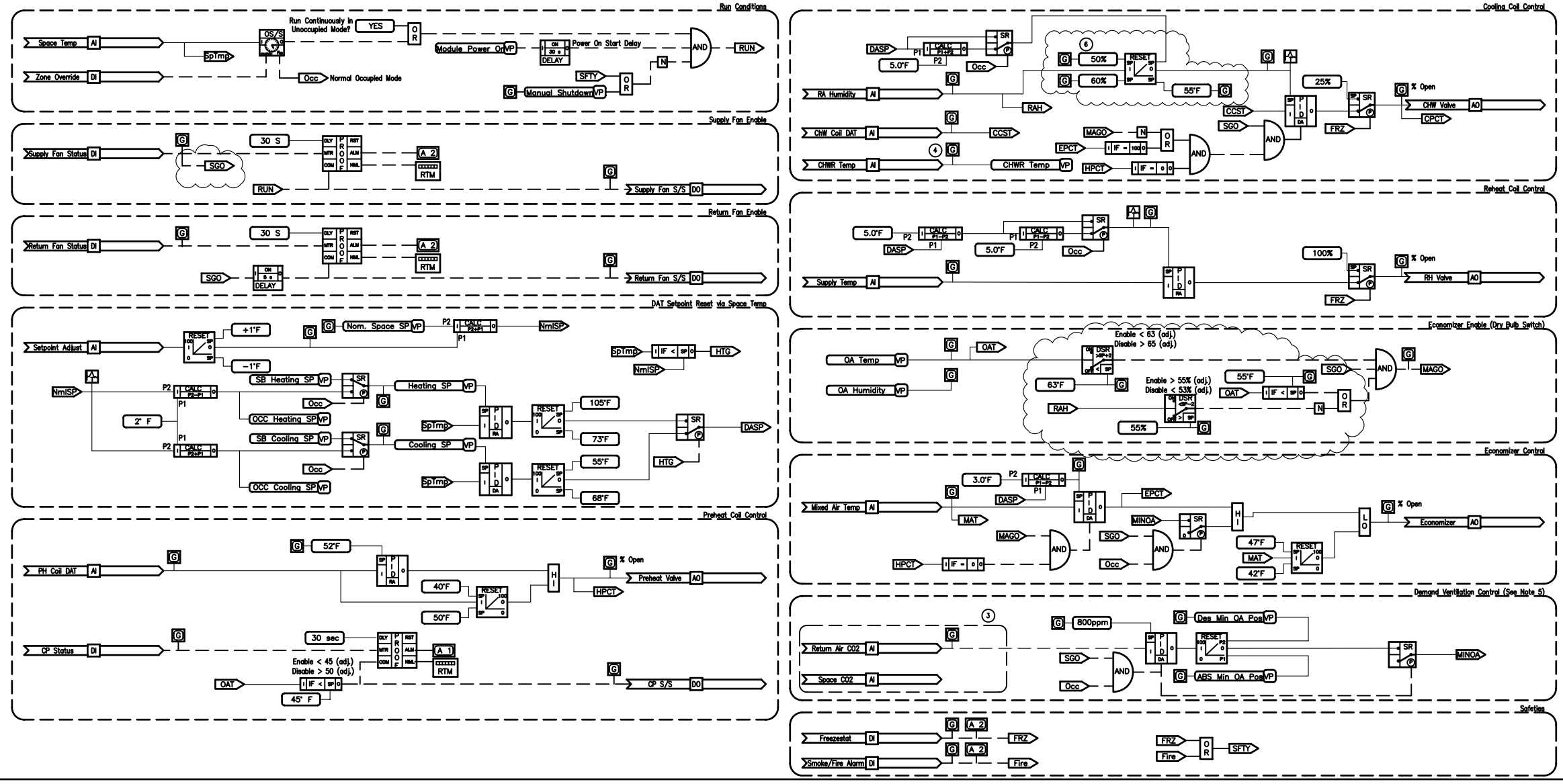


NOTES

1. Provide multiple Freezestats as required to achieve 3ft of element for each 3 sq.ft of coil face area.
2. Provide CHWR temperature well and sensor on all units with coil capacity greater than 10 tons.
3. Provide Return Air or Space CO2 sensors as directed.
4. When applicable per mechanical design.
5. See sheet C-4.05 Miscellaneous Controls for additional equipment details.
6. Reset values shown should be adjusted for optimized building and energy performance.

SINGLE DUCT CV AH WITH PREHEAT, CHW & REHEAT COIL, CO2 VENTILATION & RETURN FAN



Software Logic Diagram

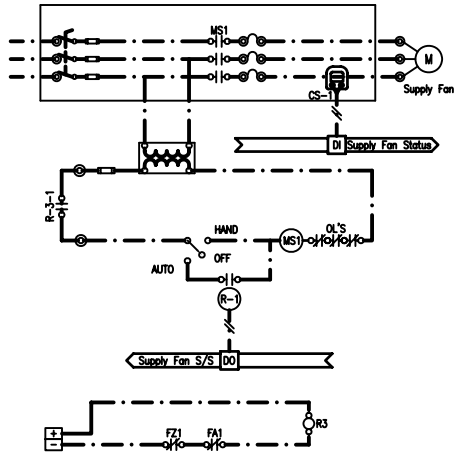
POINTS LIST

ADDRESS	POINT DESCRIPTOR	POINT TYPE DI	AI	DO	AO	VP	REMARKS
	Supply Fan S/S			•			
	Supply Fan Status	•					
	Return Fan S/S			•			
	Return Fan Status	•					
	Supply Temp		•				
	PH Coil DAT		•				
	Freezestat	•					
	Mixed Air Temp		•				
	ChW Coil DAT		•				
	Space Temp		•				
	Setpoint Adjust		•				
	Zone Override	•					
	Return Air Temp		•				
	RA Humidity		•				
	PreHeat Valve					•	
	Circ Pump S/S			•			See Note 4
	Circ Pump Status	•					See Note 4
	CHW Valve				•		
	RH Valve				•		
	Economizer				•		
	Space/Return CO2		•				See Note 3
	CHWR Temp		•				See Note 2
	Fire Alarm	•					

LOGIC VARIABLES

BINARY	ANALOG	DESCRIPTION
Occ		ON WHEN OCCUPIED MODE ACTIVE
RUN		ON WHEN UNIT COMMANDED TO START
SGO		ON WHEN SUPPLY FAN ENERGIZED AND STATUS PROVEN
MAGO		ON WHEN OA CONDITIONS ALLOW ECONOMIZER CONTROL
DHUM		ON WHEN RA HUMIDITY LOWER THAN DEHUMIDIFICATION SETPOINT
HTG		ON WHEN SPACE TEMPERATURE LOWER THAN NORMAL SPACE SETPOINT
FRZ		ON WHEN FREEZESTAT IS IN ALARM
Fire		ON WHEN FIRE ALARM IS ACTIVE
SFTY		ON WHEN UNIT SHUTDOWN ALARM IS ON
	SpTmp	VARIABLE VALUE OF SPACE TEMPERATURE
	NmlSP	VARIABLE CALCULATED VALUE OF NORMAL SPACE TEMPERATURE SETPOINT
	OAT	VARIABLE VALUE OF OUTSIDE AIR TEMPERATURE
	SAT	VARIABLE VALUE OF SUPPLY AIR TEMPERATURE
	PHT	VARIABLE VALUE OF PREHEAT AIR TEMPERATURE
	MAT	VARIABLE VALUE OF MIXED AIR TEMPERATURE
	DASP	VARIABLE CALCULATED VALUE OF DISCHARGE TEMPERATURE SETPOINT
	CPCT	VARIABLE CALCULATED VALUE OF CHW VALVE POSITION
	HPCT	VARIABLE CALCULATED VALUE OF HW VALVE POSITION
	EPCT	VARIABLE CALCULATED VALUE OF ECONOMIZER PID OUTPUT
	CCST	VARIABLE VALUE OF COOLING COIL SUPPLY AIR TEMPERATURE
	DHSP	VARIABLE VALUE OF DEHUMIDIFICATION SETPOINT
	RAH	VARIABLE VALUE OF RETURN AIR HUMIDITY
	MINOA	VARIABLE CALCULATED VALUE OF MINIMUM ECON DAMPER POSITION

ELECTRIC LADDER DIAGRAMS



SUPPLY FAN VSD (TYPICAL FOR RETURN FAN VSD)

© 2008 FACILITY DYNAMICS ENGINEERING

REVISIONS

NO.	DESCRIPTION	DATE

The University of North Carolina at Chapel Hill, North Carolina

Standard Control Drawings

Eng	RR
Drawn	BMV
Chkd	---
Appd	---
Issued	6/15/2012
Job No.	----
Scale	N/A
Proj Code	

REV. 6

SINGLE DUCT CV AH WITH PREHEAT, CHW & REHEAT COIL, CO2 VENTILATION & RETURN FAN

00 OF 00
SHEET NUMBER

C-1.04

DWG NUMBER