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**DUCTWORK SYMBOLS**

Table with columns for Rectangular and Round/Oval ductwork symbols. Includes symbols for round branch, rectangular branch, square tee, radius tee, radius branch, expansion joint, radius elbow, square elbow, square throat, access door, ductwork rise/drop, flexible ductwork, flexible connection, direction of pitch, and ductwork dimensions (W x H).

**DUCTWORK DEVICE SYMBOLS**

Table of ductwork device symbols including air devices (A3, S01, S02), manual balancing dampers (XXX), back draft dampers (BDD, CBD), fire dampers (A-D, SD, FS, MDD, ARMS), smoke detectors (SD), humidity sensors (H), static pressure sensors (S), carbon dioxide sensors (C), and temperature sensors (T).

**VALVES AND FITTINGS**

Table of valves and fittings symbols including check valves, shutoff valves, combination valves, pipe reducers, pressure gauges, temperature gauges, unions, cleanouts, strainers, drain valves, automatic flow controllers, expansion joints, manual air vents, automatic air vents, pressure reducing valves, modulating valves, quick opening valves, safety relief valves, vacuum breakers, needle valves, pressure and temperature test plugs, end caps, globe valves, shutoff valves on risers, solenoid valves, water meters, flow meters, bi-metallic steam traps, thermodynamic steam traps, inverted bucket steam traps, float and thermostatic steam traps, thermostatic steam traps, and pressure gauges with cock and siphon loop.

**MISC SYMBOLS**

Table of miscellaneous symbols including carbon dioxide sensor, carbon monoxide sensor, differential pressure sensor, humidity sensor, temperature sensor, static pressure sensor, space temperature sensor/thermostat, and emergency shutoff station.

**GENERAL FLOOR PLAN NOTES**

Table of general floor plan notes including plan notes, detail notes, equipment device/plumbing fixture mark, riser or stack number, detail B, section 1, approximate dimensions, door undercuts, door louvers, connect or connection, demolish to point, and double/single line symbols.

**PIPING SYMBOLS**

Table of piping symbols for double and single lines, including symbols for bottom connection, branch tee connection, direction of pitch, drop, elbow down/up, existing pipe to be removed, existing pipe to remain, flow direction designation, pipe riser, pump, rise, top connection, and various pipe types.

**HVAC PIPING DESIGNATIONS**

Table of HVAC piping designations including chilled water supply/return pipes, condenser water supply/return pipes, chilled water glycol solution supply/return pipes, drain lines, heating hot water return pipes, water make-up pipes, expansion tank pipes, refrigerant hot gas lines, refrigerant liquid lines, refrigerant suction lines, steam supply pipes, high/low pressure condensate return pipes, high/low pressure steam supply pipes, medium pressure condensate return pipes, medium pressure steam supply pipes, and pumped condensate return pipes.

**ABBREVIATIONS**

Table of abbreviations for various HVAC and construction terms, including air compressor, access door, adjustable, above finished floor, air flow measuring station, alternate, access panel, approximate, architect, assembly, automatic temperature control, building automation system, back draft damper, backflow preventer, building, bottom of beam, bottom of duct, bottom of equipment, bottom of footing, bottom of grille, bottom of pipe, British thermal unit, counter balanced backdraft damper, contractor furnished contractor, cubic feet per minute, chilled water supply, chilled water return, chilled water glycol solution return, chilled water glycol solution supply, ceiling, concrete masonry unit, clean out, carbon dioxide, connect or connection, contractor, center, copper, cold water, condenser water return, condenser water supply, drain line, dry bulb, direct digital controls, deionized water, diameter, dimension, down, drawing, each or exhaust air, entering air temperature, electrical contractor, expansion joint, electrical, elevator, equipment, expansion tank, existing to remain, equipment supplier, entering water temperature, exhaust, expansion, exterior, existing, floor drain, finished floor elevation, floor, flat on bottom, fuel oil flow, fuel oil gauge, fuel oil return, fuel oil supply, flat on top, feet per minute, fire suppression contractor, feet, footing, gas or natural gas, gauge, gallon, galvanized, general trades contractor, gallons per minute, hose bibb, hvac contractor, hub drain, refrigerant hot gas, horsepower, high pressure condensate return, high pressure steam supply, hour, heat trace, heater, heating, ventilating, and air conditioning, hot water, heating hot water return, heating hot water supply, inside diameter, invert elevation, inches, kitchen equipment contractor, length, leaving air temperature, lavatory, pounds, low pressure condensate return, low pressure steam supply, leaving water temperature, maximum, motorized damper, mezzanine, manufacturer, manhole, minimum or minute, miscellaneous, mounted, mounting, medium pressure condensate return, medium pressure steam supply, water make-up, normally closed, not in contract, normally open, nominal, national pipe thread, not to scale, outdoor air, opposed blade damper, outside diameter, owner furnished contractor, installed, owner furnished owner installed, propane gas, plumbing contractor, or plumbed condensate return, plumb, pressure, pressure regulating valve, pounds per square foot, pounds per square inch, pounds per square inch gauge, return air, radius, reflected ceiling plan, roof drain, recessed, required, rough in, refrigerant liquid, refrigerant temperature, reverse osmosis water supply, reverse osmosis water return, revolutions per minute, refrigerant suction, sprinkler (wet), supply air, supply air, sanitary or sanitary drain, schedule, soft cold water, sheet, specifications, square, supply riser, safety relief valve, stainless steel, standard, storm or storm drainage, structural or structure, site utility contractor, temperature, top of beam, top of duct, top of equipment, top of footing, top of joint, top of pipe, top of slab or top of steel, typical, unless noted otherwise, vent, vacuum, velocity, variable frequency drive, adjustable frequency motor controller, valve in box, volume, vent through roof, vent riser, with, without, wet bulb, wall cleanout.

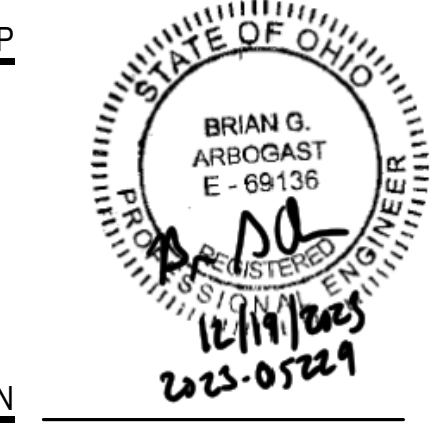
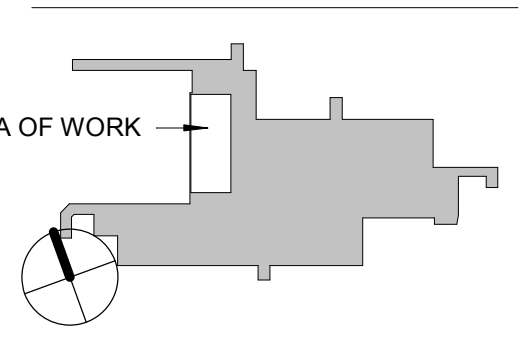
**NOTE: ALL SYMBOLS AND ABBREVIATIONS ARE SUBJECT TO MODIFICATIONS ON OTHER DRAWINGS.**

**ALL SYMBOLS OR ABBREVIATIONS MIGHT NOT NECESSARILY BE USED ON THIS PROJECT.**

**HVAC SHEET LIST**

SHEET NUMBER	HVAC LEGEND & INDEX	SHEET NAME
M001	HVAC LEGEND & INDEX	
M002	SCHEDULES & DETAILS	
M003	DETAILS	
M101	PARTIAL GROUND FLOOR PLAN - NEW	
M102	PARTIAL GROUND FLOOR PLAN - DEMO	

**KEY PLAN**



12/20/23 Date  
1 ISSUED FOR PERMIT AND CONSTRUCTION  
Issue/Revision/Submission No.

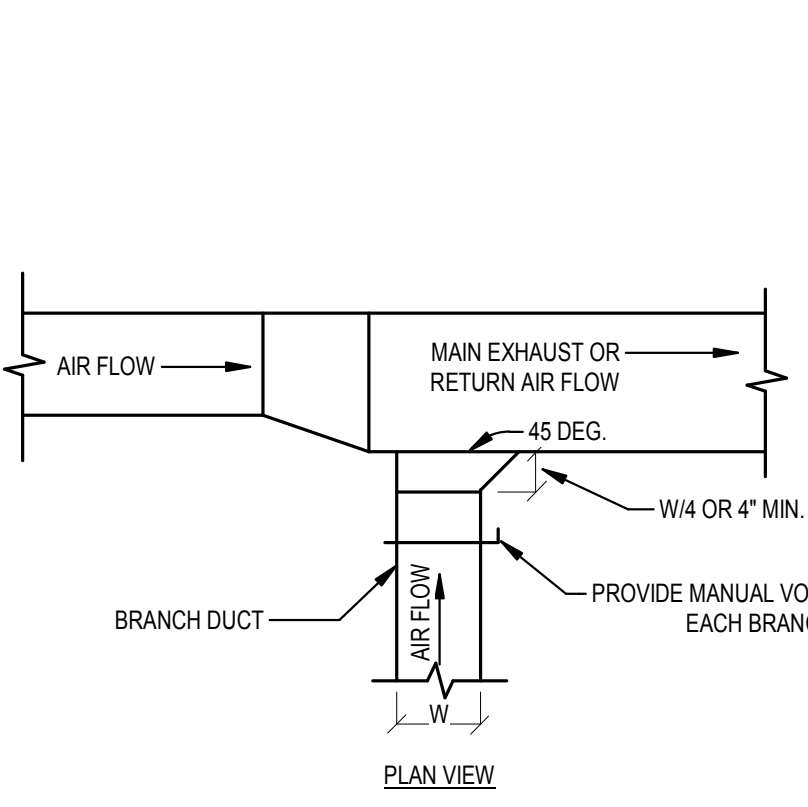
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CINCINNATI, OH 45219-2316  
PHONE 513.771.1600  
www.bhpd.com

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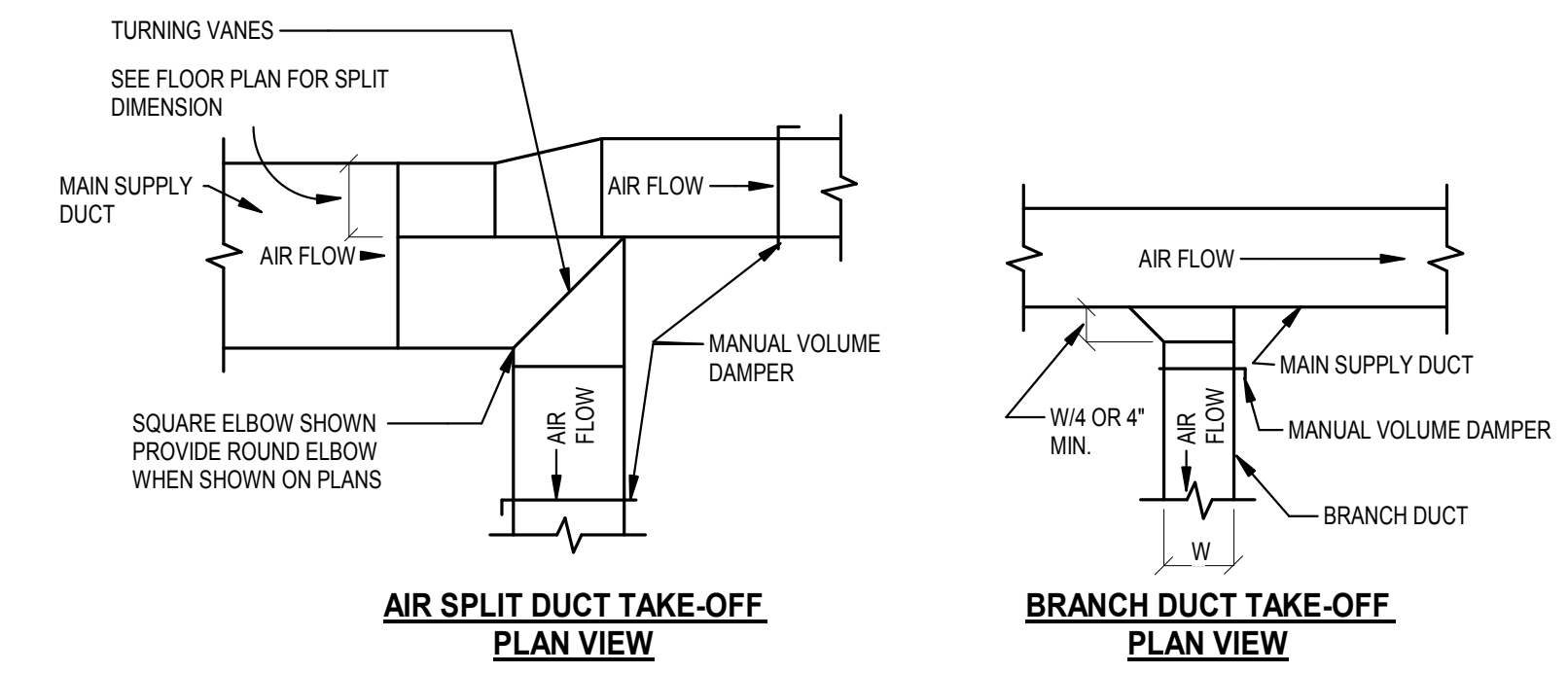
**UCMC PHASE I PHARMACY RELOCATION**  
3188 BELLEVUE AVENUE  
CINCINNATI, OH 45219-2316  
HVAC LEGEND & INDEX

Project Manager  
Approver  
Drawn  
SMG  
Checked  
BWS  
Install Drawing Date  
2023 12 20  
Project Number  
UCH0316

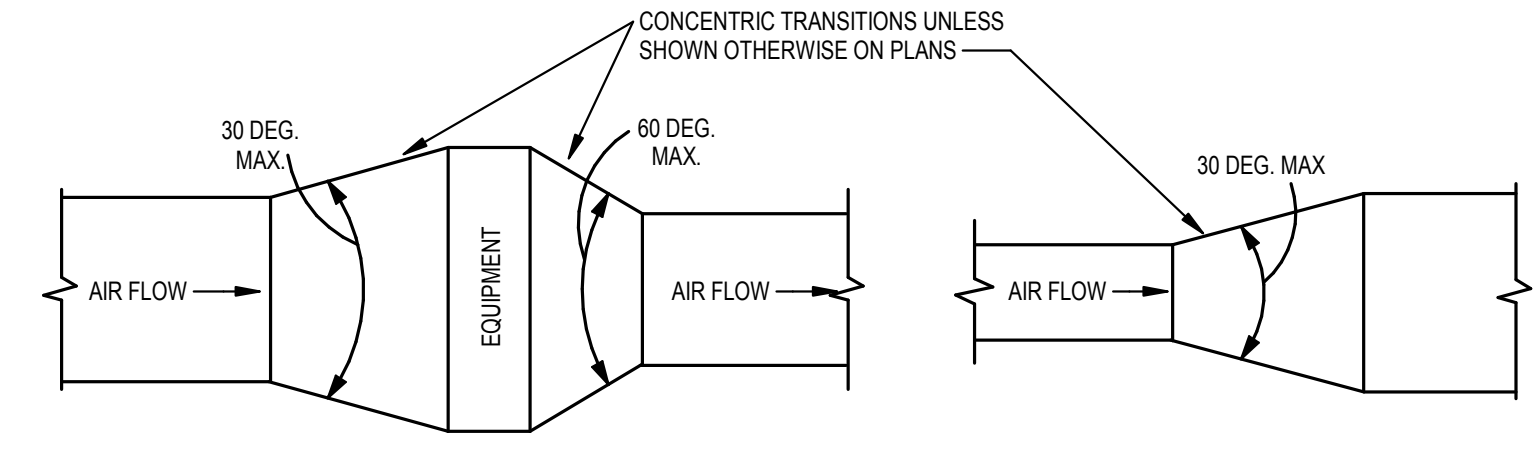
**M001**



4 EXHAUST OR RETURN BRANCH DUCTWORK  
SCALE: NONE



3 SUPPLY DUCTWORK BRANCH TAKE-OFFS  
SCALE: NONE



5 DUCTWORK TRANSITIONS  
SCALE: NONE

NOTE:  
A. UNLESS OTHERWISE INDICATED ON PLANS, MAXIMUM ANGLES SHOWN SHALL APPLY.  
B. TRANSITION ANGLES IN AND OUT OF FANS SHALL BE 50% OF THOSE SHOWN ABOVE.

### AIR CONTROL UNITS

A. TYPES: "V.V." - VARIABLE VOLUME;  
"V.V.R." - VARIABLE VOLUME REHEAT;  
"C.V.R." - CONSTANT VOLUME REHEAT;  
"V.V.E." - VARIABLE VOLUME EXHAUST;  
"C.V.E." - CONSTANT VOLUME EXHAUST.

B. 0.35" MAX. S.P. DROP THRU UNIT & COIL AT MAX. CFM.

C. HOT WATER REHEAT COIL CAPACITIES BASED ON 65°F ENT. AIR & 160°F ENT. WATER, AND MAX 5 FT. HD. W. P.D.

D. AUTO VALVES SHALL BE 2-WAY TYPE UNLESS NOTED OTHERWISE.

E. WHEN PICOV IS INDICATED, MINIMUM REQUIRED INLET PRESSURE SHALL NOT EXCEED 5 PSIG.

F. ELECTRIC REHEAT COILS BASED ON 53°F ENT. AIR.

G. REFER TO BALANCING SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

H. THE AIRFLOW VALUES LISTED ARE DESIGN VALUES. THE AIR CONTROL UNITS SUPPLIER SHALL PROVIDE A "SPACE VERIFICATION TABLE" (ROOM BALANCE SHEET) THAT CONFIRMS OR REVISES THE VALUES BASED ON THEIR PRODUCT PERFORMANCE OR RECOMMENDATIONS. THE TABLE SHALL BE SUBMITTED WITH SHOP DRAWINGS, AND THAT APPROVED SUBMITTAL SHALL BE THE BASIS BY WHICH THE AIR BALANCE IS PERFORMED.

I. WHEN APPLICABLE, REFER TO SPECIFICATIONS FOR SEISMIC RESTRAINT REQUIREMENTS.

J. ZONE PRESSURE NOMENCLATURE:  
"POS" - POSITIVE  
"NEG" - NEGATIVE  
"NTRL" - NEUTRAL

K. IF REHEAT COIL IS FURNISHED SEPARATELY FROM TERMINAL UNIT, PROVIDE DUCT TRANSITION AS REQUIRED BETWEEN TERMINAL UNIT AND COIL.

- UNIT IS A HIGH ACCURACY VARIABLE AIR VOLUME (HAVAV) AIR CONTROL VALVE. REFER TO SPEC SECTION 233624.
- ROOM RETURN SHALL TRACK THE ROOM SUPPLY TOTAL OF GPH1.2.3 MINUS CFM OFFSET.
- ROOM RETURN SHALL TRACK THE ROOM SUPPLY TOTAL OF GPH4&5 MINUS CFM OFFSET.

ROOM NO.	ZONE OFFSET CFM	ZONE PRESSURE (NOTE H)	MARK	ROOM SUPPLY	ROOM RETURN	ROOM EXHAUST	HOOD EXHAUST	EQUIPMENT EXHAUST	TYPE	AIR VALVE QUANTITY	AIR VALVE DIAMETER (EACH)	MINIMUM DUCT CONNECTION INLET SIZE		OCCUPIED CFM	UNOCCUPIED SETBACK MIN. CFM	BASIS OF DESIGN		REHEAT COIL				SEISMIC RESTRAINTS						
												DIAMETER	WIDTH			HEIGHT	MAXIMUM	MINIMUM	MANUFACTURER	MODEL	REHEAT MAXIMUM CFM	MBH	GPM	PIPE RUNOUT SIZE	PRESSURE DEPENDENT	AUTO CONTROL VALVE	PRESSURE INDEPENDENT (PICOV)	REQUIRED
E619.E652				V-11-GPH 1					C.V.R	1	8"	8"		515	515	ANTEC	VFX	515	15.1	1.1	0.75"							1
E620.E621				V-11-GPH 2					C.V.R	1	8"	8"		200	200	ANTEC	VFX	200	5.9	0.4	0.75"							1
E616A.E628				V-11-GPH 3					C.V.R	1	12"	12"		1,300	1,300	ANTEC	VFX	1,300	38.1	2.6	1"							
E616B.E653				V-11-GPH 4					C.V.R	1	14"	14"		2,350	2,350	ANTEC	VFX	2,350	68.9	4.6	1"							1
E634				V-11-GPH 5					C.V.R	1	8"	8"		350	350	ANTEC	VFX	350	10.3	0.7	0.75"							1
PHARMACY WEST	+150	POS		V-11-GPH 1R					V.V.	1	14"	14"		1,865	1,865	ANTEC	VFX		0.0	0"								1.2
PHARMACY EAST	+150	POS		V-11-GPH 4R					V.V.	1	14"	14"		2,550	2,550	ANTEC	VFX		0.0	0"								1.3

### DUCT CONSTRUCTION, SEALING, AND INSULATION

GENERAL NOTES:  
A. REFER TO SPECIFICATIONS FOR DUCT CONSTRUCTION: SHEET METAL DUCT, INTERIOR LINING, EXTERIOR INSULATION; FIBERGLASS DUCTBOARD, ETC.  
B. DUCT CONSTRUCTION AND SEALING SHALL BE PER LATEST S.M.A.C.N.A. STANDARDS.

- NOTES:  
1. ROUND SHEET METAL RUN-OUTS TO AIR DEVICES DOWNSTREAM OF VAV BOXES SHALL BE EXTERNALLY INSULATED.  
2. RETURN DUCTWORK WITHIN 15' OF AIR HANDLING UNIT SHALL BE INTERNALLY LINED.  
3. DUCTWORK 3" OR GREATER S.P. CONSTRUCTION SHALL BE LEAK TESTED. REFER TO SPECIFICATION FOR DUCT LEAK TESTING REQUIREMENTS.  
4. WATER-TIGHT SEAL.  
5. FIRE WRAPPED, PER CODE REQUIREMENTS.  
6. STAINLESS STEEL DUCTWORK.  
7. INSULATE FROM 24" UPSTREAM OF BACKDRAFT / ISOLATION DAMPER TO PENETRATION OF WALL / ROOF.  
8. CONCEALED ROUND RUNOUT DUCTS TO AIR DEVICES MAY BE 1" S.P. CLASS.

DUCT SYSTEM	S.M.A.C.N.A. CLASS.				INTERNALLY LINED	EXTERNAL INSULATION	DOUBLE WALL INSULATED	NOT INSULATED	SEE NOTE
	S.P. CONSTRUCT.	SEAL CLASS	RECT	RND					
MEDIUM PRESSURE SUPPLY AIR MAINS (AHU-11)	+4"	A	4	2	-	•	-	-	3
SUPPLY DUCTWORK DOWNSTREAM OF VAV BOXES	+1"	A	16	8	-	•	-	-	1
RETURN DUCTWORK (AHU-11)	-3"	A	8	4	-	-	-	•	2.3
EXHAUST (EF-10)	-3"	A	8	4	-	-	-	•	7

### AIR DISTRIBUTION DEVICES

GENERAL NOTES:  
A. ALL LAY-IN AIR DEVICES SHALL FIT IN 24"x24" LAY-IN CLG SYSTEM. VERIFY GRID TYPE AND COORDINATE AIR DEVICE COMPATIBILITY.  
B. FINISH KEY: "W.B.E." - WHITE BAKED ENAMEL; "E.C.L." - ETCHED CLEAR LACQUER OR ANODIZED; "C.C.B.A." - CUSTOM COLOR SELECTED BY ARCHITECT.  
C. SUPPLY AIR DIFFUSERS SHALL BE 4-WAY BLOW, UNLESS INDICATED OTHERWISE ON DRAWINGS.  
D. PROVIDE AUX. FRAMES FOR AIR DEVICES IN PLASTER, GYPSUM BOARD, TILE OR OTHER HARD SURFACES.

MARK	DESCRIPTION	MOUNTING TYPE		MATERIAL	FINISH	BASIS OF DESIGN		SEE NOTE
		LAY-IN SURFACE	DUCT			MANUFACTURER	MODEL	
A10	STANDARD SQ. PLAQUE CEILING DIFFUSER - ROUND NECK - 24 X 24	•		ALUMINUM	W.B.E.	TITUS	OMNI	
J10	EGGCRATE CEILING GRILLE	•		STAINLESS STEEL	W.B.E.	TITUS	50F	

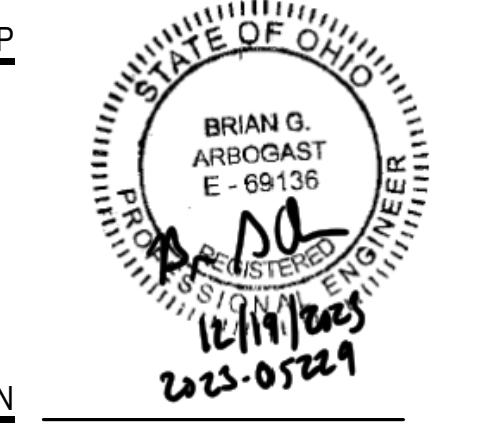
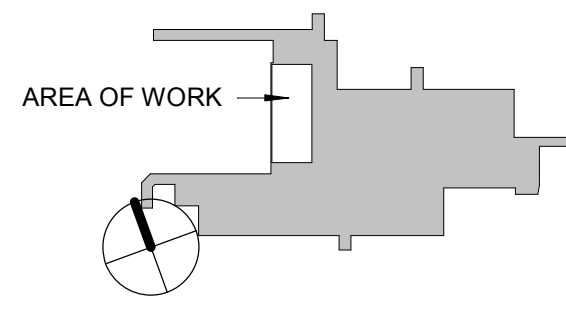
### HVAC DESIGN DATA

GENERAL NOTES:  
A. OUTDOOR DESIGN CONDITIONS:  
92°F DB SUMMER  
74°F WB SUMMER  
1°F DB WINTER  
B. DESIGN ALTITUDE: 850 FT.

- NOTES:  
1. LISTED RH IS MAXIMUM ANTICIPATED AT LISTED DB TEMPERATURE.  
2. REFER TO ATC SEQUENCES FOR ACTUAL ROOM SETPOINTS.  
3. "FLOATING" MEANS THERE IS NO ACTIVE CONTROL.  
4. OUTDOOR AIR VENTILATION ONLY.  
5. ALL AIR FROM ROOM TO BE EXHAUSTED.  
6. WHEN A NUMERIC VALUE IS GIVEN, THAT IS THE ACTIVE CONTROL SETPOINT.  
7. MINIMUM TOTAL AIR CHANGE RATE IS TO BE BASED ON SUPPLY CFM FOR POSITIVE AND NEUTRAL SPACES. EXHAUST CFM FOR NEGATIVE SPACES.

SPACE NAME / TYPE	INTERIOR DESIGN DATA				MINIMUM TOTAL AIR CHANGES (NOTE 7)	DESIGN PRESSURE RELATIONSHIP (NOTE 6)	SEE NOTE
	SUMMER		WINTER				
	°F DB	% RH (NOTE 1.3)	°F DB	% RH (NOTE 1.3)			
PHARMACY	70-72	MAX 60	72-75	FLOATING	4	POSTIVE	-
OFFICES	74	55	72	FLOATING	-	-	-
ALL OTHER SPACES	74	55	72	FLOATING	-	-	-

### KEY PLAN



12/20/23 Date  
1 ISSUED FOR PERMIT AND CONSTRUCTION Issue/Revision/Submission No.

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CINCINNATI, OH 45219-2316  
SCHEDULES & DETAILS

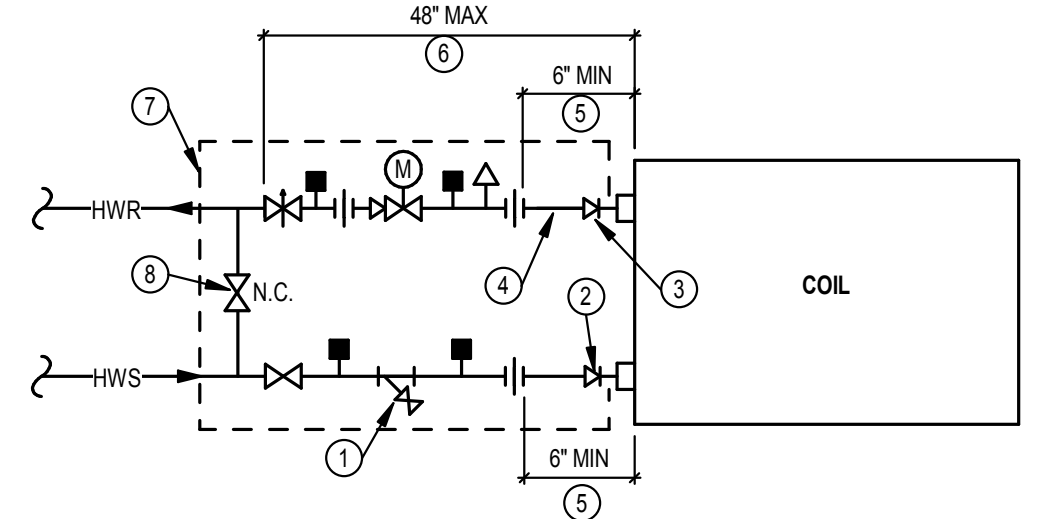
Project Manager  
Approver  
Drawn  
SMG  
Checked  
BWS  
Initial Drawing Date  
2023.12.20  
Project Number  
UCH0316



**M002**

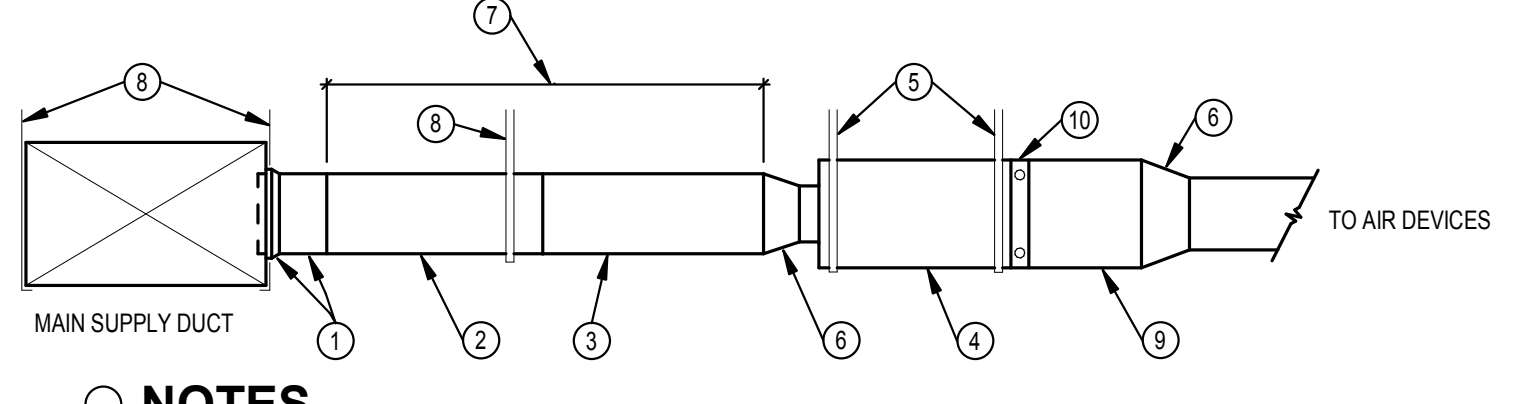
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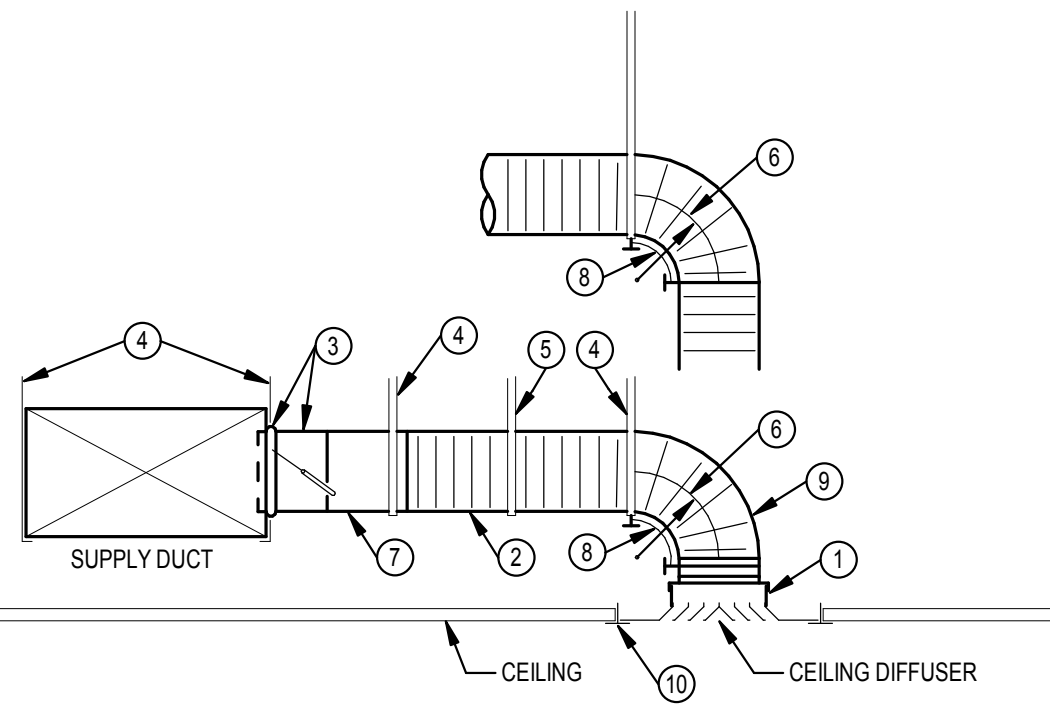
- NOTES**
- LOCATE STRAINER WITH BLOW-DOWN VALVE AND HOSE CONNECTION AT LOW POINT OF COIL PIPING.
  - PIPE REDUCER IF REQUIRED.
  - PIPE REDUCER/INCREASER IF COIL CONNECTION SIZE DIFFERS FROM AUTO CONTROL VALVE SIZE.
  - PIPING SAME SIZE AS AUTO CONTROL VALVE OR COIL CONNECTION, WHICH EVER IS LARGER.
  - 6\"/>
- GENERAL NOTES**
- ALL PIPING SHALL BE FULL SIZE OF MAIN RUN-OUT PIPING UNLESS NOTED OTHERWISE.
  - REFER TO AIR TERMINAL UNIT SCHEDULE FOR AUTOMATIC CONTROL VALVE SIZE.
  - REFER TO SPECIFICATIONS FOR DEVICES NOT TO BE INSULATED. INSULATED DEVICES SHALL INCLUDE EXTENDED NECKS, SHAFTS, ETC., SO THEY ARE ACCESSIBLE ABOVE THE INSULATION.

**3 AIR TERMINAL UNIT REHEAT COIL/DUCT HEATING COIL**  
SCALE: NONE



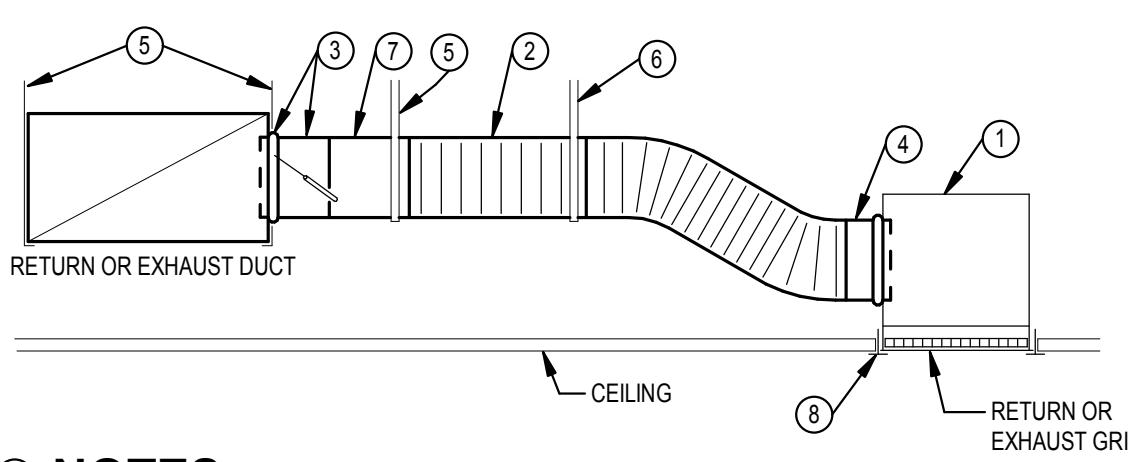
- NOTES**
- CONICAL SPIN-IN BRANCH TAP FITTING, STRAIGHT SIDE INTEGRAL INSULATION GUARD SLEEVE REQUIRED FOR TAP FITTING TO MAIN SUPPLY DUCT WITH INTERNAL INSULATION.
  - ROUND SHEET METAL BRANCH DUCT, SAME SIZE AS AIR TERMINAL UNIT INLET SIZE UNLESS NOTED OTHERWISE.
  - HARD DUCT CONNECTION TO AIR TERMINAL UNIT. FLEX CONNECTION NOT PERMITTED.
  - AIR TERMINAL UNIT.
  - MINIMUM FOUR HANGER RODS FOR UNIT (CORNER POINTS), ATTACH TO STRUCTURE.
  - TRANSITION WHEN REQUIRED.
  - MINIMUM STRAIGHT LENGTH OF DUCT SHALL BE TERMINAL UNIT MANUFACTURER'S REQUIRED LENGTH, BUT AT LEAST 3 TIMES UNIT INLET DIAMETER.
  - DUCT HANGER, ATTACH TO STRUCTURE.
  - DUCT SHALL BE FULL SIZE OF UNIT OUTLET UNLESS NOTED OTHERWISE ON FLOOR PLANS.
  - REHEAT COIL WHEN SPECIFIED. REFER TO COIL DETAIL.

**4 AIR TERMINAL UNIT HARD DUCT CONNECTION**  
SCALE: NONE



- NOTES**
- SQUARE-TO-ROUND ADAPTER IF DIFFUSER NECK IS SQUARE. CONNECT ADAPTOR TO DIFFUSER. SEAL TO AIR DEVICE. SEAL CLASS A. INSULATE ADAPTOR AND EXPOSED BACKSIDE SURFACES OF AIR DEVICE.
  - INSULATED FLEXIBLE DUCT SAME DIAMETER AS BRANCH DUCT (7). 5 FT. MAXIMUM TOTAL LENGTH PER AIR DEVICE. STRETCH FLEXIBLE DUCT TO AT LEAST 90% OF FULLY EXTENDED LENGTH.
  - SPIN-IN BRANCH TAP FITTING, STRAIGHT SIDE WITH MANUAL DAMPER. DAMPER SHAFT IN HORIZONTAL. INTEGRAL INSULATION GUARD SLEEVE REQUIRED FOR TAP FITTING TO MAIN DUCT WITH INTERNAL INSULATION, AND EXTENDED DAMPER SHAFT AND HANDLE WITH STAND-OFF TO ACCOMMODATE EXTERNAL INSULATION.
  - DUCT STRAP HANGER, ATTACH TO STRUCTURE.
  - STRAP HANGER REQUIRED IF LENGTH OF FLEXIBLE DUCT IS LONGER THAN 4 FT.
  - MINIMUM CENTERLINE RADIUS EQUAL TO DUCT DIAMETER.
  - ROUND SHEET METAL BRANCH DUCT, SAME SIZE AS DIFFUSER INLET UNLESS NOTED OTHERWISE.
  - FLEXIBLE DUCT ELBOW SUPPORT. INSTALLED WITH NYLON BANDING PER MANUFACTURER'S INSTRUCTIONS.
  - A RADIUS'S SHEET METAL ELBOW MAY BE USED IN LIEU OF A FLEXIBLE ELBOW SUPPORT WHEN CONNECTED DIRECTLY TO AIR DEVICE.
  - CEILING T-BAR SUPPORT (FOR LAY-IN APPLICATIONS). COORDINATE AND VERIFY T-BAR TYPE FOR COMPATIBILITY WITH DIFFUSER.

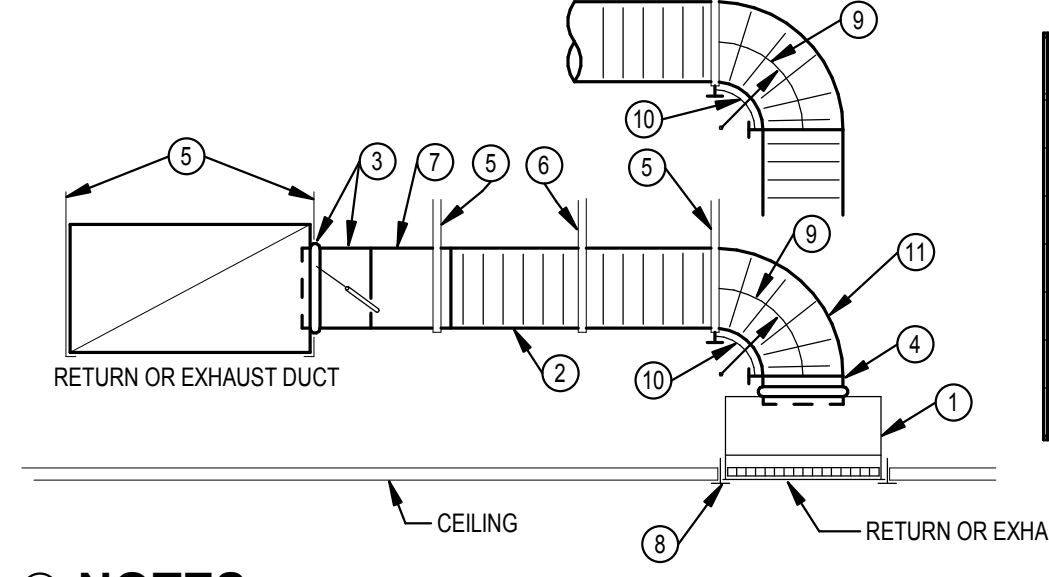
**5 CEILING DIFFUSER DUCT CONNECTION**  
SCALE: NONE



BRANCH CFM	RD. DUCT SIZE
0 TO 80 CFM	6\"/>

- NOTES**
- SHEET METAL PLENUM, FULL SIZE OF GRILLE NECK, MINIMUM 4\"/>

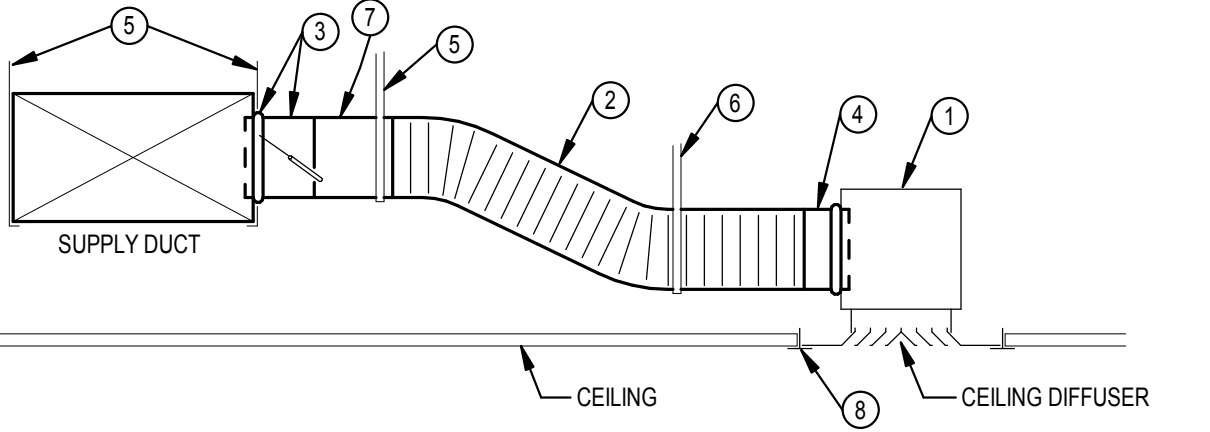
**6 RETURN/EXHAUST GRILLE DUCT CONNECTION**  
SCALE: NONE



BRANCH CFM	RD. DUCT SIZE
0 TO 80 CFM	6\"/>

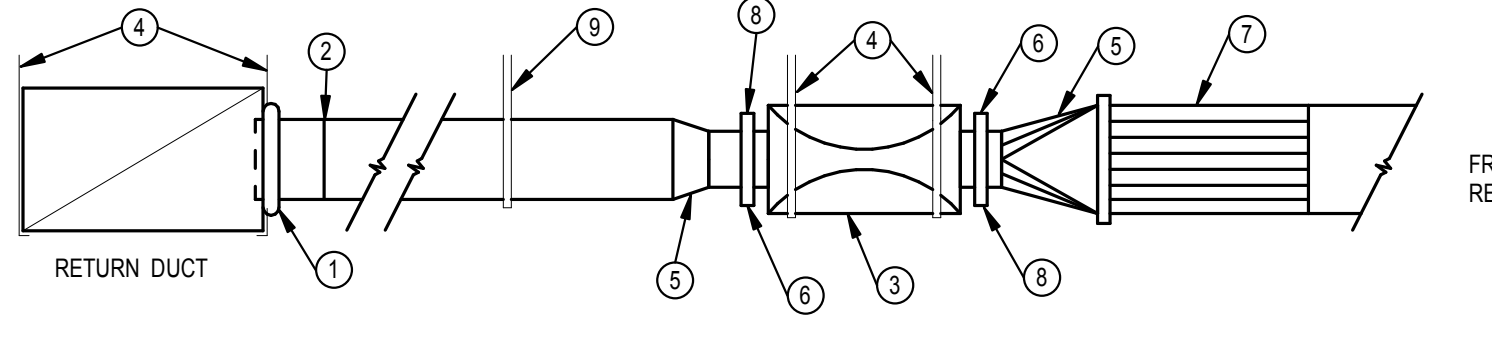
- NOTES**
- SHEET METAL PLENUM, FULL SIZE OF GRILLE NECK, MINIMUM 6\"/>

**7 RETURN/EXHAUST GRILLE DUCT CONNECTION**  
SCALE: NONE



- NOTES**
- SHEET METAL BOX WITH SAME INTERNAL OR EXTERNAL INSULATION AS MAIN SUPPLY DUCT, 2\"/>

**8 CEILING DIFFUSER DUCT CONNECTION**  
SCALE: NONE



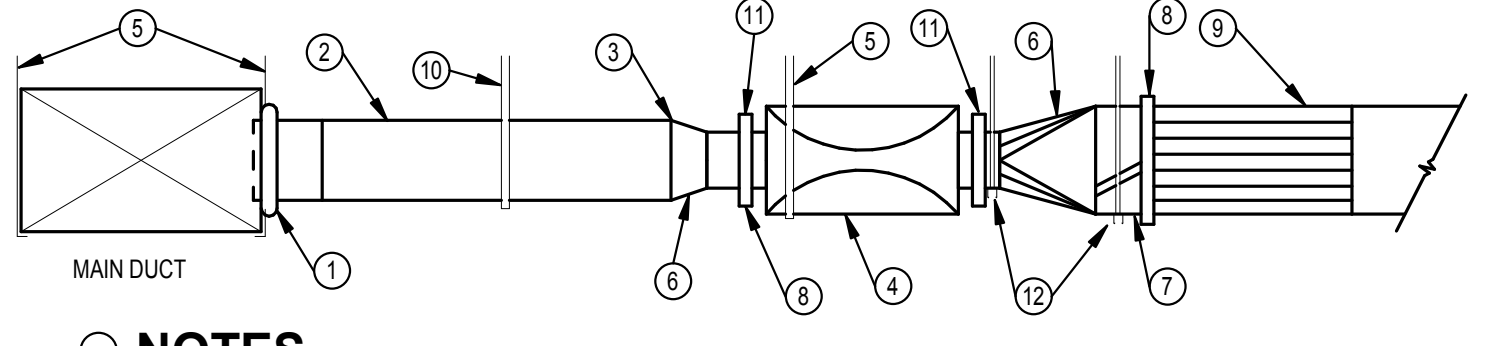
BRANCH CFM	RD. DUCT SIZE
886 TO 1200 CFM	12\"/>

- NOTES**
- CONICAL SPIN-IN BRANCH TAP FITTING, STRAIGHT SIDE INTEGRAL INSULATION GUARD SLEEVE REQUIRED FOR TAP FITTING TO MAIN EXHAUST/RETURN DUCT.
  - ROUND SHEET METAL BRANCH DUCT, SAME SIZE AS AIR CONTROL VALVE OUTLET SIZE UNLESS NOTED OTHERWISE. REFER TO DETAIL SCHEDULED FOR DUCT RUN-OUT SIZE REQUIRED FOR MULTI-VALVE INSTALLATION.
  - EXHAUST/RETURN AIR CONTROL VALVE.
  - CABLE SUPPORTS, ATTACH TO STRUCTURE.
  - TRANSITION WHEN NEEDED.
  - 6\"/>

**USER NOTES:**

- CONSIDER UPSIZING RUN-OUT DUCT BY 1\"/>

**9 RETURN/EXHAUST AIR CONTROL VALVE DUCT CONNECTION**  
SCALE: NONE



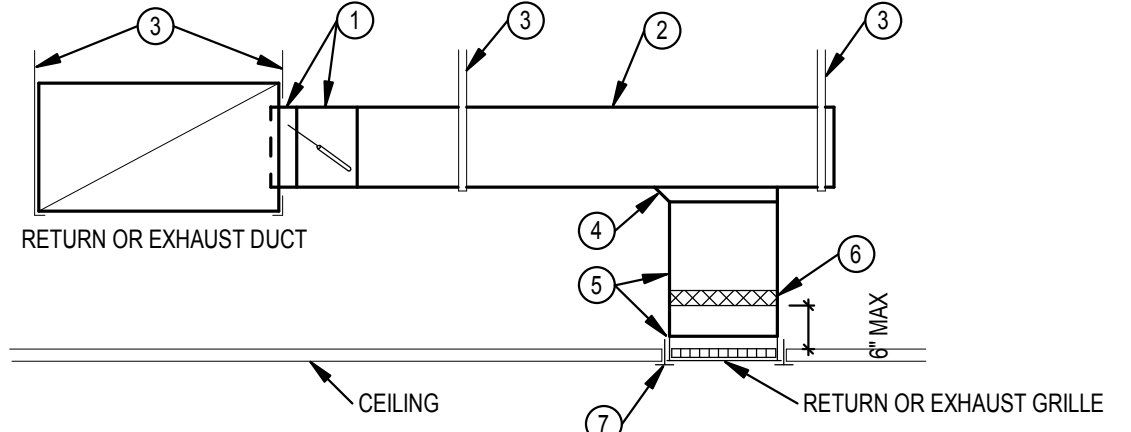
BRANCH CFM	RD. DUCT SIZE
886 TO 1200 CFM	12\"/>

- NOTES**
- CONICAL SPIN-IN BRANCH TAP FITTING, STRAIGHT SIDE INTEGRAL INSULATION GUARD SLEEVE REQUIRED FOR TAP FITTING TO MAIN SUPPLY DUCT WITH INTERNAL INSULATION.
  - ROUND SHEET METAL BRANCH DUCT, SAME SIZE AS AIR CONTROL VALVE INLET SIZE UNLESS NOTED OTHERWISE. REFER TO DETAIL SCHEDULE FOR DUCT RUN-OUT SIZE REQUIRED FOR MULTI-VALVE INSTALLATION.
  - HARD DUCT CONNECTION TO AIR VALVE. FLEX CONNECTION NOT PERMITTED. PROVIDE INSULATION TO MATCH SYSTEM REQUIREMENTS.
  - SUPPLY AIR CONTROL VALVE. EXTERNALLY INSULATE TO PREVENT SWEATING.
  - CABLE SUPPORT. ATTACH TO STRUCTURE.
  - TRANSITION WHEN REQUIRED.
  - HOT WATER REHEAT COIL WHEN SPECIFIED. REFER TO REHEAT COIL PIPING DETAIL. INSULATE COIL.
  - 6\"/>

**USER NOTES:**

- CONSIDER UPSIZING RUN-OUT DUCT BY 1\"/>

**10 SUPPLY AIR CONTROL VALVE DUCT CONNECTION**  
SCALE: NONE



- NOTES**
- 45 DEGREE STATIC BOOT AND MANUAL DAMPER. INTEGRAL INSULATION GUARD SLEEVE REQUIRED WHEN MAIN DUCT HAS INTERNAL INSULATION. EXTENDED DAMPER SHAFT AND HANDLE WITH STAND-OFF REQUIRED FOR EXTERNALLY INSULATED DUCTWORK.
  - SHEET METAL DUCT, SIZE AS NOTED ON PLANS.
  - DUCT STRAP HANGER.
  - STATIC BOOT SIMILAR TO (1) EXCEPT NO DAMPER.
  - SHEET METAL DUCT, FULL SIZE OF GRILLE NECK SIZE. CONNECT AND SEAL DUCT TO GRILLE. SEAL CLASS A.
  - FLEXIBLE DUCT CONNECTOR.
  - CEILING T-BAR SUPPORT (FOR LAY-IN APPLICATIONS). COORDINATE AND VERIFY T-BAR TYPE FOR COMPATIBILITY WITH GRILLE.

**11 RETURN/EXHAUST GRILLE DUCT CONNECTION**  
SCALE: NONE



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3188 BELLEVUE AVENUE  
CINCINNATI, OH 45219-2316  
DETAILS

Project Manager  
Approver  
SMG  
Checked  
BHS  
Install Drawing Date  
2023.12.20  
Project Number  
UCH0316



**M003**

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**GENERAL NOTES**

A. FIRE BARRIERS - OBC 717.5.2 EXCEPTION 3 / FIRE PARTITIONS - OBC 717.5.4 EXCEPTION 4  
  
FIRE DAMPERS ARE NOT REQUIRED (UNLESS SHOWN ON FLOOR PLANS OR SCHEMATICS) AT PENETRATIONS OF FIRE BARRIERS WHERE SUCH WALLS ARE PENETRATED BY DUCTED HVAC SYSTEMS, HAVING A REQUIRED FIRE-RESISTANCE RATING OF 1 HOUR OR LESS IN AREAS OF THESE THAN GROUP H AND ARE IN BUILDINGS EQUIPPED THROUGH WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.3.1.1 OR 903.1.2. HVAC SYSTEM SHALL BE CONSTRUCTED OF SHEET STEEL NOT LESS THAN 26 GAUGE. FLEXIBLE AIR CONNECTORS SHALL NOT BE PROHIBITED IN FULLY DUCTED SYSTEMS AT AIR HANDLING EQUIPMENT CONNECTIONS AND AT AIR CONNECTORS INSTALLATION TO CONNECT METAL DUCT TO A CEILING DIFFUSER AND IS LOCATED ENTIRELY WITHIN THE SAME ROOM AS THE CEILING DIFFUSER. THE FLEXIBLE AIR CONNECTOR SHALL NOT PAS THROUGH ANY WALLS, FLOORS, OR CEILINGS.

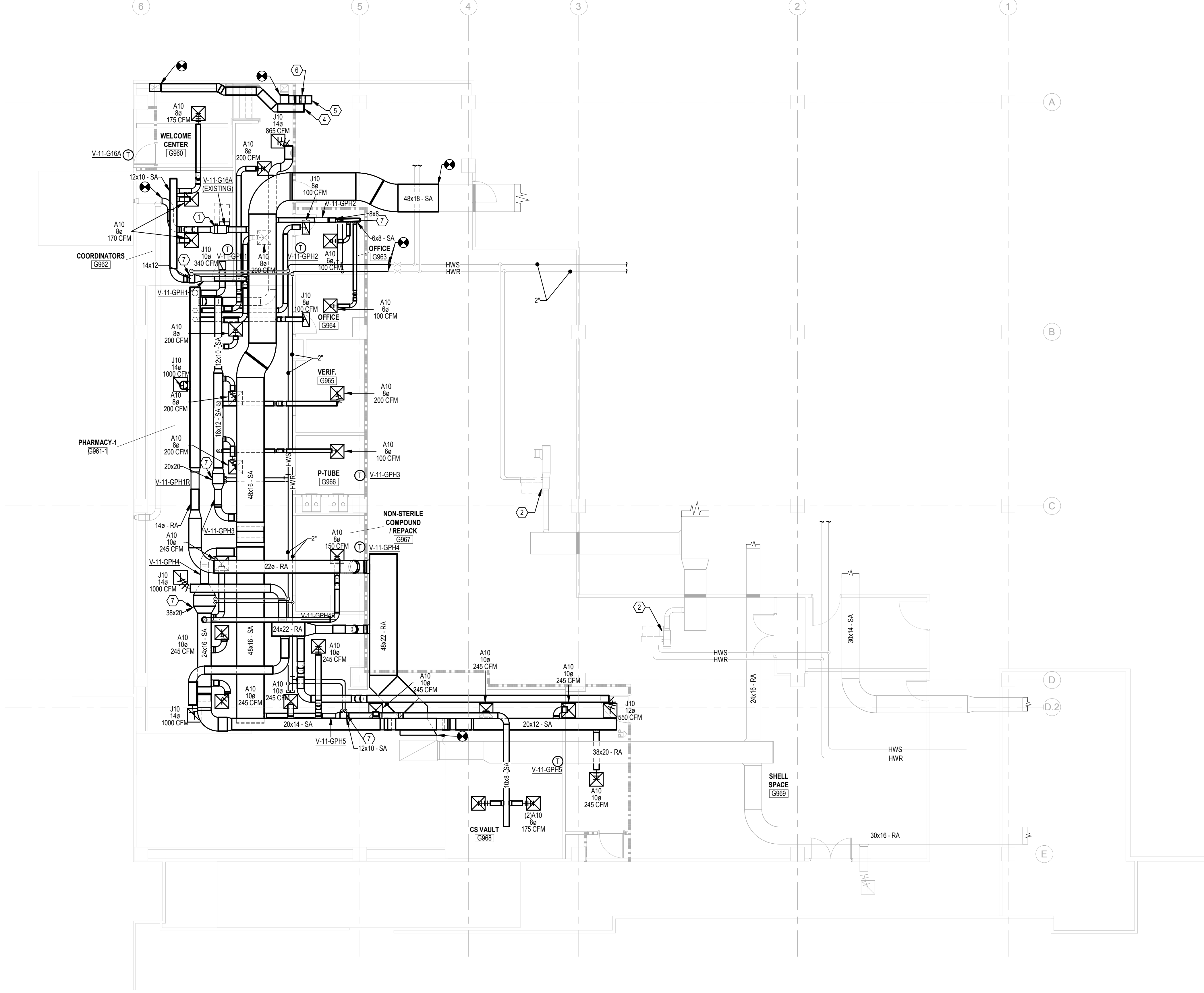
**PLAN NOTES:**

- 1. RELOCATE EXISTING VAV LOCATION SHOWN. REBALANCE TO CFM INDICATED.
- 2. REBALANCE EXISTING VAV TO 650 CFM MAX.
- 3. RELOCATE EXISTING THERMOSTAT FOR EXISTING VAV. EXTEND CONTROL WIRING FROM THERMOSTAT TO NEW VAV BOX LOCATION. CONNECT TO THE BAS.
- 4. CAPPED FOR PHASE TWO USP EXHAUST. HC SHALL COORDINATE NEW DAMPER ACCESS DOORS FOR EXISTING FIRE DAMPERS LOCATED IN SLAB ABOVE. DAMPERS SHOULD BE ACCESSIBLE FROM ABOVE CEILING ON GROUND FLOOR OR WALL AND DUCT ACCESS PANELS SHALL BE PROVIDED ON LEVEL 1 ABOVE.
- 5. CAPPED FOR PHASE TWO GENERAL EXHAUST. HC SHALL COORDINATE NEW DAMPER ACCESS DOORS FOR EXISTING FIRE DAMPERS LOCATED IN SLAB ABOVE. DAMPERS SHOULD BE ACCESSIBLE FROM ABOVE CEILING ON GROUND FLOOR OR WALL AND DUCT ACCESS PANELS SHALL BE PROVIDED ON LEVEL 1 ABOVE.
- 6. TRANSITION DUCT INTO OPEN SPACE BETWEEN BEAMS.
- 7. DUCT MOUNTED HEATING COIL FURNISHED WITH AIR VALVE.



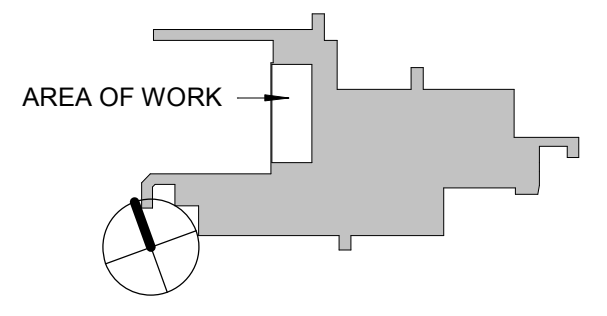
12/20/23  
Date

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1 PARTIAL GROUND FLOOR PLAN - NEW WORK  
SCALE: 1/8" = 1'-0"

**KEY PLAN**



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PARTIAL GROUND FLOOR PLAN - NEW

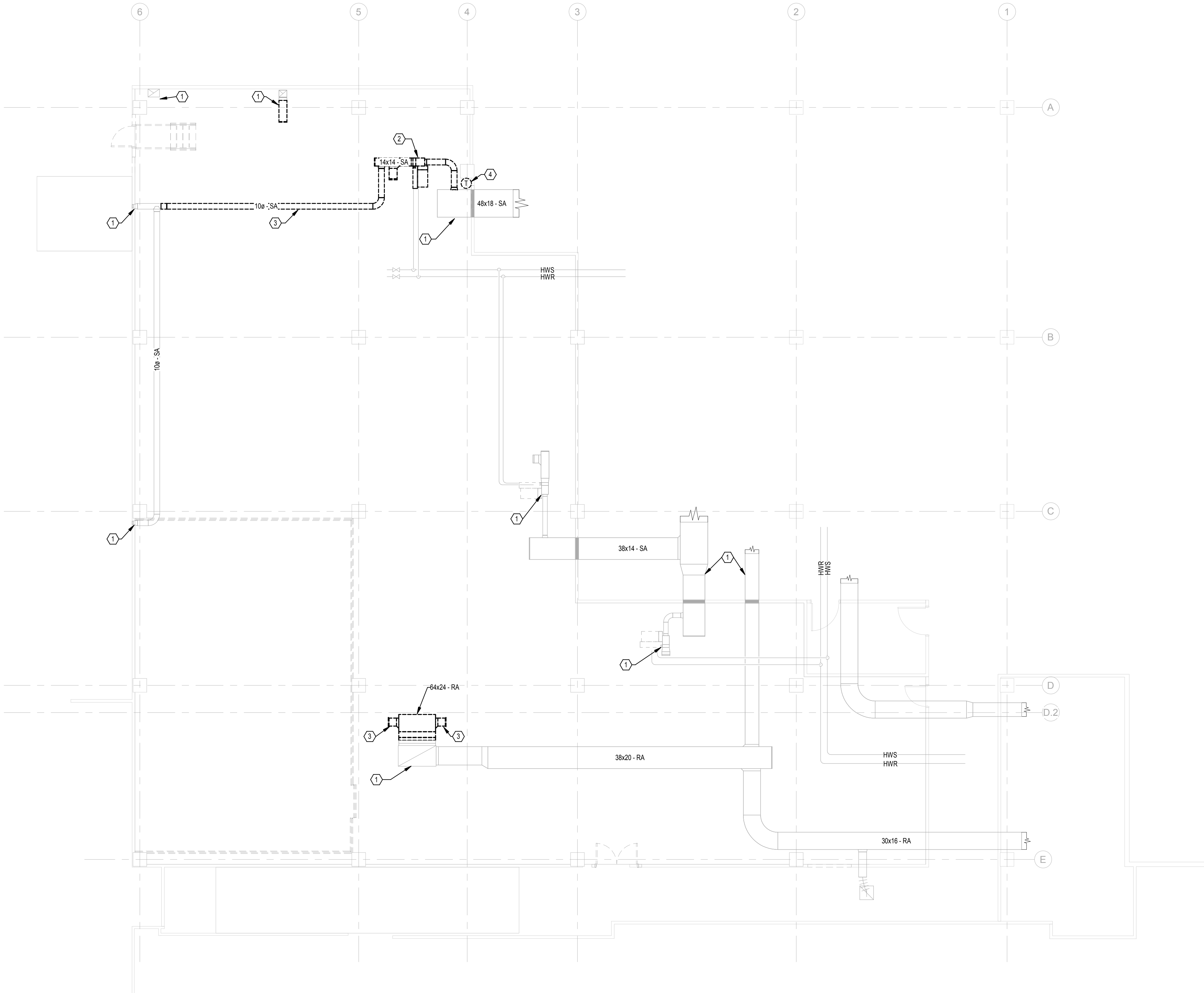
Project Manager  
Approver  
Drawn  
SMG  
Checked  
BHS  
Install Drawing Date  
2023.12.20  
Project Number  
UCH0316



**M101**

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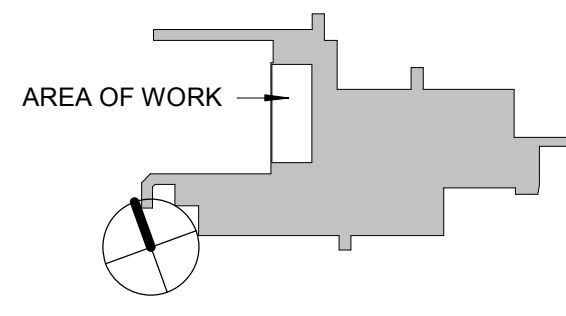
**1 PARTIAL GROUND FLOOR PLAN - DEMOLITION**  
SCALE: 1/8" = 1'-0"



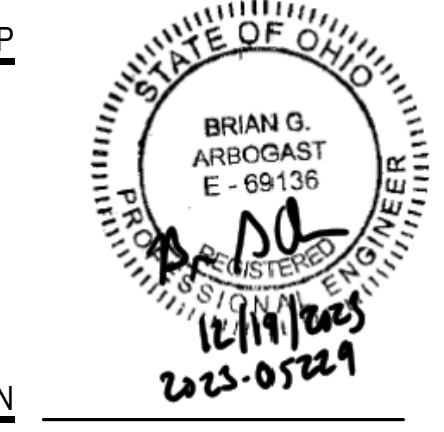
**PLAN NOTES:**

- EXISTING TO REMAIN, TYP.
- RELOCATE EXISTING VAV TO LOCATION SHOWN ON SHEET M101.
- REMOVE DUCT AS INDICATED. CAP AND SEAL EXISTING ACTIVE DUCTWORK AIRTIGHT.
- RELOCATED EXISTING THERMOSTAT TO LOCATION SHOWN ON SHEET M101.

**KEY PLAN**



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CINCINNATI, OH 45219-2316  
PARTIAL GROUND FLOOR PLAN - DEMO

Project Manager  
Approver  
SMG  
Checked  
BHS  
Initial Drawing Date  
2023.12.20  
Project Number  
UCH0316

**M102**