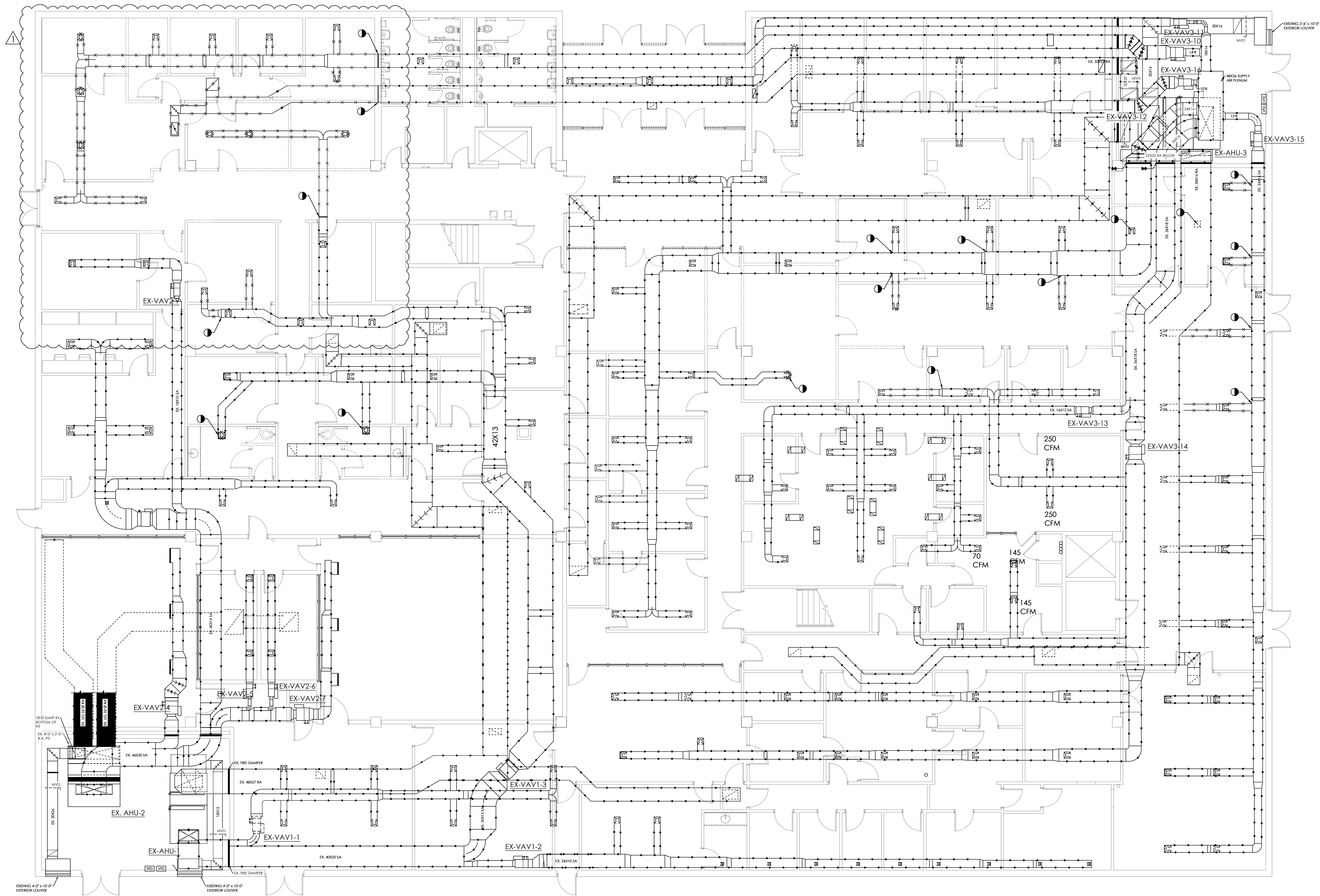
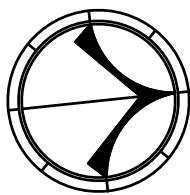




MECHANICAL FIRST FLOOR PLAN-DEMOLITION

SCALE: 1/8"=1'-0"



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Rev.	Description	Date
1	Addendum 1	9/28/2024

Job Number	22079
Date	SEPTEMBER 10, 2026
Drawn By	WKH
Checked By	HBD

Project Title

WALLACE HALL FIRST FLOOR
RENOVATION
TROY UNIVERSITY | TROY, AL

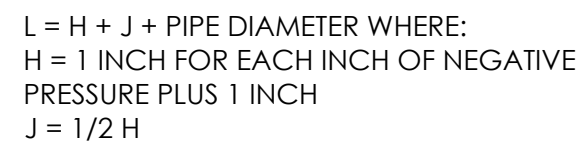
Sheet Title
MECHANICAL
FIRST FLOOR PLAN
DEMOLITION

Sheet Number
M0.01

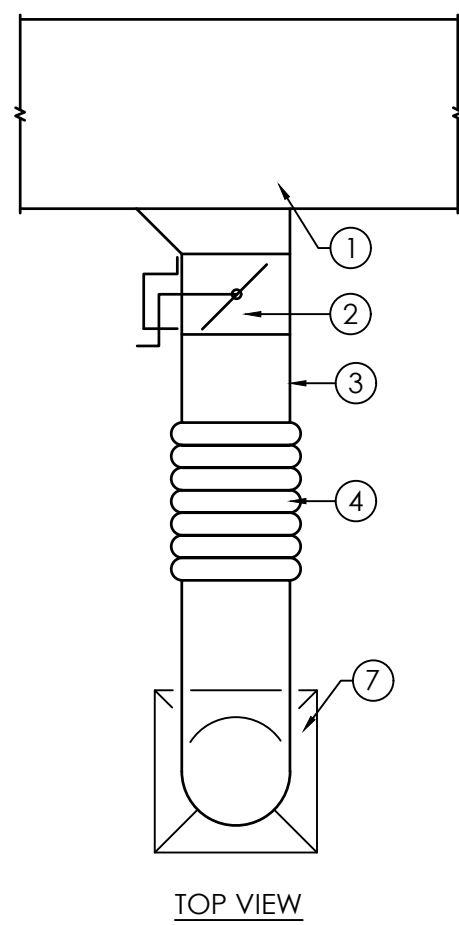
FAN COIL UNIT SCHEDULE																	
SYMBOL	EVAP FAN		COOLING COIL								HEATING COIL						REMARKS
	TOTAL CFM	MOTOR POWER	EAT DB	EAT WB	TOTAL MBH	SEN MBH	GPM	EWT	MAX. WATER SIDE PD FT. H ₂ O	MINIMUM ROWS	EAT DB	TOTAL MBH	GPM	EWT	MAX. WATER SIDE PD FT. H ₂ O	MINIMUM ROWS	
FCU-1-1	436	80 W	80	67	12.4	9.0	2.0	42	7.6	2	70	19.9	2.0	140	7.0	1	1,2,3,4,5
FCU-1-2	436	80 W	80	67	12.4	9.0	2.0	42	7.6	2	70	19.9	2.0	140	7.0	1	1,2,3,4,5
FCU-1-3	579	130 W	80	67	23.2	15.9	4.5	42	9.1	2	70	33.8	4.5	140	8.3	1	1,2,3,4,5
FCU-1-4	579	130 W	80	67	23.2	15.9	4.5	42	9.1	2	70	33.8	4.5	140	8.3	1	1,2,3,4,5
FCU-1-5	436	80 W	80	67	12.4	9.0	2.0	42	7.6	2	70	19.9	2.0	140	7.0	1	1,2,3,4,5
FCU-1-6	579	130 W	80	67	23.2	15.9	4.5	42	9.1	2	70	33.8	4.5	140	8.3	1	1,2,3,4,5
FCU-1-7	694	260 w	80	67	33.8	23.8	5.5	42	15.8	2	70	50.7	5.5	140	14.4	1	1,2,3,4,5

1. BASED ON MULTI AQUA MODEL MH4CFW. RECESSED CEILING MOUNTED FAN COIL UNIT.
2. PROVIDE FILTER, TWO-WAY MODULATING VALVES (CHILLED WATER AND HOT WATER), PIPING PACKAGE, ROOM TEMPERATURE SENSOR, CONTROL TRANSFORMER, SINGLE POINT POWER CONNECTION, FACTORY DISCONNECT SWITCH. INTERLOCK WITH DDC SYSTEM.
3. PROVIDE MIN. 3/4" RUNOUTS TO CHILLED AND HOT WATER COIL.
4. PROVIDE CONDENSATE PUMP. CONDENSATE PUMP SHALL BE FACTORY MOUNTED CENTRIFUGAL TYPE PUMP. INTERLOCK WITH FCU POWER.
5. PROVIDE SPRING VIBRATION ISOLATORS FOR INSTALLATION OF ALL FAN COIL UNITS.

SPECIFIED GPM	RUNOUT SIZE
0 - 3.5	3/4"
3.5 - 7.5	1"
7.5 - 16	1-1/4"
16 - 23	1-1/2"
23 - 45	2"
45 - 70	2-1/2"
70 - 130	3"
130 - 270	4"
270 - 750	6"



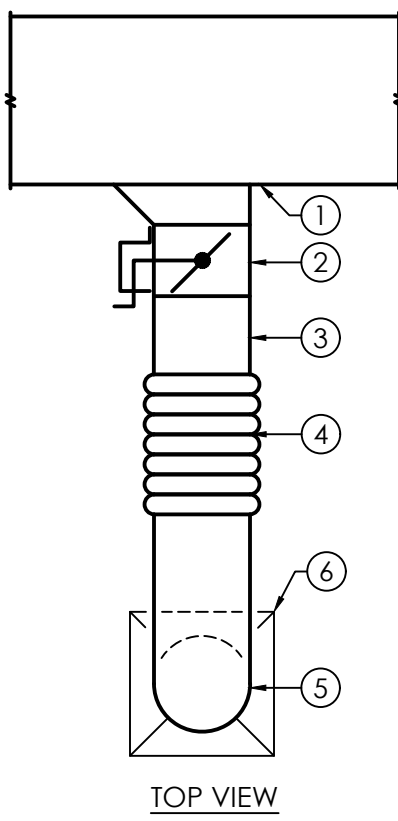
NO SCALE



- ① TRUCK DUCT
- ② RECTANGULAR TO ROUND TAKEOFF WITH STANDOFF
- ③ BUTTERFLY DAMPER, (ROUGH BALANCING THIS DAMPER)
- ④ ROUND METAL DUCTWORK
- ⑤ FLEXIBLE DUCTWORK (4' MAX.)
- ⑥ CEILING
- ⑦ DIFFUSER - INSULATE TOP COMPLETELY

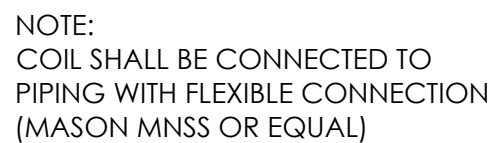
NOTE: DETAIL MAY BE USED IN TIGHT CEILING AREAS ONLY

NO SCALE



1. INSULATED MIN. 24 ga. SHEETMETAL TRUNK DUCT
2. ROUND TAKEOFF WITH 1" WIDE SCREW FLANGE, GASKET RING AND 2" DAMPER HANDLE WITH STANDOFF.
3. INSULATED MIN. 28 ga. min. RIGID ROUND DUCTWORK.
4. FLEXIBLE DUCTWORK R-8 (CLASS 1) - (4" MAX.).
5. INSULATED FULL RADIUS RIGID ELBOW
6. ALUMINUM CEILING MOUNTED AIR DIFFUSER WITH OPPOSED BLADE DAMPER - INSULATE ENTIRE TOP OF DIFFUSER
7. LAY-IN CEILING AND GRID BY OTHERS.

NO SCALE

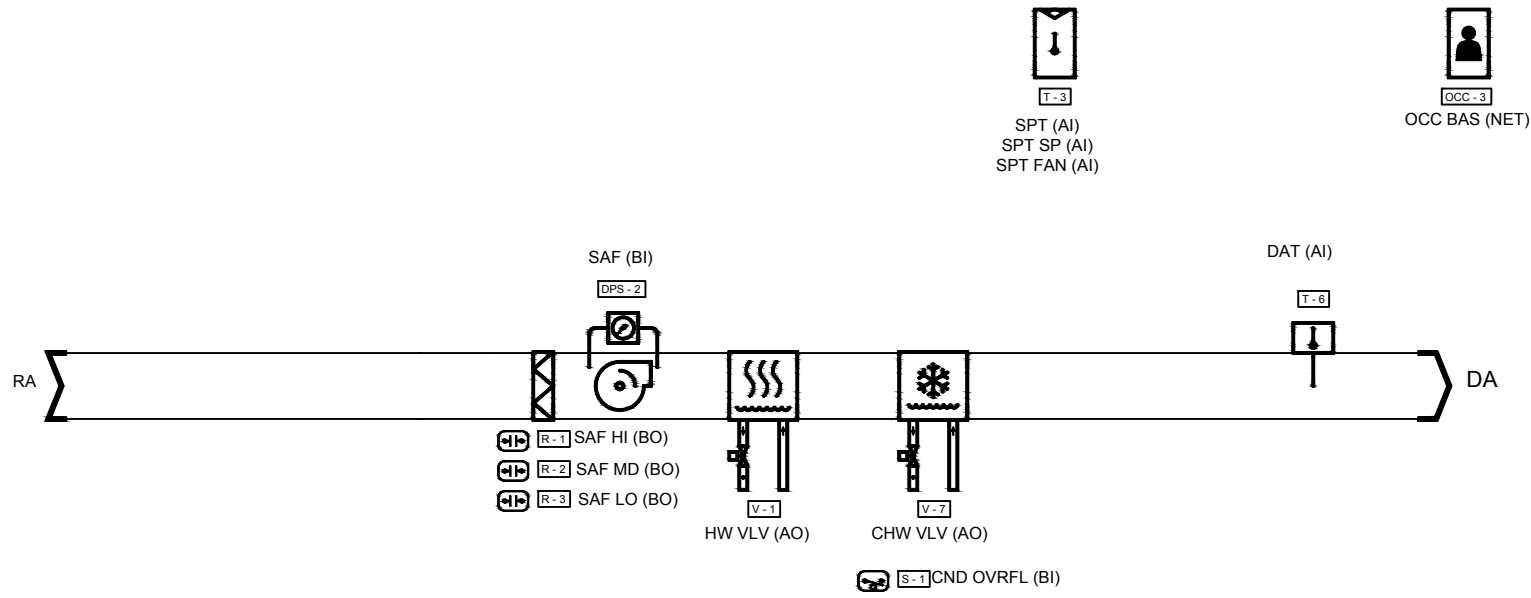


NO SCALE



NO SCALE





FAN COIL UNIT FLOW DIAGRAM
(FCU-1-1 THRU FCU-1-7)
NO SCALE

SEQUENCE OF OPERATION
(FCU-1-1 THRU FCU-1-7)

Building Automation System Interface:

The Building Automation System (BAS) shall send the controller Occupied Bypass, Morning Warm-up/Pre-Cool, Occupied/Unoccupied and Heat/Cool modes. If a BAS is not present, or communication is lost with the BAS the controller shall operate using default modes and setpoints

Occupied:

During occupied periods, the supply fan shall run continuously. The chilled water valve and the hot water valve shall control to maintain the active space temperature setpoint.

Unoccupied:

When the space temperature is below the unoccupied heating setpoint of 60.0 deg. F (adj.) the supply fan shall start and the hot water valve shall open. When the space temperature rises above the unoccupied heating setpoint of 60.0 deg. F (adj.) plus the unoccupied differential of 4.0 deg. F (adj.) the supply fan shall stop and the hot water valve shall close. When the space temperature is above the unoccupied cooling setpoint of 85.0 deg. F (adj.) the supply fan shall start and the chilled water valve shall open. When the space temperature falls below the unoccupied cooling setpoint of 85.0 deg. F (adj.) minus the unoccupied differential of 4.0 deg. F (adj.) the supply fan shall stop and the chilled water valve shall close.

Optimal Start:

The BAS shall monitor the scheduled occupied time, occupied space setpoints and space temperature to calculate when the optimal start occurs.

Morning Warm-Up Mode

During optimal start, if the space temperature is below the occupied heating setpoint a morning warm-up mode shall be activated. When morning warm-up is initiated the unit shall enable the heating and supply fan. When the space temperature reaches the occupied heating setpoint (adj.), the unit shall transition to the occupied mode.

Pre-Cool Mode:

During optimal start, if the space temperature is above the occupied cooling setpoint, pre-cool mode shall be activated. When pre-cool is initiated the unit shall enable the fan and cooling. When the space temperature reaches occupied cooling setpoint (adj.), the unit shall transition to the occupied mode.

Optimal Stop:

The BAS shall monitor the scheduled unoccupied time, occupied setpoints and space temperature to calculate when the optimal stop occurs. When the optimal stop mode is active the unit controller shall maintain the space temperature to the space temperature offset setpoint.

Occupied Bypass:

The BAS shall monitor the status of the ON and CANCEL buttons of the space temperature sensor. When an occupied bypass request is received from a space sensor, the unit shall transition from its current occupancy mode to occupied bypass mode and the unit shall maintain the space temperature to the occupied setpoints (adj.).

Space Temperature Control:

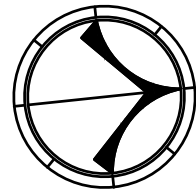
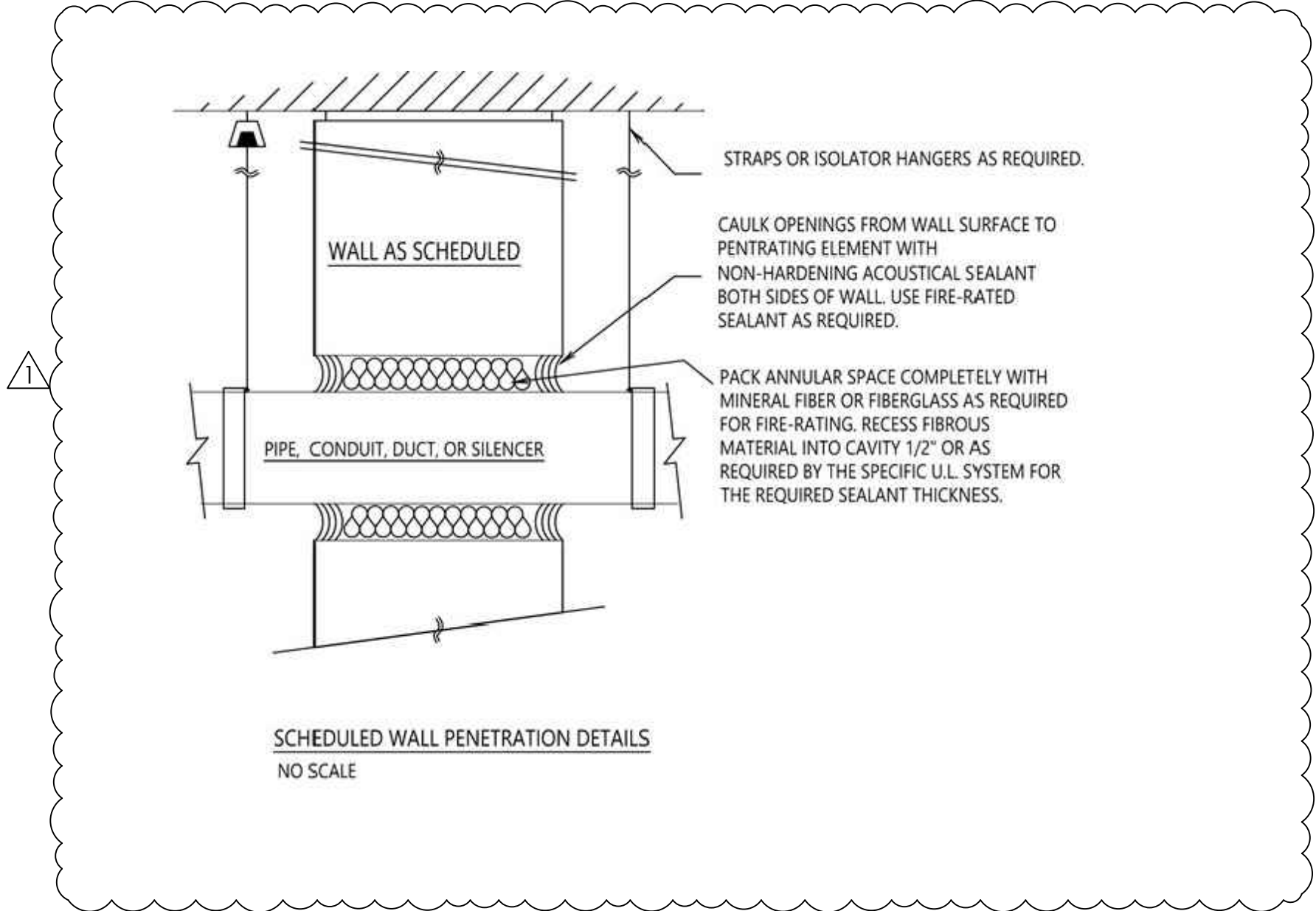
Cascade zone control shall be used in the occupied, occupied bypass, and occupied standby modes. It maintains zone temperature by controlling the discharge air temperature to control the zone temperature while minimizing the fan speed. The space temperature shall be maintained between the occupied cooling setpoint of 74.0 deg. F (adj.) and the occupied heating setpoint of 71.0 deg. F (adj.). The unit shall transition to the cooling mode when the space temperature rises one degree above the occupied cooling setpoint of 74.0 deg. F (adj.). The unit shall transition to the heating mode when the space temperature drops one degree below the occupied heating setpoint of 71.0 deg. F (adj.).

Supply Fan Operation:

The supply fan shall cycle on demand during the unoccupied mode. When the controller transitions to the occupied mode, the supply fan shall start at high speed before transitioning to continuous operation at the selected speed. The supply fan status shall be monitored by a differential pressure switch. If the supply fan fails the fan shall be commanded off and an alarm shall annunciate at the BAS. A manual reset shall be required to restart the fan.

Condensate Overflow Monitoring:

If the condensate level reaches the trip point, a condensate overflow diagnostic shall annunciate at the BAS. To prevent the condensate drain pan from overflowing and causing water damage to the building the fan shall be disabled and the chilled water valve shall close.



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WALLACE HALL FIRST FLOOR RENOVATION TROY UNIVERSITY TROY, AL

Sheet Title
MECHANICAL SEQUENCE OF OPERATION
Sheet Number
M2.03



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