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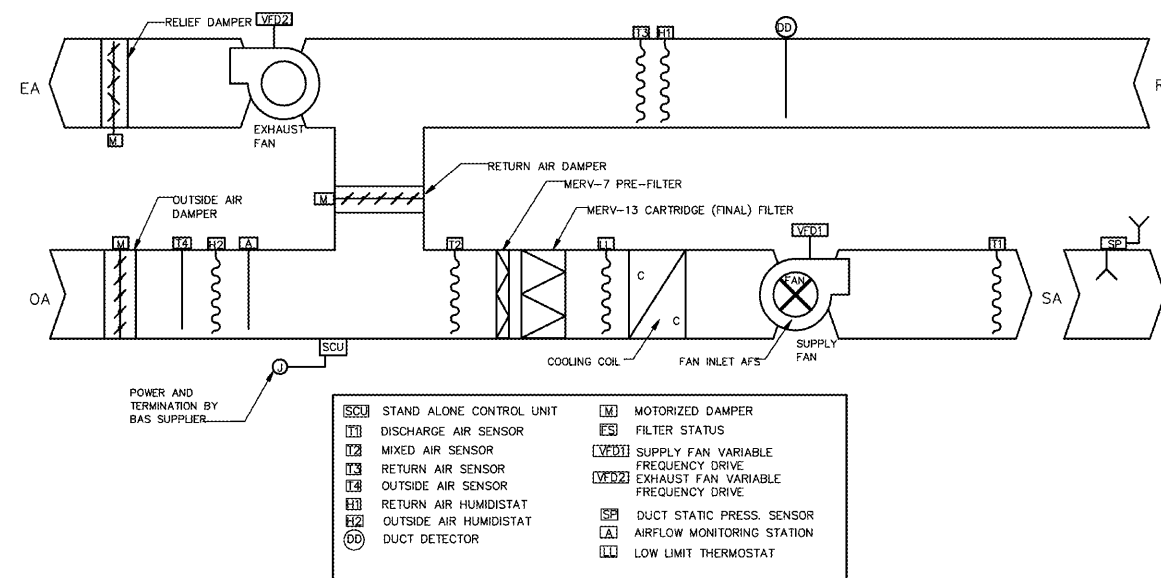
CONTROL SYSTEM NOTES

- ALL CONTROL SETPOINTS SHALL BE ADJUSTABLE, INDICATED TEMPERATURE SETPOINTS SHOULD BE USED FOR ORIGINAL SYSTEM SET-UP. ANY CHANGES IN SETPOINT SETTINGS REQUIRED FOR INTENDED SYSTEM OPERATION SHALL BE NOTED ON AS-BUILT DRAWINGS.
- PHOTO-ELECTRIC TYPE DUCT SMOKE DETECTORS SHALL BE FURNISHED AND WIRED TO THE FIRE ALARM SYSTEM BY THE ELECTRICAL CONTRACTOR. MECHANICAL CONTRACTOR SHALL INSTALL DETECTOR IN DUCT. ELECTRICAL CONTRACTOR SHALL WIRE UNIT FROM FIRE ALARM SYSTEM (DRY CONTACTS) FOR UNIT SHUT-DOWN UPON ACTIVATION.
- ELECTRICAL CONTRACTOR SHALL PROVIDE A DEDICATED 120V CIRCUIT IN A J-BOX FOR CONTROL POWER. CONTROLS CONTRACTOR SHALL EXTEND 120V POWER FROM J-BOX TO CONTROL PANELS, DAMPER ACTUATORS, TRANSFORMERS, ETC. AS REQUIRED FOR OPERATION OF CONTROL SYSTEM.
- BAS SHALL ALLOW GLOBAL OPERATION OF AIR HANDLING UNIT SUPPLY FANS. SYSTEM SHALL ALLOW FANS TO BE OPERATED CONTINUOUSLY WHILE IN THE OCCUPIED MODE OR ALLOW THE FANS TO BE CYCLED WITH THE CALL FOR HEATING OR COOLING.
- THE SEQUENCE OF OPERATION PROVIDED IN THE CONTRACT DOCUMENTS IS INTENDED TO COMMUNICATE THE GENERAL DESIGN INTENT TO THE CONTROLS SUBCONTRACTOR AND IS NOT INTENDED TO BE COMPLETE. IN THE CONTROLS SUBMITTAL, THE SUBCONTRACTOR SHALL FULLY DEVELOP THE SEQUENCE OF OPERATIONS FOR ALL SYSTEMS IDENTIFIED AND SHALL PRESENT ALL SETPOINTS, CONTROL PARAMETERS, AND ALARM POINTS. THE CONTROLS SUBCONTRACTOR SHALL INCORPORATE STANDARD FEATURES SUCH AS MINIMUM RUN TIME DELAYS AND DEAD BANDS FROM SETPOINTS TO PREVENT EQUIPMENT FROM SHORT CYCLING WHEN NEAR SETPOINTS. ALL MONITORED POINTS SHALL INCLUDE EARLY HIGH/LOW ALARM NOTIFICATIONS PRIOR TO HAVING TO TAKE CORRECTIVE ACTIONS OR EQUIPMENT SHUTDOWNS. TRANSMITTERS SHALL INCLUDE OUT-OF-RANGE, FAIL-SAFE POSITIONING FOR OPEN CIRCUITS OR LOSS OF COMMUNICATION. CONTROL CONTRACTOR SHALL SPECIFY TO FAIL DE-ENERGIZER, HOLD LAST STATE, OR DEFAULT TO A PREDETERMINED SETPOINT. THESE BASIC FEATURES THAT ARE NECESSARY AND ARE PART OF A ROBUST CONTROLS INSTALLATION SHALL BE ASSUMED INCLUDED IN THE SCOPE OF SERVICES FOR DELIVERABLES AT NO ADDITIONAL COSTS TO THE OWNER.

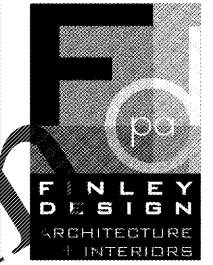
POINTS LIST

SYSTEM APPARATUS, OR AREA POINT DESCRIPTION	ANALOG		BINARY	OUTPUTS		SYSTEM FEATURES		GENERAL	SUPPLEMENT. NOTES
	MEASURED			DIGITAL	ANALOG	ALARMS	PROGRAMS		
	TEMPERATURE	PRESSURE		ON/OFF	ANALOG	ALARM	CONTROL		
VAV ROOFTOP UNITS									
RETURN TEMP	X						X	X	X
SUPPLY TEMP	X								
OA DAMPER		X			X				
RA DAMPER					X				
SUPPLY FAN & VFD		X	X	X		X			
EXHAUST FAN & VFD		X	X	X		X			
MIXED AIR HUMIDITY	X					X			ENTHALPY CONTROL
RETURN HUMIDITY	X					X			ENTHALPY CONTROL
BUILDING PRESSURE	X					X	X	X	
AIR MONITORING		X				X	X	X	
FILTER DIFF. PRESSURE	X					X	X	X	
VAV BOXES									
SUPPLY FAN			X	X			X	X	TYPICAL
ELECTRIC HEAT				X			X		PER STAGE
SPACE TEMP	X								
SUPPLY TEMP	X								
OVER-RIDE									
FANS									
EXHAUST FANS			X	X			X		
MISC. POINTS									
TEMP	X		X						
OVER HUMIDITY			X						ENTHALPY CONTROL
FACILITY DOWN			X				X		COORD. WITH DIV. 26
SUMP PUMP							X		
DUCTLESS SPLIT SYS.									
ON/OFF			X						
SPACE TEMP	X					X	X		

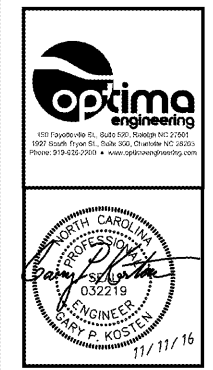
GENERAL NOTE:
INPUT/OUTPUT SUMMARY IS A GENERAL LIST OF CONTROL POINTS REQUIRED FOR THE OPERATION OF THE MECHANICAL SYSTEM. IN ADDITION TO CONTROL POINTS INDICATED, THE CONTROLS CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADDITIONAL POINTS AS REQUIRED FOR OPERATION OF THE MECHANICAL SYSTEM AS SPECIFIED AND OUTLINED IN THE SEQUENCE OF OPERATION.



1 TYPICAL VAV RTU CONTROL DIAGRAM
NO SCALE



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WESTPOINT 2
DURHAM, NC

REVISIONS

PROJECT:	1342
DATE:	11/11/16
DRAWN BY:	ECC
CHECKED BY:	GPK
MECHANICAL CONTROLS	
M2.2	
11 OF 14	