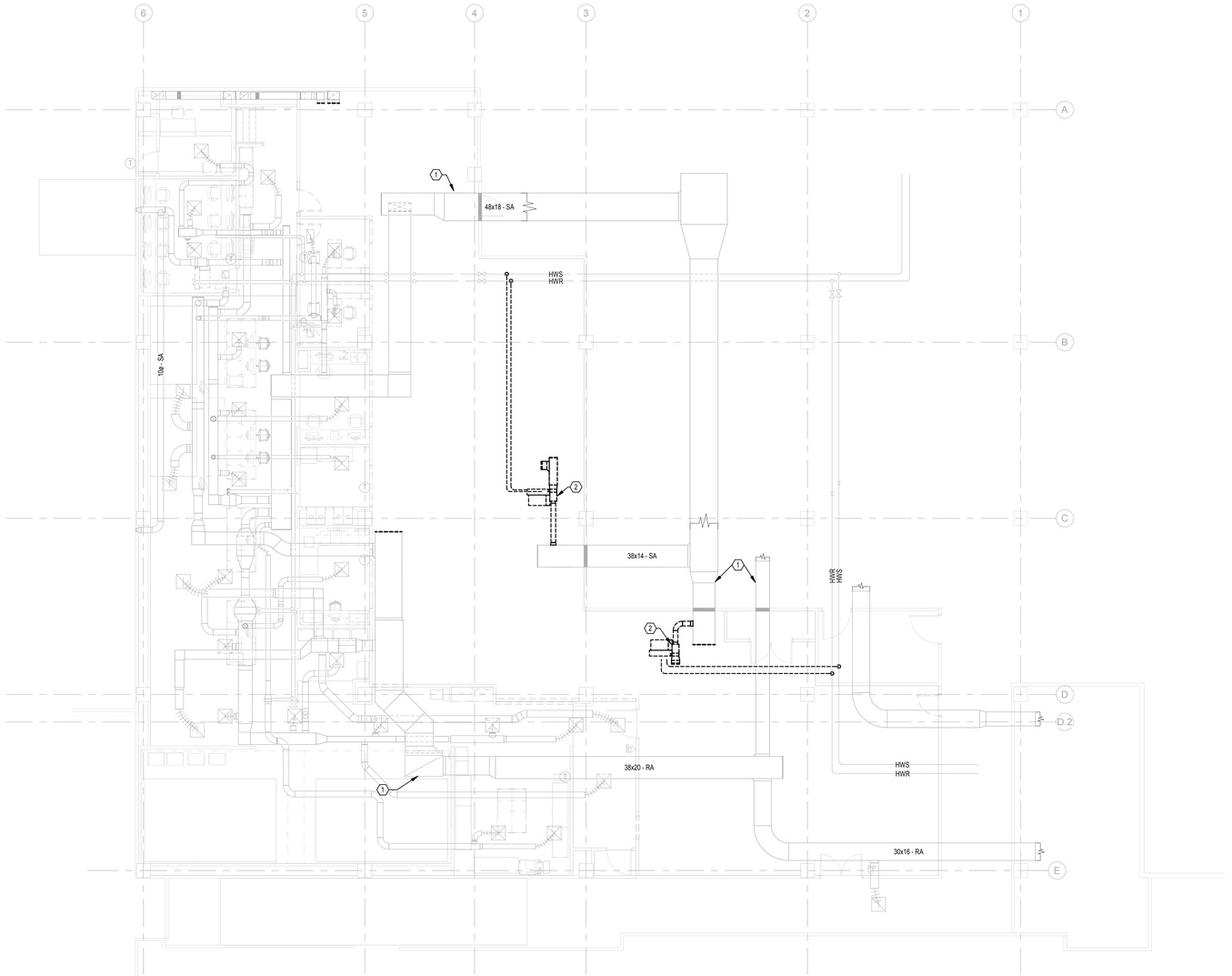
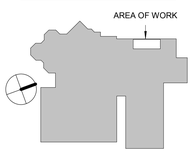
PLAN NOTES:

1. EXISTING TO REMAIN, TYP.
2. REMOVE EXISTING AIR TERMINAL UNIT SERVING PHASE I SHELL SPACE. ALL ASSOCIATED PIPING, DUCTWORK, AIR DEVICES, WIRING AND CONTROLS SHALL BE DEMOLISHED BACK TO EXISTING MAIN AS INDICATED



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

KEY PLAN



No.	Issue/Revision/Submission	Date
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HEAPY

UCMC PHASE 2 PHARMACY RELOCATION
3188 BELLEVUE AVENUE
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PARTIAL GROUND FLOOR PLAN - DEMO

STATE OF OHIO
9/6/24
DAVID
T.
HICKEY
PROFESSIONAL ENGINEER

Project Manager	
Approver	
Drawn	SMG
Checked	BWS
Initial Drawing Date	2024.09.06
Project Number	UCH0316

MD101

DUCTWORK SYMBOLS

RECTANGULAR	ROUND / OVAL	
	CONICAL FITTING	ROUND BRANCH DUCTWORK
ACOUSTIC FITTING	ACOUSTIC FITTING	RECTANGULAR BRANCH DUCTWORK
		SQUARE TEE WITH TURNING VANES NOTE: ALL SQUARE ELBOWS IN RECTANGULAR AND ROUND / OVAL DUCTWORK SHALL BE PROVIDED WITH TURNING VANES. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS.
		RADIUS'D TEE
		RADIUS'D BRANCH
		UNLESS NOTED OTHERWISE ON DRAWINGS, 15° MAX FOR DIVERGING, 30° MAX FOR CONVERGING TRANSITION
		EXISTING DUCTWORK TO REMAIN
		EXISTING DUCTWORK TO REMOVED
		RETURN AIR, RELIEF AIR, OR TRANSFER AIR DUCTWORK. (UP AND DOWN) RADIUSED OR SQUARE WITH TURNING VANES.
		SUPPLY AIR OR OUTDOOR AIR DUCTWORK. (UP AND DOWN) RADIUSED OR SQUARE WITH TURNING VANES.
		EXHAUST AIR DUCTWORK. (UP AND DOWN) RADIUSED OR SQUARE WITH TURNING VANES.
		RECTANGULAR AND ROUND / OVAL DUCTWORK RISE / DROP WITH 90° RADIUSED OR SQUARE ELBOWS AND TURNING VANES.
		RADIUS ELBOW
		90° SQUARE ELBOW (WITH TURNING VANES) NOTE: ALL SQUARE ELBOWS IN RECTANGULAR AND ROUND DUCTWORK SHALL BE PROVIDED WITH TURNING VANES.
		SQUARE THROAT / RADIUS HEEL FITTINGS NOT ACCEPTABLE
AD	AD	ACCESS DOOR OR PANEL
R	R	DUCTWORK RISE IN DIRECTION OF AIR FLOW
D	D	DUCTWORK DROP IN DIRECTION OF AIR FLOW
		FLEXIBLE DUCTWORK
		DUCTWORK WITH ACOUSTICAL LINER. LISTED DUCT SIZES ARE INSIDE CLEAR DIMENSIONS.
		FLEXIBLE CONNECTION
		DUCTWORK CONSTRUCTED OF SPECIAL MATERIAL AS NOTED
		DIRECTION OF PITCH
26x20		RECTANGULAR DUCTWORK DIMENSIONS (W x H)
26ø		ROUND DUCTWORK DIMENSIONS (DIA)
26x20 OV		OVAL DUCTWORK DIMENSIONS (W x H)

DUCTWORK DEVICE SYMBOLS

A3 10ø 300	AIR DEVICE. A3 = DESIGNATION (REFER TO FLOOR PLANS AND AIR DEVICE SCHEDULE FOR VARIOUS DESIGNATIONS). 10ø = NECK SIZE (IN INCHES). 300 = REQUIRED CFM. ALL AIR DEVICE DISCHARGE 4-WAY UNLESS NOTED WITH FLOW ARROWS. AIR DEVICE SHOWN IS 2-WAY SIDE THROW. METHOD OF IDENTIFICATION ALSO APPLIES TO OTHER CEILING MOUNTED AIR DEVICES.
SG1 20x12 300 BOG: 9'-0"	WALL OR DUCTWORK MOUNTED AIR DEVICE. SG1 = DESIGNATION (REFER TO AIR DEVICE SCHEDULE). 20x12 = DUCT CONNECTION SIZE (IN INCHES). 300 = REQUIRED CFM. 9'-0" = MOUNTING HEIGHT FROM FLOOR TO BOTTOM OF GRILLE.
	MANUAL BALANCING DAMPER WITH LOCKING DEVICE
XXX	BDD = BACK DRAFT DAMPER CBD = COUNTER-BALANCED BACK DRAFT DAMPER
A-D	FIRE DAMPER A = TYPE (REFER TO FLOOR PLANS FOR VARIOUS TYPES) D OR S = DYNAMIC OR STATIC
XX	SD = SMOKE DAMPER FS = COMBINATION FIRE - SMOKE DAMPER MDD = MOTORIZED DAMPER AFMS = AIR FLOW MEASURING STATION
SD	DUCT MOUNTED SMOKE DETECTOR. COORDINATE LOCATION.
H	HUMIDITY SENSOR - DUCT MOUNTED
SP	STATIC PRESSURE SENSOR - DUCT MOUNTED
C	CARBON DIOXIDE SENSOR - DUCT MOUNTED
S	TEMPERATURE SENSOR - DUCT MOUNTED

VALVES AND FITTINGS

	CHECK VALVE
	SHUTOFF VALVE (REFER TO SPECIFICATIONS FOR REQUIRED TYPE BASED ON APPLICATIONS)
	COMBINATION SHUTOFF AND BALANCING VALVE (REFER TO SPECIFICATIONS FOR REQUIRED TYPE BASED ON APPLICATIONS)
	CONCENTRIC PIPE REDUCER
FOT FOB	ECCENTRIC PIPE REDUCER
P	PRESSURE GAUGE
T	TEMPERATURE GAUGE OR THERMOMETER
	UNION
	CLEANOUT
	STRAINER
	STRAINER WITH A BLOW DOWN VALVE AND HOSE CONNECTION
	DRAIN VALVE WITH HOSE END CONNECTION
	AUTOMATIC FLOW CONTROLLER WITH P/T PLUG IN AND OUT
	EXPANSION JOINT
	MANUAL AIR VENT
A	AUTOMATIC AIR VENT
	PRESSURE REDUCING VALVE
M	MODULATING 2 PORT AUTOMATIC CONTROL VALVE
M	2 PORT AUTOMATIC CONTROL VALVE, 2-POSITION UNLESS SPECIFIED OTHERWISE
M	MODULATING 3 PORT AUTOMATIC CONTROL VALVE
M	3 PORT AUTOMATIC CONTROL VALVE, 2-POSITION UNLESS SPECIFIED OTHERWISE
M	AUTOMATIC PRESSURE INDEPENDENT CONTROL VALVE
	QUICK OPENING MANUAL VALVE
	SAFETY RELIEF VALVE. FOR HYDRONIC SYSTEMS PIPE DISCHARGE AIR GAPPED TO FLOOR DRAIN UNLESS NOTED OTHERWISE. FOR STEAM SYSTEMS PIPE DISCHARGE TO OUTDOORS.
	VACUUM BREAKER
N	NEEDLE VALVE
	PRESSURE AND TEMPERATURE TEST PLUG
V	VACUUM GAUGE WITH STOP
	END CAP
	GLOBE VALVE
VB	SHUTOFF VALVE AND BOX
	SHUTOFF VALVE ON RISER
S	SOLENOID VALVE
M	WATER METER
F	FLOW METER
BM	BI-METALIC STEAM TRAP AND DRIP ASSEMBLY
TD	THERMODYNAMIC STEAM TRAP AND DRIP ASSEMBLY
IB	INVERTED BUCKET STEAM TRAP AND DRIP ASSEMBLY
FT	FLOAT AND THERMOSTATIC STEAM TRAP AND DRIP ASSEMBLY
TS	THERMOSTATIC STEAM TRAP AND DRIP ASSEMBLY
	PRESSURE GAUGE WITH COCK AND SIPHON LOOP

MISC SYMBOLS

C	CARBON DIOXIDE SENSOR. WHEN WALL MOUNTED, MOUNTING HEIGHT 46" TO MEET ADA REQUIREMENTS. WHEN MOUNTED NEXT TO WALL SWITCH COORDINATE WITH ARCHITECT.
CO	CARBON MONOXIDE SENSOR. WHEN WALL MOUNTED, MOUNTING HEIGHT 46" TO MEET ADA REQUIREMENTS. WHEN MOUNTED NEXT TO WALL SWITCH COORDINATE WITH ARCHITECT.
DP	DIFFERENTIAL PRESSURE SENSOR. WHEN WALL MOUNTED, MOUNTING HEIGHT 46" TO MEET ADA REQUIREMENTS. WHEN MOUNTED NEXT TO WALL SWITCH COORDINATE WITH ARCHITECT.
H	HUMIDITY SENSOR. WHEN WALL MOUNTED, MOUNTING HEIGHT 46" TO MEET ADA REQUIREMENTS. WHEN MOUNTED NEXT TO WALL SWITCH COORDINATE WITH ARCHITECT.
S	TEMPERATURE SENSOR. WHEN WALL MOUNTED, MOUNTING HEIGHT 46" TO MEET ADA REQUIREMENTS. WHEN MOUNTED NEXT TO WALL SWITCH COORDINATE WITH ARCHITECT.
S	TEMPERATURE SENSOR MOUNTED IN CEILING PLENUM.
SP	STATIC PRESSURE SENSOR.
T	SPACE TEMPERATURE SENSOR / THERMOSTAT. WHEN WALL MOUNTED, MOUNTING HEIGHT 46" TO MEET ADA REQUIREMENTS. WHEN MOUNTED NEXT TO WALL SWITCH COORDINATE WITH ARCHITECT.
	EMERGENCY SHUTOFF STATION. 46" MOUNTING HEIGHT UNLESS NOTED OTHERWISE.

GENERAL FLOOR PLAN NOTES

3	PLAN NOTE. APPLIES ONLY TO THE SHEET WHICH IT IS SHOWN UNLESS NOTED OTHERWISE.
3	DETAIL NOTE. APPLIES ONLY TO THE ASSOCIATED DETAIL.
A1	EQUIPMENT, DEVICE, OR PLUMBING FIXTURE MARK. LETTER DESIGNATIONS REFER TO SCHEDULES.
H1 OR H1	EQUIPMENT REFERENCE. LETTER DESIGNATION VARIES. REFER TO SCHEDULES.
2	RISER OR STACK NUMBER
B / H2	DETAIL: B = DETAIL DESIGNATION H2 = SHEET WHERE DETAIL IS LOCATED
1 / H2	SECTION: 1 = SECTION DESIGNATION H2 = SHEET WHERE DETAIL IS LOCATED
A1	"UP TO" SYMBOL (ITEM ON FLOOR ABOVE)
TOE: 3' - 0" BOE: 0' - 6"	APPROXIMATE DIMENSION ABOVE FINISHED FLOOR TO TOP OR BOTTOM OF EQUIPMENT, UNLESS NOTED OTHERWISE
10" ELEV: 8' - 0" / 10" ELEV: 8' - 0"	APPROXIMATE DIMENSION ABOVE FINISHED FLOOR TO CENTERLINE OF PIPE, UNLESS NOTED OTHERWISE
20x20 TOD: 8' - 10" 20x20 BOD: 7' - 2"	APPROXIMATE DIMENSION ABOVE FINISHED FLOOR TO TOP OR BOTTOM OF DUCTWORK, UNLESS NOTED OTHERWISE
UC-X	DOOR UNDERCUT. X = HEIGHT OF UNDERCUT IN INCHES; 0.75 INCH UNDERCUT IF NO HEIGHT IS NOTED. COORDINATE WITH GC.
DL-1	DOOR LOUVER. 1 = SQUARE FEET OF LOUVER.
	CONNECT TO EXISTING
	DEMOLISH TO POINT INDICATED

PIPING SYMBOLS

DOUBLE LINE	SINGLE LINE	
		BOTTOM CONNECTION (45°)
		BOTTOM CONNECTION (90°)
		BRANCH TEE CONNECTION (NOTE: BULLHEAD TEE'S ARE NOT PERMITTED)
		DIRECTION OF PITCH
D	D	DROP
		ELBOW DOWN
		ELBOW UP
		EXISTING PIPE TO BE REMOVED
		EXISTING PIPE TO REMAIN
		FLOW DIRECTION DESIGNATION
		PIPE RISER
		PUMP
R	R	RISE
		TOP CONNECTION (45°)
		TOP CONNECTION (90°)

HVAC PIPING DESIGNATIONS

CHS	CHILLED WATER SUPPLY PIPE
CHR	CHILLED WATER RETURN PIPE
CWS	CONDENSER WATER SUPPLY PIPE
CWR	CONDENSER WATER RETURN PIPE
CHGS	CHILLED WATER GLYCOL SOLUTION SUPPLY PIPE
CHGR	CHILLED WATER GLYCOL SOLUTION RETURN PIPE
D	DRAIN LINE. PITCH IN DIRECTION INDICATED
HWR	HEATING HOT WATER RETURN PIPE
HWS	HEATING HOT WATER SUPPLY PIPE
MU	WATER MAKE-UP PIPE
V	VENT PIPE
ET	EXPANSION TANK PIPE
HG	REFRIGERANT HOT GAS LINE
RL	REFRIGERANT LIQUID LINE
RS	REFRIGERANT SUCTION LINE
10	STEAM SUPPLY PIPE - NUMBER INDICATES P.S.I.G.
HPC	HIGH PRESSURE CONDENSATE RETURN PIPE
HPS	HIGH PRESSURE STEAM SUPPLY PIPE
LPC	LOW PRESSURE CONDENSATE RETURN PIPE
LPS	LOW PRESSURE STEAM SUPPLY PIPE
MPC	MEDIUM PRESSURE CONDENSATE RETURN PIPE
MPS	MEDIUM PRESSURE STEAM SUPPLY PIPE
PC	PUMPED CONDENSATE RETURN PIPE

ABBREVIATIONS

AC - AIR COMPRESSOR OR AIR CONDITIONER
ACCU - AIR COOLED CONDENSING UNIT
AD - ACCESS DOOR OR AREA DRAIN
ADJ - ADJUSTABLE
AFF - ABOVE FINISHED FLOOR
AFG - ABOVE FINISHED GRADE
AFMS - AIR FLOW MEASURING STATION
ALT - ALTERNATE
AP - ACCESS PANEL
APPROX - APPROXIMATE
ARCH - ARCHITECT OR ARCHITECTURAL
ASSY - ASSEMBLY
ATC - AUTOMATIC TEMPERATURE CONTROL (SYNONYMOUS WITH BAS)

BAS - BUILDING AUTOMATION SYSTEM
BDD - BACK DRAFT DAMPER
BFP - BACKFLOW PREVENTER
BLDG - BUILDING
BOB - BOTTOM OF BEAM
BOD - BOTTOM OF DUCT
BOE - BOTTOM OF EQUIPMENT
BOF - BOTTOM OF FOOTING
BOG - BOTTOM OF GRILLE
BOP - BOTTOM OF PIPE
BOT - BOTTOM
BTU - BRITISH THERMAL UNIT
BTUH - BRITISH THERMAL UNIT PER HOUR

CBD - COUNTER BALANCED BACKDRAFT DAMPER
CFCI - CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CFM - CUBIC FEET PER MINUTE
CHS - CHILLED WATER SUPPLY
CHR - CHILLED WATER RETURN
CHGR - CHILLED WATER GLYCOL SOLUTION RETURN
CHGS - CHILLED WATER GLYCOL SOLUTION SUPPLY
CLG - CEILING
CMU - CONCRETE MASONRY UNIT
CO - CLEAN OUT
CO2 - CARBON DIOXIDE
CONN - CONNECT OR CONNECTION
CONTR - CONTRACTOR
CTR - CENTER
CU - COPPER
CW - COLD WATER
CWR - CONDENSER WATER RETURN
CWS - CONDENSER WATER SUPPLY

D - DRAIN LINE
DB - DRY BULB
DDC - DIRECT DIGITAL CONTROLS
DI - DEIONIZED WATER
DIA - DIAMETER
DIM - DIMENSION
DN - DOWN
DWG - DRAWING

EA - EACH OR EXHAUST AIR
EAT - ENTERING AIR TEMPERATURE
EC - ELECTRICAL CONTRACTOR (DIVISION 26)
EJ - EXPANSION JOINT
ELEC - ELECTRICAL
ELEV - ELEVATOR
EQUIP - EQUIPMENT
ET - EXPANSION TANK
ETR - EXISTING TO REMAIN
EQS - EQUIPMENT SUPPLIER
EWT - ENTERING WATER TEMPERATURE
EXH - EXHAUST
EXP - EXPANSION
EXT - EXTERIOR
EX - EXISTING

FD - FLOOR DRAIN
FF - FINISHED FLOOR ELEVATION
FLR - FLOOR
FOB - FLAT ON BOTTOM
FOF - FUEL OIL FLOW
FOG - FUEL OIL GAUGE
FOR - FUEL OIL RETURN
FOS - FUEL OIL SUPPLY
FOT - FLAT ON TOP
FPM - FEET PER MINUTE
FSC - FIRE SUPPRESSION CONTRACTOR (DIVISION 21)
FT - FEET
FTG - FOOTING

G - GAS OR NATURAL GAS
GA - GAUGE
GAL - GALLON
GALV - GALVANIZED
GC - GENERAL TRADES CONTRACTOR
GPM - GALLONS PER MINUTE

HB - HOSE BIBB
HC - HVAC CONTRACTOR (DIVISION 23)
HD - HUB DRAIN
HG - REFRIGERANT HOT GAS
HP - HORSEPOWER
HPC - HIGH PRESSURE CONDENSATE RETURN
HPS - HIGH PRESSURE STEAM SUPPLY
HR - HOUR
HT - HEAT TRACE
HTR - HEATER
HVAC - HEATING, VENTILATING, AND AIR CONDITIONING
HW - HOT WATER
HWR - HEATING HOT WATER RETURN
HWS - HEATING HOT WATER SUPPLY

ID - INSIDE DIAMETER
INV - INVERT ELEVATION
IN - INCHES

KEC - KITCHEN EQUIPMENT CONTRACTOR

L - LENGTH
LAT - LEAVING AIR TEMPERATURE
LAV - LAVATORY
LBS - POUNDS
LPC - LOW PRESSURE CONDENSATE RETURN
LPS - LOW PRESSURE STEAM SUPPLY
LWT - LEAVING WATER TEMPERATURE

MAX - MAXIMUM
MDD - MOTORIZED DAMPER
MEZZ - MEZZANINE
MFR - MANUFACTURER
MH - MANHOLE
MIN - MINIMUM OR MINUTE
MISC - MISCELLANEOUS
MTD - MOUNTED
MTG - MOUNTING
MPC - MEDIUM PRESSURE CONDENSATE RETURN
MPS - MEDIUM PRESSURE STEAM SUPPLY
MU - WATER MAKE-UP

N/C - NORMALLY CLOSED
NIC - NOT IN CONTRACT
N/O - NORMALLY OPEN
NOM - NOMINAL
NPT - NATIONAL PIPE THREAD
NTS - NOT TO SCALE

OA - OUTDOOR AIR
OBD - OPPOSED BLADE DAMPER
OD - OUTSIDE DIAMETER
OFCI - OWNER FURNISHED CONTRACTOR INSTALLED
OFOI - OWNER FURNISHED OWNER INSTALLED

P - PROPANE GAS
PC - PLUMBING CONTRACTOR (DIVISION 22) OR PUMPED CONDENSATE RETURN
PLBG - PLUMBING
PRESS - PRESSURE
PRV - PRESSURE REGULATING VALVE
PSF - POUNDS PER SQUARE FOOT
PSI - POUNDS PER SQUARE INCH
PSIG - POUNDS PER SQUARE INCH GAUGE

RA - RETURN AIR
RAD - RADIUS
RCP - REFLECTED CEILING PLAN
RD - ROOF DRAIN
REC - RECESSED
REQD - REQUIRED
RI - ROUGH IN
RL - REFRIGERANT LIQUID
ROS - REVERSE OSMOSIS WATER SUPPLY
ROR - REVERSE OSMOSIS WATER RETURN
RPM - REVOLUTIONS PER MINUTE
RS - REFRIGERANT SUCTION

S - SPRINKLER (WET)
SA - SUPPLY AIR
SAN - SANITARY OR SANITARY DRAIN
SCH - SCHEDULE
SCW - SOFT COLD WATER
SHT - SHEET
SPEC - SPECIFICATIONS
SQ - SQUARE
SR - SUPPLY RISER
SRV - SAFETY RELIEF VALVE
SS - STAINLESS STEEL
STD - STANDARD
STM - STORM OR STORM DRAINAGE
STRUC - STRUCTURAL OR STRUCTURE
SUC - SITE UTILITY CONTRACTOR

TEMP - TEMPERATURE
TOB - TOP OF BEAM
TOD - TOP OF DUCT
TOE - TOP OF EQUIPMENT
TOF - TOP OF FOOTING
TOJ - TOP OF JOIST
TOP - TOP OF PIPE
TOS - TOP OF SLAB OR TOP OF STEEL
TYP - TYPICAL

UNO - UNLESS NOTED OTHERWISE

V - VENT
VAC - VACUUM
VEL - VELOCITY
VFD - VARIABLE FREQUENCY DRIVE (ADJUSTABLE FREQUENCY MOTOR CONTROLLER)
VIB - VALVE IN BOX
VOL - VOLUME
VTR - VENT THROUGH ROOF
VR - VENT RISER

W/ - WITH
W/O - WITHOUT
WB - WET BULB
WCO - 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	SHEET NAME
M001	HVAC LEGEND & INDEX
M002	SCHEDULES & DETAILS
M003	DETAILS
M004	CONTROLS
M101	PARTIAL GROUND FLOOR PLAN - NEW WORK
M102	PARTIAL THIRD FLOOR PLAN - NEW WORK
M103	PARTIAL ROOF PLAN - NEW WORK
MD101	PARTIAL GROUND FLOOR PLAN - DEMO

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HVAC LEGEND & INDEX

STATE OF OHIO
9/6/24
DAVID T. RICKEY
E - 79101
REGISTERED
PROFESSIONAL ENGINEER

Project Manager: Approver
Drawn: SMG
Checked: BWS
Initial Drawing Date: 2024.09.06
Project Number: UCH0316

M001

AIR CONTROL UNITS

GENERAL NOTES:
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." - CONSANT VOLUME EXHAUST.
B. 0.35" MAX S.P. DROP THRU UNIT & COIL AT MAX CFM.
C. HOT WATER REHEAT COIL CAPACITIES BASED ON 55 F ENT. AIR & 160 F ENT. WATER, AND MAX 7 FT. HD. W.P.D.
D. AUTO VALVES SHALL BE 2-WAY TYPE UNLESS NOTED OTHERWISE.
E. WHEN PICV IS INDICATED, MINIMUM REQUIRED INLET PRESSURE SHALL NOT EXCEED 5 PSIG.

ROOM NO.	CFM OFFSET	UNIT NO.	TYPE	PRES. RANGE	INLET DIA.	CFM MAX.	CFM MIN.	HEATING MAX CFM		MBH	GPM	RUNOUT SIZE	AUTO VALVE TYPE	MIN. AUTO. VALVE CV	MAX N.C.	SEE NOTE
	+280															
ANTE ROOM	SUPPLY	V-11-GPH10	C.V.R	0.3"	8"D	720	720	720		19.6	**1.4**	3/4	2-WAY	0.7	35	
G971	ROOM RETURN	V-11-GPH10R	V.V.	0.3"	8"D	440	440								35	
						280	280									
	+295															
NON HAZ COMPOUNDING	SUPPLY	V-11-GPH9	C.V.R	0.3"	(2)14"D	3,690	3,690	3,690		100.1	**6.7**	1-1/4	2-WAY	3.2	35	
G973	ROOM RETURN	V-11-GPH9R	V.V.	0.3"	(2) 12"D	3,395	3,395								35	
	-175															
NEG DECASING	SUPPLY	V-11-GPH11	C.V.R	0.3"	8"D	595	595	595		16.2	**1.1**	3/4	2-WAY	0.5	35	
G975	ROOM EXHAUST	V-11-GPH11E1	V.V.	0.3"	8"D	485	485								35	
	HOOD EXHAUST	V-11-GPH11E2 (NU-814-400)	V.V.	0.3"	8"D	285	285								35	
BREAK ROOM, LOCKER, DRESS																
G961, G962, G962A	SUPPLY	V-11-GPH7	C.V.R	0.3"	8"D	340	340	340		9.3	**0.7**	3/4	2-WAY	0.3	35	
SHARED OFFICE, SHARED OFFICE																
G965, G967	SUPPLY	V-11-GPH8	C.V.R	0.3"	8"D	400	400	400		10.9	**0.8**	3/4	2-WAY	0.4	35	
REFRIGERATED STORAGE																
G978	SUPPLY	V-11-GPH12	C.V.R	0.3"	(2) 12"D	1,260	1,260	1,260		34.2	**2.3**	3/4	2-WAY	1.1	35	
PHARMACY																
XXX	SUPPLY	V-11-GPH13	C.V.R	0.3"	8"D	750	750	750		20.4	**1.4**	3/4	2-WAY	0.7	35	
GENERAL RETURN																
REFRIGERATED STORAGE, PHARMACY	ROOM RETURN	V-11-GPH2R	V.V.	0.3"	(2) 12"D	1,680	1,680								35	
SHARE OFFICE, SHARED OFFICE	ROOM RETURN	V-11-GPH8R	V.V.	0.3"	8"D	400	400								35	

BASIS OF DESIGN: ANTEC VFX
1. ROOM RETURN SHALL TRACK THE ROOM SUPPLY PLUS CFM OFFSET.
2. ROOM SUPPLY SHALL TRACK THE ROOM TOTAL EXHAUST PLUS CFM OFFSET.
3. AIR VALVE SHALL BE SHUT-OFF TYPE.
4. AIR VALVE TO HAVE EPOXY COATING TO RESIST CORRISION.
5. AIR VALVE SHALL BE ENABLED BY "AUXILARY" SWITCH ON HOOD.

FANS

GENERAL NOTES:
A. ALL FANS SHALL BE A.M.C.A. 211 AND 311 PERFORMANCE CERTIFIED AND SHALL BEAR THE A.M.C.A. LABEL.
B. SONES VALUES BASED ON A.M.C.A. 301 MEASURED AT 5 FT.
C. MOTOR HORSEPOWERS LISTED SHALL BE CONSIDERED MINIMUM.
E. ROOF & WALL OPENINGS ARE APPROX. VERIFY SIZE & COORDINATE.
F. COORDINATE STEEL FRAMING AROUND ROOF OPENING WHERE REQUIRED FOR DECK SUPPORT, AND WALL LINTELS FOR WALL OPENINGS.
G. WHEN APPLICABLE, REFER TO SPECIFICATIONS FOR VIBRATION ISOLATOR TYPES AND SEISMIC RESTRAINT REQUIREMENTS.
H. VFD'S SHALL BE CONSTRUCTED AND LABELED FOR REQUIRED SCCR (SHORT CIRCUIT CURRENT RATING). COORDINATE WITH DIVISION 26.
I. IF EC MOTORS ARE INDICATED OR SPECIFIED, EACH MOTOR SHALL BE PROVIDED WITH FACTORY DISCONNECTING MEANS, INTERNAL OVERLOAD PROTECTION, FIELD ADJUSTABLE SPEED CONTROL, AND REMOTE ANALOG SPEED CONTROL INPUT WHEN REMOTE CONTROL IS SPECIFIED, COORDINATED WITH THE BUILDING AUTOMATION SYSTEM.

NOTES:
1.

MARK	DESCRIPTION	SERVICE	CONNECTED CFM	FAN CFM	EXTERNAL STATIC PRESSURE (IN. W.C.)	APPROX. WHEEL DIAMETER	MAXIMUM SONES	MOTOR: HORSEPOWER (HP)	MOTOR: VOLTAGE - PHASE	MOTOR: ELECTRONICALLY COMMUTATED	MOTOR: ECM MCA (AMPS, TOTAL)	MOTOR: ECM MOCP (AMPS, TOTAL)	MOTOR: VARIABLE FREQUENCY DRIVE	MOTOR: MINIMUM SCCR (AMPS)	APPROX. ROOF/WALL OPENING	APPROX. WEIGHT (LBS.)	VIBRATION ISOLATOR TYPE	SEISMIC RESTRAINTS: REQUIRED	SEISMIC RESTRAINTS: IMPORTANCE FACTOR	BASIS OF DESIGN: MANUFACTURER	BASIS OF DESIGN: MODEL	SEE NOTE
GPF-1	CENTRIFUGAL FUME EXHAUST FAN	GROUND FLOOR PHARMACY	770	1000	1.4	10"	24	1	460/3	-			•			289		-	-	GREENHECK	FJI-10-BI-X	

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: SUMMER °F DB	SUMMER % RH (NOTE 1,3)	WINTER °F DB	WINTER % RH (NOTE 1,3)	MINIMUM TOTAL AIR CHANGES (NOTE 7)	DESIGN PRESSURE RELATIONSHIP (NOTE 6)	SEE NOTE
PHARMACY	68	MAX 60	68	30%	4	POS	-
ANTE ROOM	68	MAX 60	68	30%	30	POS (+0.02)	-
NON-HAZ COMPOUNDING	68	MAX 60	68	30%	30	POS (+0.02)	-
NEG DECASING	68	MAX 60	68	30%	30	NEG	5
ALL OTHER SPACES	75-72	MAX 60	70-72	FLOATING	-	-	-

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. INSULATE FROM 24" UPSTREAM OF BACKDRAFT / ISOLATION DAMPER TO PENETRATION OF WALL / ROOF.
5. CONCEALED ROUND RUNOUT DUCTS TO AIR DEVICES MAY BE 1" S.P. CLASS.

DUCT SYSTEM	S.M.A.C.N.A. CLASS: S.P. CONSTRUCT.	SEAL CLASS	LEAKAGE CLASS: RECT	LEAKAGE CLASS: RND	INTERNALLY LINED	EXTERNAL INSULATION	DOUBLE WALL INSULATED	NOT INSULATED	SEE NOTE
SUPPLY DUCTWORK UPSTREAM OF VAV BOXES (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 (GPF-1)	-2"	A	16	8	-	NOTE 4	-	•	5
EXHAUST (EF-10)	-3"	A	8	4	-	NOTE 4	-	•	3,5

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.

NOTES:
1. None.

MARK	DESCRIPTION	MOUNTING TYPE: LAY-IN	SURFACE	DUCT	SPLINE	SNAP-IN	MATERIAL: STEEL	ALUMINUM	STAINLESS STEEL	FINISH: W.B.E.	E.C.L.	C.C.B.A.	OPPOSED BLADE DAMPER	SQ-TO-RO NECK ADAPTOR	BASIS OF DESIGN: MANUFACTURER	BASIS OF DESIGN: MODEL	SEE NOTE
A10	STANDARD SQ. PLAQUE CEILING DIFFUSER - ROUND NECK - 24 X 24	•						•		•					TITUS	OMNI	
H10	SIDEWAL GRILLE - RETURN		•					•		•			•		TITUS	350FL	
J10	EGGCRATE CEILING GRILLE - RETURN - 24 X 24	•						•		•					TITUS	50F	
J11	EGGCRATE CEILING GRILLE - RETURN -12 X 24	•						•		•					TITUS	50F	
K10	EGGCRATE CEILING GRILLE, EXHAUST - 12 X 24							•		•					TITUS	50F	
K11	SIDEWALL GRILLE - EXHAUST		•					•		•			•		TITUS	350FL	
T10	LAMINAR FLOW HEPA FILTER DIFFUSER - 24 X 48		•				•			•					TITUS	TRITECR	

AIR PRESSURE STABILIZERS

GENERAL NOTES:
1. ALL DEVICES ARE CONTRACTOR INSTALLED AND SEALED.
2. CONTRACTOR TO SET COUNTERBALANCING WEIGHT TO MATCH THE DIFFERENTIAL PRESSURE AS SCHEDULED.
3. ROOM AIRFLOW OFFSETS MAY NEED ADJUSTED TO ENSURE DAMPER IS WITHIN ITS OPERATING RANGE.

NOTES:
1. COORDINATE OPENING LOCATION AND SIZE TO ENSURE PROPER INSTALLATION. WALL THICKNESS SHALL BE VERIFIED COMPATIABLE WITH BOD MODEL # PRIOR TO ORDER.
2. UNIT MOUNTED HIGH ON WALL.
3. UNIT MOUNTED LOW ON WALL.
4. UNIT MOUNTED LOW ON DOOR.

MARK	INLET ROOM	OUTLET ROOM	CFM	DIFF. PRESSURE (in. w.c.)	BASIS OF DESIGN: MANUFACTURER	BASIS OF DESIGN: SERIES	BASIS OF DESIGN: MODEL	DIMENSIONS: OPENING WIDTH	OPENING HEIGHT	OVERALL INCL. FRAME WIDTH	OVERALL INCL. FRAME HEIGHT	OVERALL INCL. FRAME DEPTH	NOTES
PS1	NON-HAZ	ANTE	1230	0.03	AERCON	100 LFA	750/5 SS	30.3"	24.9"	32.7"	27.3"	7.25"	3

VENTILATION SCHEDULE

ZONE UNIT	ROOM NO.	Occup. Identity	Occupancy Category	Occupancy Sub-Category	OA CFM/ Person (Rp)	Zone Popultn. (Pz)	AREA (SF)	OA CFM/ SqFt (Ra)	Min OA AC/HR	Zone OA (Voz)	Actual Supply (CFM)	Min AC/HR	Res. CFM/ SqFt	Res. AC/HR	Air Distribution Effectiveness (Ez)	Vpzm Tr90/60m	Vpzm (CFM)	Zp	Evz 1+Xs-Vp	Space Height (ft)
V-11-GPH7	G961 - BREAK ROOM	D01	General	Break rooms	5.0	3	118	0.06		28	170		1.44	10.80	0.80	103%	175	16%	0.96	8
	G962 - LOCKER	N30	Exhaust	Locker rooms for athletic, industrial and f			119				***120***		1.01	7.60	0.80		0		1.12	8
	G962A - DRESS	F05	Office Buildings	Office space	5.0	1	40	0.06		9	***50***		1.25	9.40	0.80	70%	35	26%	0.86	8
V-11-GPH8	G967 - SHARED OFFICE	F05	Office Buildings	Office space	5.0	4	174	0.06		38	***200***		1.15	8.60	0.80	70%	140	27%	0.85	8
	G965 - SHARED OFFICE	F05	Office Buildings	Office space	5.0	4	190	0.06		39	***200***		1.05	7.90	0.80	73%	145	27%	0.85	8
V-11-GPH9	G973 - NON-HAZ COMPOUNDING	T16	Diagnostic and Treatment	Pharmacy (b)			533		2.00	142	***3690***	50.00	6.92	51.90	0.80	96%	3555	4%	1.08	8
V-11-GPH10	G971 - ANTE ROOM	T16	Diagnostic and Treatment	Pharmacy (b)			168		2.00	45	***720***	30.00	4.29	32.10	0.80	94%	675	7%	1.05	8
V-11-GPH11	G975 - NEG DECASING	T16	Diagnostic and Treatment	Pharmacy (b)			148		2.00	39	595	30.00	4.02	30.20	0.80	100%	595	7%	1.05	8
V-11-GPH12	G978 - REFRIGERATED STORAGE	X02	Support Space	Clean workroom or clean holding			1203		2.00	321	***1260***	4.00	1.05	7.90	0.80	96%	1210	27%	0.86	8
	G967 - TOILET	Q03	inpatient Nursing	Toilet room			67								0.80		0		1.12	8
V-11-GPH13	PHARMACY	T16	Diagnostic and Treatment	Pharmacy (b)			903		2.00	241	750	4.00	0.83	6.20	0.80	97%	730	33%	0.79	8
AHU-11						**12**	**3663**	---		**902**	**7755**						**7260**	**0.33**	**0.79**	
																	Ev ==>	0.82	Vou ==>	
															Multiple Zone:		**OA CFM Req'd (Vot)=>**	**1075**	**CFM**	D ==>	1.00		
															% OA @ max clg cfm=>			**14%**		Xs ==>	0.12		

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HEAPY

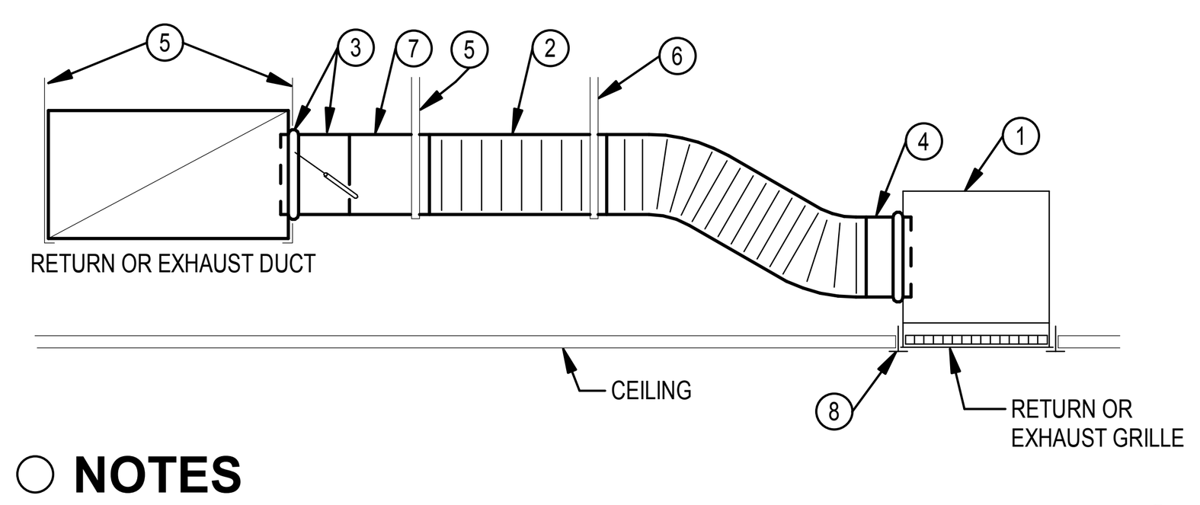
09/06/24 Date
1 ISSUED FOR PERMIT AND CONSTRUCTION Issue/Revision/Submission No.

UCMC PHASE 2 PHARMACY RELOCATION
3188 BELLEVUE AVENUE
CINCINNATI, OH 45219-2316
SCHEDULES & DETAILS

STATE OF OHIO 9/6/24 DAVID W. RICKEY PROFESSIONAL ENGINEER

Project Manager: Approver
Drawn: SMG
Checked: BWS
Initial Drawing Date: 2024.09.06
Project Number: UCH0316

M002

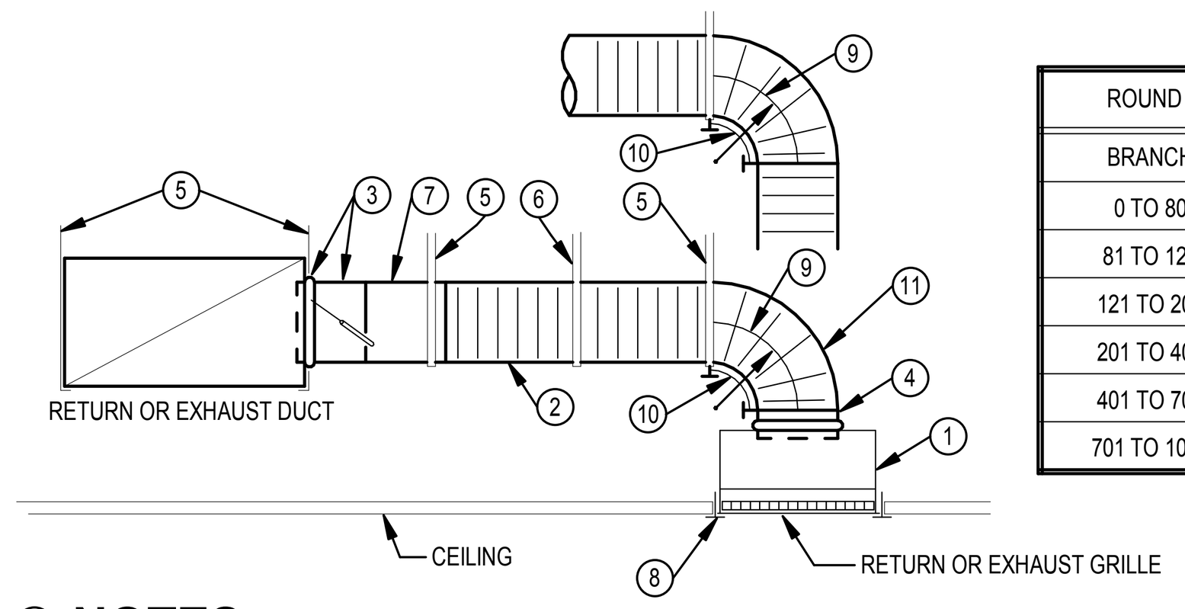


ROUND SHEETMETAL BRANCH DUCT	
BRANCH CFM	RD. DUCT SIZE
0 TO 80 CFM	6"D
81 TO 120 CFM	7"D
121 TO 200 CFM	8"D
201 TO 400 CFM	10"D
401 TO 700 CFM	12"D
701 TO 1000 CFM	14"D

○ NOTES

1. SHEET METAL PLENUM, FULL SIZE OF GRILLE NECK, MINIMUM 4" TALLER THAN DUCT RUNOUT SIZE, WITH SAME INTERNAL OR EXTERNAL INSULATION AS RETURN OR EXHAUST DUCT, CONNECT TO GRILLE. SEAL PLENUM AND CONNECTION TO GRILLE, SEAL CLASS A.
2. 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.
3. 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. EXTENDED DAMPER SHAFT AND HANDLE WITH STAND-OFF REQUIRED FOR EXTERNALLY INSULATED DUCTWORK.
4. SPIN-IN TAP FITTING SIMILAR TO (3) EXCEPT NO DAMPER.
5. DUCT STRAP HANGER. ATTACH TO STRUCTURE.
6. STRAP HANGER REQUIRED IF LENGTH OF FLEXIBLE DUCT IS LONGER THAN 4 FT.
7. ROUND SHEET METAL BRANCH DUCT, SIZE AS INDICATED IN ADJACENT SCHEDULE UNLESS NOTED OTHERWISE ON PLANS.
8. CEILING T-BAR SUPPORT (FOR LAY-IN APPLICATIONS). COORDINATE AND VERIFY T-BAR TYPE FOR COMPATIBILITY WITH GRILLE.

6 RETURN/EXHAUST GRILLE DUCT CONNECTION
SCALE: NONE



ROUND SHEETMETAL BRANCH DUCT	
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0 TO 80 CFM	6"D
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701 TO 1000 CFM	14"D

○ NOTES

1. SHEET METAL PLENUM, FULL SIZE OF GRILLE NECK, MINIMUM 6" TALL WITH SAME INTERNAL OR EXTERNAL INSULATION AS RETURN OR EXHAUST DUCT. CONNECT TO GRILLE. SEAL PLENUM AND CONNECTION TO GRILLE, SEAL CLASS A.
2. 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.
3. 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. EXTENDED DAMPER SHAFT AND HANDLE WITH STAND-OFF REQUIRED FOR EXTERNALLY INSULATED DUCTWORK.
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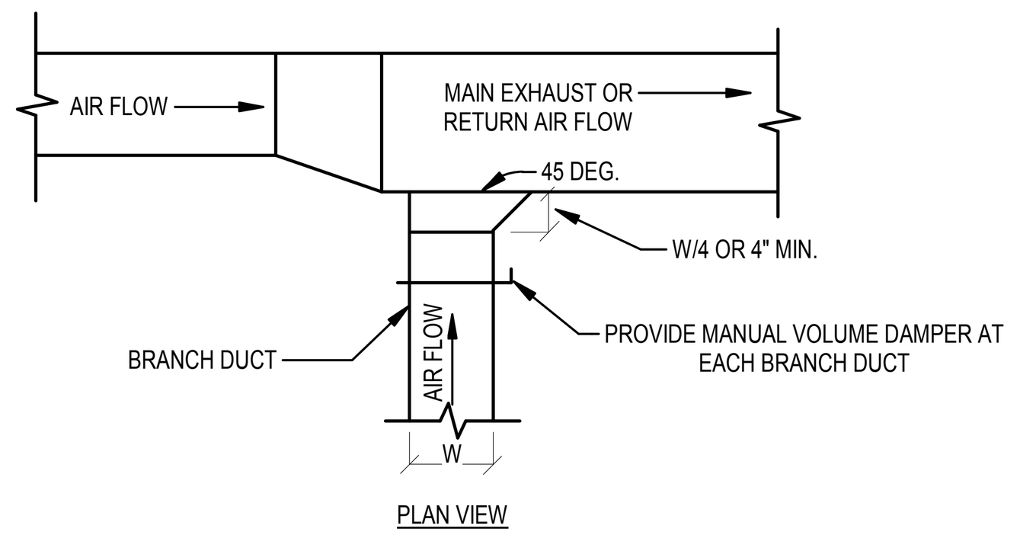
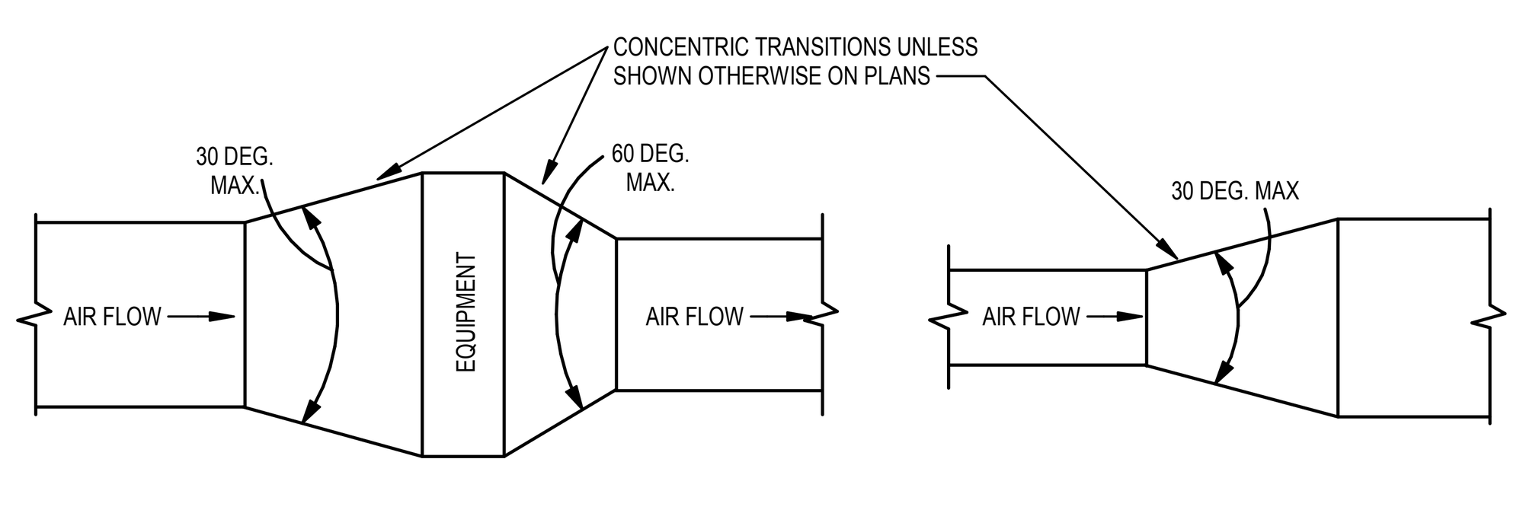
7. ROUND SHEET METAL BRANCH DUCT, SIZE AS INDICATED IN ADJACENT SCHEDULE UNLESS NOTED OTHERWISE ON PLANS.
8. CEILING T-BAR SUPPORT (FOR LAY-IN APPLICATIONS). COORDINATE AND VERIFY T-BAR TYPE FOR COMPATIBILITY WITH GRILLE.
9. MINIMUM CENTERLINE RADIUS EQUAL TO DUCT DIAMETER.
10. FLEXIBLE DUCT ELBOW SUPPORT, INSTALLED WITH NYLON BANDING PER MANUFACTURER'S INSTRUCTIONS.
11. A RADIUS'D SHEET METAL ELBOW MAY BE USED IN LIEU OF A FLEXIBLE ELBOW SUPPORT WHEN CONNECTED DIRECTLY TO AIR DEVICE.

5 RETURN/EXHAUST GRILLE DUCT CONNECTION
SCALE: NONE



13 EXHAUST OR RETURN BRANCH DUCTWORK
SCALE: NONE

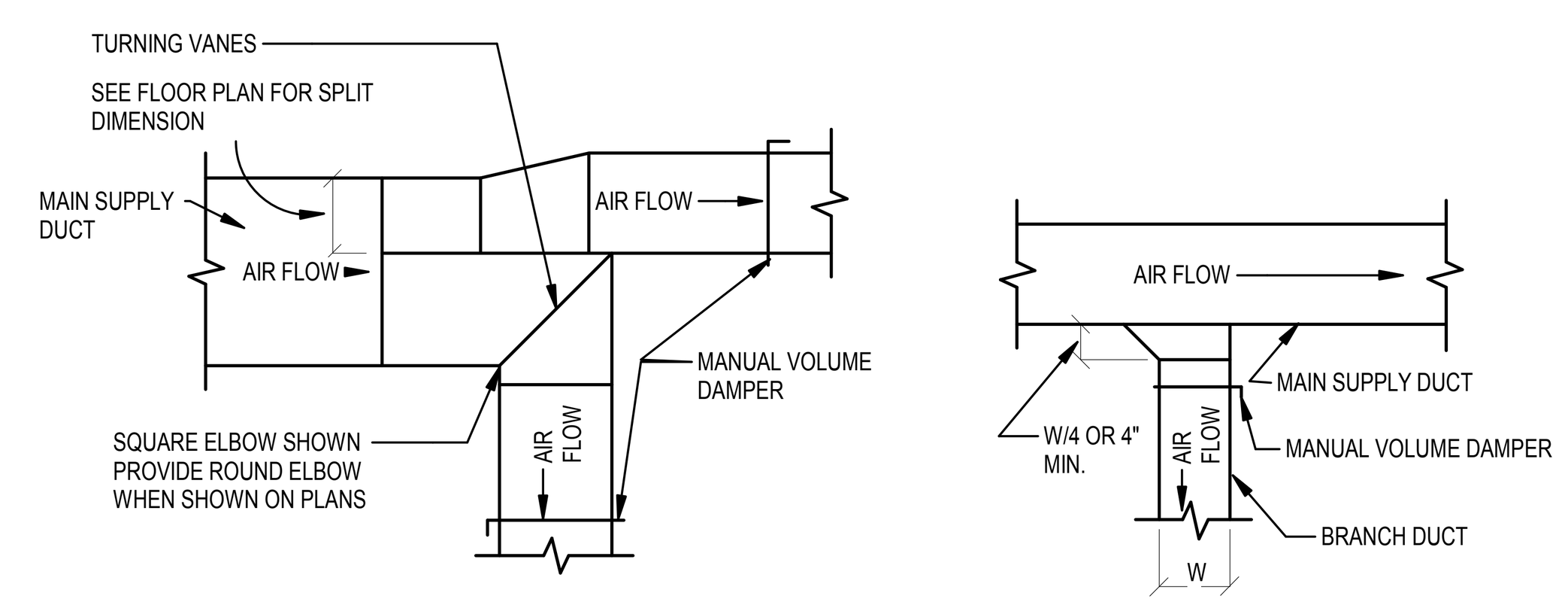


TYPICAL DUCTWORK TRANSITION WITH EQUIPMENT MOUNTED IN DUCT PLAN OR SIDE VIEW

TYPICAL DUCTWORK TRANSITION PLAN OR SIDE VIEW

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.

14 DUCTWORK TRANSITIONS
SCALE: NONE

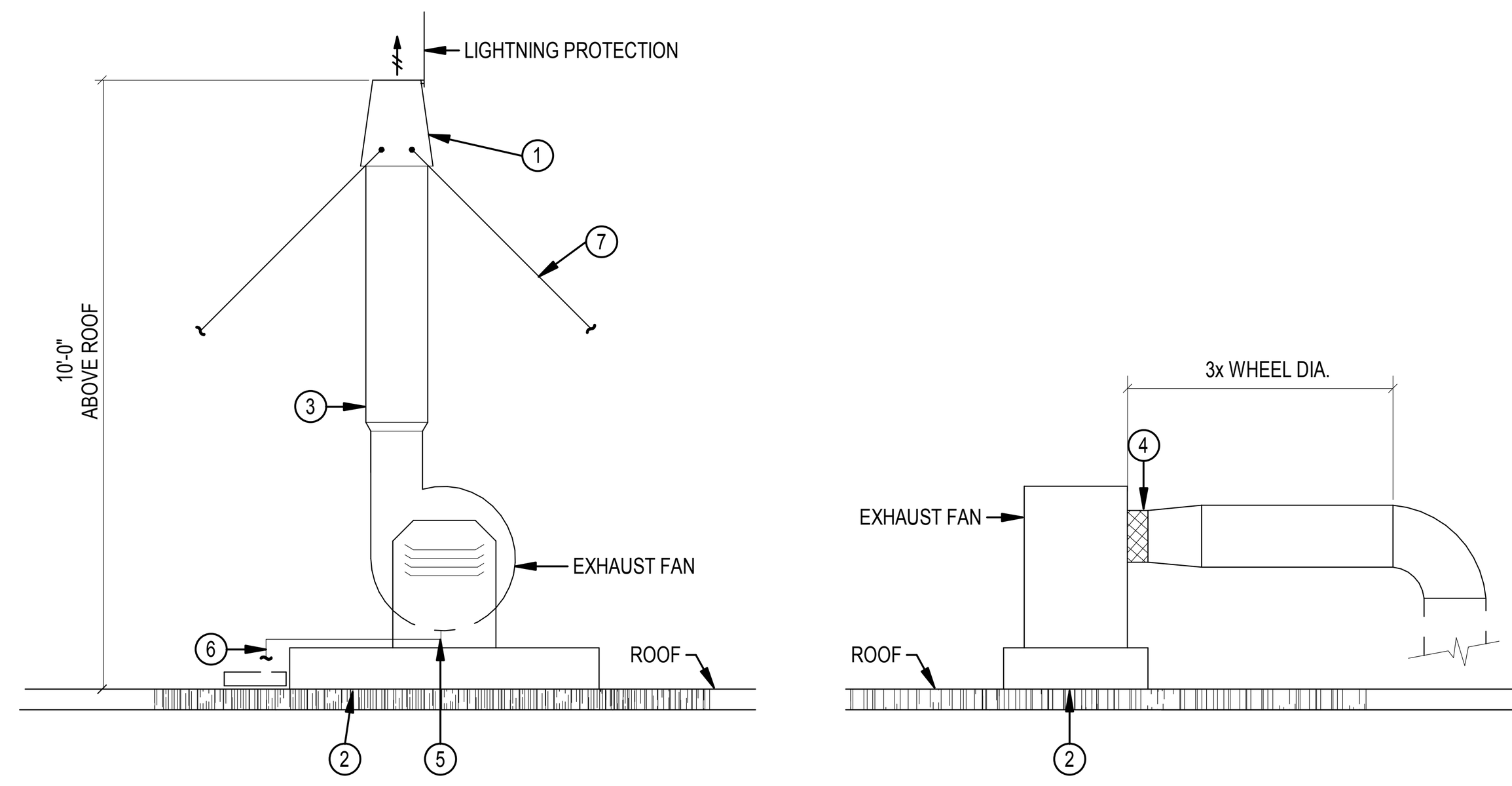


AIR SPLIT DUCT TAKE-OFF PLAN VIEW

BRANCH DUCT TAKE-OFF PLAN VIEW

THE BRANCH DUCT TAKE-OFF MAY BE USED FOR UP TO 15% OF THE MAIN DUCT CFM, AND UP TO 40% WHEN THE MAIN DUCT VELOCITY IS 1000 FPM OR LESS. THE AIR SPLIT DUCT TAKE-OFF SHALL BE USED IN ALL OTHER CASES

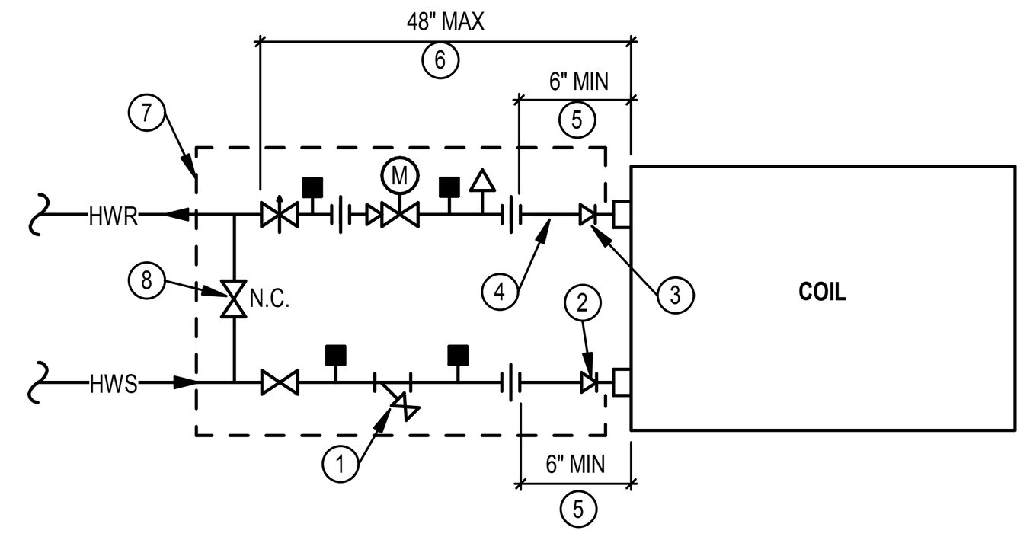
12 SUPPLY DUCTWORK BRANCH TAKE-OFFS
SCALE: NONE



○ NOTES

1. HIGH PLUME DILUTION NOZZLE.
2. SEISMIC EQUIPMENT RAILS AND SPRING ISOLATORS.
3. EXHAUST STACK, INTEGRAL TO EXHAUST FAN.
4. FLEX CONNECTION.
5. DRAIN THRU BOTTOM OF FAN HOUSING, SLOPED TO DRAIN OUTLET.
6. 3/4" PVC DRAIN OUTLET TO SPILL ONTO CONCRETE SPLASH BLOCK OR NEARBY ROOF DRAIN.
7. GUY WIRES ATTACHED ROOF PER SEISMIC & WIND REQUIREMENTS.

15 UTILITY EXHAUST W/ INTEGRAL STACK
SCALE: NONE



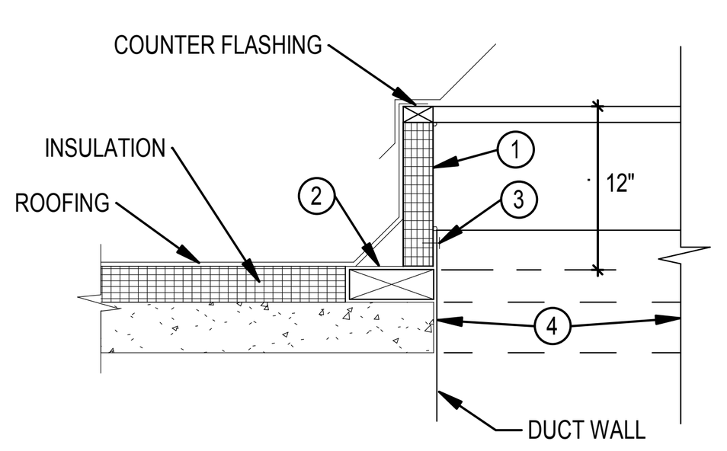
○ NOTES

1. LOCATE STRAINER WITH BLOW-DOWN VALVE AND HOSE CONNECTION AT LOW POINT OF COIL PIPING.
2. PIPE REDUCER IF REQUIRED.
3. PIPE REDUCER/INCREASER IF COIL CONNECTION SIZE DIFFERS FROM AUTO CONTROL VALVE SIZE.
4. PIPING SAME SIZE AS AUTO CONTROL VALVE OR COIL CONNECTION, WHICH EVER IS LARGER.
5. 6" MINIMUM LENGTH INCLUDES ANY REQUIRED ELBOWS AND OFFSETS. PIPING INSULATION FROM COIL TO UNION SHSALL INCLUDE SEALED VAPOR BARRIER.
6. MAXIMUM DISTANCE FROM SUPPLY AND RETURN SHUT-OFF VALVES TO COIL IS 48".
7. FACTORY ASSEMBLED PIPING PACKAGE (OPTIONAL).
8. LINE SIZE START-UP/FLUSHING BYPASS.

GENERAL NOTES

A. ALL PIPING SHALL BE FULL SIZE OF MAIN RUN-OUT PIPING UNLESS NOTED OTHERWISE.
B. REFER TO AIR TERMINAL UNIT SCHEDULE FOR AUTOMATIC CONTROL VALVE SIZE.
C. REFER TO SPECIFICATIONS FOR DEVICES NOT TO BE INSULATED. INSULATED DEVICES SHALL INCLUDE EXTENDED NECKS, SHAFTS, ETC... SO THEY ARE ACCESSIBLE ABOVE THE INSULATION.

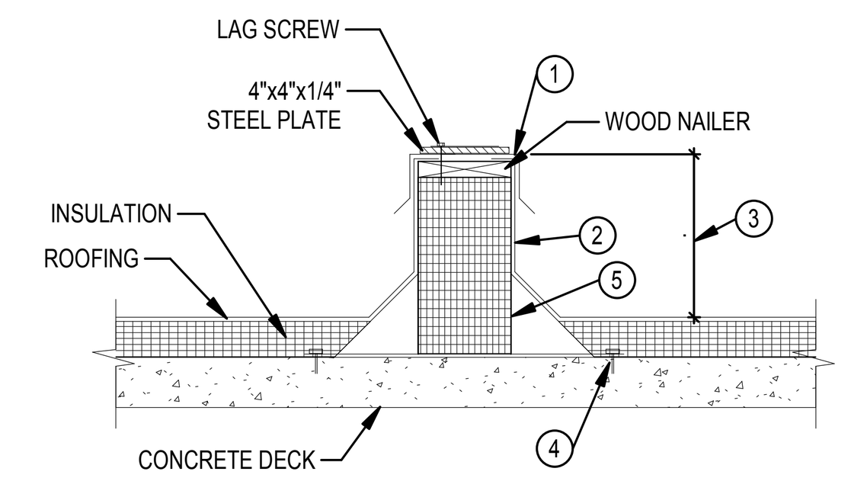
3 DUCT HEATING COIL
SCALE: NONE



○ NOTES

1. 12" HIGH INSULATED STEEL CURB.
2. PROVIDE PRESSURE TREATED RIGID WOOD BLOCK FRAME SAME THICKNESS AS ROOF INSULATION. BOLT TO CONCRETE ROOF DECK.
3. SHEET METAL SCREW.
4. CONCRETE ROOF DECK OPENING. COORDINATE REQUIRED OPENING SIZE.

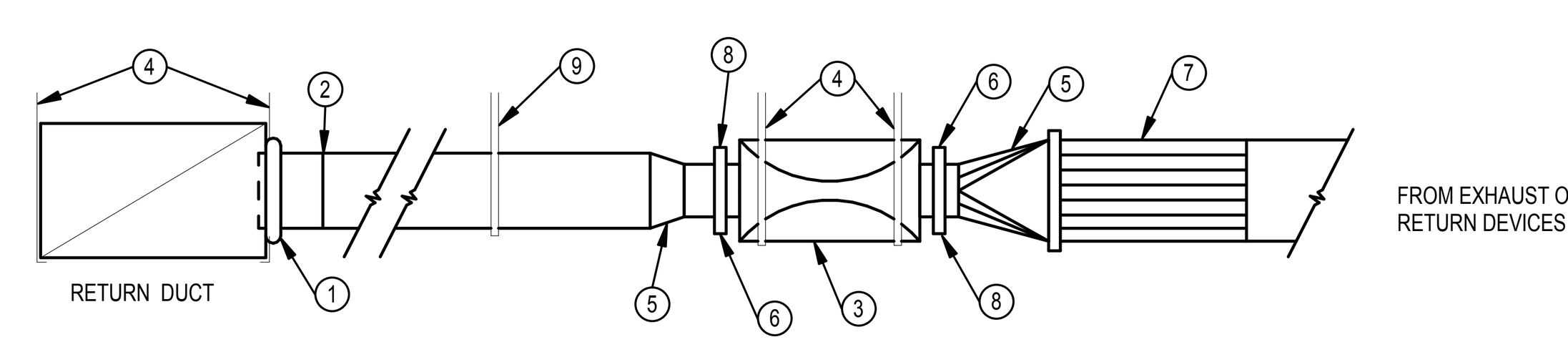
11 FAN MOUNTING CURB
SCALE: NONE



○ NOTES

1. PROVIDE COUNTER-FLASHING.
2. HEAVY GAUGE CONTINUOUS SUPPORT EXTENDS 6" BEYOND LAST EQUIPMENT LEG. SCREW ATTACHMENT TO DECK.
3. MINIMUM 12 INCHES.
4. EXPANSION LAGS TO DECK.
5. 18 / 24 / 36 INCH HIGH INSULATED STEEL CURB.

10 ROOF EQUIPMENT SUPPORT
SCALE: NONE

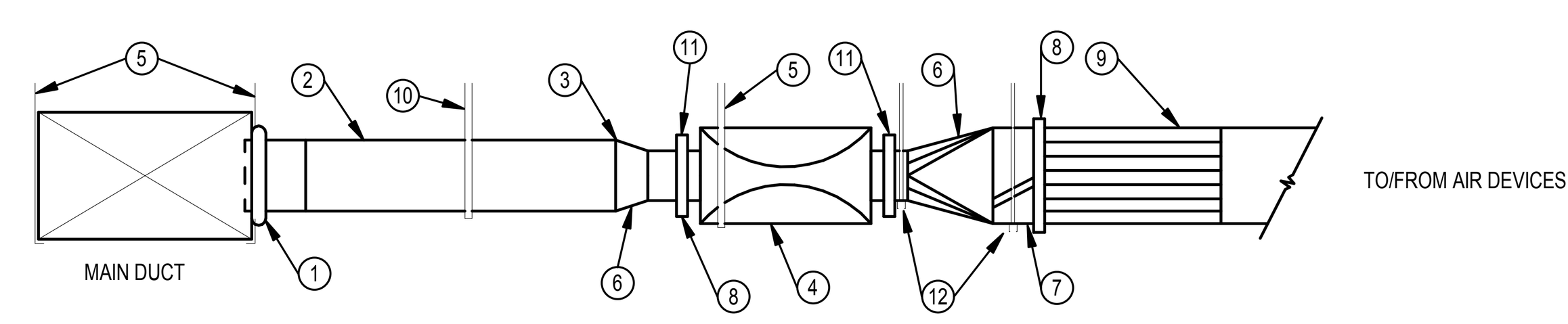


○ NOTES

1. CONICAL SPIN-IN BRANCH TAP FITTING, STRAIGHT SIDE. INTEGRAL INSULATION GUARD SLEEVE REQUIRED FOR TAP FITTING TO MAIN EXHAUST/RETURN DUCT.
2. ROUND SHEET METAL BRANCH DUCT, SAME SIZE AS AIR CONTROL VALVE OUTLET SIZE UNLESS NOTED OTHERWISE. REFER TO DETAIL SCHEDULED FOR DUCT RUNOUT SIZE REQUIRED FOR MULTI-VALVE INSTALLATION.
3. EXHAUST/RETURN AIR CONTROL VALVE.
4. CABLE SUPPORTS. ATTACH TO STRUCTURE.
5. TRANSITION WHEN NEEDED.
6. 6" WIDE 22 GAUGE DRAW BAND WITH 5/16" THICK x 3/4" WIDE DUCTMATE DM 440 GASKET TAPE (BUTYL RUBBER TAPE) INSTALLED PER VALVE MANUFACTURE'S INSTRUCTIONS.
7. SOUND ATTENUATOR, IF REQUIRED.
8. PROVIDE MULTI-VALVE DUCT TRANSITION FOR MULTI-VALVE INSTALLATION.
9. STRAP HANGER. ATTACH TO STRUCTURE.

AIR CONTROL MULTI-VALVE RUNOUT SIZE	
BRANCH CFM	RD. DUCT SIZE
886 TO 1200 CFM	12"D
1201 TO 1780 CFM	14"D
1781 TO 2140 CFM	16"D
2141 TO 3630 CFM	24"X16" RECT.

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



○ NOTES

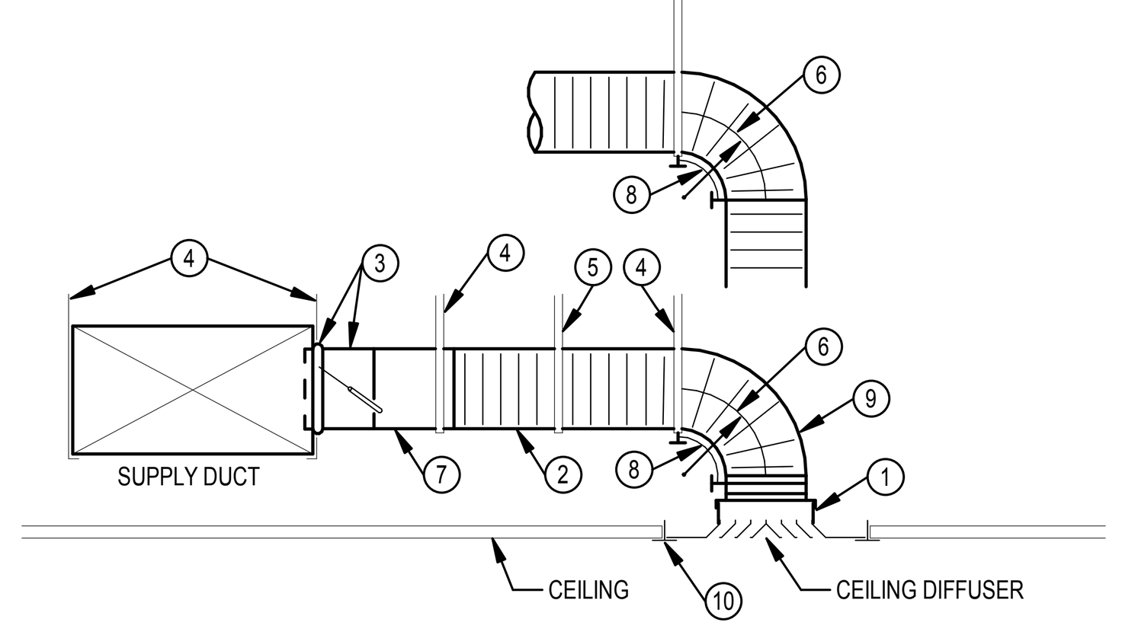
1. CONICAL SPIN-IN BRANCH TAP FITTING, STRAIGHT SIDE. INTEGRAL INSULATION GUARD SLEEVE REQUIRED FOR TAP FITTING TO MAIN SUPPLY DUCT WITH INTERNAL INSULATION.
2. ROUND SHEET METAL BRANCH DUCT, SAME SIZE AS AIR CONTROL VALVE INLET SIZE UNLESS NOTED OTHERWISE. REFER TO DETAIL SCHEDULE FOR DUCT RUNOUT SIZE REQUIRED FOR MULTI-VALVE INSTALLATION.
3. HARD DUCT CONNECTION TO AIR VALVE, FLEX CONNECTION NOT PERMITTED. PROVIDE INSULATION TO MATCH SYSTEM REQUIREMENTS.
4. SUPPLY AIR CONTROL VALVE. EXTERNALLY INSULATE TO PREVENT SWEATING.
5. CABLE SUPPORT. ATTACH TO STRUCTURE.
6. TRANSITION WHEN REQUIRED.
7. HOT WATER REHEAT COIL WHEN SPECIFICED. REFER TO REHEAT COIL PIPING DETAIL. INSULATE COIL.
8. 6" WIDE 22 GAUGE DRAW BAND WITH 5/16" THICK x 3/4" WIDE DUCTMATE DM 440 GASKET TAPE (BUTYL RUBBER TAPE) INSTALLED PER VALVE MANUFACTURER'S INSTRUCTIONS.
9. SOUND ATTENUATOR.
10. STRAP HANGER. ATTACH TO STRUCTURE.
11. PROVIDE MULTI-VALVE DUCT TRANSITION FOR MULTI-VALVE INSTALLATION.
12. CHANNEL SUPPORT SYSTEM WITH HANGER RODS OR CABLE SUPPORTS ATTACHED TO STRUCTURE.

AIR CONTROL MULTI-VALVE RUNOUT SIZE	
BRANCH CFM	RD. DUCT SIZE
886 TO 1200 CFM	12"D
1201 TO 1780 CFM	14"D
1781 TO 2140 CFM	16"D
2141 TO 3630 CFM	24"X16" RECT.

USER NOTES:

1. CONSIDER UPSIZING RUN-OUT DUCT BY 1" TO REDUCE STATIC PRESSURE LOSSES. SERIOUSLY CONSIDER FOR LONG RUN-OUTS (GREATER THAN 5 LF).

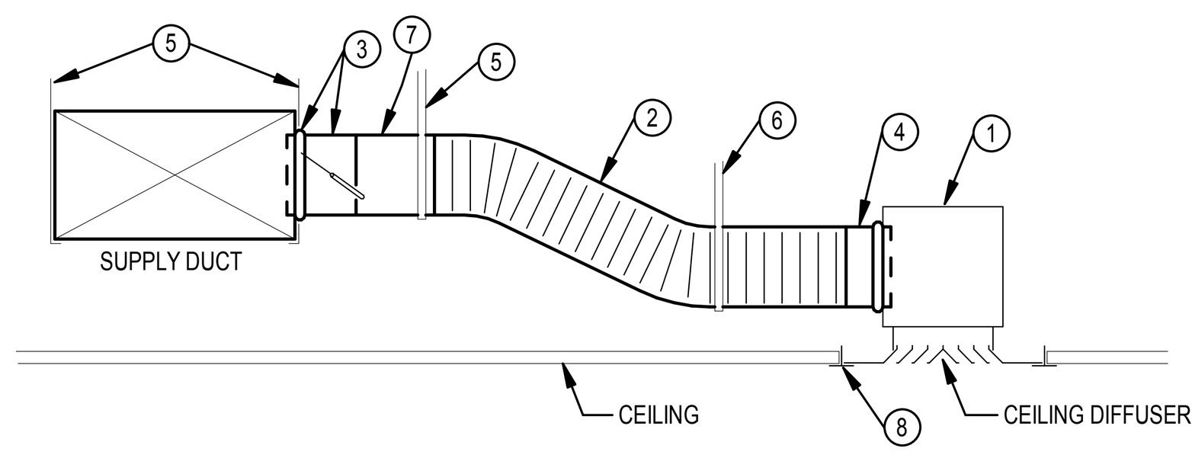
8 SUPPLY AIR CONTROL VALVE DUCT CONNECTION
SCALE: NONE



○ NOTES

1. 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.
2. 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.
3. 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.
4. DUCT STRAP HANGER. ATTACH TO STRUCTURE.
5. STRAP HANGER REQUIRED IF LENGTH OF FLEXIBLE DUCT IS LONGER THAN 4 FT.
6. MINIMUM CENTERLINE RADIUS EQUAL TO DUCT DIAMETER.
7. ROUND SHEET METAL BRANCH DUCT, SAME SIZE AS DIFFUSER INLET UNLESS NOTED OTHERWISE.
8. FLEXIBLE DUCT ELBOW SUPPORT, INSTALLED WITH NYLON BANDING PER MANUFACTURER'S INSTRUCTIONS.
9. A RADIUS'D SHEET METAL ELBOW MAY BE USED IN LIEU OF A FLEXIBLE ELBOW SUPPORT WHEN CONNECTED DIRECTLY TO AIR DEVICE.
10. CEILING T-BAR SUPPORT (FOR LAY-IN APPLICATIONS). COORDINATE AND VERIFY T-BAR TYPE FOR COMPATIBILITY WITH DIFFUSER.

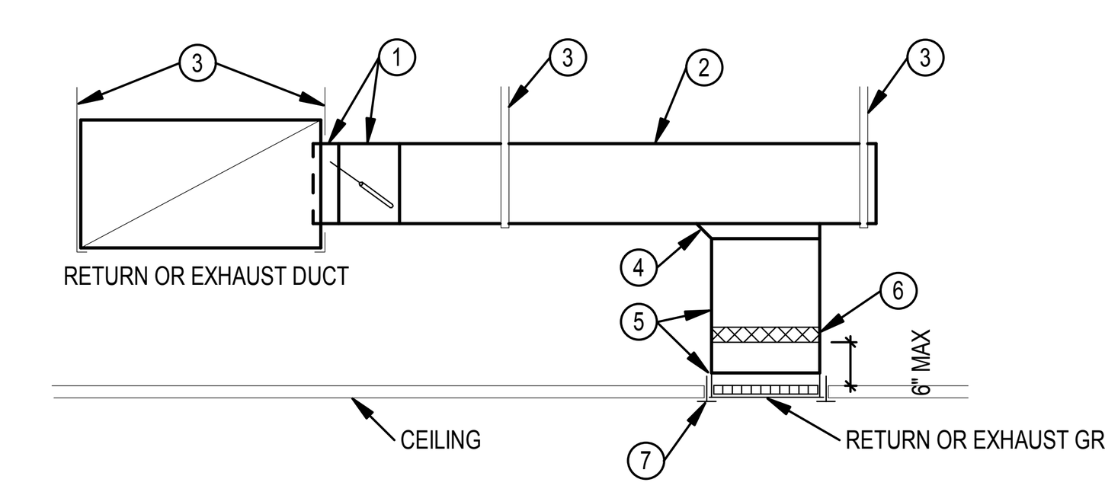
1 CEILING DIFFUSER DUCT CONNECTION
SCALE: NONE



○ NOTES

1. SHEET METAL BOX WITH SAME INTERNAL OR EXTERNAL INSULATION AS MAIN SUPPLY DUCT, 2" LARGER EACH DIRECTION THAN DIFFUSER NECK, WITH ADAPTOR CONNECTION TO DIFFUSER. CONNECT PLENUM TO DIFFUSER. SEAL BOX AND ADAPTOR TO AIR DEVICE, SEAL CLASS A. INSULATE ADAPTOR AND BACKSIDE SURFACES OF AIR DEVICE.
2. 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.
3. 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.
4. SPIN-IN TAP FITTING SIMILAR TO (3) EXCEPT NO DAMPER.
5. DUCT STRAP HANGER. ATTACH TO STRUCTURE.
6. STRAP HANGER REQUIRED IF LENGTH OF FLEXIBLE DUCT IS LONGER THAN 4 FT.
7. ROUND SHEET METAL BRANCH DUCT, SAME SIZE AS DIFFUSER INLET UNLESS NOTED OTHERWISE.
8. CEILING T-BAR SUPPORT (FOR LAY-IN APPLICATIONS). COORDINATE AND VERIFY T-BAR TYPE FOR COMPATIBILITY WITH DIFFUSER.

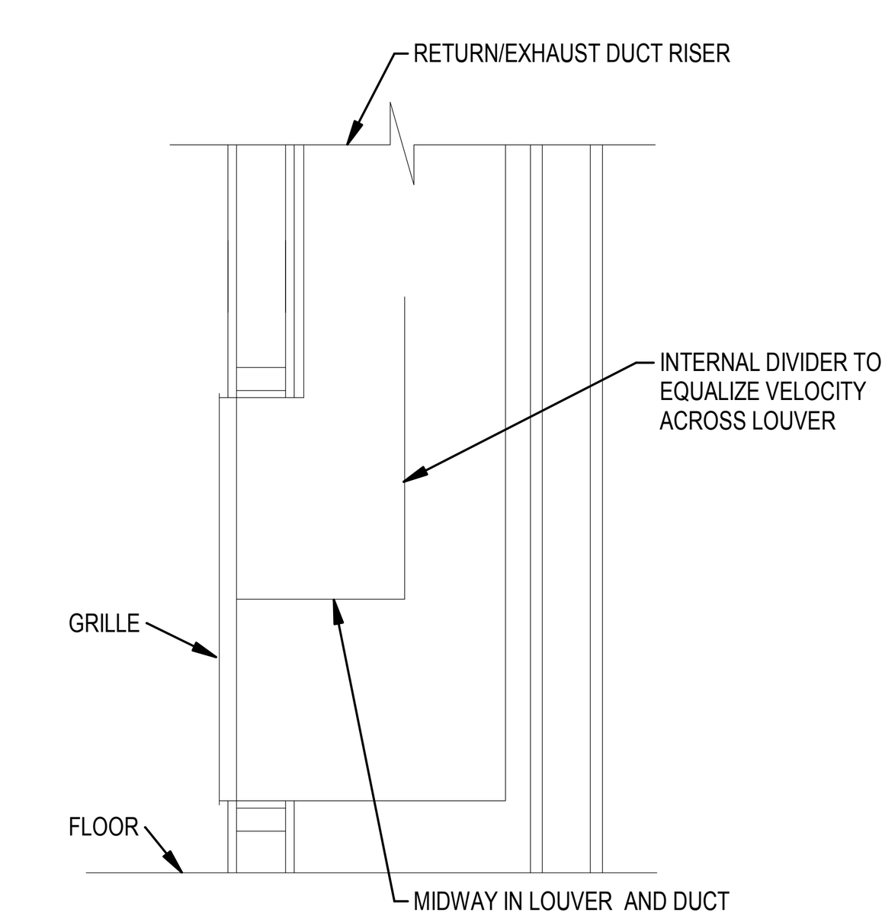
4 CEILING DIFFUSER DUCT CONNECTION
SCALE: NONE



○ NOTES

1. 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.
2. SHEET METAL DUCT, SIZE AS NOTED ON PLANS.
3. DUCT STRAP HANGER.
4. STATIC BOOT SIMILAR TO (1) EXCEPT NO DAMPER.
5. SHEET METAL DUCT, FULL SIZE OF GRILLE NECK SIZE. CONNECT AND SEAL DUCT TO GRILLE, SEAL CLASS A.
6. FLEXIBLE DUCT CONNECTOR.
7. CEILING T-BAR SUPPORT (FOR LAY-IN APPLICATIONS). COORDINATE AND VERIFY T-BAR TYPE FOR COMPATIBILITY WITH GRILLE.

7 RETURN/EXHAUST GRILLE DUCT CONNECTION
SCALE: NONE



2 LOW RETURN/EXHAUST AIR GRILLE
SCALE: NONE

1 ISSUED FOR PERMIT AND CONSTRUCTION 09/06/24
No. Issue/Revision/Submission Date

BHDP ARCHITECTURE
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PROJECT NO. 2023-05229

UCMC PHASE 2 PHARMACY RELOCATION
3188 BELLEVUE AVENUE
CINCINNATI, OH 45219-2316
DETAILS

Project Manager	Approver
Drawn	SMG
Checked	BWS
Initial Drawing Date	2024.09.06
Project Number	UCH0316

M003

LEGEND-
AUTOMATIC TEMPERATURE CONTROLS

XX-01	CONTROL POINT - SEE POINTS SCHEDULE
AI	ANALOG INPUT
AO	ANALOG OUTPUT
BI	BINARY INPUT
BO	BINARY OUTPUT
PI	PULSED INPUT
OAT	OUTSIDE AIR TEMPERATURE
MAT	MIXED AIR TEMPERATURE
RAT	RETURN AIR TEMPERATURE
SAT	SUPPLY AIR TEMPERATURE
CCAT	COOLING COIL LEAVING AIR TEMPERATURE
HCAT	HEATING COIL LEAVING AIR TEMPERATURE
OAHY	OUTSIDE AIR HUMIDITY
RAH	RETURN AIR HUMIDITY
SAH	SUPPLY AIR HUMIDITY
NC	NORMALLY CLOSED (CLOSES ON LOSS OF POWER)
NO	NORMALLY OPEN (OPENS ON LOSS OF POWER)
L	LOW
H	HIGH
C	COMMON
	2-WAY AUTOMATIC 2-POSITION CONTROL VALVE
	3-WAY AUTOMATIC 2-POSITION CONTROL VALVE
	2-WAY AUTOMATIC MODULATING CONTROL VALVE
	3-WAY AUTOMATIC MODULATING CONTROL VALVE
	DIFFERENTIAL PRESSURE SENSOR
	DIFFERENTIAL PRESSURE SWITCH
C	CARBON DIOXIDE SENSOR
CO	CARBON MONOXIDE SENSOR
CS	CURRENT SENSOR TRANSMITTER
EPT	ELECTRONIC TO PNEUMATIC TRANSDUCER
FM	FLOW METER TRANSMITTER
H	HUMIDITY SENSOR
LC	LEVEL CONTROLLER
LT	LEVEL TRANSMITTER
P	PRESSURE SENSOR
SP	STATIC PRESSURE SENSOR
T	TEMPERATURE SENSOR
WF	WATER FLOW SENSOR
WL	WATER LEVEL SENSOR
CS	CURRENT SWITCH
ES	END SWITCH
FS	FLOW SWITCH
H	HUMIDISTAT
OS	OCCUPANCY SENSOR
P HL	PRESSURE SWITCH, HIGH LIMIT
P LL	PRESSURE SWITCH, LOW LIMIT
T LL	TEMPERATURE LOW LIMIT (FREEZE STAT)
T	ROOM THERMOSTAT
WL	WATER LEVEL SWITCH
	EMERGENCY SHUT-OFF STATION

LEGEND-
AUTOMATIC TEMPERATURE CONTROLS

AFMS	AIR FLOW MEASURING STATION
VFD	VARIABLE FREQUENCY DRIVE (ADJUSTABLE FREQUENCY MOTOR CONTROLLER)
MS	MOTOR STARTER
CON	CONTACTOR
TCP	LOCAL TEMPERATURE CONTROL PANEL
PSH	PRESSURE SAFETY - HIGH
PSL	PRESSURE SAFETY - LOW
SD	SMOKE DETECTOR
M	DAMPER OR VALVE ACTUATOR - MODULATING
M	DAMPER OR VALVE ACTUATOR - 2-POSITION
R	RELAY
UV	UVGI LIGHT
	PUMP
	FAN
	COOLING COIL
	HEATING COIL
	HUMIDIFIER
	FILTER
	ENERGY RECOVERY WHEEL
	OPPOSED BLADE CONTROL DAMPER
	PARALLEL BLADE CONTROL DAMPER
SD	SMOKE DAMPER
ECON / MIN	MIN OA / ECON DAMPER
R	DX COIL
X	WALL MOUNTED DEVICE
X	DUCT INSERTION DEVICE
X	PIPE INSERTION OR IMMERSION DEVICE WITH WELL
X	AVERAGING SENSOR OR DEVICE
X	OUTDOOR SENSOR OR DEVICE, SHIELDED
X x Y	FAN ARRAY, "X" FANS VERTICAL x "Y" FANS HORIZONTAL

GENERAL NOTES-
AUTOMATIC TEMPERATURE CONTROLS

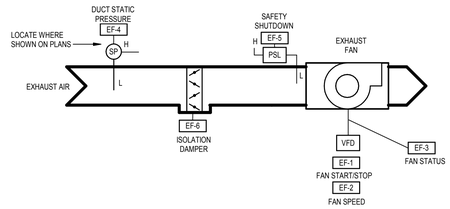
A A COMPLETE SYSTEM OF AUTOMATIC TEMPERATURE CONTROLS SHALL BE INSTALLED AS REQUIRED TO ACCOMPLISH THE SEQUENCE OF CONTROL FOR VARIOUS ITEMS OF EQUIPMENT AND SYSTEMS DESCRIBED HEREINAFTER. THE SYSTEM SHALL BE A DIRECT DIGITAL CONTROL SYSTEM UTILIZING ELECTRIC OR PNEUMATIC ACTUATION AS DEFINED IN THE SPECIFICATIONS.

B THE CONTROL DIAGRAMS AND INFORMATION CONTAINED WITHIN ARE TO SHOW DESIGN INTENT. IT IS THE CONTROL SYSTEM SUPPLIERS RESPONSIBILITY TO DEVELOP DETAILED AND COMPLETE CONTROL DIAGRAMS AND SHOP DRAWINGS TO ACCOMPLISH THE SPECIFIED SEQUENCES.

C THE POINTS LIST IS SHOWN AS AN AID TO THE CONTRACTOR INDICATING THE MINIMUM POINTS REQUIRED FOR CONTROL, AND MONITORING. ALL INPUT AND OUTPUT POINTS, AND THEIR REQUIRED INTERFACE AND ACCESSORY HARDWARE, SHALL BE PROVIDED FOR A COMPLETE AND FUNCTIONAL CONTROL SYSTEM. IF OR WHEN ADDITIONAL POINTS ARE REQUIRED TO ACCOMPLISH THE SEQUENCES OF CONTROL SPECIFIED, THESE POINTS, ALONG WITH ADDITIONAL DIRECT DIGITAL CONTROL PANE(S) (IF REQUIRED), SHALL ALSO BE PROVIDED.

D BULB WELLS FOR TEMPERATURE SENSING AS INDICATED SHALL BE PROVIDED BY THE HVAC CONTRACT. PIPING WORK SHALL INCLUDE PROPERLY SIZED WELDOLET OR THREADOLET FITTINGS PLACED AS DIRECTED BY THE CONTROL SYSTEM SUPPLIER.

E ELECTRICAL WORK INCLUDES A POWER SOURCE TO THE MOTOR STARTERS. PROVIDE ALL HVAC POWER SOURCES REQUIRED BEYOND THESE STARTERS OR BEYOND SOURCES EXPLICITLY SHOWN ON THE ELECTRICAL DRAWINGS. THIS SHALL INCLUDE BUT NOT BE LIMITED TO WIRING, CONDUIT, TRANSFORMERS, RELAYS AND FUSES.



PHARMACY EXHAUST FAN ATC DIAGRAM
SCALE: NONE

EXHAUST FAN SEQUENCES

EXHAUST FAN SHALL RUN CONTINUOUSLY. FAN SPEED SHALL MODULATE TO MAINTAIN DUCT STATIC PRESSURE SETPOINT.

PROVIDE POINTS AS SHOWN. APPROPRIATE STATIC PRESSURE SETPOINT SHALL BE DETERMINED DURING TAB.

EXHAUST FAN POINTS LIST SCHEDULE

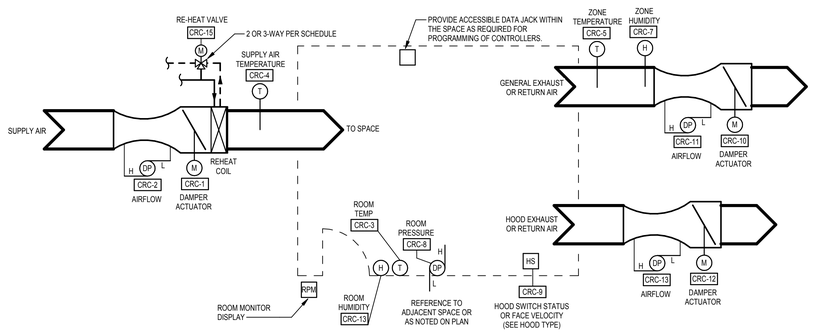
GENERAL NOTES:
A. THE FOLLOWING LIST SHALL BE THE MINIMUM POINTS REQUIRED OF THE DIRECT DIGITAL CONTROL SYSTEM (BUILDING AUTOMATION SYSTEM). IT IS NOT THE INTENT TO SHOW ALL REQUIRED POINTS. IF OR WHEN ADDITIONAL POINTS ARE REQUIRED TO ACCOMPLISH THE SEQUENCES OF CONTROL SPECIFIED, THOSE POINTS SHALL ALSO BE PROVIDED.

NOTES:
1. CURRENT SENSOR.
2. IN ADDITION TO BEING A (BI) SAFETIES SHALL BE WIRED INTO THE FAN STARTERS/VFD(S) STARTER CIRCUIT SUCH THAT THE SAFETY SHALL FUNCTION WHETHER THE SELECTOR SWITCH IS IN THE "HAND" OR "AUTOMATIC" POSITION.

POINT NO.	EF-1	EF-2	EF-3	EF-4	EF-5	EF-6	EF-7
POINT NAME	FAN START/STOP	FAN SPEED	FAN STATUS	DUCT STATIC PRESSURE	PRESSURE SAFETY SHUTDOWN	ISOLATION DAMPER	
TYPE	BO	AO	BI	AI	BI	BI	
ALARM				HIGH/LOW			
NOTES			1		2		

CRITICAL ROOM CONTROL SEQUENCES

1. DESCRIPTION
   A. THE CRITICAL ROOM CONTROL SYSTEM CONSISTS OF A COMBINATION OF AIR VALVES (SUPPLY, RETURN, EXHAUST), FUME HOODS, AND A SUPPLY REHEAT COIL. THESE DEVICES SHALL BE SEQUENCED TO PROVIDE OPERATOR SAFETY, ROOM PRESSURIZATION, TEMPERATURE CONTROL, AND OPERATOR INTERFACE.
   B. ALL CONTROLS ASSOCIATED WITH THE CRITICAL ROOM CONTROL SHALL BE PROVIDED BY A SINGLE CONTROLLER VENDOR AND BE COMPLETELY CONFIGURABLE VIA THE WALL MOUNTED DISPLAY.
2. MULTI-ROOM MONITOR REQUIREMENTS
   A. FOR ALL SPACES AS NOTED IN THE SCHEDULE, PROVIDE INFORMATION ON A MULTI-ROOM MONITOR IN THE LOCATION SHOWN ON THE DRAWINGS. EACH ROOM SHOULD BE DISPLAYED ON MONITOR HOME SCREEN. PROVIDE QUANTITY OF MONITORS AS REQUIRED FOR NUMBER OF ROOMS SPECIFIED.
   B. ANY DATA POINT FROM A ROOM CONTROLLER SHALL BE CAPABLE OF DISPLAY ON THE MULTI-ROOM MONITOR. BY DEFAULT, THE FOLLOWING INFORMATION SHOULD BE DISPLAYED. SUBMIT GRAPHIC DISPLAY EXAMPLE FOR OWNER REVIEW PRIOR TO PROGRAMMING AND INSTALLATION.
      a. ROOM PRESSURE
      b. ROOM TEMPERATURE
      c. ROOM HUMIDITY
      d. ROOM AIR CHANGES PER HOUR
3. ROOM MONITORS
   A. PROVIDE QUANTITY OF ROOM MONITORS AS SCHEDULE. REFER TO PLANS FOR LOCATIONS TO BE INSTALLED.
   B. ROOM MONITORS SHALL PROVIDE OPERATOR CONTROL OF ROOM TEMPERATURE SETPOINT (OPTIONAL PASSCODE FOR LOCKOUT)
   C. ROOM MONITORS SHALL PROVIDE OPTIONAL AUDIBLE AND VISUAL ALARMS.
   D. ANY DATA POINT FROM THE ROOM CONTROLLER SHALL BE CAPABLE OF DISPLAY ON THE ROOM MONITOR. BE DEFAULT THE FOLLOWING INFORMATION SHOULD BE DISPLAYED. SUBMIT GRAPHIC DISPLAY EXAMPLE FOR OWNER REVIEW PRIOR TO PROGRAMMING AND INSTALLATION:
      a. ROOM TEMPERATURE.
      b. ROOM TEMPERATURE
      c. ROOM HUMIDITY
      d. ROOM AIR CHANGES PER HOUR
4. CRITICAL ROOM CONTROL SEQUENCE - PHARMACY SPACES
   A. MODES
      a. OCCUPIED MODE: THE PHARMACY SHALL CONTROL TO THE OCCUPIED MODE SETPOINTS.
      b. UNOCCUPIED MODE: THE PHARMACY SHALL HAVE NO UNOCCUPIED MODE. DISABLE MODE OR WRITE OCCUPIED SETPOINTS TO UNOCCUPIED VALUES TO PREVENT INADVERTENT CHANGE IN MODE.
   B. TEMPERATURE CONTROL
      a. ROOM TEMPERATURE SHALL BE MEASURED BY SENSING THE GENERAL RETURN/EXHAUST AIR TEMPERATURE TO ENSURE PROPER MEASUREMENT OF SPACE CONDITIONS.
      b. A SINGLE SETPOINT SHALL BE USED TO CONTROL SPACE TEMPERATURE
      c. COOLING SHALL BE PROVIDED BY MODULATING BETWEEN THE MINIMUM AND MAXIMUM SUPPLY AIR FLOW (IF APPLICABLE).
      d. HEATING SHALL BE PROVIDED BY FIRST MODULATING THE REHEAT COIL CAPACITY CONTROL. AFTER MAXIMUM DISCHARGE AIR TEMPERATURE HAS BEEN ACHIEVED, MODULATE FROM MINIMUM TO MAXIMUM SUPPLY AIR FLOW (IF APPLICABLE).
   C. ROOM PRESSURE CONTROL
      a. ROOM PRESSURE SHALL BE MAINTAINED BY A FIXED OFFSET BETWEEN TOTAL SUPPLY AND TOTAL RETURN/EXHAUST AIR.
      b. DURING INITIAL TAB, OFFSET SHALL BE ADJUSTED TO FIELD CONDITIONS AS REQUIRED.
         - POSITIVE PRESSURE ROOMS SHALL BE ADJUSTED TO +0.03" W.C. BY DECREASING RETURN AIRFLOW AS REQUIRED. AIR CHANGES SHALL BE CALCULATED BY TOTAL SUPPLY AIRFLOW MEASUREMENT.
         - NEGATIVE PRESSURE ROOMS SHALL BE ADJUSTED TO -0.02" W.C. BY DECREASING SUPPLY AIRFLOW AS REQUIRED. AIR CHANGES SHALL BE CALCULATED BY TOTAL RETURN/EXHAUST AIRFLOW MEASUREMENT.
   D. AIRFLOW CONTROL
      a. SUPPLY AIR CONTROL:
         - SUPPLY AIRFLOW SETPOINT SHALL VARY BETWEEN THE SCHEDULED MINIMUM AND MAXIMUM VALUES. CONTROLLING SETPOINT SHALL BE DETERMINED FROM BOTH ROOM PRESSURE OFFSET AND TEMPERATURE CONTROL ALGORITHMS.
      b. GENERAL RETURN/EXHAUST CONTROL:
         - GENERAL RETURN/EXHAUST AIRFLOW SHALL VARY BETWEEN THE SCHEDULED MINIMUM AND MAXIMUM VALUES. CONTROLLING SET POINT SHALL BE DETERMINED FROM THE ROOM PRESSURE OFFSET ALGORITHM.
   E. CONTAINMENT HOOD CONTROL:
      a. HOOD STATUS SHALL BE DETERMINED BY MONITORING EITHER A HOOD SWITCH CONTACT OR HOOD FAN VIA CURRENT TRANSDUCER. PROVIDE RELAYS AS REQUIRED.
      b. WHEN HOOD HAS PROVED ON, PROVIDE SPECIFIED MAXIMUM AIRFLOW.
      c. WHEN HOOD IS PROVED OFF, PROVIDE SPECIFIED MINIMUM AIRFLOW. IF SPECIFIED MINIMUM IS 0 CFM, THEN CLOSE DAMPER COMPLETELY. REFER TO SPECIFICATION FOR ALLOWABLE LEAKAGE RATES.
5. DAMPER CONTROL
   A. MODULATE EACH VENTURI VALVE DAMPER POSITION TO MAINTAIN EFFECTIVE AIRFLOW SETPOINT.



CRITICAL ROOM CONTROL DIAGRAM
SCALE: NONE

CRITICAL ROOM CONTROL - POINTS LIST SCHEDULE

GENERAL NOTES:
A. THE FOLLOWING LIST SHALL BE THE MINIMUM POINTS REQUIRED OF THE BUILDING AUTOMATION SYSTEM IT IS NOT THE INTENT TO SHOW ALL REQUIRED POINTS. IF OR WHEN ADDITIONAL POINTS ARE REQUIRED TO ACCOMPLISH THE SEQUENCES OF CONTROL SPECIFIED, THOSE POINTS SHALL ALSO BE PROVIDED.

NOTES:
1. CONNECT DP FLOW SENSOR PROVIDED WITH AIR TERMINAL UNIT.
2. PROVIDE CONTROLS FOR QUANTITY OF TERMINALS AS SCHEDULED.
3. PROVIDE FOR QUANTITY OF HOODS AS SCHEDULED. COORDINATE SWITCH WITH HOOD MANUFACTURER. ONLY A SINGLE SWITCH SHALL BE USED. A CURRENT TRANSDUCER ON HOOD FAN MAY BE PROVIDED IN LIEU OF MONITORING THE SWITCH.

POINT NO.	CRC-1	CRC-2	CRC-3	CRC-4	CRC-5	CRC-6	CRC-7	CRC-8	CRC-9	CRC-10	CRC-11	CRC-12	CRC-13	CRC-14	CRC-15
POINT NAME	SUPPLY DAMPER ACTUATOR	SUPPLY AIRFLOW	ROOM TEMPERATURE	SUPPLY AIR TEMPERATURE	ZONE TEMPERATURE	ZONE TEMPERATURE SETPOINT	ZONE HUMIDITY	ROOM PRESSURE	HOOD SWITCH	GENERAL EXHAUST / RETURN DAMPER ACTUATOR	GENERAL EXHAUST / RETURN AIRFLOW	HOOD EXHAUST / RETURN DAMPER ACTUATOR	HOOD EXHAUST / RETURN AIRFLOW	ROOM HUMIDITY	HW REHEAT VALVE
TYPE	AO	AI	AI	AI	AI	AI	AI	AI	BI	AO	AI	AO	AI	AI	AI
ALARM			HIGH TEMP LOW TEMP		HIGH TEMP @ 69 °F		HIGH RH @ 60%	HIGH PRESSURE LOW PRESSURE							
NOTES	2	1,2							3	2	1,2	2	1,2		

ROOM	TOTAL QUANTITY			QTY. OF CONTAINMENT HOODS W/CTRL.	ROOM PRESSURE MONITORS			DISPLAYS	
	SUPPLY VALVES	RETURN VALVES	EXHAUST VALVES		REFERENCE LOCATION	ALARM LOW LIMIT	ALARM HIGH LIMIT	ROOM	MULTI-VIEW
ANTE-ROOM	1	1	-	-	GENERAL PHARMACY	+0.02	-	1	•
NON-HAZ ROOM	1	1	-	-	ANTE	+0.02	-	1	•
NEG. DECASING	1	-	1	1	GENERAL PHARMACY	-0.03	-0.005	1	•

No.	Date	Issue/Revision/Submission
1.	09/06/24	ISSUED FOR PERMIT AND CONSTRUCTION

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PROJECT NO. 2023-05229

UCMC PHASE 2 PHARMACY RELOCATION
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CONTROLS

STATE OF OHIO
9/6/24
DAVID T. RICKEY
REGISTERED
PROFESSIONAL ENGINEER

Project Manager: Approver
Drawn: SMG
Checked: BWS
Initial Drawing Date: 2024.09.06
Project Number: UCH0316

M004

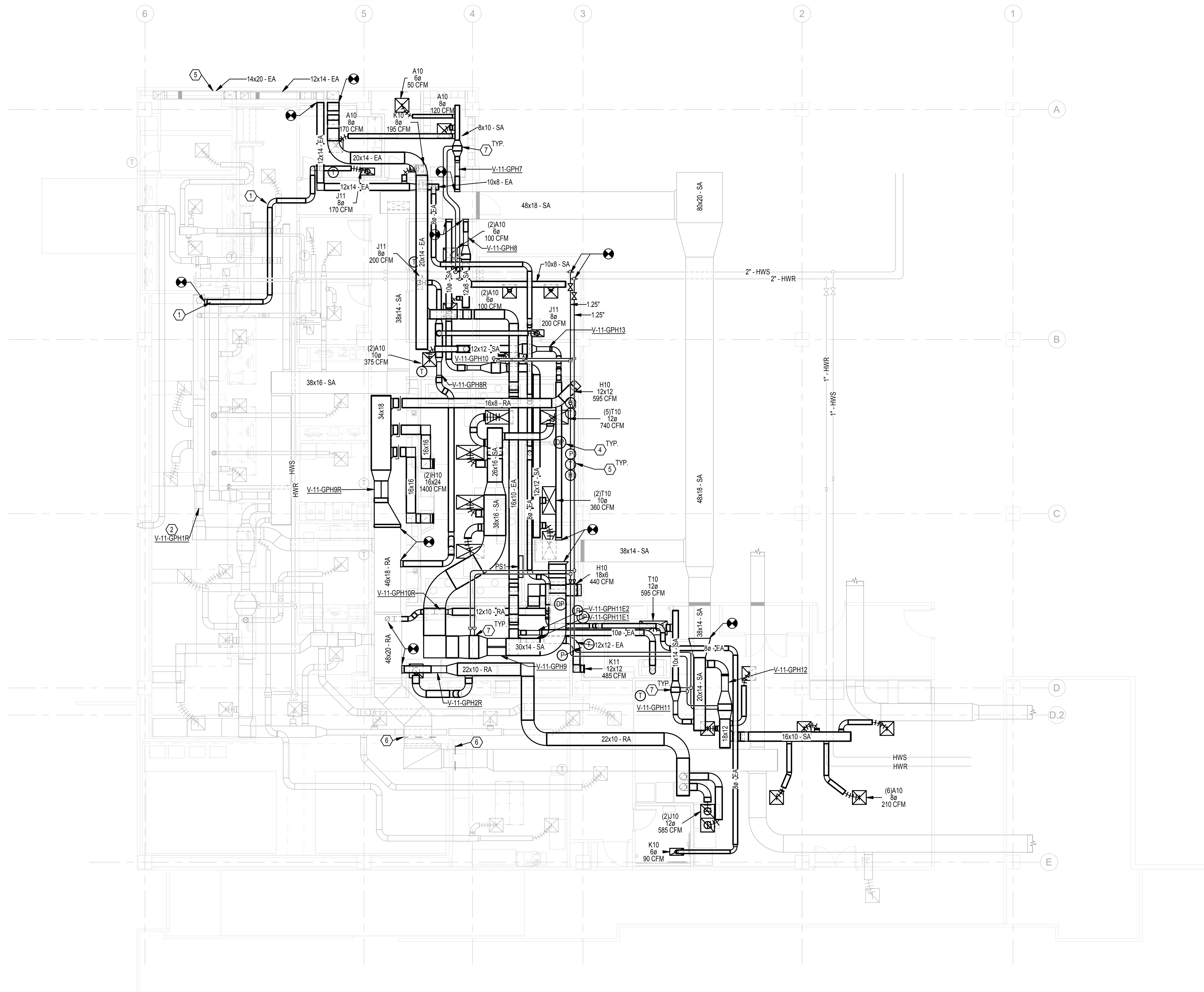
GENERAL NOTES

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 THERE 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 THOUGH ANY WALLS, FLOORS, OR CEILINGS.

⬡ PLAN NOTES:

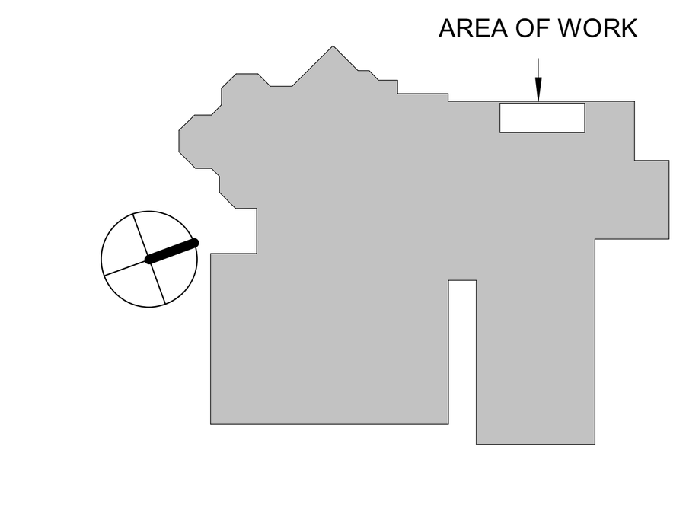
1. WORK OVER THE PHASE 1 AREA OF THE PHARMACY MUST BE COORDINATED CLOSELY WITH UCH AND THE CM.
2. REBALANCE EXISTING RETURN AIR VALVE MAX CFM AND OFFSET TO CURRENT CFM (+) 170 CFM.
3. MUTLTI-VIEW MONITOR THAT ALLOWS FOR MONITORING AND CONTROL OF TEMPERATURE, PRESSURE AND AIR CHANGES SHALL BE ANTEC-MVM OR APPROVED EQUAL. TEMPERATURE SENSORS SHALL BE REMOTE MOUNTED IN THE ROOM RETURN AIR DUCT.
4. THRU-THE-WALL ROOM PRESSURE SENSOR SHALL BE MOUNTED ABOVE THE DOOR AS INDICATED. INSTALL PER MANUFACTUREER'S RECOMMENDATIONS.
5. PROVIDE PRE-TAB REPORT TO EXISTING EF-14 ON THE ROOF ABOVE. FAN SHALL BE RE-BALANCED TO MEET DESIGN CFM.
6. PROVIDE RETURN DUCT TRAVERSE AT THESE TWO LOCATIONS DURING THE FINAL TAB REPORT.
7. NEW DUCT REHEAT COIL. REFER TO AIR VAVLE SCHEDULE ON SHEET M002 FOR BALANCING INFORMATION.



1 PARTIAL GROUND FLOOR PLAN - NEW WORK

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

KEY PLAN



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PROJECT NO. 2023-05229

No.	Issue/Revision/Submission	Date
1	ISSUED FOR PERMIT AND CONSTRUCTION	09/06/24

UCMC PHASE 2 PHARMACY RELOCATION
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PARTIAL GROUND FLOOR PLAN - NEW WORK

Project Manager	Approver
Drawn	SMG
Checked	BWS
Initial Drawing Date	2024.09.06
Project Number	UCH0316

M101

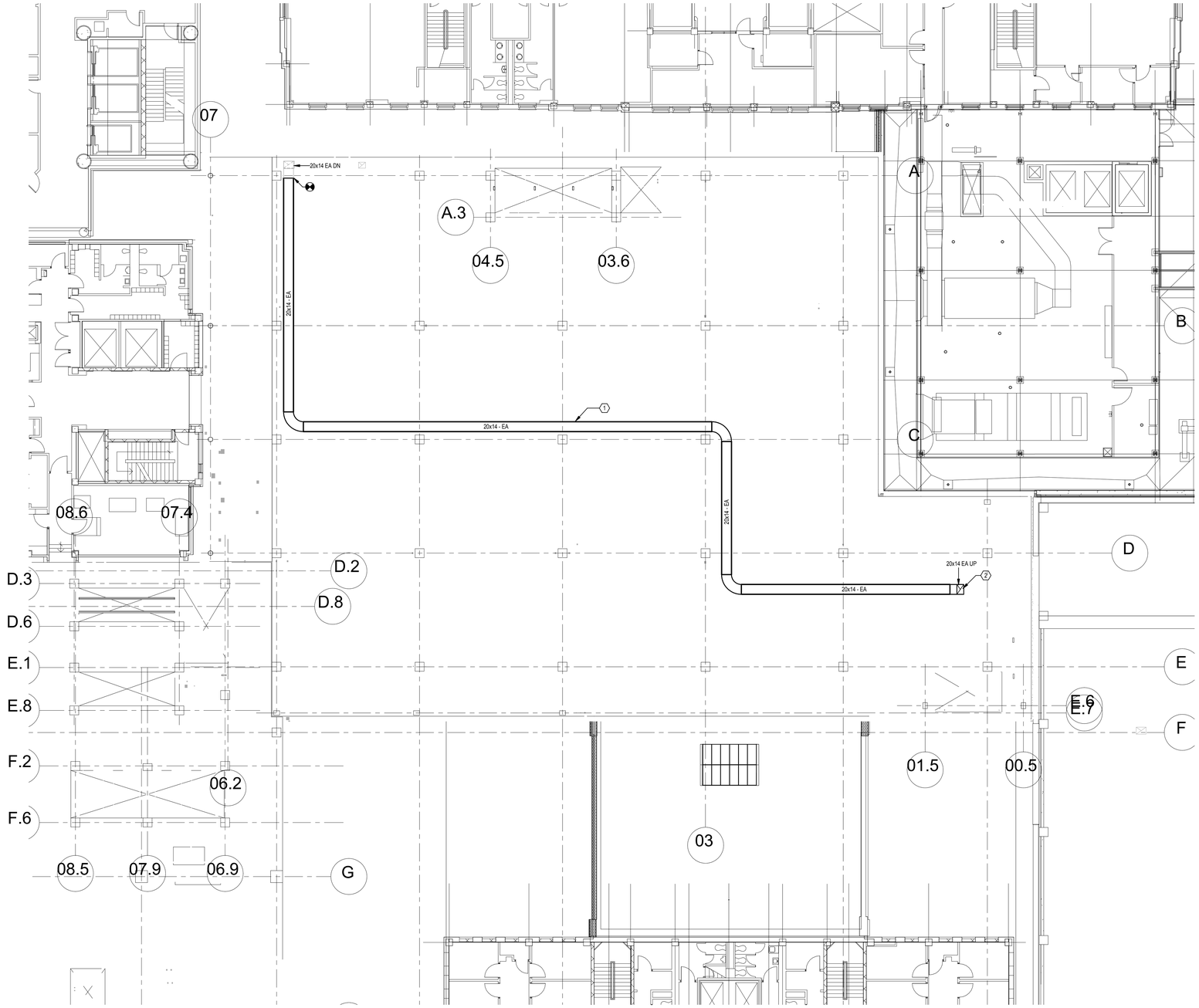
GENERAL NOTES

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 THERE 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 THOUGH ANY WALLS, FLOORS, OR CEILINGS.

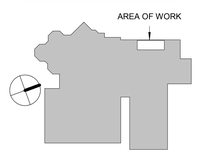
⬡ PLAN NOTES:

1. ROUTE DUCT TIGHT TO STRUCTURE THROUGH SHELL SPACE.
2. COORDINATE ROOF PENETRATION TO BE BETWEEN THE CONCRETE JOIST AND SUBMIT COORDINATED LOCATION FOR ENGINEERS APPROVAL.



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

KEY PLAN



No.	Issue/Revision/Submission	Date
1.	ISSUED FOR PERMIT AND CONSTRUCTION	09/06/24

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1 TRIEST
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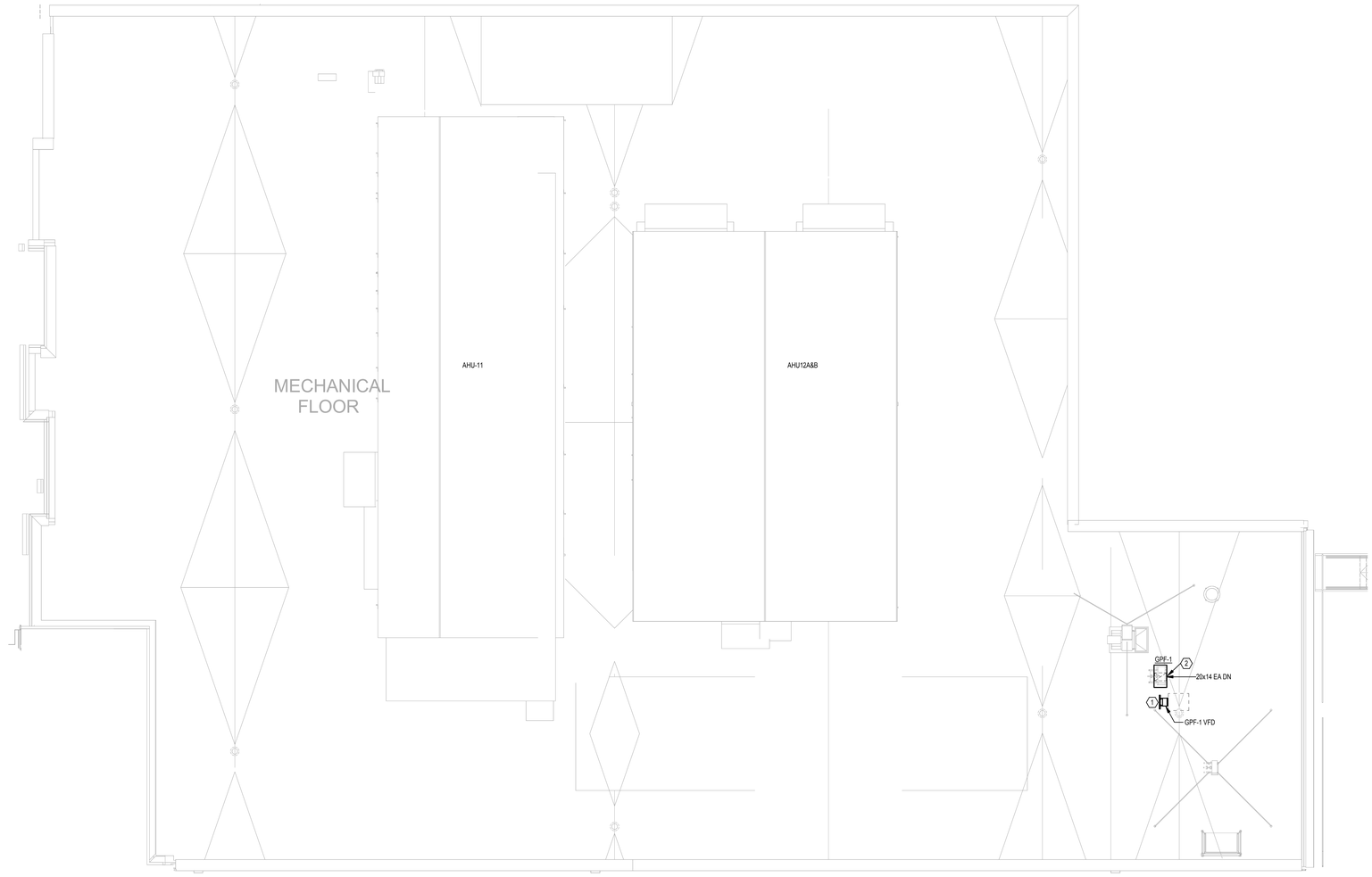
CINCINNATI, OH 45219-2316

PARTIAL THIRD FLOOR PLAN - NEW WORK

STATE OF OHIO
9/6/24
DAVID T. RICKEY
E - 78201
REGISTERED
PROFESSIONAL ENGINEER

Project Manager	
Approver	
Drawn	SMG
Checked	BWS
Initial Drawing Date	2024.09.06
Project Number	UCH0316

M102



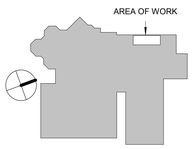
PLAN NOTES:

1. VFD TO BE LOCATED IN NEMA 4X VENTILATED ENCLOSURE.
2. COORDINATE ROOF PENETRATION TO BE BETWEEN THE CONCRETE JOIST AND SUBMIT COORDINATED LOCATION FOR ENGINEERS APPROVAL.

1 PARTIAL ROOF PLAN - NEW WORK

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

KEY PLAN



No.	Issue/Revision/Submission	Date
1.	ISSUED FOR PERMIT AND CONSTRUCTION	09/06/24

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PARTIAL ROOF PLAN - NEW WORK

STATE OF OHIO
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T.
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