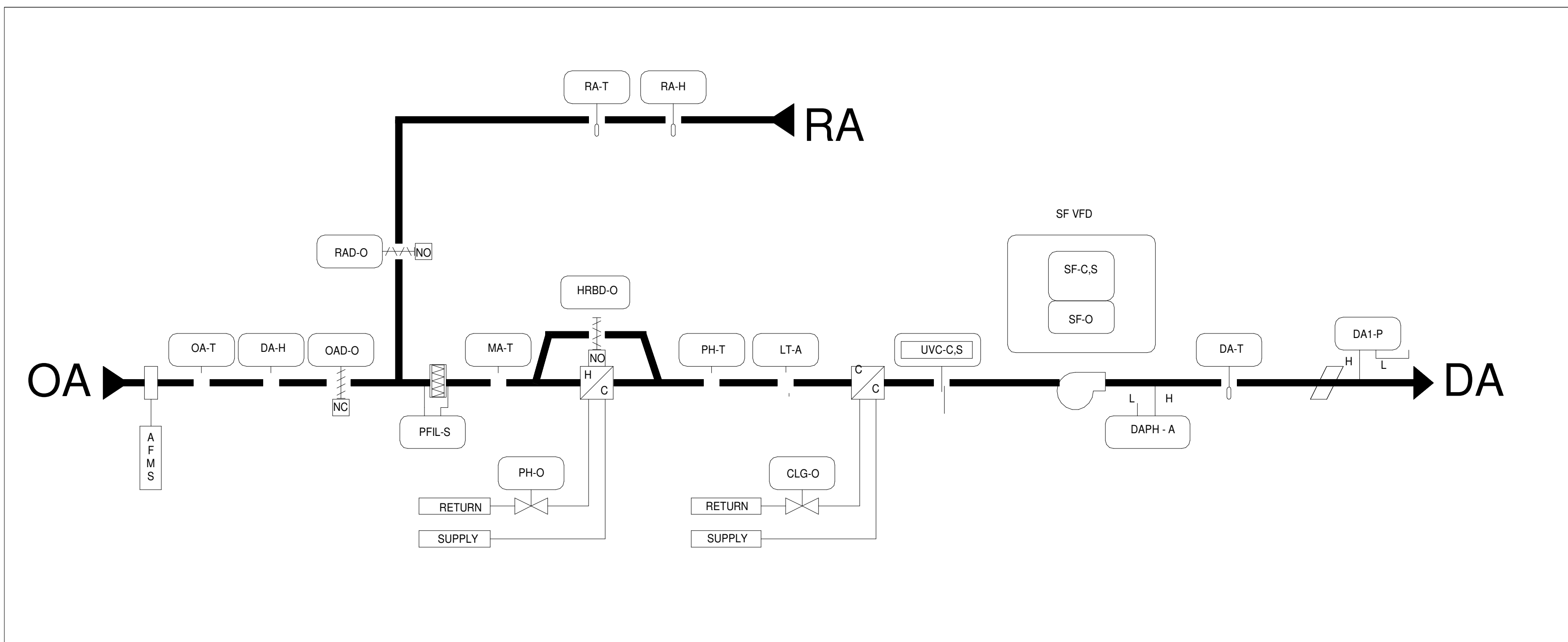


PETTIT & PETTIT  
CONSULTING ENGINEERS, INC.  
PERMIT SET



**AHU 1 ~ 4 SEQUENCE OF OPERATION**

**SUPPLY FAN CONTROL:**  
The variable speed supply fan will be started based on occupancy schedule. When the supply fan status indicates the fan started, the control sequence will be enabled. The supply fan will modulate to maintain the discharge static pressure at setpoint. Upon a loss of airflow, the system will attempt to automatically restart until positive status is received.

**ECONOMIZER CONTROL:**  
When the outdoor air is cooler than the economizer setpoint, the economizer will act as the initial stage of cooling, working in sequence with the cooling coil.

**MINIMUM OA CONTROL:**  
The fresh air intake of the unit will be limited to prevent the preheat temperature from falling below the low limit setpoint.

**TEMPERATURE CONTROL:**  
The unit will control to maintain a constant discharge air temperature.

**OCCUPIED MODE:**  
The occupancy mode will be controlled via a network input. The occupancy mode can also be overridden by a network input.

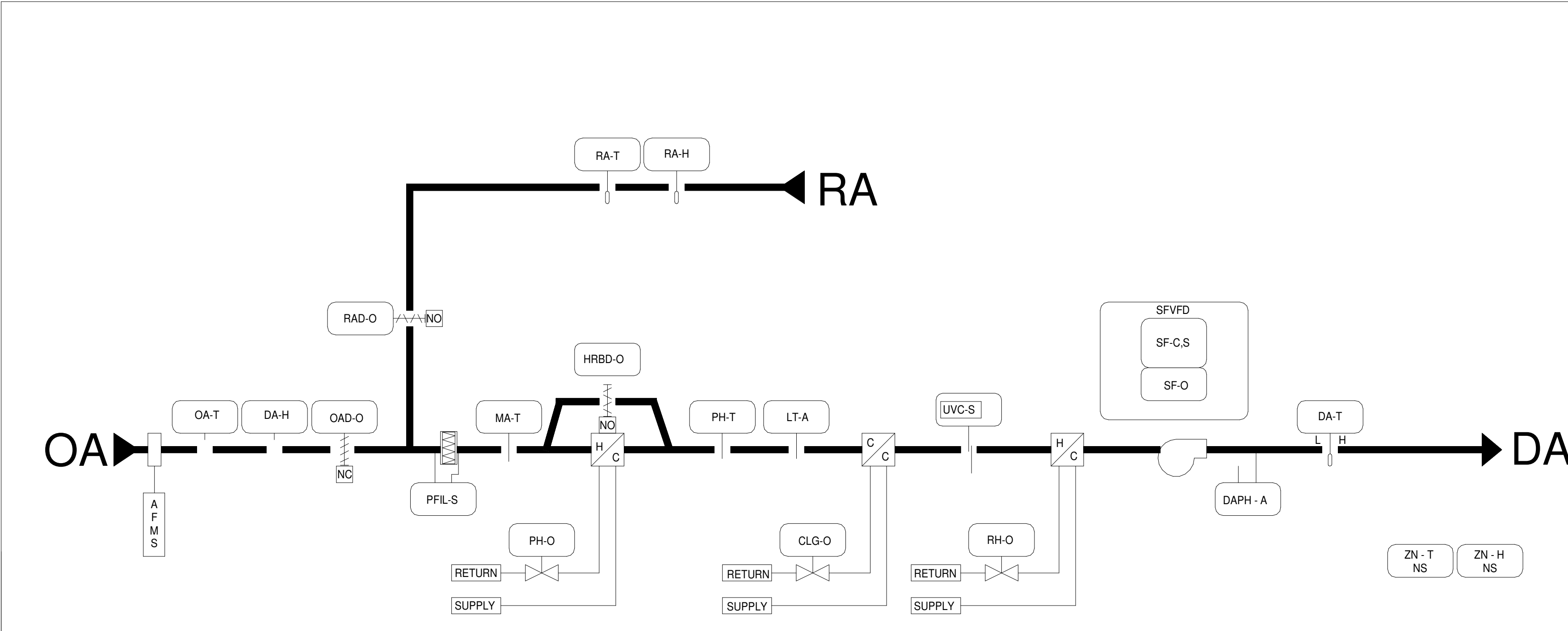
**UNOCCUPIED MODE:**  
The unit will remain off during unoccupied periods.

**PREHEAT COIL:**  
The preheat face & bypass damper will remain open to the face when the preheat valve is modulating. The preheat face & bypass damper will be enabled if the outdoor air temperature falls below setpoint, at which time the preheat valve will be commanded fully open, and the preheat face & bypass damper will modulate to maintain the temperature setpoint. When the unit is shutdown, the preheat coil will be commanded to a preset position should the outdoor air temperature fall below the low outdoor air temperature setpoint. Upon a loss of airflow, the preheat coil will be commanded to a preset position should the outdoor air temperature fall below the low outdoor air temperature setpoint.

**COOLING COIL:**  
The cooling coil will modulate to maintain the temperature setpoint. When the unit is shutdown, the cooling coil will be commanded to a preset position should the outdoor air temperature fall below the low outdoor air temperature setpoint. Upon a loss of airflow, the cooling coil will be off.

**UNIT PROTECTION:**  
Low Temperature Alarm - When in "Alarm", the control sequence will stop running, the valve(s) will open and the fan(s) will be disabled via a hard wired shut down circuit.

**ADDITIONAL POINTS MONITORED BY THE FMS:**  
Outdoor Air Temperature  
Mixed Air Temperature  
Return Air Temperature



**AHU 5 ~ 7 SEQUENCE OF OPERATION**

**SUPPLY FAN CONTROL:**  
The supply fan will be started based on occupancy schedule. The supply fan speed will modulate from the minimum speed to the maximum cooling speed as the cooling command increases and from the minimum speed to the maximum heating speed as the heating command increases. When the supply fan status indicates the fan started, the control sequence will be enabled. Upon a loss of airflow, the supply fan will attempt to automatically restart until positive status is received.

**ECONOMIZER CONTROL:**  
When the outdoor air is cooler than the economizer setpoint, the economizer will act as the initial stage of cooling, working in sequence with the cooling coil.

**MINIMUM OA CONTROL:**  
The fresh air intake of the unit will be limited to prevent the preheat temperature from falling below the low limit setpoint.

**TEMPERATURE CONTROL:**  
The unit will control to maintain a constant discharge air temperature.

**OCCUPIED MODE:**  
The occupancy mode will be controlled via a network input. The occupancy mode can also be overridden by a network input.

**UNOCCUPIED MODE:**  
The unit will remain off during unoccupied periods.

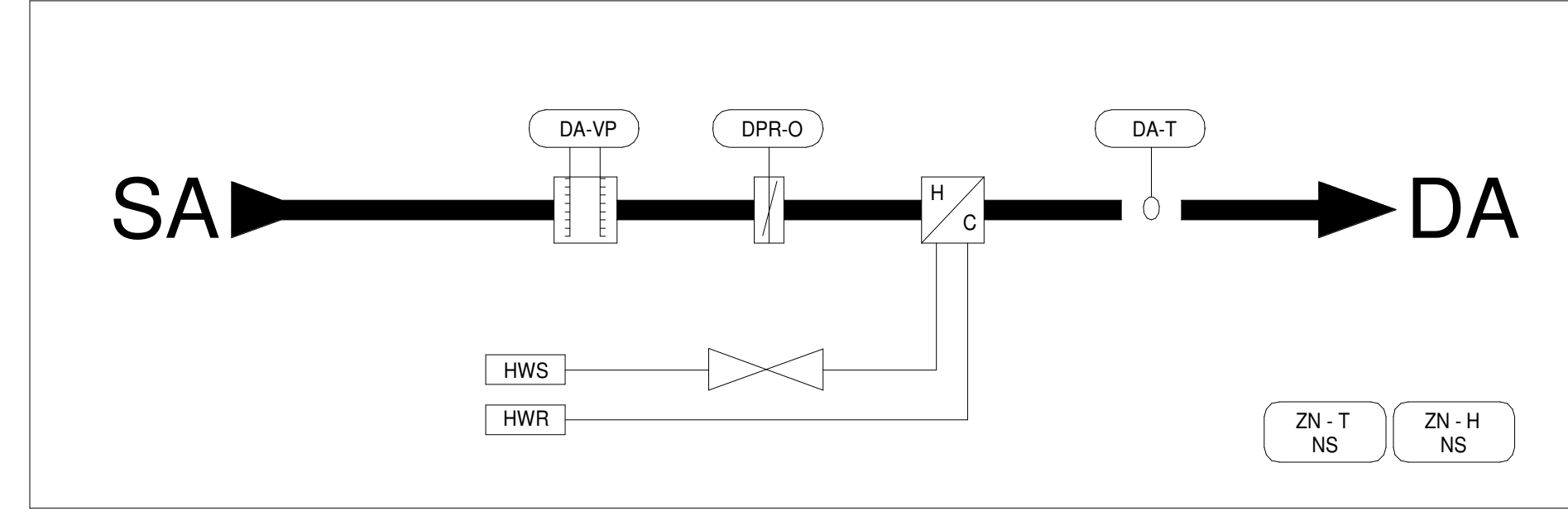
**PREHEAT COIL:**  
The preheat face & bypass damper will remain open to the face when the preheat valve is modulating. The preheat face & bypass damper will be enabled if the outdoor air temperature falls below setpoint, at which time the preheat valve will be commanded fully open, and the preheat face & bypass damper will modulate to maintain the temperature setpoint. When the unit is shutdown, the preheat coil will be commanded to a preset position should the outdoor air temperature fall below the low outdoor air temperature setpoint. Upon a loss of airflow, the preheat coil will be commanded to a preset position should the outdoor air temperature fall below the low outdoor air temperature setpoint.

**COOLING COIL:**  
The cooling coil will modulate to maintain the temperature setpoint. When the unit is shutdown, the cooling coil will be commanded to a preset position should the outdoor air temperature fall below the low outdoor air temperature setpoint. Upon a loss of airflow, the cooling coil will be off.

**REHEAT COIL:**  
The reheat coil will modulate to maintain the temperature setpoint. When the unit is shutdown, the reheat coil will be off. Upon a loss of airflow, the reheat coil will remain in control.

**UNIT PROTECTION:**  
Low Temperature Alarm - When in "Alarm", the control sequence will stop running, the valve(s) will open and the fan(s) will be disabled via a hard wired shut down circuit.

**ADDITIONAL POINTS MONITORED BY THE FMS:**  
Outdoor Air Temperature  
Mixed Air Temperature  
Return Air Temperature



**V.A.V. BOX SEQUENCE OF OPERATION**

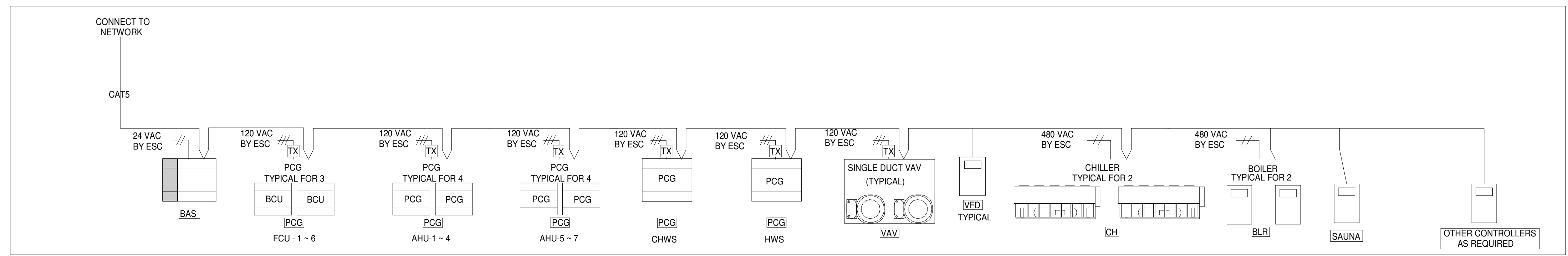
**OCCUPIED MODE:**  
When the zone temperature is between the occupied heating and cooling setpoints (inside of the bias), the primary air damper will be at the minimum CFM and there will be no mechanical heating. On a rise in zone temperature above the cooling setpoint, the primary air damper will increase the CFM and there will be no mechanical heating. On a drop in zone temperature below the heating setpoint, the reheat coil will be used to maintain the zone temperature and the damper is controlled to provide a minimum CFM.

**UNOCCUPIED MODE:**  
When in this mode, while the zone temperature is between the unoccupied heating and cooling setpoints (inside of the bias), the primary air damper will be at the minimum CFM and there will be no mechanical heating. On a rise in zone temperature above the unoccupied cooling setpoint, the primary air damper will increase the CFM (if available) and there will be no mechanical heating. On a drop in zone temperature below the unoccupied heating setpoint, the reheat coil will be used to maintain the zone temperature and the primary air damper will be at the minimum CFM.

**DISCHARGE AIR TEMP SENSOR:**  
A discharge air temp sensor is provided on each box for monitoring purposes.

**UNIT ENABLE:**  
A network unit enable signal will control the mode of the box.

**NETWORK WARMUP-COOL DOWN:**  
Warm-up and Cool down modes will be activated by a network command. When the zone temperature is below the effective heating setpoint, the box damper will be modulated to allow warm air flow, then reheat coil to maintain the zone temperature. When the box effective heating setpoint is satisfied the flow will remain at the warm-up minimum position until the warm command has been removed.



ADDITION AND RENOVATION TO PLEASANT VALLEY COUNTRY CLUB

**CLUBHOUSE**  
1 PLEASANT VALLEY DRIVE  
LITTLE ROCK, ARKANSAS 72212

REVISIONS

PROJECT NO.  
21075  
DATE:  
June 21, 2023