

ROOFTOP UNIT SCHEDULE (DX/GAS-FIRED)																						
MARK	MANUFACTURER	MODEL	NOMINAL TONS	SUPPLY AIR (CFM)	MIN. OUTDOOR AIR (CFM)	ESP (\"WC)	BHP	FAN RPM	HEATING INPUT (MBH)	HEATING OUTPUT (MBH)	HEATING CONTROL	TOTAL COOLING CAPACITY (MBH)	SENSIBLE COOLING CAPACITY (MBH)	AMBIENT TEMPERATURE (°F)	REFRIGERANT TYPE	COOLING EAT DB/WB (°F)	ELECTRICAL				OPERATING WEIGHT (LBS)	REMARKS
																	MCA	MOCP	VOLT	PHASE		
(E)RTU-4	CARRIER	48A3D025CNM21HM	25.0	10,000	2,000	1.0	5.84	784	282.5 / 350.0	283.5	MODULATING	300.0	226.0	95.0	R-410A	80.0 / 67.0	81.0	90.0	460	3	4,825	1

REMARKS
1. EXISTING ROOFTOP UNIT TO REMAIN. SCHEDULE INFORMATION SHOWN FOR REFERENCE ONLY. MECHANICAL CONTRACTOR TO FIELD VERIFY EXISTING UNIT PERFORMANCE INFORMATION AND PROVIDE ROUTINE SERVICE MAINTENANCE AS NECESSARY TO MEET DESIGN REQUIREMENTS.

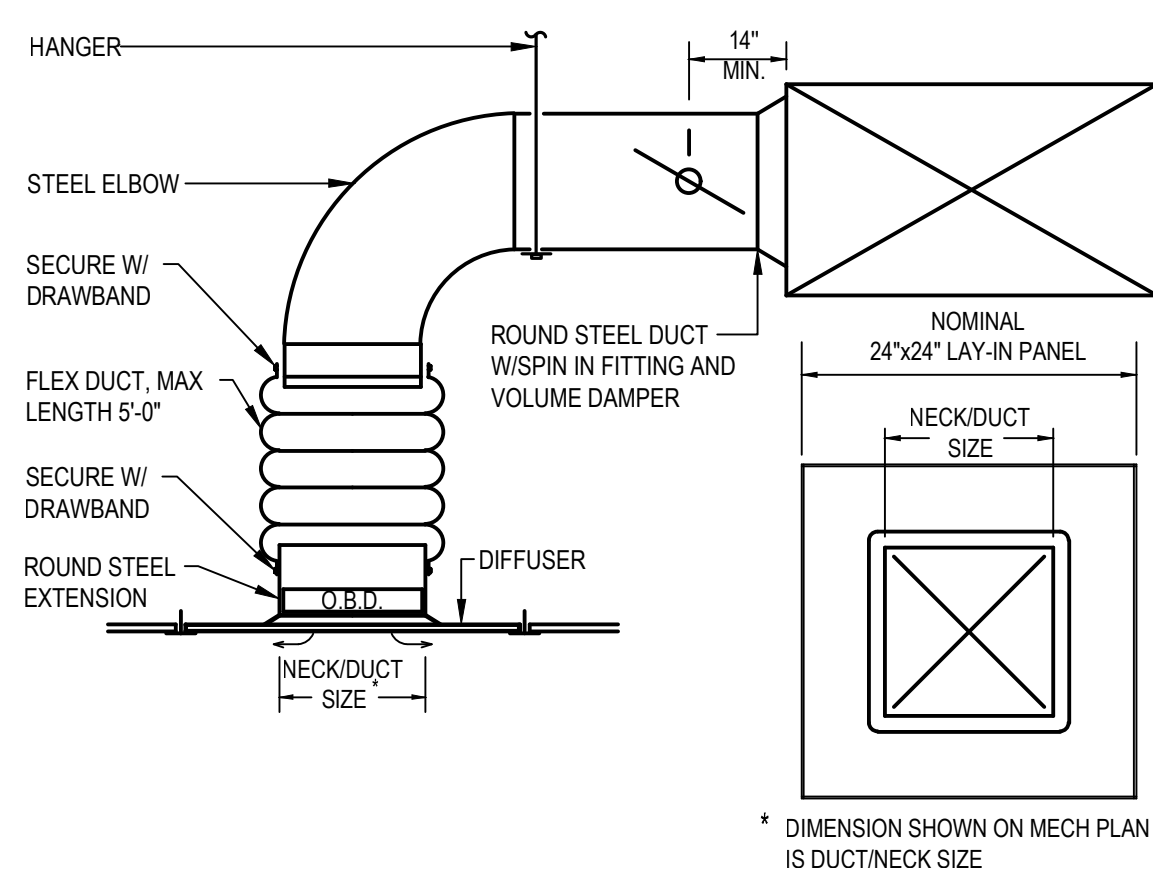
VENTILATION SCHEDULE based on Ohio Mechanical Code 2024													
Zone Identification	Occupancy Category	Zone Floor Area A _z (ft ²)	Area Outdoor Airflow Rate R _a (CFM/ft ²)	People Outdoor Airflow Rate R _p (CFM/person)	Occupant Density (W/1000ft ²)	Zone Population P _z (People)	Zone Air Effectiveness E _z	Breathing Zone Outdoor Airflow V _{bz} (CFM)	Exhaust Rate (CFM/ft ²)	Required Exhaust Airflow (CFM)	Actual Provided Airflow (CFM)	Actual Provided Outdoor Airflow (CFM)	Mechanical Unit
001 - Waiting	Reception Areas	539	0.06	5	30	18	0.80	153	0	0	625	156.25	0 (E) RTU-4
010 - Hall (Left)	Corridors	297	0.06	0	0	0	0.80	22	0	0	100	25	0 (E) RTU-4
020 - Hall (Right)	Corridors	356	0.06	0	0	0	0.80	27	0	0	125	31.25	0 (E) RTU-4
101 - Office 1	Office Space	110	0.06	5	5	2	0.80	21	0	0	100	25	0 (E) RTU-4
102 - Office 2	Office Space	117	0.06	5	5	2	0.80	21	0	0	100	25	0 (E) RTU-4
103 - Office 3	Office Space	113	0.06	5	5	2	0.80	21	0	0	100	25	0 (E) RTU-4
104 - Office 4	Office Space	121	0.06	5	5	2	0.80	22	0	0	150	37.5	0 (E) RTU-4
105 - Office 5	Office Space	116	0.06	5	5	2	0.80	21	0	0	150	37.5	0 (E) RTU-4
106 - Office 6	Office Space	151	0.06	5	5	2	0.80	24	0	0	100	25	0 (E) RTU-4
107 - Office 7	Office Space	115	0.06	5	5	2	0.80	21	0	0	200	50	0 (E) RTU-4
108 - Office 8	Office Space	117	0.06	5	5	2	0.80	21	0	0	200	50	0 (E) RTU-4
109 - Office 9	Office Space	120	0.06	5	5	2	0.80	22	0	0	100	25	0 (E) RTU-4
110 - Office 10	Office Space	161	0.06	5	5	2	0.80	25	0	0	250	62.5	0 (E) RTU-4
111 - Office 11	Office Space	115	0.06	5	5	2	0.80	21	0	0	175	43.75	0 (E) RTU-4
112 - Office 12	Office Space	126	0.06	5	5	2	0.80	22	0	0	250	62.5	0 (E) RTU-4
113 - Office 13	Office Space	116	0.06	5	5	2	0.80	21	0	0	175	43.75	0 (E) RTU-4
114 - Office 14	Office Space	119	0.06	5	5	2	0.80	21	0	0	100	25	0 (E) RTU-4
115 - Group Office 15	Office Space	199	0.06	5	5	10	0.80	77	0	0	325	81.25	0 (E) RTU-4
301 - Break Room	Break Rooms	207	0.06	5	25	4	0.80	41	0	0	200	50	0 (E) RTU-4
401 - Telecom	Occupiable Storage Rooms for Dry Materials	59	0.06	5	2	0	0.80	5	0	0	25	6.25	0 (E) RTU-4
801 - Reception	Reception Areas	120	0.06	5	30	2	0.80	22	0	0	130	32.5	0 (E) RTU-4
801 - Closet	Occupiable Storage Rooms for Dry Materials	105	0.06	5	2	0	0.80	9	0	0	50	12.5	0 (E) RTU-4
Total:											3730	932.5	0

FAN POWERED VAV BOX WITH ELECTRIC REHEAT SCHEDULE														
MARK	MANUFACTURER	MODEL	MAXIMUM CFM	MINIMUM CFM SETTING	INLET DUCT SIZE (IN)	FAN CFM	ESP	FAN HP	HEATING CAPACITY (KW)	ELECTRICAL				REMARKS
										VOLT	PHASE	MCA	MOCP	
FPVAV-1	TITUS	DTQP	600	170	8	285	0.5	1/8	3.5	208	1	21.0	25.0	1-4
FPVAV-2	TITUS	DTQP	250	55	6	120	0.5	1/8	1.5	208	1	9.0	15.0	1-4
FPVAV-3	TITUS	DTQP	400	130	6	180	0.5	1/8	2.5	208	1	15.0	20.0	1-4
FPVAV-4	TITUS	DTQP	400	150	6	225	0.5	1/8	3	208	1	18.0	20.0	1-4

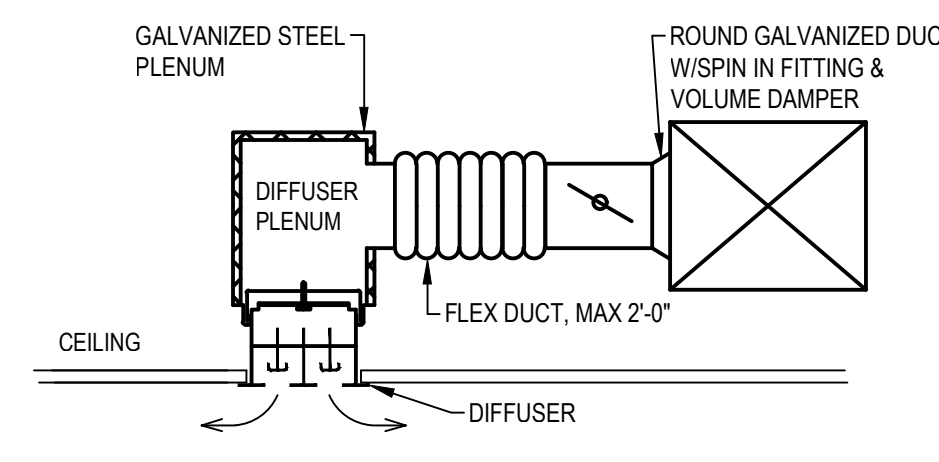
REMARKS
1. APPROVED MANUFACTURERS: ANEMOSTAT, CARRIER, KRUEGER, PRICE, TITUS, OR TRANE.
2. PROVIDE WITH DDC CONTROLLER, SINGLE POINT POWER CONNECTION, DISCONNECT SWITCH, DIRECT DRIVE SUPPLY FAN WITH ECM MOTOR WITH FACTORY INSTALLED SPEED CONTROLLER.
3. PROVIDE WITH INLET ATTENUATOR AS NECESSARY TO FAN POWERED BOX.
4. PROVIDE WITH SCR CONTROLLER FOR INFINITE HEATING STEPS.

VAV BOX WITH ELECTRIC REHEAT SCHEDULE													
MARK	MANUFACTURER	MODEL	INLET DUCT SIZE (IN)	MAXIMUM CFM	HEATING CFM	MINIMUM CFM	HEATING CAPACITY (KW)	ELECTRICAL				REMARKS	
								VOLT	PHASE	MCA	MOCP		
VAV-1	TITUS	DESV	10	755	175	220	2.5	208	1	15.0	20.0	1,2	
VAV-2	TITUS	DESV	6	350	105	130	1.5	208	1	9.0	15.0	1,2	
VAV-3	TITUS	DESV	8	575	105	130	1.5	208	1	9.0	15.0	1,2	
VAV-4	TITUS	DESV	6	400	105	125	1.5	208	1	9.0	15.0	1,2	

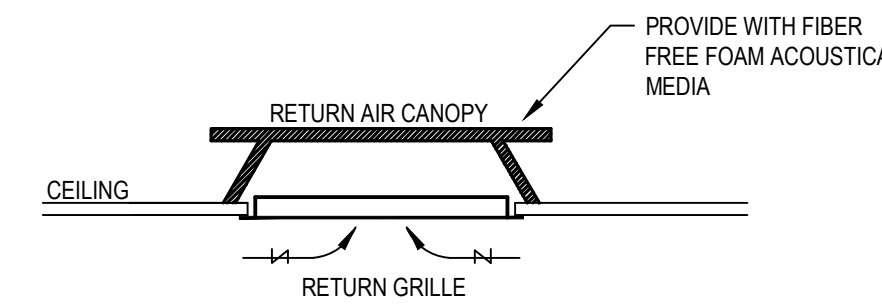
REMARKS
1. APPROVED MANUFACTURERS: ANEMOSTAT, CARRIER, KRUEGER, PRICE, TITUS, OR TRANE.
2. PROVIDE WITH SCR CONTROL FOR INFINITE HEATING STEPS.



1 LAY-IN DIFFUSER DETAIL
N.T.S.



2 LINEAR DIFFUSER DETAIL
N.T.S.

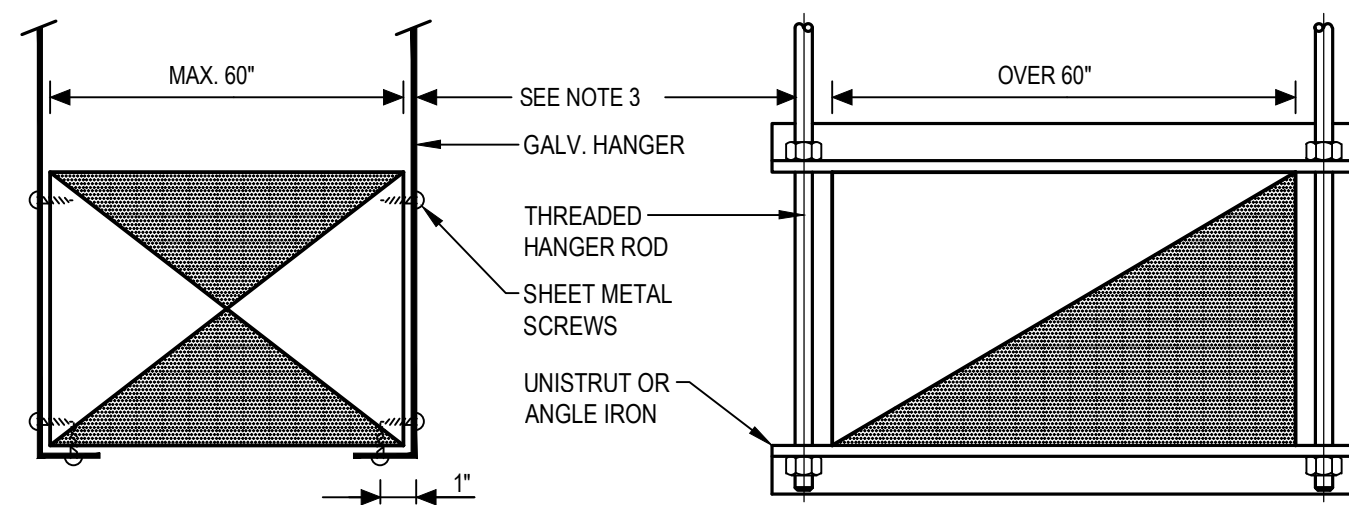


3 RETURN AIR CANOPY
N.T.S.

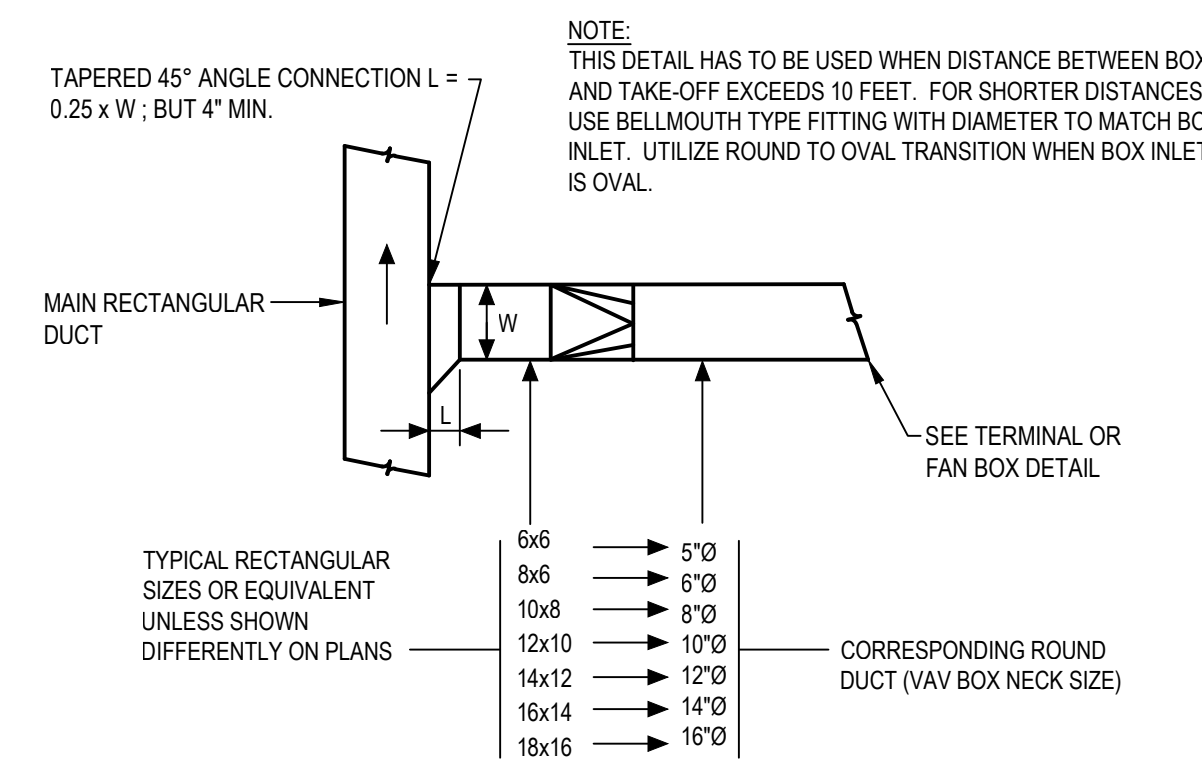
NOTE:
CONTRACTOR SHALL COORDINATE BUILDING BMS CONTROLS WITH LANDLORD APPROVED CONTRACTOR (JACKSONS) TO ENSURE PROPER INTEGRATION WITH EXISTING BUILDING CONTROLS.

GRILLE AND DIFFUSER SCHEDULE						
MARK	MANUFACTURER	MODEL	FRAME	MATERIAL	MAX NC	NOTES
CD-1	PRICE	SPD	24x24 LAY-IN	STEEL	25	1,2,6
LD-1	PRICE	SDS75	TYPE 19 LAY-IN	STEEL	25	2,4
RG-1	PRICE	630	24x24 LAY-IN	ALUMINUM	25	2,3,6
LR-1	PRICE	SDR75	TYPE 19 LAY-IN	ALUMINUM	--	2,5

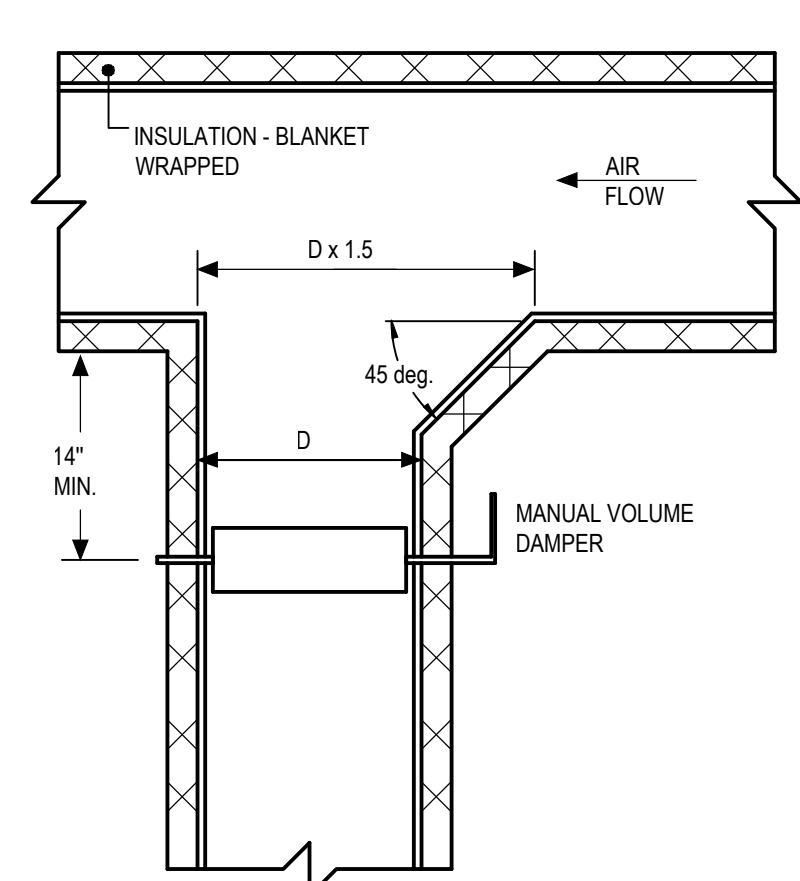
NOTES:
1. DIFFUSERS SHALL BE 4-WAY THROW UNLESS NOTED OTHERWISE.
2. DIFFUSERS/GRILLES SHALL BE PAINTED TO MATCH CEILING GRID. COORDINATE WITH ARCHITECTURAL PRIOR TO PAINTING.
3. PROVIDE WITH PRICE RETURN AIR CANOPY WITH FIBER FREE FOAM ACOUSTICAL MEDIA (RAC).
4. LINEAR SLOT DIFFUSER, DIFFUSER WITH 4FT SUPPLY PLENUM (MODEL SOB), 5\"/>



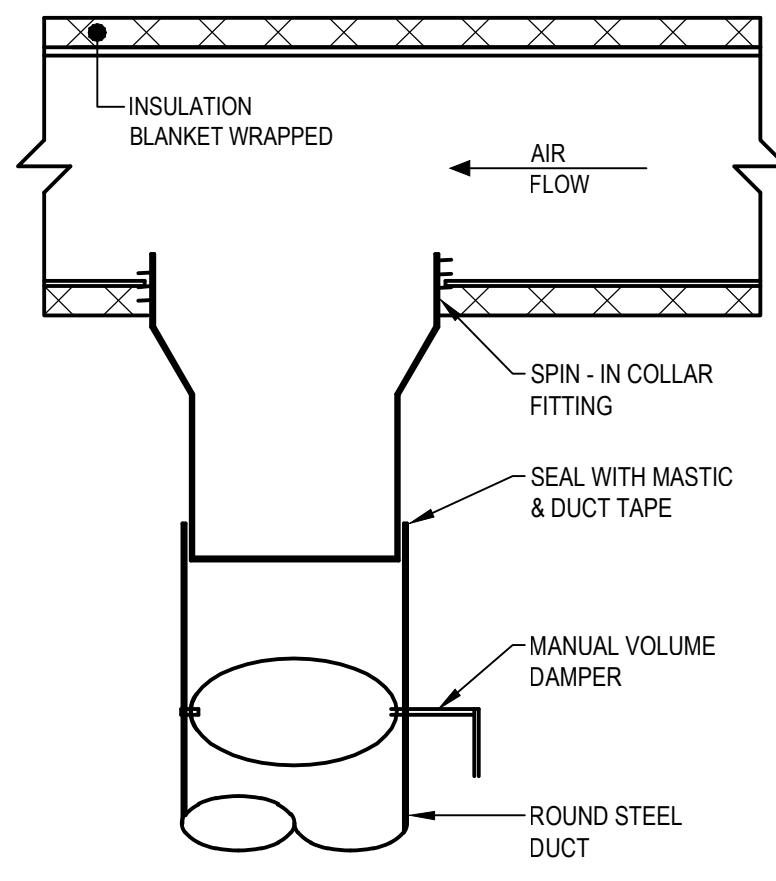
4 DUCT HANGER SUPPORT
N.T.S.



5 TAKE-OFF TO TERMINAL BOX
N.T.S.



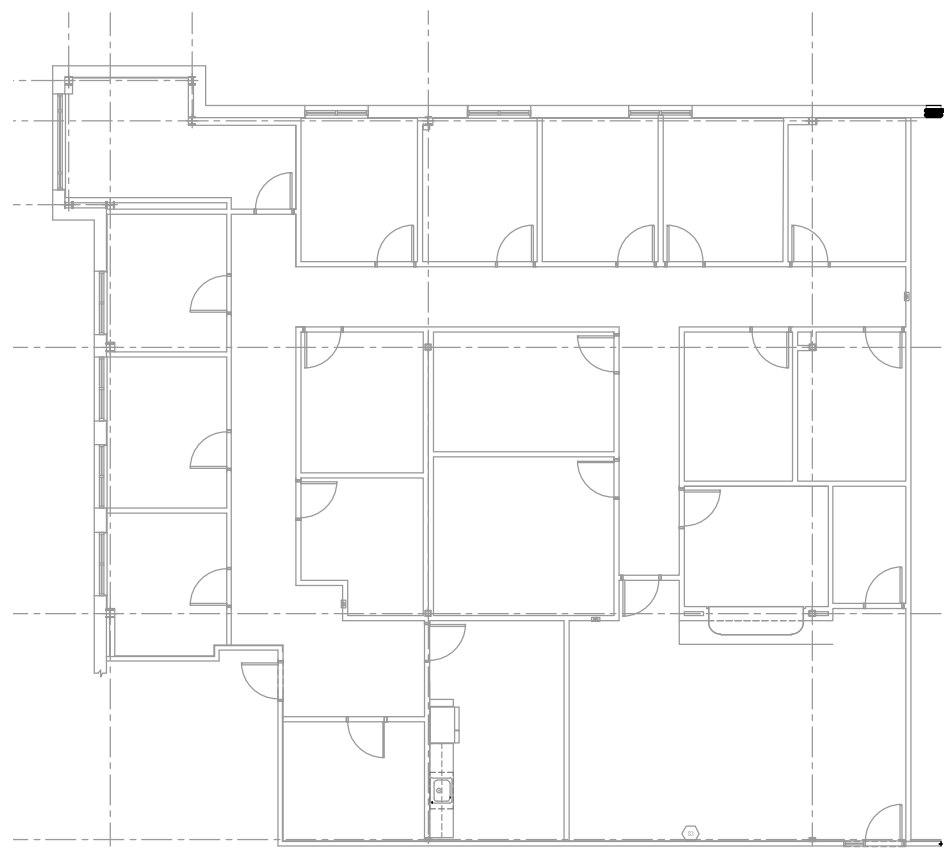
6 TAKEOFF DETAIL RECTANGULAR DUCT BRANCH
N.T.S.



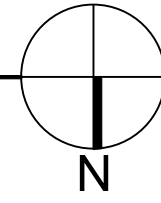
7 TAKEOFF DETAIL ROUND DUCT BRANCH
N.T.S.

MECHANICAL SYMBOLS/ABBREVIATIONS LEGEND			
SYMBOL/ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
⊕	THERMOSTAT	EXIST (E)	EXISTING
☐	DUCT SMOKE DETECTOR	FA	FIRE ALARM
⊕	CONNECT TO EXISTING	FPB	FAN POWERED BOX
⊥	VOLUME DAMPER	FPC	FIRE PROTECTION CONTRACTOR
☐	CEILING DIFFUSER	G	GRILLE (EXHAUST, RETURN OR TRANSFER)
☐	RETURN GRILLE	GC	GENERAL CONTRACTOR
→	AIRFLOW DIRECTION	HP	HORSEPOWER
⊥	UNDERCUT DOOR	HVAC	HEATING, VENTILATION, AIR CONDITIONING
☐	SUPPLY DUCT	KW	KILOWATT
☐	RETURN/OUTSIDE AIR DUCT	MBH	1,000 BTUH
☐	DUCTWORK ACOUSTICAL LINING	MC	MECHANICAL CONTRACTOR
☐	MITERED ELBOW WITH TURNING VANES	NEC	NATIONAL ELECTRIC CODE
☐	SPIN-IN BRANCH W/MANUAL DAMPER	NF	NON-FUSED
A	AMPS	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
AFF	ABOVE FINISHED FLOOR	NIC	NOT IN CONTRACT
CD	CEILING DIFFUSER	OA	OUTSIDE AIR
CFM	CUBIC FEET PER MINUTE	PH	PHASE
D	DAMPER	PSI	POUNDS PER SQUARE INCH
DPS	DIFFERENTIAL PRESSURE SENSOR	RA	RETURN AIR
EC	ELECTRICAL CONTRACTOR	RG	RETURN GRILLE
ELEC	ELECTRICAL	RTU	ROOFTOP UNIT
ETR	EXISTING TO REMAIN	SA	SUPPLY AIR
		TYP	TYPICAL
		V	VOLTS
		VAV	VARIABLE AIR VOLUME BOX
		VD	VOLUME DAMPER
		W	WATTS

NOTE: ALL SYMBOLS SHOWN MAY NOT APPEAR ON THE DRAWINGS.



KEY PLAN
1/8" = 1'-0"



CODED NOTES

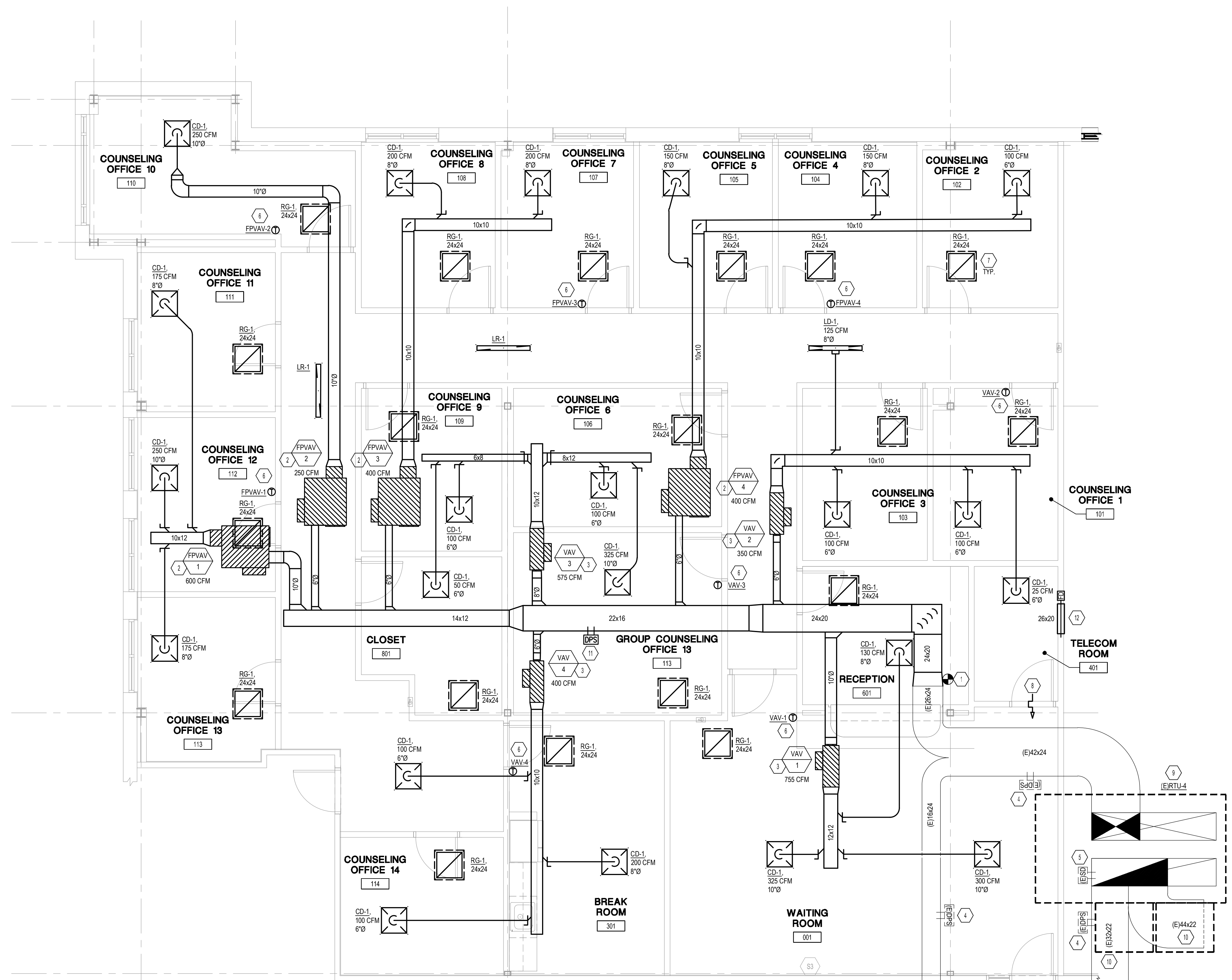
- MECHANICAL CONNECT NEW SUPPLY DUCT MAIN TO EXISTING BUILDING SUPPLY DUCT MAIN. FIELD VERIFY EXISTING CONDITIONS, ROUTING, AND EXACT POINT OF CONNECTION PRIOR TO STARTING WORK.
- MECHANICAL CONTRACTOR SHALL PROVIDE A NEW FAN POWERED VAV BOX WITH ELECTRIC REHEAT. REFER TO SCHEDULE ON SHEET M1.0 FOR ADDITIONAL INFORMATION. FIELD VERIFY EXISTING CONDITIONS PRIOR TO STARTING WORK.
- MECHANICAL CONTRACTOR SHALL PROVIDE A NEW VAV BOX WITH ELECTRIC REHEAT. REFER TO SCHEDULE ON SHEET M1.0 FOR ADDITIONAL INFORMATION. FIELD VERIFY EXISTING CONDITIONS PRIOR TO STARTING WORK.
- EXISTING DUCT PRESSURE SENSOR TO REMAIN. CONFIRM SENSOR IS IN GOOD WORKING ORDER AND REPLACE IF NECESSARY.
- EXISTING RETURN DUCT MOUNTED SMOKE DETECTOR TO REMAIN. CONFIRM DETECTOR IS IN GOOD WORKING ORDER. IF DETECTOR NEEDS REPLACED, MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL NEW DETECTOR AND ELECTRICAL CONTRACTOR SHALL WIRE NEW DETECTOR.
- PROVIDE NEW HONEYWELL THERMOSTAT PER LANDLORD REQUIREMENTS AT 48" A.F.F. PROVIDE WITH CLEAR LOCK BOX. COORDINATE FINAL LOCATION WITH ARCHITECTURAL PLANS.
- PROVIDE WITH RETURN AIR CANOPY. REFER TO DETAIL ON SHEET M1.0 FOR ADDITIONAL INFORMATION. TYP. ALL RETURN AIR GRILLES.
- UNDERCUT DOOR 1".
- EXISTING ROOFTOP UNIT TO REMAIN. REFER TO SCHEDULE ON SHEET M1.0 FOR ADDITIONAL INFORMATION. FIELD VERIFY EXISTING CONDITIONS.
- EXISTING RETURN AIR DUCTWORK TO REMAIN. FIELD VERIFY EXISTING CONDITIONS.
- PROVIDE WITH NEW HONEYWELL DUCT PRESSURE SENSOR.
- PROVIDE 26x20 TRANSFER AIR DUCT ABOVE ACT CEILING WITH FIRE DAMPER TO MATCH WALL RATING. FIELD VERIFY EXISTING CONDITIONS PRIOR TO STARTING WORK.

NOTE:
ALL EXISTING PVC PIPING EXPOSED WITHIN THE RETURN AIR PLENUM SPACE SHALL EITHER BE FIRE WRAPPED OR REMOVED AND REPLACED WITH A PLENUM RATED PIPING MATERIAL (I.E. CAST IRON, COPPER ETC.)

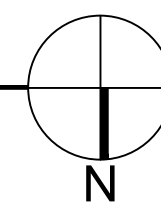
NOTE:
CONTRACTOR SHALL COORDINATE BUILDING BMS CONTROLS WITH LANDLORD APPROVED CONTRACTOR (JACKSONS) TO ENSURE PROPER INTEGRATION WITH EXISTING BUILDING CONTROLS.

MECHANICAL GENERAL NOTES:

- CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT TO INSTALL A COMPLETE AND OPERATIONAL HEATING AND COOLING SYSTEM.
- CONTRACTOR SHALL PROVIDE ALL REQUIRED HVAC PERMITS.
- THE CONTRACTOR SHALL COMPLY WITH NFPA-90A AND ALL APPLICABLE CODES.
- ALL HVAC WORK TO BE PERFORMED SHALL BE IN COMPLIANCE WITH ALL STATE AND LOCAL CODES.
- FLEXIBLE DUCT SHALL COMPLY WITH SMACNA. ALL LOCAL CODES, U.L. RATING, AND NOT EXCEED FIVE FEET IN LENGTH, SHEET METAL DUCT, WHERE REQUIRED BY LOCAL CODES, SHALL BE LINED WITH 1" MATT FACED DUCTLINER IN THE FIRST 10 (TEN) FEET OF THE RETURN AND SUPPLY DUCT STARTING FROM THE HVAC UNIT. AFTER THE FIRST 10 (TEN) FEET THE USE OF 1" DUCT WRAP SHALL BE ACCEPTABLE WORK MATERIAL TO BE VERIFIED WITH CEILING ACCESSIBILITY RATINGS.
- THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SWITCHES, DISCONNECTS, AND CONTROL WIRING.
- ALL DUCT SIZES ARE CLEAR INSIDE DIMENSIONS, ALLOW FOR DUCT INSULATION.
- THE CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE THAT SHALL WARRANT ALL WORKMANSHIP AND MATERIALS FOR ONE (1) YEAR FROM THE FINAL WORK ACCEPTANCE BY THE OWNER AND A FIVE YEAR WARRANTY ON THE COMPRESSOR.
- FILTERS SHALL BE OF THE DISPOSABLE TYPE AND SHALL BE MERV-8. PROVIDE TWO SETS, ONE DURING CONSTRUCTION AND ONE FOR USE AFTER OCCUPANCY.
- CONTRACTORS SHALL INSTALL ALL NECESSARY OFFSETS, BENDS, AND TRANSITIONS REQUIRED TO PROVIDE A COMPLETE SYSTEM AT NO ADDITIONAL COST TO THE OWNER.
- COORDINATE LOCATION OF ALL CEILING DIFFUSERS, GRILLES AND REGISTERS IN THE FIELD WITH THE ELECTRICIAN TO PREVENT CONFLICT WITH LIGHTS AND ARCHITECTURAL ELEMENTS.
- ALL WORK OF THIS TRADE SHALL BE COORDINATED WITH ALL OTHER TRADES TO AVOID ANY INTERFERENCES THAT MAY DELAY PROGRESS DURING CONSTRUCTION.
- THE MECHANICAL CONTRACTOR SHALL TEST AND BALANCE TO THE AIR QUANTITIES ON THE PLAN AND PROVIDE A TAB REPORT.
- CONTRACTOR SHALL INSTALL A THERMOSTAT IN ACCORDANCE WITH THERMOSTAT SPECS.
- CONTRACTOR SHALL INSTALL MANUAL BALANCING DAMPERS AT ALL SUPPLY AIR BRANCH DUCTWORK RUN OUTS.
- CONTRACTOR SHALL INSTALL TURNING VANES AT ALL DUCTWORK TEES AND 90 DEGREE ELBOWS.
- CONTRACTOR SHALL INSTALL A DUCT-TYPE MOUNTED SMOKE DETECTOR FOR UNIT SHUTDOWN IN THE RETURN AIR DUCTWORK PLENUM AT ROOFTOP UNITS. THE CONTRACTOR SHALL VERIFY THE COMPATIBLE TYPE OF DETECTION DEVICE TO USE WITH THE BUILDING OPERATIONS MANAGER.
- ALL SHEET METAL DUCTWORK SHALL COMPLY WITH SMACNA STANDARDS. ALL DUCTWORK JOINTS SHALL BE TAPED AND SEALED.
- CONTRACTOR SHALL PROVIDE EQUIPMENT OF THE SCHEDULED CAPACITIES DESIGNED.



MECHANICAL PLAN
1/4" = 1'-0"



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Project No.: 25.0488
Drawn By: REK
Date: 05-01-25 Issue: BID / PERMIT

Mechanical General Information

- A. General
1. Conform to all general and special conditions of contract as specified by architect, tenant and owner.
2. Specifications are applicable to all contractors and subcontractors for mechanical and electrical systems...

- B. Codes, standards and regulations
1. Conform to all applicable codes, government regulations, utility company requirements, and national electrical code.

- C. Related work specified elsewhere
1. Openings and chases, when shown on architectural drawings.

- D. Drawings
1. The systems as shown on the contract drawings are diagrammatic.
2. The intent is to complete and workable systems. The drawings and these notes are to be used together as a basis of showing and/or describing the system requirements for the facility.

- E. Base equipment and materials and substitutions
1. All equipment and materials shall be new, free of defects and U.L. labeled.
2. Submit shop drawings for all equipment, fixtures, etc., including all accessories to be furnished. Base bid manufacturers and models are included in specifications or listed in schedule on drawing. Any other manufacturer or model is a substitution.

- F. Check, test, start, adjust, balance and instructions
1. After installation, check all equipment, and perform start up in accordance with the manufacturer's instructions.

- G. Cutting, patching and drilling
1. All cutting and chasing of the building construction required for this work shall be by this contractor unless shown on architectural drawings and confirmed as to size and location prior to new construction.

- H. Warranty
1. Fully warrant all materials, equipment and workmanship for one (1) year from date of acceptance.

SECTION 23 053 IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT

- 1.01 SECTION INCLUDES
A. Nameplates
B. Tags
C. Nameplates
D. Thermostats: Nameplates
E. MINIMUM DATA TO BE REPORTED

SECTION 23 059 TESTING, ADJUSTING, AND BALANCING FOR HVAC

- 1.01 SECTION INCLUDES
A. Testing, adjustment, and balancing of air systems.
B. Measurement of final operating condition of HVAC systems.
1.02 SUBMITTALS
A. TAB Plan: Submit a written plan indicating the testing, adjusting, and balancing standard to be followed and the specific approach for each system and component.

- B. Final Report: Indicate deficiencies in systems that would prevent proper testing, adjusting, and balancing of systems and equipment to achieve specified performance.
1. Review TAB plan to reflect actual procedures and submit as part of final report.
2. Submit draft copies of report for review prior to final acceptance of Project. Provide final copies for Architect and for inclusion in operating and maintenance manuals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

- 1.01 GENERAL REQUIREMENTS
A. Perform total system balance in accordance with one of the following:
1. AABC (NISTSE), AABC National Standards for Total System Balance.
2. ASHRAE Std 111, Practices for Measurement, Testing, Adjusting and Balancing of Building Heating, Ventilating, Air-Conditioning, and Refrigeration Systems.

3.02 EXAMINATION

- A. Verify that systems are complete and operable before commencing work. Ensure the following conditions:
1. Systems are started and operating in a safe and normal condition.
2. Temperature control systems are installed complete and operable.

3.03 ADJUSTMENT TOLERANCES

- A. Air Handling Systems: Adjust to within plus or minus 10 percent of design for supply systems and plus or minus 10 percent of design for return and exhaust systems.
B. Air Outlets and Inlets: Adjust total to within plus 10 percent and minus 10 percent of design to space. Adjust outlets and inlets in space to within plus or minus 10 percent of design.

3.05 AIR SYSTEM PROCEDURE

- A. Adjust air handling and distribution systems to provide required or design supply, return, and exhaust air quantities at site airflow.
B. Make air quantity measurements in ducts by Pitot tube traverse of entire cross sectional area of duct.
C. Measure air quantities at air inlets and outlets.
D. Adjust distribution system to obtain uniform space temperatures free from objectionable drafts and noise.

- E. Electric Heat Coils:
1. Review TAB plan to reflect actual procedures and submit as part of final report.
2. Submit draft copies of report for review prior to final acceptance of Project. Provide final copies for Architect and for inclusion in operating and maintenance manuals.
3. Include actual instrument list, with manufacturer name, serial number, and date of calibration.
4. Form of Test Reports: Where the TAB standard being followed recommends a report format use that; otherwise, follow ASHRAE Std 111.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

- 1.01 GENERAL REQUIREMENTS
A. Perform total system balance in accordance with one of the following:
1. AABC (NISTSE), AABC National Standards for Total System Balance.
2. ASHRAE Std 111, Practices for Measurement, Testing, Adjusting and Balancing of Building Heating, Ventilating, Air-Conditioning, and Refrigeration Systems.

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B. Make air quantity measurements in ducts by Pitot tube traverse of entire cross sectional area of duct.
C. Measure air quantities at air inlets and outlets.
D. Adjust distribution system to obtain uniform space temperatures free from objectionable drafts and noise.

- 3.02 INSTALLATION
A. Install in accordance with manufacturer's instructions.
B. Install in accordance with NAIMA National Insulation Standards.
C. Insulated Ducts Conveying Air Below Ambient Temperature:
1. Provide insulation with vapor barrier jacket.
2. Finish with tape and vapor barrier jackets.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

- 1.01 SECTION INCLUDES
A. Pressure independent valves and actuators.
B. Dampers.
C. Damper Operators:
1. Electric operators.
D. Humidistats:
1. Room humidistats.
2. Description of ductwork under test.

SECTION 23 013 INSTRUMENTATION AND CONTROL DEVICES FOR HVAC

- 1.01 SECTION INCLUDES
A. Pressure independent valves and actuators.
B. Dampers.
C. Damper Operators:
1. Electric operators.
D. Humidistats:
1. Room humidistats.
2. Description of ductwork under test.

SECTION 23 300 AIR DUCT ACCESSORIES

- 1.01 SECTION INCLUDES
A. Air turning devices/extractors.
B. Multi-blade device with radius blades attached to pivoting frame and bracket, steel construction, with push-pull operator strap.
C. Duct Access Doors:
1. Fabricate in accordance with SMACNA (DCS) and as indicated.
2. Access doors with sheet metal screw fasteners are not acceptable.

SECTION 23 310 HVAC DUCTS AND CASINGS

- 1.01 SECTION INCLUDES
A. Metal ductwork.
B. Casings and plenums.
C. Duct cleaning.
D. Quality Assurance:
1. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience, and approved by manufacturer.

SECTION 23 0713 DUCT INSULATION

- 1.01 SECTION INCLUDES
A. Duct insulation.
B. Duct liner.
1.02 SUBMITTALS
A. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service and location.
1.03 DELIVERY, STORAGE, AND HANDLING
A. Acquire materials on site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.
B. Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.

PART 2 PRODUCTS

- 2.01 DUCT ASSEMBLIES
A. Regulatory Requirements: Construct ductwork to comply with NFPA 90A standards.
B. Ducts: Galvanized steel, unless otherwise indicated.
C. Low Pressure Supply (Heating Systems): 1 inch wvg (250 Pa) pressure class, galvanized steel.
D. Low Pressure Supply (System with Cooling Coils): 1 inch wvg (250 Pa) pressure class, galvanized steel.
E. Return and Relief: 1 inch wvg (250 Pa) pressure class, galvanized steel.

PART 3 EXECUTION

- 3.01 INSTALLATION
A. Install accessories in accordance with manufacturer's instructions, NFPA 90A, and follow SMACNA (DCS).
B. Provide backdraft dampers on exhaust fans or exhaust ducts nearest to and where indicated.
C. Provide duct access doors for inspection and cleaning before and after filters, coils, fans, automatic dampers, at fire dampers, and elsewhere as indicated. Provide 4 by 4 inch (100 mm) by balancing dampers only. Review locations prior to fabrication.
D. Provide duct test holes where indicated and required for testing and balancing purposes.
E. Provide fire dampers at locations indicated, where ducts and outlets pass through fire rated components, and where required by Authorities Having Jurisdiction. Install with required perimeter mounting angles, sleeves, breakaway duct connections, corrosion resistant springs, bearings, bushings and hinges.

- 2.05 CASINGS AND PLENIUMS
A. Fabricate casings in accordance with SMACNA (DCS) and construct for operating pressures indicated.
B. Reinforce door frames with steel angles tied to horizontal and vertical plenum supporting angles. Install hinged access doors where indicated or required for access for cleaning and inspection.
C. Fabricate acoustic casings with reinforcing turned inward. Provide 16 gauge, 0.0598 inch (1.52 mm) sheet steel back framing and 22 gauge, 0.0299 inch (0.76 mm) perforated sheet steel front facing with 3/32 inch (2.4 mm) diameter holes on 5/32 inch (4 mm) centers. Construct panels 3 inches (75 mm) thick packed with 4.5 lb/cu ft (72 kg/cu m) minimum glass fiber insulation media, on inverted channels of 16 gauge, 0.0598 inch (1.52 mm) sheet steel.

PART 2 PRODUCTS

- 2.01 DUCT ASSEMBLIES
A. Regulatory Requirements: Construct ductwork to comply with NFPA 90A standards.
B. Ducts: Galvanized steel, unless otherwise indicated.
C. Low Pressure Supply (Heating Systems): 1 inch wvg (250 Pa) pressure class, galvanized steel.
D. Low Pressure Supply (System with Cooling Coils): 1 inch wvg (250 Pa) pressure class, galvanized steel.
E. Return and Relief: 1 inch wvg (250 Pa) pressure class, galvanized steel.

PART 3 EXECUTION

- 3.01 INSTALLATION
A. Install support, and seal ducts in accordance with SMACNA (DCS).
B. Install in accordance with manufacturer's instructions.
C. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.
D. Flexible Ducts: Connect to metal ducts with mechanical fastener.
E. Duct sizes indicated are inside clear dimensions. For lined ducts, maintain sizes inside lining.
F. Provide openings in ductwork where required to accommodate thermostats and controllers. Provide pilot tube openings where required for testing of systems, complete with metal can with spring device or screw to ensure against air leakage. Where openings are provided in insulated ductwork, install insulation material inside a metal ring.

SECTION 23 330 AIR DUCT ACCESSORIES

- 1.01 SECTION INCLUDES
A. Air turning devices/extractors.
B. Multi-blade device with radius blades attached to pivoting frame and bracket, steel construction, with push-pull operator strap.
C. Duct Access Doors:
1. Fabricate in accordance with SMACNA (DCS) and as indicated.
2. Access doors with sheet metal screw fasteners are not acceptable.

SECTION 23 310 HVAC DUCTS AND CASINGS

- 1.01 SECTION INCLUDES
A. Metal ductwork.
B. Casings and plenums.
C. Duct cleaning.
D. Quality Assurance:
1. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience, and approved by manufacturer.

SECTION 23 0713 DUCT INSULATION

- 1.01 SECTION INCLUDES
A. Duct insulation.
B. Duct liner.
1.02 SUBMITTALS
A. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service and location.
1.03 DELIVERY, STORAGE, AND HANDLING
A. Acquire materials on site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.
B. Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.

PART 2 PRODUCTS

- 2.01 DUCT ASSEMBLIES
A. Regulatory Requirements: Construct ductwork to comply with NFPA 90A standards.
B. Ducts: Galvanized steel, unless otherwise indicated.
C. Low Pressure Supply (Heating Systems): 1 inch wvg (250 Pa) pressure class, galvanized steel.
D. Low Pressure Supply (System with Cooling Coils): 1 inch wvg (250 Pa) pressure class, galvanized steel.
E. Return and Relief: 1 inch wvg (250 Pa) pressure class, galvanized steel.

PART 3 EXECUTION

- 3.01 INSTALLATION
A. Install accessories in accordance with manufacturer's instructions, NFPA 90A, and follow SMACNA (DCS).
B. Provide backdraft dampers on exhaust fans or exhaust ducts nearest to and where indicated.
C. Provide duct access doors for inspection and cleaning before and after filters, coils, fans, automatic dampers, at fire dampers, and elsewhere as indicated. Provide 4 by 4 inch (100 mm) by balancing dampers only. Review locations prior to fabrication.
D. Provide duct test holes where indicated and required for testing and balancing purposes.
E. Provide fire dampers at locations indicated, where ducts and outlets pass through fire rated components, and where required by Authorities Having Jurisdiction. Install with required perimeter mounting angles, sleeves, breakaway duct connections, corrosion resistant springs, bearings, bushings and hinges.

HVAC SEQUENCE OF OPERATION

PART 1 GENERAL

- 1.01 SECTION INCLUDES
A. THIS SECTION DEFINES THE MANNER AND METHOD BY WHICH CONTROLS FUNCTION. REQUIREMENTS FOR EACH TYPE OF CONTROL SYSTEM OPERATION ARE SPECIFIED. EQUIPMENT, DEVICES, AND SYSTEM COMPONENTS REQUIRED FOR CONTROL SYSTEMS ARE SPECIFIED IN OTHER SECTIONS.
1.02 SUBMITTALS
A. SEQUENCE OF OPERATION DOCUMENTATION: SUBMIT WRITTEN SEQUENCE OF OPERATION FOR ENTIRE HVAC SYSTEM AND EACH PIECE OF EQUIPMENT.

PART 2 PRODUCTS

- 2.01 FLEXIBLE DUCT CONNECTORS
A. Fabricate in accordance with SMACNA (DCS) and as indicated.
B. Flexible Duct Connections: Fabric crimped into metal edging strip.
1. Fabric: UL listed fire-retardant neoprene coated woven glass fiber fabric to NFPA 90A, minimum density 30 oz per sq yd (1.0 kg/m²).
2. Metal: 3 inches (75 mm) wide, 24 gauge, 0.0239 inch (0.61 mm) thick galvanized steel.

PART 3 EXECUTION

- 3.01 INSTALLATION
A. Install accessories in accordance with manufacturer's instructions, NFPA 90A, and follow SMACNA (DCS).
B. Provide backdraft dampers on exhaust fans or exhaust ducts nearest to and where indicated.
C. Provide duct access doors for inspection and cleaning before and after filters, coils, fans, automatic dampers, at fire dampers, and elsewhere as indicated. Provide 4 by 4 inch (100 mm) by balancing dampers only. Review locations prior to fabrication.
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2. Metal: 3 inches (75 mm) wide, 24 gauge, 0.0239 inch (0.61 mm) thick galvanized steel.

PART 3 EXECUTION

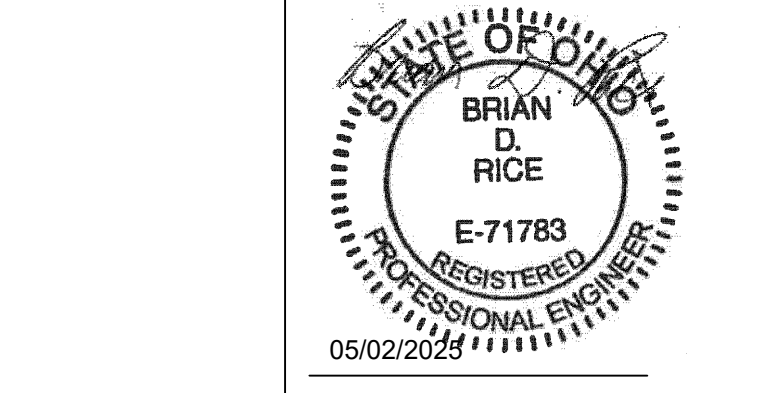
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PART 2 PRODUCTS

- 2.01 FLEXIBLE DUCT CONNECTORS
A. Fabricate in accordance with SMACNA (DCS) and as indicated.
B. Flexible Duct Connections: Fabric crimped into metal edging strip.
1. Fabric: UL listed fire-retardant neoprene coated woven glass fiber fabric to NFPA 90A, minimum density 30 oz per sq yd (1.0 kg/m²).
2. Metal: 3 inches (75 mm) wide, 24 gauge, 0.0239 inch (0.61 mm) thick galvanized steel.



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SECTION 23 053 IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT

- 1.01 SECTION INCLUDES
A. Nameplates
B. Tags
C. Nameplates
D. Thermostats: Nameplates
E. MINIMUM DATA TO BE REPORTED

SECTION 23 059 TESTING, ADJUSTING, AND BALANCING FOR HVAC

- 1.01 SECTION INCLUDES
A. Testing, adjustment, and balancing of air systems.
B. Measurement of final operating condition of HVAC systems.
1.02 SUBMITTALS
A. TAB Plan: Submit a written plan indicating the testing, adjusting, and balancing standard to be followed and the specific approach for each system and component.

SECTION 23 300 AIR DUCT ACCESSORIES

- 1.01 SECTION INCLUDES
A. Air turning devices/extractors.
B. Multi-blade device with radius blades attached to pivoting frame and bracket, steel construction, with push-pull operator strap.
C. Duct Access Doors:
1. Fabricate in accordance with SMACNA (DCS) and as indicated.
2. Access doors with sheet metal screw fasteners are not acceptable.

SECTION 23 310 HVAC DUCTS AND CASINGS

- 1.01 SECTION INCLUDES
A. Metal ductwork.
B. Casings and plenums.
C. Duct cleaning.
D. Quality Assurance:
1. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience, and approved by manufacturer.

SECTION 23 0713 DUCT INSULATION

- 1.01 SECTION INCLUDES
A. Duct insulation.
B. Duct liner.
1.02 SUBMITTALS
A. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service and location.
1.03 DELIVERY, STORAGE, AND HANDLING
A. Acquire materials on site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.
B. Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.

PART 2 PRODUCTS

- 2.01 DUCT ASSEMBLIES
A. Regulatory Requirements: Construct ductwork to comply with NFPA 90A standards.
B. Ducts: Galvanized steel, unless otherwise indicated.
C. Low Pressure Supply (Heating Systems): 1 inch wvg (250 Pa) pressure class, galvanized steel.
D. Low Pressure Supply (System with Cooling Coils): 1 inch wvg (250 Pa) pressure class, galvanized steel.
E. Return and Relief: 1 inch wvg (250 Pa) pressure class, galvanized steel.

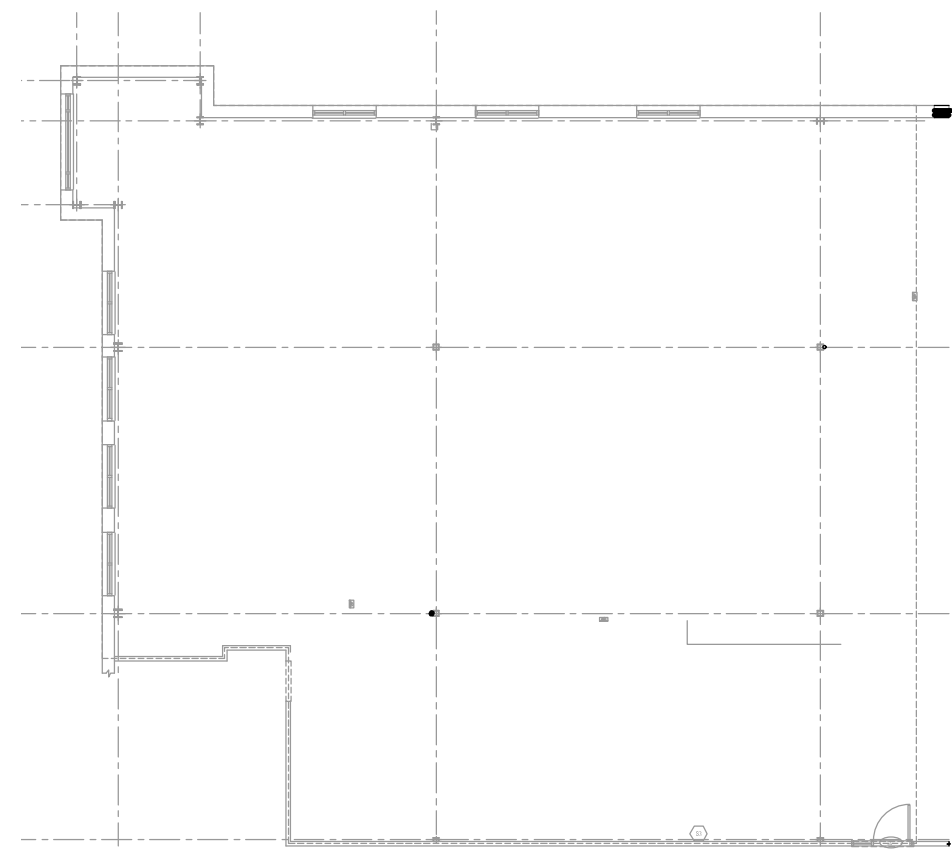
PART 3 EXECUTION

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B. Provide backdraft dampers on exhaust fans or exhaust ducts nearest to and where indicated.
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D. Provide duct test holes where indicated and required for testing and balancing purposes.
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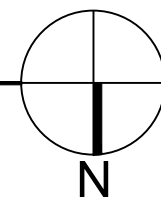
Project No.: 25.048
Drawn By: REB
Date: Issue
05-01-25 BID / PERMIT

LifeStance HEALTH
BID SET PERMIT
6770 CINCINNATI DAYTON ROAD, SUITE 208
LIBERTY TOWNSHIP, OH 45404

M3.0
MECHANICAL SPECIFICATIONS



KEY PLAN
1/16" = 1'-0"

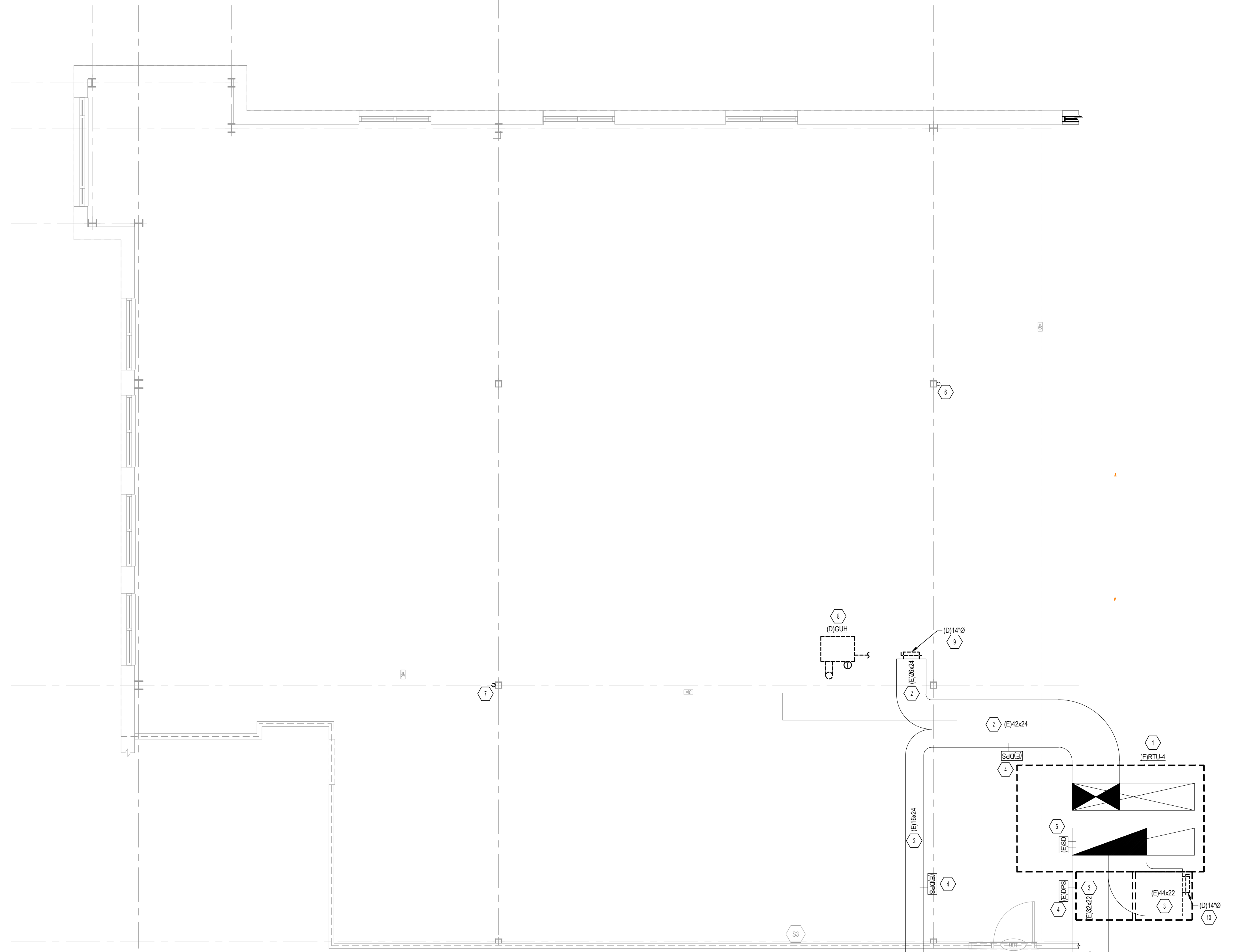


DEMOLITION CODED NOTES:

1. EXISTING ROOFTOP UNIT TO REMAIN. REFER TO SCHEDULE ON SHEET M1.0 FOR ADDITIONAL INFORMATION. FIELD VERIFY EXISTING CONDITIONS.
2. EXISTING BUILDING SUPPLY AIR DUCTWORK MAIN TO REMAIN. FIELD VERIFY EXISTING CONDITIONS.
3. EXISTING BUILDING RETURN AIR DUCTWORK MAIN TO REMAIN. FIELD VERIFY EXISTING CONDITIONS PRIOR TO STARTING WORK.
4. EXISTING HONEYWELL DUCT DIFFERENTIAL PRESSURE SENSOR TO REMAIN. MECHANICAL CONTRACTOR TO ENSURE DUCT PRESSURE SENSOR IS IN GOOD WORKING ORDER AND REPLACE AS NECESSARY. FIELD VERIFY EXISTING CONDITIONS.
5. EXISTING RETURN DUCT MOUNTED SMOKE DETECTOR TO REMAIN. MECHANICAL CONTRACTOR TO ENSURE SMOKE DETECTOR IS IN GOOD WORKING ORDER. IF SMOKE DETECTOR IS NOT IN GOOD WORKING ORDER, MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL A NEW RETURN DUCT SMOKE DETECTOR. ELECTRICAL CONTRACTOR TO WIRE NEW SMOKE DETECTOR. FIELD VERIFY EXISTING CONDITIONS.
6. EXISTING 3" STORM PIPING TO REMAIN. FIELD VERIFY EXISTING CONDITIONS.
7. EXISTING 3" PENETRATION IN SLAB TO BE FILLED AND REPAIRED TO MATCH EXISTING SLAB. FIELD VERIFY EXISTING CONDITIONS PRIOR TO STARTING WORK.
8. EXISTING GAS-FIRED UNIT HEATER AND ASSOCIATED THERMOSTAT TO BE REMOVED AND RETURNED TO LANDLORD. EXISTING FLUE TO BE REMOVED AND ROOF PENETRATION TO BE SEALED WEATHER TIGHT. PATCHED AND REPAIRED TO MATCH EXISTING ROOF. EXISTING GAS PIPING FOR UNIT HEATER TO BE REMOVED BACK TO MAIN AND CAPPED. FIELD VERIFY EXISTING CONDITIONS PRIOR TO STARTING WORK.
9. EXISTING CAP WITH 14"Ø SUPPLY DUCT BRANCH AND DAMPER TO BE REMOVED. FIELD VERIFY EXISTING CONDITIONS PRIOR TO STARTING WORK.
10. EXISTING CAP WITH 14"Ø RETURN DUCT BRANCH AND DAMPER TO BE REMOVED. RETURN DUCT OPENING TO BE PROVIDED WITH WIRE MESH GRILLE. FIELD VERIFY EXISTING CONDITIONS PRIOR TO STARTING WORK.

DEMOLITION GENERAL NOTES

- A. THE ARCHITECTURAL DRAWINGS ARE TO BE USED ONLY AS A GUIDELINE FOR DEMOLITION. THE CONTRACTOR MUST VISIT THE SITE PRIOR TO BIDDING TO VERIFY ALL WORK REQUIRED FOR A COMPLETE JOB AND INCLUDE THE COST OF SUCH WORK IN HIS BID.
- B. EXAMINE AREAS AND CONDITIONS UNDER WHICH DEMOLITION WORK MUST BE PERFORMED. THIS CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER TRADES PERFORMING DEMOLITION WORK AND/OR DEMOLITION WORK PERFORMED BY THE OWNER. IN EVERY INSTANCE OF DEMOLITION AND/OR REMODELING, THE CONTRACTOR SHALL FIGURE A COMPLETE JOB AS NONE OTHER SHALL BE ACCEPTED.
- C. THE EXTENT OF WORK SHOWN OR NOT SHOWN SHALL INCLUDE REMOVAL AND LEGALLY DISPOSE OFF SITE. ALL THE ITEMS AND SYSTEMS BEING REMOVED.
- D. THIS CONTRACTOR SHALL RETAIN ON THE PREMISES IN NEATLY STACKED PILES WHERE INSTRUCTED FOR SELECTION BY THE OWNER, ALL MATERIAL, WIRE, FIXTURES AND/OR EQUIPMENT WHICH ARE SPECIFIED TO BE REMOVED OR REPLACED. ALL SUCH ITEMS, NOT SELECTED FOR SALVAGE BY THE OWNER, SHALL BECOME THE PROPERTY OF THIS CONTRACTOR AND SHALL BE REMOVED FROM THE PREMISES AND LEGALLY DISPOSED.
- E. CONFORM TO ALL APPLICABLE CODES FOR DEMOLITION OF ITEMS AND SYSTEMS, SAFETY OF ADJACENT SYSTEMS, DUST CONTROL, LEGAL RUN-OFF CONTROL, DISPOSAL AND ALL ITEMS NECESSARY TO COMPLETE THE WORK COMPLETELY.
- F. DEMOLITION SHALL BE DONE IN A MANNER SO AS NOT TO DAMAGE ADJACENT WORK AND NOT AFFECT THE OPERATION OF SYSTEMS TO REMAIN IN USE. ANY ITEM TO REMAIN THAT IS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED AND/OR REPAIRED AT THE CONTRACTOR'S EXPENSE.
- G. DEMOLITION AND CUTTING SHALL BE DONE IN A MANNER WHICH DOES NOT DEFORM OR APPLY LOADS TO THE EXISTING FRAMING AND EQUIPMENT OF THE BUILDING TO REMAIN.
- H. ALL WALLS, CEILINGS, FLOORS, ETC. BEING DISTURBED BY THE WORK SHALL BE RETURNED TO FINISHED CONDITIONS TO MATCH EXISTING BY THE CONTRACTOR AND CONTRACTOR SHALL DO HIS OWN CUTTING AND PATCHING AS NECESSARY UNDER HIS CONTRACT.
- I. THE CONTRACTOR SHALL MAINTAIN EXISTING SERVICES TO AND IN THE EXISTING AREA AS REQUIRED.
- J. THE EXISTING SYSTEMS TO REMAIN ARE TO BE SUPPORTED AS REQUIRED UNTIL THE MODIFIED ELEMENTS ARE INSTALLED AND SUPPORTED.
- K. IF NECESSARY, THE CONTRACTOR SHALL PROVIDE TEMPORARY SERVICES IN THE EXISTING AREAS.
- L. EXISTING SLABS SHALL BE SAW-CUT IN A MANNER THAT DOES NOT CAUSE THE STEEL FRAMING OR THE REBAR SUPPORTING THE SLAB TO BE CUT. CONTRACTOR SHALL FIELD VERIFY SLAB THICKNESS AND REBAR SPACING.
- M. EXISTING SLABS SHALL BE CORE DRILLED AT REENTRANT CORNERS OF NEW FLOOR OPENINGS TO PREVENT OVER CUTTING. IF EXISTING SLAB IS A STRUCTURAL SLAB, CONTRACTOR SHALL CONTACT ENGINEER ON HOW TO PROCEED.
- N. THE ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE ELECTRIC SERVICE TO ALL MECHANICAL EQUIPMENT BEING REMOVED AS A RESULT OF THE RENOVATION.
- O. EQUIPMENT AND DEVICES SHALL BE REMOVED COMPLETE INCLUDING HANGERS, SUPPORTS, CONTROLS, CONDUIT, WIRE, PIPES, DUCTWORK, ETC. WIRING SHALL BE DISCONNECTED AT CIRCUIT BREAKERS, REMOVED AND BREAKERS MARKED 'SPARE'.
- P. ALL OPEN ENDED PIPING AND DUCTWORK THAT IS TO REMAIN SHALL BE CAPPED AND PROPERLY SECURED.
- Q. ANY EXISTING PIPES, DUCTWORK, CONDUIT, LOW VOLTAGE CONTROL, WIRING AND/OR ELECTRICAL AND MECHANICAL DEVICES BEING DISTURBED BY THE WORK SHALL BE REWORKED BY THIS CONTRACTOR AS REQUIRED TO RETURN TO ITS FORMER EXISTING OPERATING CONDITION.
- R. ANY PIPES OR DUCTWORK, OR CONTROL WIRING, OR TUBING FEEDING THROUGH DEVICES OR EQUIPMENT BEING RELOCATED, REWORKED, OR ABANDONED AND SERVING OTHER DEVICES, AND/OR EQUIPMENT SHALL BE MAINTAINED IN WORKING CONDITION.
- S. ANY ASBESTOS REMOVAL IF REQUIRED WILL BE HANDLED BY THE OWNER AND IS NOT A PART OF THIS WORK.
- T. EXISTING ARCHITECTURAL, MECHANICAL AND ELECTRICAL EQUIPMENT AND SYSTEMS SHALL BE PROTECTED FROM DAMAGE RESULTING FROM DEMOLITION.
- U. CONTRACTOR SHALL SUBMIT A PROPOSED DECONSTRUCTION SEQUENCE TO THE OWNER AND ARCHITECT FOR REVIEW PRIOR TO COMMENCEMENT OF WORK.
- V. CONTRACTOR SHALL PROTECT ALL EXISTING RETURN DUCTWORK AND TRANSFER AIR OPENINGS WITH DISPOSABLE FILTERS DURING CONSTRUCTION. FILTERS SHALL BE OF THE DISPOSABLE TYPE AND SHALL BE MERV 8. REPLACE EXISTING BUILDING UNIT FILTERS AFTER CONSTRUCTION IS COMPLETE.



MECHANICAL DEMOLITION PLAN
1/4" = 1'-0"

