

SPECTRUM DESIGN
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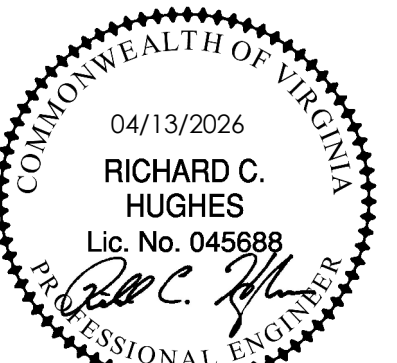
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RENOVATIONS & ADDITIONS TO

**BEDFORD COUNTY
SHERIFF'S OFFICE**

SPECTRUM DESIGN PROJECT NO.: **24112**



PROJ. MGR.: RCH
CHECKED BY: JCW
DRAWN BY: RMP

SHEET ISSUE DATE:
04.13.2026

PROJECT PHASE:
CONSTRUCTION DOCUMENTS

SHEET REVISIONS:

PLAN NORTH SITE NORTH

SHEET NAME:
**DEMOLITION FLOOR
PLANS - HVAC**

SHEET NUMBER:

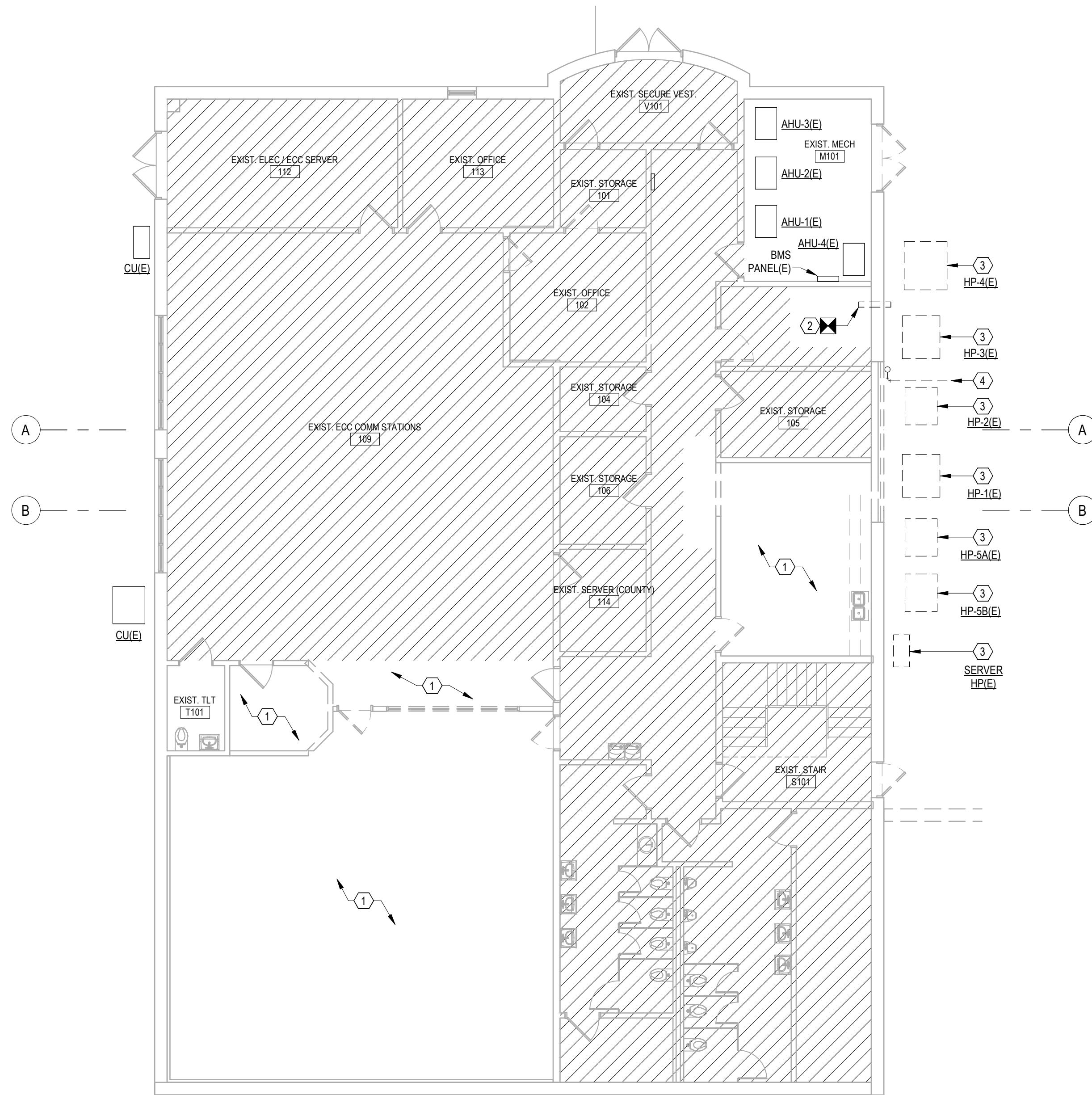
MD101

GENERAL DEMOLITION NOTES:

1. NO DEMOLITION SCOPE IN HATCHED AREAS.

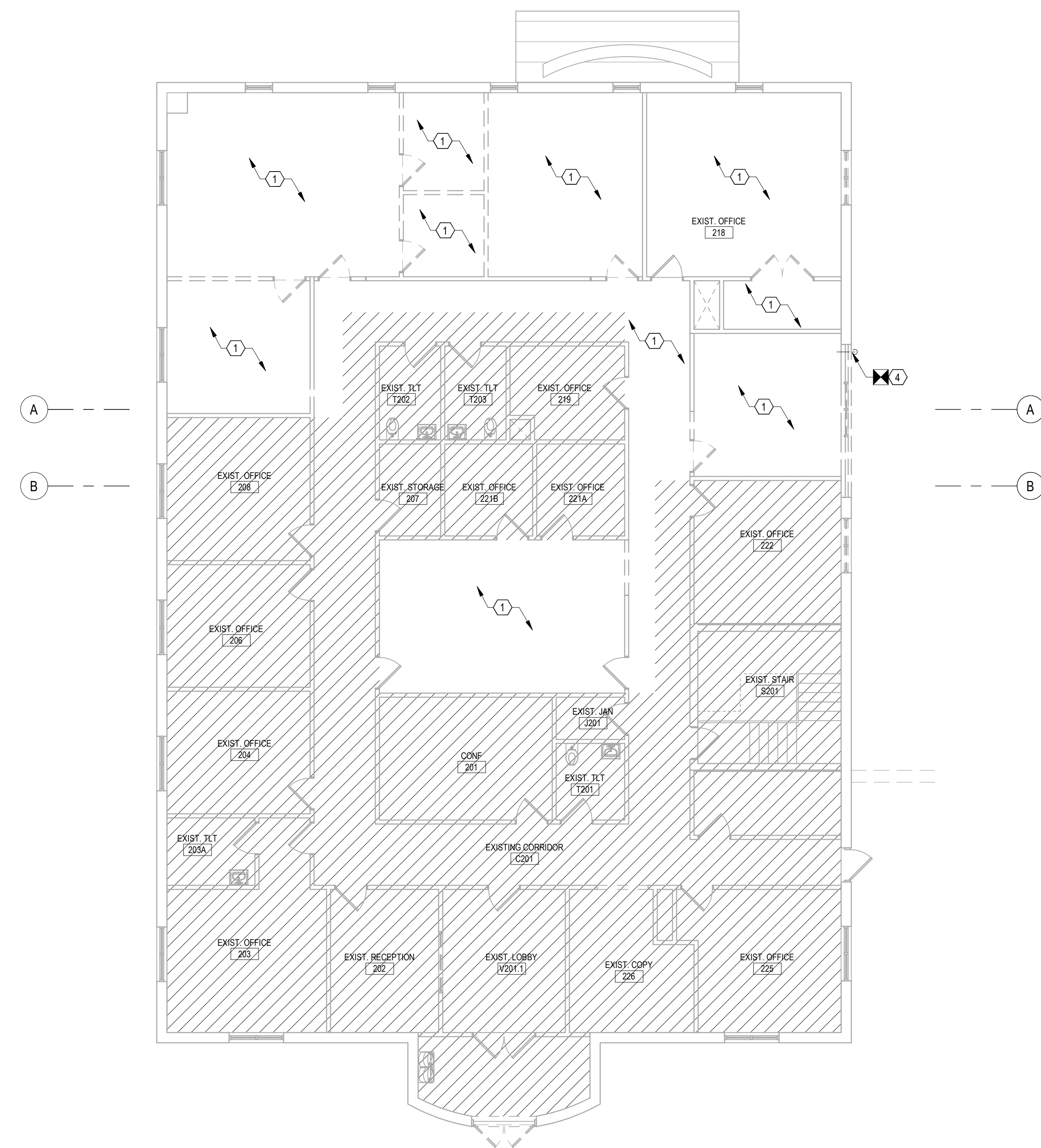
DEMOLITION PLAN NOTES:

- DEMOLISH ALL AIR TERMINALS IN CEILING. AIR TERMINALS IN GOOD CONDITION SHALL BE CLEANED AND RE-USED. SEE NEW WORK PLAN FOR NEW AIR TERMINAL LOCATIONS IN THIS AREA.
- DEMOLISH EXTERIOR DUCT WALL CAP AND RE-ROUTE DUCT THRU EXISTING MECHANICAL ROOM EXTERIOR WALL.
- RELOCATE SPLIT SYSTEM HEAT PUMP CONDENSING UNIT. DEMOLISH ASSOCIATED REFRIGERANT LINESET TO/FROM CORRESPONDING EXISTING TO REMAIN INDOOR AIR HANDLING UNIT. SEE NEW WORK FLOOR PLANS FOR NEW HEAT PUMP CONDENSING UNIT LOCATIONS.
- DEMOLISH EXISTING COOLING COIL CONDENSATE DRAIN LINE RUNNING VERTICALLY ALONG DOWNSPOUT. REROUTE TO SPILL ONTO NEW FLAT ROOFTOP.



GROUND FLOOR DEMOLITION PLAN - HVAC

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



FIRST FLOOR DEMOLITION PLAN - HVAC

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

0 4 8 16
SCALE: 1/8" = 1'-0"

AIR HANDLING UNITS: TRANE		
UNIT MARK	AHU-1 / CU-1	RTU-1
AREA SERVED	GROUND FLOOR	FIRST FLOOR
CV OR VAV	MULTIZONE VAV	MULTIZONE VAV
SUPPLY FAN AIRFLOW, CFM	4,380	6,285
ESP, IN. W.C.	3.02	1.68
MOTOR HP	5	3
OUTSIDE AIRFLOW, CFM (DCV / MIN)	1125 / 1330	1900 / 1935
COOLING COIL (DX)		
TOTAL CAPACITY, MBH	182.5	211.2
SENSIBLE CAPACITY, MBH	125.1	156.1
ENT. AIR TEMP. * F, DB / WB	83.60 / 68.80	81.60 / 67.80
LEAV. AIR TEMP. * F, DB / WB	57.59 / 55.76	57.57 / 56.59
HEATING (HEAT PUMP)		
TOTAL CAPACITY, MBH	169.83	---
HEATING AIRFLOW, CFM	2955	---
ENT. AIR TEMP. * F, DB / WB	60	---
LEAV. AIR TEMP. * F, DB / WB	95.75	---
HEATING COIL (ELECTRIC)		
HEATING CFM	---	4,235
OUTPUT CAPACITY, KW	---	36.0
ENT. AIR TEMP. * F, DB	---	53
LEAV. AIR TEMP. * F, DB	---	70.84
FILTERS (TYPE)		
SUPPLY	MERV 13	MERV 13
UNIT ELECTRICAL, V / Ph	460 / 3	460 / 3
MCA / MOP, A	10.47 / 15	72 / 80
SCCR, kAIC	5	65
ESTIMATED UNIT WEIGHT, LBS	1,506	2,343
UNIT MODEL NO.	UCCAG10CUJ	TSK210A50N
OUTDOOR CONDENSING UNIT		
NOMINAL CAPACITY, MBH	180	---
UNIT ELECTRICAL, V / Ph	460 / 3	---
MCA / MOP, A	33 / 40	---
SCCR, kAIC	5	65
ESTIMATED UNIT WEIGHT, LBS	782	---
UNIT MODEL NO.	TWA180K4DAA	---
AHU-1 / CU-1 NOTES:		
1. COOLING SELECTIONS BASED ON 93.1°F AMBIENT TEMP.		
2. HEAT PUMP HEATING PERFORMANCE BASED ON 45°F AMBIENT TEMP.		
3. PROVIDE FACTORY MOUNTED DISCONNECT SWITCH AND PHASE-LOSS MONITORING FOR AHU & CU.		
4. PROVIDE FACTORY MOUNTED VFDs.		
5. MOUNT CU-1 ON EQUIPMENT RAILS.		
6. SUPPLY FAN EXTERNAL STATIC PRESSURE INCLUDES 0.25 INCHES H2O FOR FILTER LOADING.		
7. PROVIDE ENTHALPY ECONOMIZER.		
RTU-1 NOTES:		
1. COOLING SELECTIONS BASED ON 93.1°F AMBIENT TEMP.		
2. HEATING SELECTIONS BASED ON 13°F AMBIENT TEMP.		
3. PROVIDE FACTORY MOUNTED DISCONNECT SWITCH, PHASE-LOSS MONITORING, AND FACTORY WIRED GFI OUTLET.		
4. PROVIDE FACTORY MOUNTED VFDs.		
5. PROVIDE 1" CURB SUITABLE FOR PITCHED ROOF.		
6. SUPPLY FAN EXTERNAL STATIC PRESSURE INCLUDES 0.25 INCHES H2O FOR FILTER LOADING.		
7. PROVIDE POWER EXHAUST & ENTHALPY ECONOMIZER.		

ELECTRIC HEATERS: MARKEL									
MARK	TYPE	LOCATION	CAPACITY (KW)	AIRFLOW (CFM)	VOLTS/PH	UNIT WEIGHT (LBS)	MODEL	NOTES	
EH-1	RECESSED CEILING HEATER	V202 SECURE VEST.	2.0	600	277/1	45	3480		1,2,3,4
EMH-1	RECESSED WALL HEATER	T206 PUBLIC FLT.	2.0	100	277/1	6	305		1,2,4,5
EUH-1	UNIT HEATER	M102 NEW MECH.	3.3	400	480/3	36	UH		1,3,6
ECH-1	CABINET HEATER	S102 STAIR	2.0	250	480/3	99	6300		1,4,7
NOTES:									
1. PROVIDE INTEGRAL DISCONNECT.									
2. PROVIDE INTEGRAL TAMPER-PROOF THERMOSTAT.									
3. PROVIDE MANUFACTURER RECESS BOX AND BOTTOM GRILLE ASSEMBLY.									
4. INCLUDE RESETTING TYPE LIMIT CONTROL FOR OVERHEAT PROTECTION.									
5. PROVIDE MANUFACTURER WALL BOX FOR RECESSED MOUNTED.									
6. PROVIDE FACTORY 24V STEP-DOWN TRANSFORMER AND HEATING-ONLY THERMOSTAT.									
7. FRONT RETURN & TOP DISCHARGE GRILLE CONFIGURATION.									

FANS: GREENHECK									
MARK	TYPE	CFM	ESP	RPM	MOTOR HP	VOLTS/PH	UNIT WEIGHT (LBS)	MODEL	NOTES
EF-1	ROOF DOWNBLAST	400	0.30	1246	1/10	115/1	41	G-90-VG	1,2,4,5
EF-2	ROOF DOWNBLAST	200	0.35	1533	1/15	115/1	36	G-70-GV	1,2,3,5
EF-3	INLINE	425	0.40	1555	1/6	115/1	34	SQ-90-VG	1,2,4
NOTES:									
1. PROVIDE FACTORY INSTALLED DISCONNECT SWITCH.					2. PROVIDE SPEED CONTROLLER FOR AIR BALANCE OF FAN.				
3. PROVIDE LINE-VOLTAGE COOLING-ONLY THERMOSTAT.					4. RUN CONTINUOUSLY DURING BUILDING OCCUPIED MODE.				
5. PROVIDE 14" CURB FOR PITCHED ROOF W/ INTEGRAL BACKDRAFT DAMPER.									

VARIABLE AIR VOLUME HEATING BOXES: TRANE												
MARK	TYPE	MAX AIR P.D. IN. W.C.	INLET Ø, IN.	COOLING CFM			HEATING CFM	HEATING CAPACITY		ELEC VOLTS/PH	MODEL #	NOTES
				MAX	DCV MIN	MIN		KW	VOLTS/PH			
VAV-101	SHUT-OFF	0.25	6	350	---	105	240	3.0	277 / 1	VCEF	1,2,3,4	
VAV-102	SHUT-OFF	0.25	8	700	100	210	470	6.0	480 / 3	VCEF	1,2,3,4	
VAV-103	SHUT-OFF	0.25	6	480	---	145	325	4.0	480 / 3	VCEF	1,2,3,4	
VAV-104	SHUT-OFF	0.25	8	635	---	195	430	5.5	480 / 3	VCEF	1,2,3,4	
VAV-105	SHUT-OFF	0.25	8	670	285	205	450	5.5	480 / 3	VCEF	1,2,3,4	
VAV-106	SHUT-OFF	0.25	6	400	---	120	265	2.5	277 / 1	VCEF	1,2,3,4	
VAV-107	SHUT-OFF	0.25	8	600	150	180	400	4.0	480 / 3	VCEF	1,2,3,4	
VAV-108	SHUT-OFF	0.25	8	650	150	180	435	4.0	480 / 3	VCEF	1,2,3,4	
VAV-201	SHUT-OFF	0.25	6	400	---	120	270	3.5	277 / 1	VCEF	1,2,3,4	
VAV-202	SHUT-OFF	0.25	8	850	---	255	570	7.0	480 / 3	VCEF	1,2,3,4	
VAV-203	SHUT-OFF	0.25	6	450	---	135	300	4.0	480 / 3	VCEF	1,2,3,4	
VAV-204	SHUT-OFF	0.25	10	950	---	285	635	8.0	480 / 3	VCEF	1,2,3,4	
VAV-205	SHUT-OFF	0.25	6	450	---	135	300	4.0	480 / 3	VCEF	1,2,3,4	
VAV-206	SHUT-OFF	0.25	6	345	---	110	230	3.0	277 / 1	VCEF	1,2,3,4	
VAV-207	SHUT-OFF	0.25	6	425	---	130	290	3.5	277 / 1	VCEF	1,2,3,4	
VAV-208	SHUT-OFF	0.25	5	300	---	120	205	2.5	277 / 1	VCEF	1,2,3,4	
VAV-209	SHUT-OFF	0.25	10	1000	115	300	670	8.0	480 / 3	VCEF	1,2,3,4	
VAV-210	SHUT-OFF	0.25	6	400	---	120	280	3.5	277 / 1	VCEF	1,2,3,4	
VAV-211	SHUT-OFF	0.25	5	240	---	75	160	2.0	277 / 1	VCEF	1,2,3,4	
VAV-212	SHUT-OFF	0.25	6	475	---	150	325	4.0	277 / 1	VCEF	1,2,3,4	
NOTES:												
1. BOX AIR PRESSURE DROP (INCLUDING HEATING COIL) SHALL NOT EXCEED THE SCHEDULED QUANTITY.												
2. ELECTRIC HEATERS SHALL HAVE SCR CONTROL.												
3. PROVIDE STEP-DOWN TRANSFORMER FROM SCHEDULED UNIT VOLTAGE TO 24V. PROVIDE DISCONNECT SWITCH.												
4. ROUND DUCT FROM MAIN TO VAV INLET SHALL MATCH SCHEDULED INLET DIMENSION UNLESS OTHERWISE NOTED.												

GRILLES, REGISTERS AND DIFFUSERS: PRICE									
MARK	SERVICE	TYPE	FACE SIZE, IN. x IN.	NECK SIZE, IN. x IN.	MAX AIR P.D., IN. H2O	MAX N.C.	MODEL #	NOTES	
A	SUPPLY	LAY-IN DIFFUSER	24 x 24	8"Ø	0.1	25	SCDA		1,2,3
B	SUPPLY	LAY-IN DIFFUSER	24 x 24	8"Ø	0.1	25	SCDA		1,3
C	SUPPLY	LAY-IN DIFFUSER	24 x 24	10"Ø	0.1	25	SCDA		1,3
D	SUPPLY	LAY-IN DIFFUSER	24 x 24	12"Ø	0.1	25	SCDA		1,3
E	SUPPLY	SURFACE MOUNTED REGISTER	6 x 6	8" x 8"	0.1	25	520		4
F	SUPPLY	SURFACE MOUNTED REGISTER	8 x 4	10" x 6"	0.1	25	520		4
X	EXHAUST	SURFACE MOUNTED REGISTER	6 x 6	8" x 8"	0.05	20	530		4
Y	EXHAUST	SURFACE MOUNTED REGISTER	10 x 10	12" x 12"	0.05	20	530		4
Z	RETURN	LAY-IN GRILLE	24 x 24	24" X 24"	0.05	20	530		---
NOTES:									
1. DIFFUSER SHALL BE 4-WAY UNLESS OTHERWISE NOTED.									
2. PROVIDE SURFACE MOUNT FRAME AS REQUIRED FOR INSTALLATION IN HARD CEILING IN 245 INTERVIEW, 246 INTERVIEW, & 247 OBSERVATION.									
3. FLEX DUCT CONNECTION SHALL EQUAL THE DIAMETER OF DIFFUSER CONNECTION.									
4. DUCT CONNECTION FROM MAIN SHALL MATCH THE SIZE OF THE REGISTER INLET CONNECTION.									

SPLIT SYSTEM HEAT PUMP: TRANE											
MARK	TYPE	AIRFLOW (CFM) (HIGH/LOW)	COOLING		HEATING		ELECTRICAL			MODEL	NOTES
			TOTAL CAP (MBH)	EAT COOLING DEG F, DBWB	TOTAL CAP (MBH)	EAT HEATING DEG F	V/PH	MCA	MOP		
DSS-1	WALL MOUNTED	375/215	12.2	8067	13	70	POWERED BY OUTDOOR UNIT			PKA-AL12NL	1,2,3,6
HP-1	OUTDOOR CONDENSING UNIT	---	---	---	---	---	208/1	16	27	PUY-AL12NL	4,5
NOTES:											
1. COOLING AND HEATING CAPACITY BASED ON ARI CONDITIONS.											
2. FURNISH WITH SEVEN DAY PROGRAMMABLE THERMOSTAT.											
3. PROVIDE 208V CONDENSATE DRAIN PUMP PER MANUFACTURER SPECIFICATIONS, MANUFACTURER 25' LINESET, AND DISCONNECT SWITCH.											
4. PROVIDE MANUFACTURER 25' LINESET AND DISCONNECT SWITCH.											
5. MOUNT ON EQUIPMENT RAILS. SEE MECHANICAL DETAILS.											
6. UNIT SHALL OPERATE IN COOLING-MODE ONLY. LOCK OUT HEATING MODE.											

GENERAL NOTES:

- ALL DUCTWORK AND PIPES SHALL BE COORDINATED WITH OTHER NEW DUCTS, PIPES, LIGHTS, STRUCTURAL SYSTEM, CEILING SUPPORTS AND FRAMING BEFORE INSTALLATION. MINOR DUCT AND PIPE OFFSETS AND MINOR DUCT TRANSITIONS SHALL BE PROVIDED AS REQUIRED. WHERE TRANSITIONS ARE REQUIRED, CROSS SECTIONAL AREA OF DUCT SHALL NOT BE REDUCED. MEASUREMENTS FOR VERTICAL CLEARANCES OF DUCTWORK SHALL BE TAKEN AT THE JOB SITE BEFORE FABRICATION OF ANY DUCTWORK.
- ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED INSTRUCTIONS.
- MATERIALS AND INSTALLATION SHALL COMPLY WITH LOCAL CODES, APPLICABLE PROVISIONS OF LATEST EDITION OF NATIONAL FIRE PROTECTION ASSOCIATION, LOCAL UTILITY REGULATIONS AND GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION.
- CONTRACTOR SHALL SEAL AND FLASH ALL PENETRATIONS IN EXISTING ROOF AND WALLS.
- VERIFY ALL EXISTING AND NEW ROOF AND WALL OPENINGS WITH STRUCTURE.
- VERIFY THE LOCATION OF ALL THERMOSTATS, TEMPERATURE SENSORS, PANELS AND CONTROL INSTRUMENTS WITH THE ARCHITECT AND OWNER PRIOR TO ROUGH-IN.
- ALL CUTTING AND PATCHING FOR THE INSTALLATION OF NEW WORK IN EXISTING BUILDING SHALL BE DONE BY THE GENERAL CONTRACTOR.
- REFER TO ARCHITECTURAL, STRUCTURAL AND ELECTRICAL DRAWINGS TO COORDINATE THE EXACT LOCATIONS OF DIFFUSERS, REGISTERS, GRILLES, PIPING AND OTHER MECHANICAL EQUIPMENT WITH CEILING GRID, LIGHTS, BEAMS AND OTHER BUILDING COMPONENTS.
- CONTRACTOR SHALL PROVIDE ALL SUPPORTS REQUIRED TO MOUNT MECHANICAL EQUIPMENT, PIPING AND DUCTWORK.
- WHERE PIPE AND DUCT CONNECTIONS ARE SHOWN CONNECTING TO EXISTING, CONTRACTOR SHALL DETERMINE EXACT LOCATIONS AND CONNECTION SIZES FOR INSTALLATION.
- ALL FLEXIBLE DUCTS CONNECTED TO SUPPLY DIFFUSERS SHALL BE SIZED TO EQUAL THE DIFFUSER NECK DIAMETER.
- PROVIDE FLEXIBLE DUCT CONNECTIONS BETWEEN THE SUPPLY AND RETURN DUCTS FROM THE AIR UNITS AND FANS. FLEXIBLE CONNECTIONS SHALL BE WEATHERTIGHT WHEN EXPOSED.
- PROVIDE CONDENSATE DRAIN PIPING FROM AIR CONDITIONING UNITS DRAIN PAN AND SPILL TO ROOF AWAY FROM WALKWAY. PIPING SHALL BE THE SAME SIZE AS THE DRAIN PAN CONNECTION AND SHALL INCLUDE A 6-INCH TRAP TO PREVENT SIPHONING BY THE SUPPLY AIR FAN.
- EXPOSED PIPING RUNOUTS SHALL BE INSTALLED IN PRACTICAL ALIGNMENT WITH THE BUILDING AND SHALL BE ADEQUATELY SECURED TO THE BUILDING STRUCTURE.
- ALL CEILING DIFFUSERS SHALL BE 4-WAY THROW TYPE UNLESS NOTED OTHERWISE.
- FOR EXACT LOCATIONS OF CEILING DEVICES, SEE REFLECTED CEILING PLAN.
- FINAL LOCATION OF ROOF-MOUNTED EQUIPMENT SHALL BE COORDINATED WITH ROOF FRAMING. VERIFY ROOF OPENINGS WITH STRUCTURE.
- PROVIDE ACCESS DOORS OF SUFFICIENT SIZE FOR ALL CONCEALED CONTROLS, DAMPERS OR ANY ITEMS REQUIRING ACCESS.
- AIR DEFLECTORS SHALL BE PROVIDED IN ALL SQUARE ELBOWS.
- CEILING GRID AND OTHER ITEMS SHALL NOT BE SUPPORTED FROM OR IN CONTACT WITH DUCT, PIPING, OR MECHANICAL EQUIPMENT. CONDUIT, WIRING, PIPING AND SUPPORTS SHALL NOT BE LOCATED BELOW FAN COIL ACCESS PANELS.
- DUCTWORK AND PIPING SHALL NOT BE INSTALLED ABOVE ELECTRICAL PANELS. COORDINATE INSTALLATION OF DUCTWORK AND PIPING WITH ELECTRICAL PANELS WHEN SHOWN NEAR PANELS OR OVER ELECTRICAL ROOMS.
- SYSTEMS SHALL OPERATE UNDER CONDITIONS OF LOAD WITHOUT UNUSUAL OR EXCESSIVE NOISE OR VIBRATION. UNUSUAL OR EXCESSIVE NOISE OR VIBRATION SHALL BE CORRECTED.
- EQUIPMENT, MATERIALS AND LABOR REQUIRED BY THESE CONTRACT DRAWINGS SHALL BE GUARANTEED TO BE FREE FROM DEFECTIVE MATERIALS OR WORKMANSHIP FOR ONE YEAR AFTER FINAL ACCEPTANCE OF THE PROJECT UNLESS SPECIFIED OTHERWISE. DEFECTIVE MATERIALS OR WORKMANSHIP OCCURRING DURING THIS PERIOD SHALL BE CORRECTED AT NO ADDITIONAL COST.

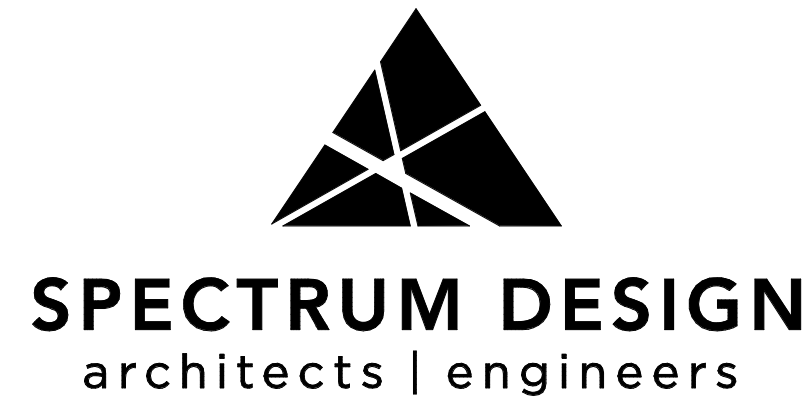
DEMOLITION NOTES:

- THE CONTRACTOR SHALL REMOVE OR ALTER AS NECESSARY ALL EXISTING PIPING, EQUIPMENT, EQUIPMENT FOUNDATIONS, AND APPURTENANCES THAT ARE NOT REQUIRED FOR THE EXISTING SYSTEMS TO REMAIN. CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE SCOPE OF THIS WORK AND VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING BIDS.
- EXISTING EQUIPMENT SHALL BE TURNED OVER TO THE OWNER, UNLESS DIRECTED OTHERWISE AND LOCATED AS DIRECTED BY THE OWNER. ALL OTHER ITEMS TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE PREMISES.
- INSULATION ON EXISTING PIPING THAT IS DAMAGED OR REMOVED DUE TO THE DEMOLITION WORK SHALL BE REPLACED AND SEALED AS REQUIRED.

REFRIGERANT PIPE NOTES:

- ALL REFRIGERANT PIPING SHALL BE SIZED AND INSTALLED PER EQUIPMENT MANUFACTURER'S REQUIREMENTS. SIZES AND QUANTITIES OF REFRIGERANT PIPING SHALL BE DETERMINED BY EQUIPMENT MANUFACTURER. PIPING SHOWN ON DRAWINGS IS DIAGRAMMATIC ONLY AND INTENDED ONLY TO REPRESENT THE SCOPE OF WORK AND PREFERRED ROUTING.

HVAC LEGEND	
ABOVE FINISHED FLOOR	AFF
AIR HANDLING UNIT	AHU
BACKDRAFT DAMPER	BD
BELOW	BEL
BETWEEN	BET
BUILDING PRESSURE SENSOR CAPACITY	BPS
CARBON DIOXIDE DETECTOR	CD
CEILING	CLG
CEILING DIFFUSER	CD
CEILING GRILLE	CG
CEILING REGISTER	CR
CUBIC FEET PER MINUTE DEGREES FAHRENHEIT DIAMETER	CFM
DIRECTION OF FLOW	DF
DIRECTION OF SLOPE DOWN	DN
DRAIN PIPE (COOLING COIL CONDENSATE)	DB
DRY BULB	DB
DUCT SLOPE DOWN	DN
DUCT SLOPE UP	UP
ELECTRIC HEATER	EH
ELECTRIC CABINET HEATER	ECH
ELECTRIC UNIT HEATER	EUH
ENTERING AIR TEMPERATURE	EAT
EXHAUST AIR	EA
EXHAUST FAN	EF
EXTERNAL STATIC PRESSURE FEET	ESP
FEET PER MINUTE	FTM
FIRE DAMPER	FD
FIRESTAT	FS
FLEXIBLE DUCT CONNECTION	FD
FLOOR	FL
FROM	FR
GALLONS	GAL
GALLONS PER MINUTE	GPM
HORSEPOWER	HP
HOUR	HR
INCH	IN
KILOWATT	KW
LEAVING AIR TEMPERATURE	LAT
LEAVING WATER TEMPERATURE	LWT
LOUVER	LVR
MANUAL DAMPER	MD
MOTOR OPERATED DAMPER	MOD
NORMALLY CLOSED	NC
NORMALLY OPEN	NO
OUTDOOR AIR	OA
PIPING INDICATION WITH RESPECT TO FLOW:	
BOTTOM TAKEOFF	
SIDE CONNECTION	
TOP TAKEOFF	
TURN DOWN OR FROM BELOW	
TURN UP OR DOWN	
TURN UP OR FROM ABOVE	
POUNDS	LBS
POINT OF CONNECTION (NEW WORK)	
POINT OF DISCONNECT (DEMOLITION)	
POUNDS PER SQUARE INCH GAGE	PSIG
PRESSURE DROP	PD
REFRIGERANT PIPE	R
RETURN AIR	RA
REVOLUTIONS PER MINUTE	RPM
ROOFTOP AIR HANDLING UNIT	RTU
SMOKE DETECTOR (DUCT MOUNTED)	SD
STATIC PRESSURE	SP
STATIC PRESSURE SENSOR (DUCT MOUNTED)	SFS
SUPPLY AIR	SA
THERMOSTAT OR TEMPERATURE SENSOR	TS/TAT
THOUSAND BTU PER HOUR	MBH
WET BULB	WB



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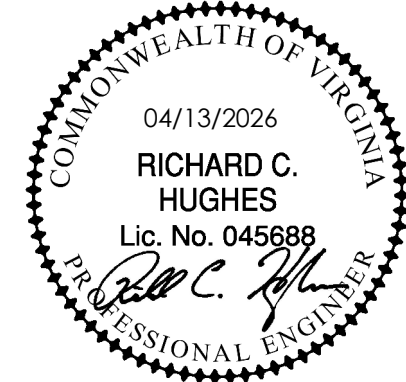
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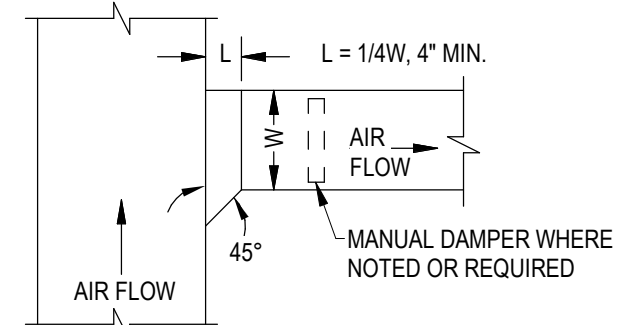
RENOVATIONS & ADDITIONS TO

BEDFORD COUNTY SHERIFF'S OFFICE

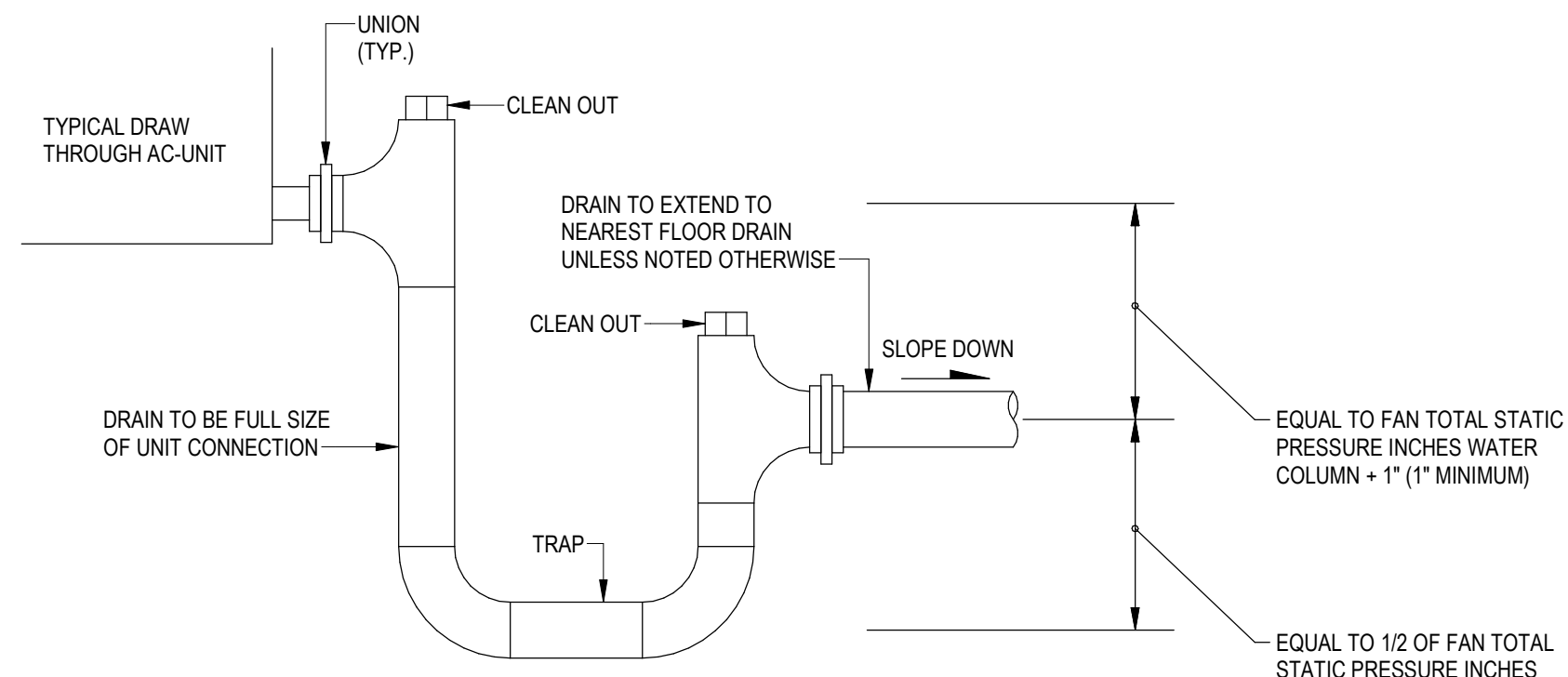
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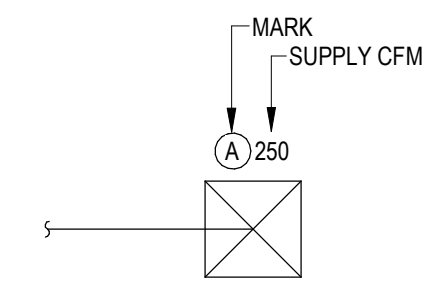
PROJ. MGR.:



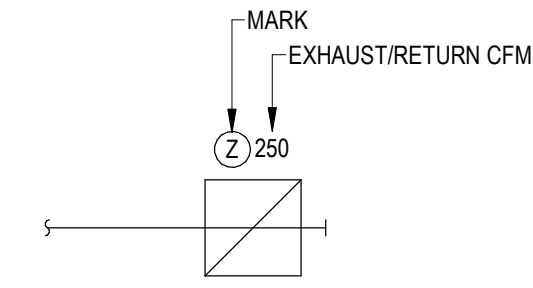
BRANCH DUCT CONNECTION
SCHEMATIC
DETAIL



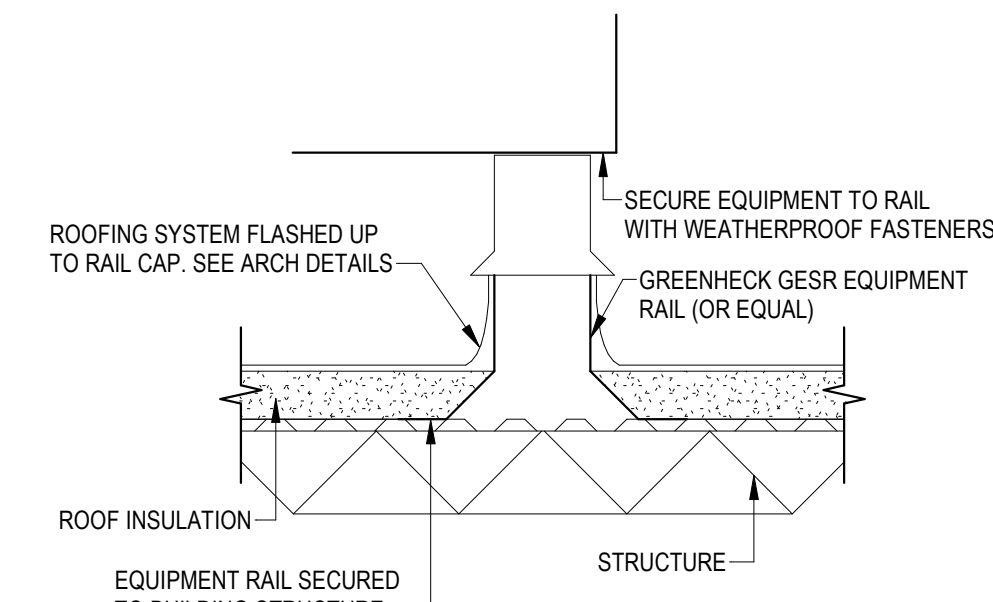
COOLING COIL CONDENSATE DRAIN
NO SCALE



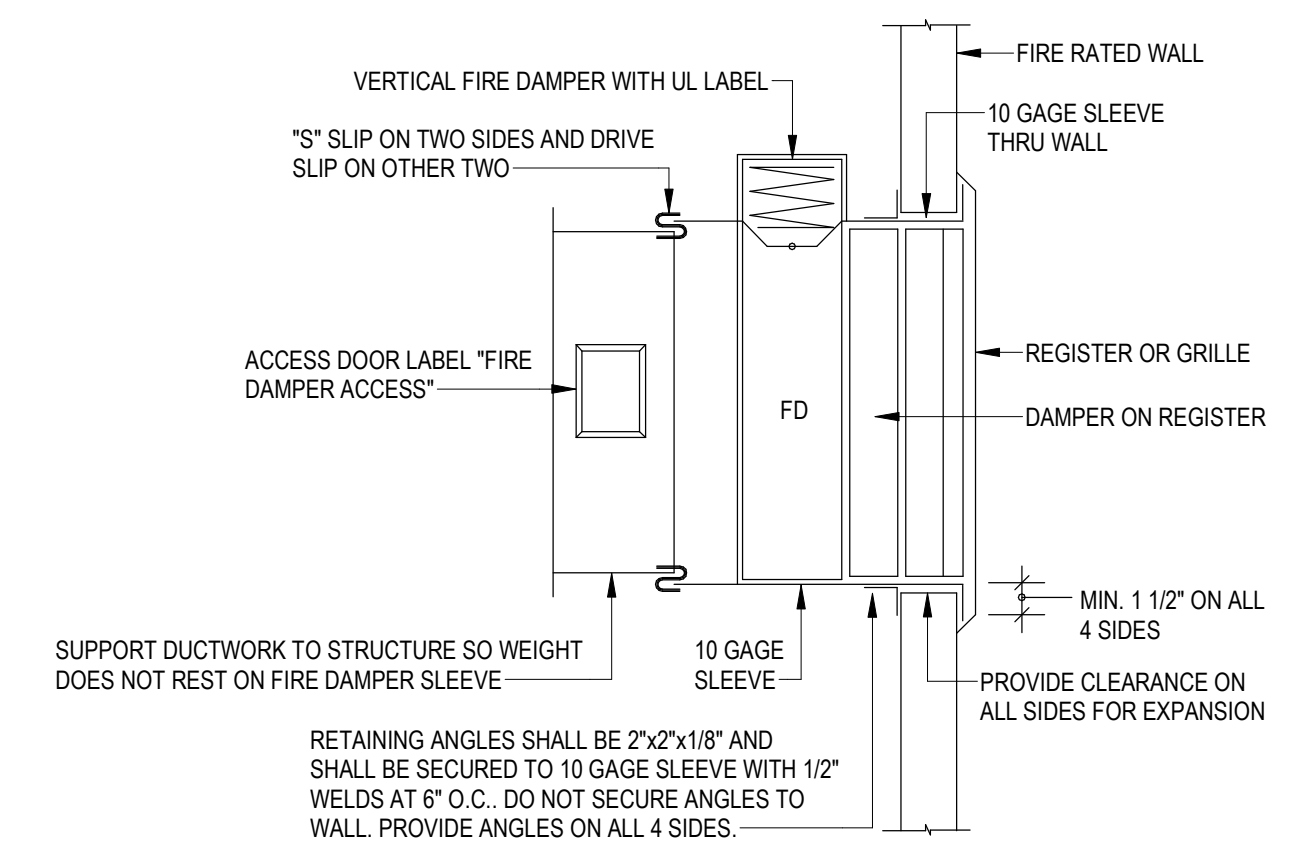
DIFFUSER SIZING DETAIL
NO SCALE



REGISTER SIZING DETAIL
NO SCALE



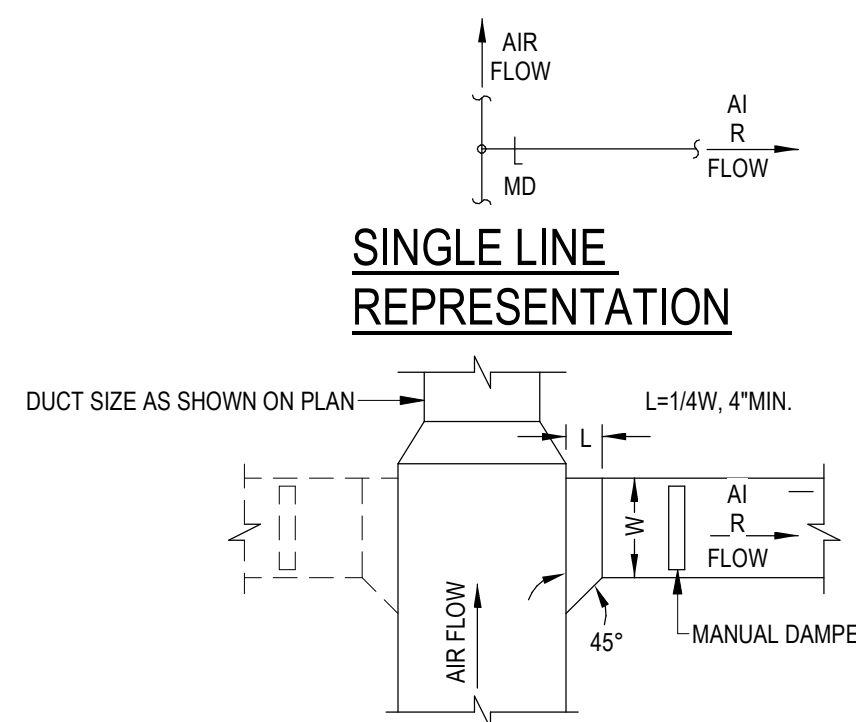
EQUIPMENT RAIL SUPPORT DETAIL
NO SCALE



FIRE DAMPER AT FIRE RATED WALL DETAIL
NO SCALE

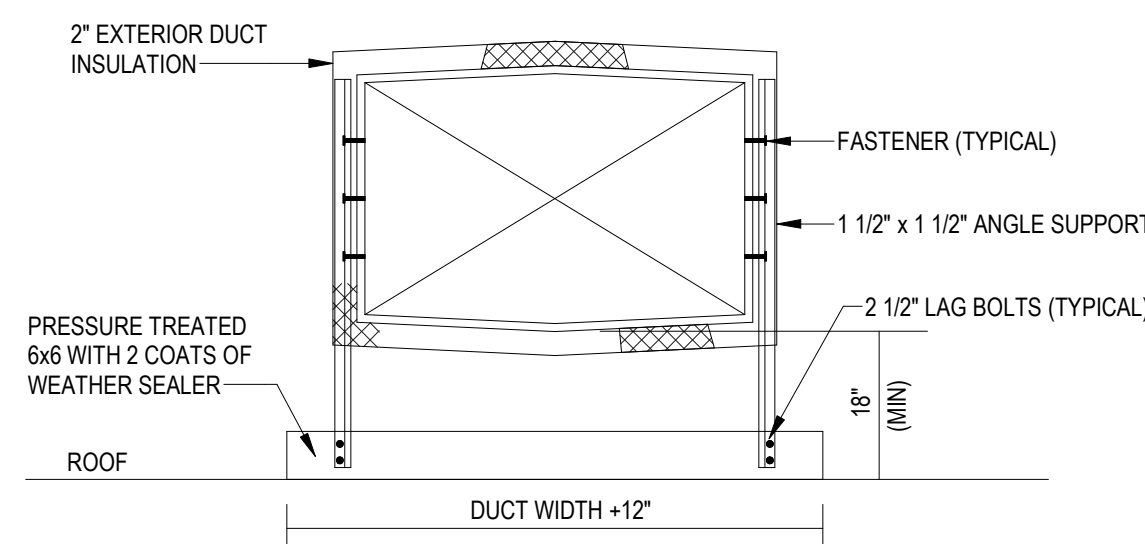
FIRE DAMPER AT FIRE RATED WALL DETAIL
NO SCALE

NOTE:
1. INSTALL ALL FIRE DAMPERS IN ACCORDANCE WITH THE N.F.P.A. PAMPHLET NO. 90A AND LOCAL CODES.
2. FASTEN FIRE DAMPER FRAME TO SLEEVE WITH 1/2\"/>



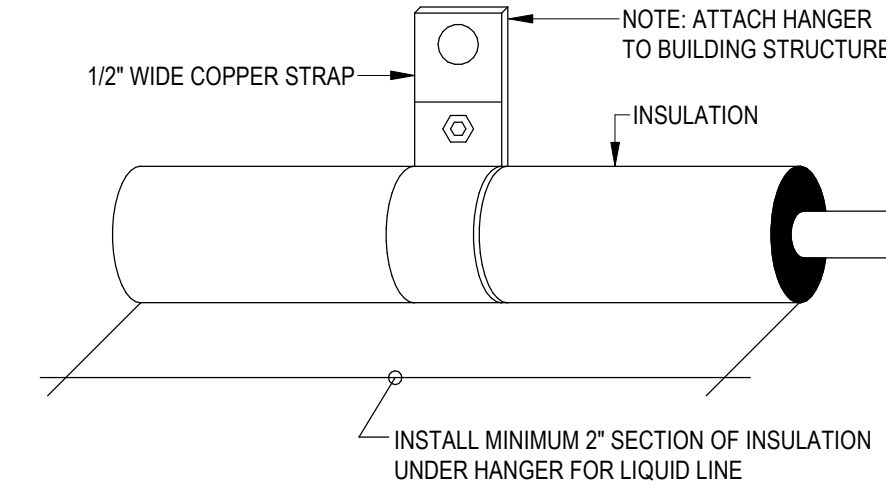
SINGLE LINE REPRESENTATION

NOTE:
LATERAL BRANCH DUCT DETAIL
SCHEMATIC

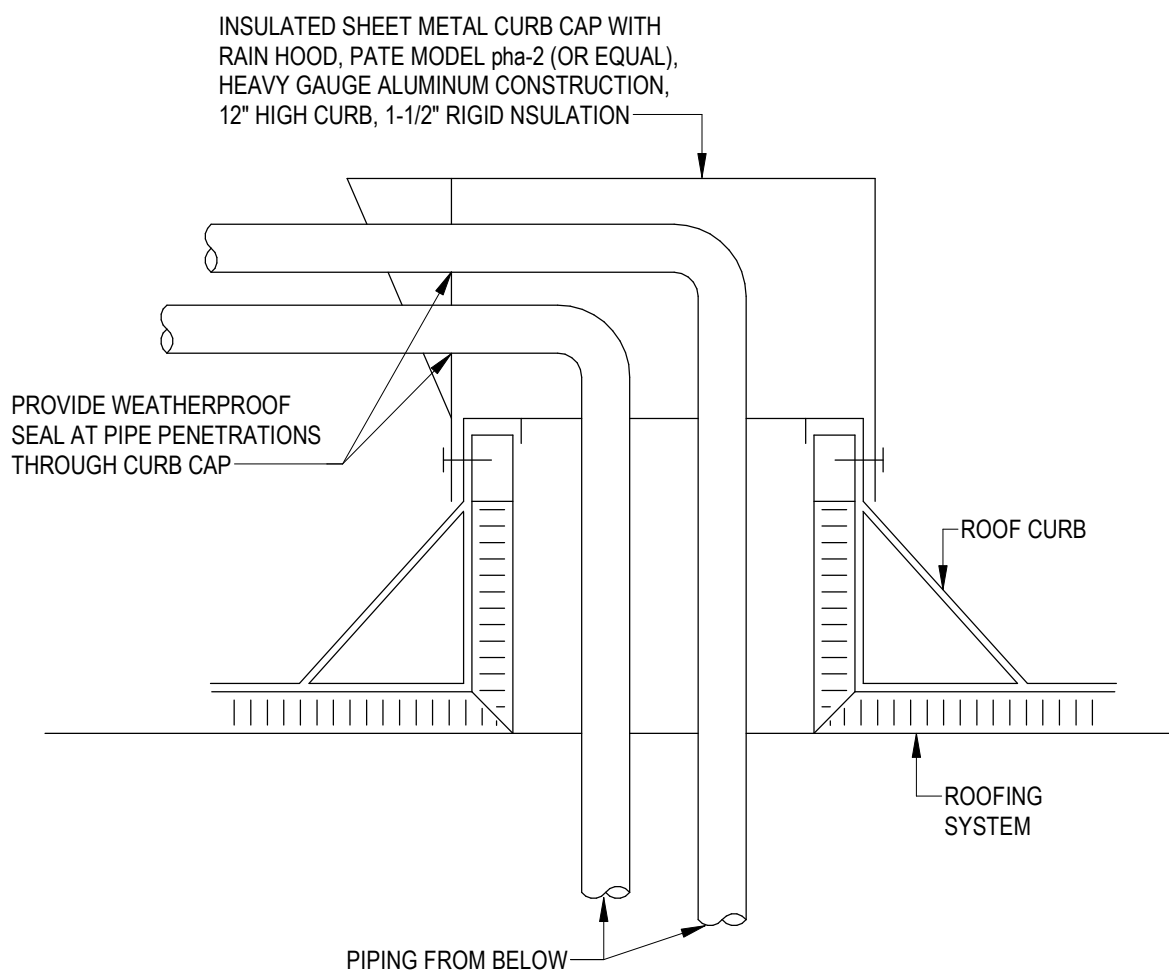


NOTES:
1. DUCT SUPPORTS SHALL BE SPACED 6\"/>

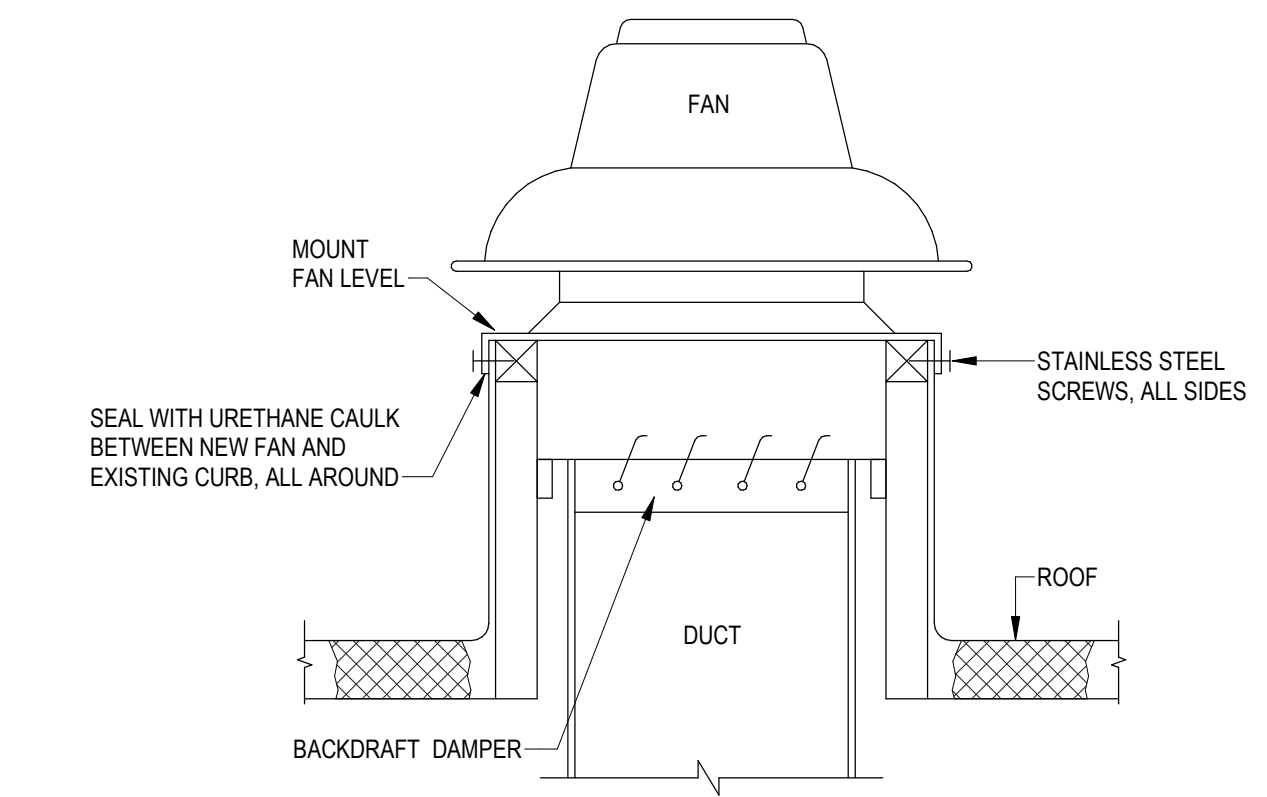
ROOF DUCT-MOUNTING DETAIL
NO SCALE



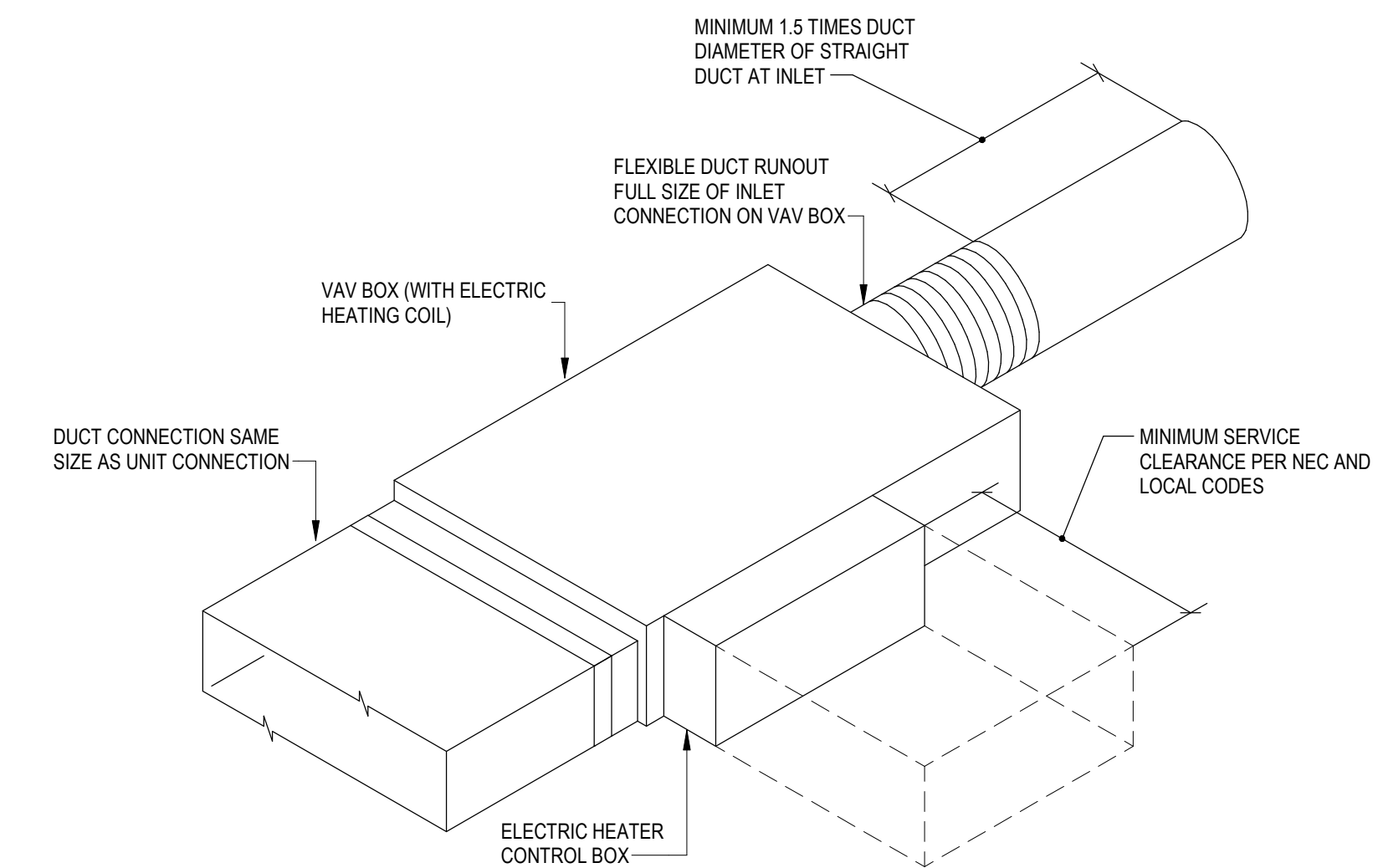
REFRIGERANT PIPING HANGER DETAIL
NO SCALE



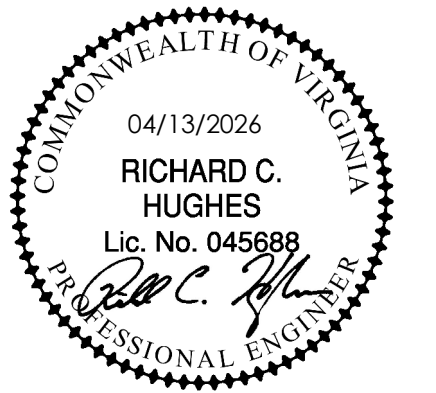
ROOFTOP PIPING PENETRATION DETAIL
NO SCALE

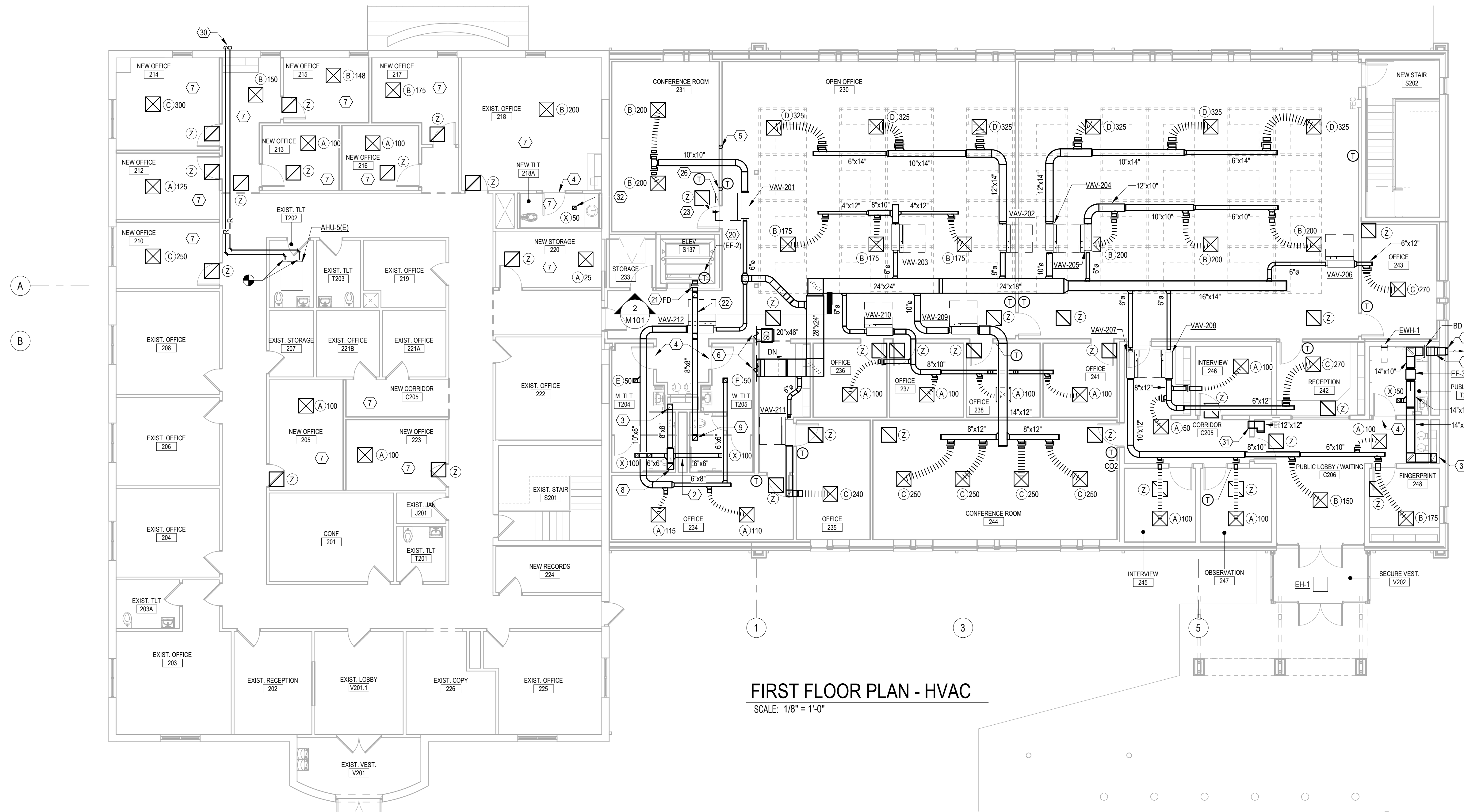


ROOF FAN DETAIL
NO SCALE



VARIABLE AIR VOLUME SHUT-OFF BOX WITH ELECTRIC HEAT CONNECTION DETAIL
SCHEMATIC





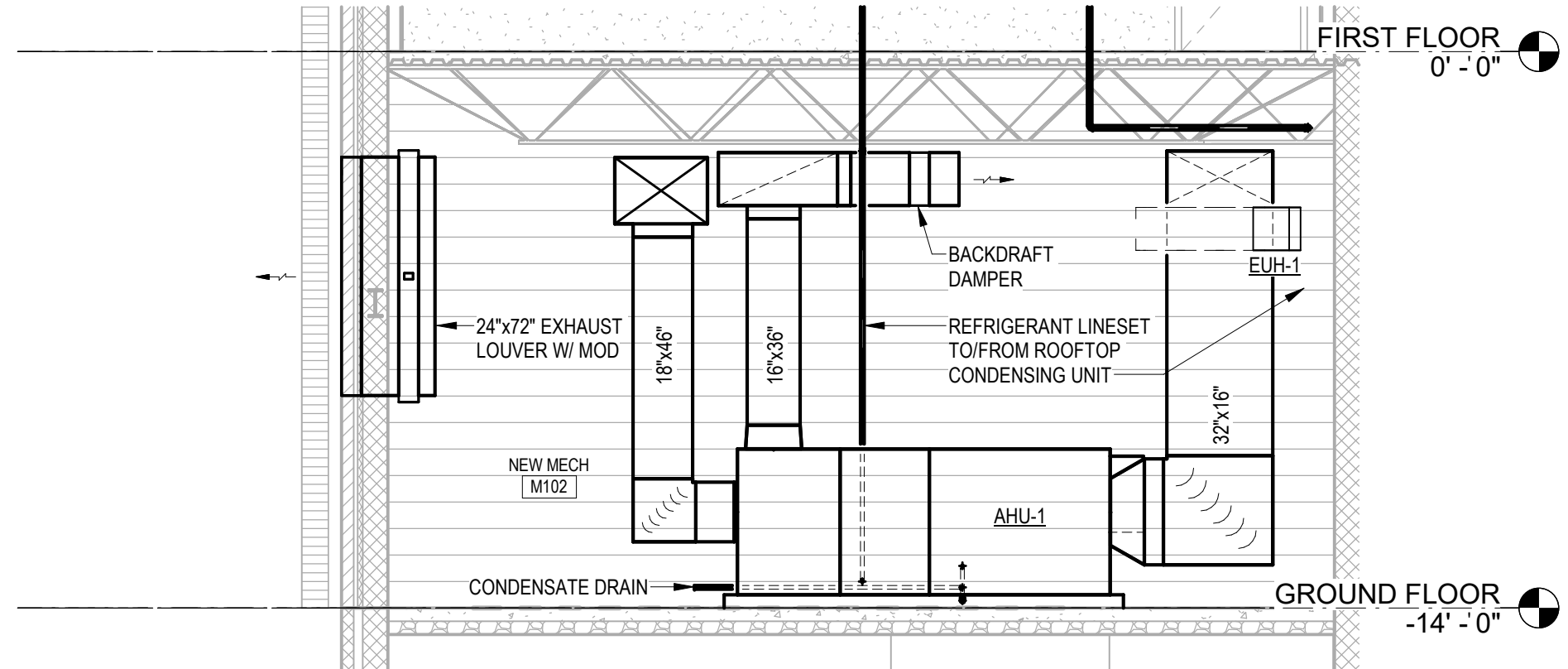
FIRST FLOOR PLAN - HVAC
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

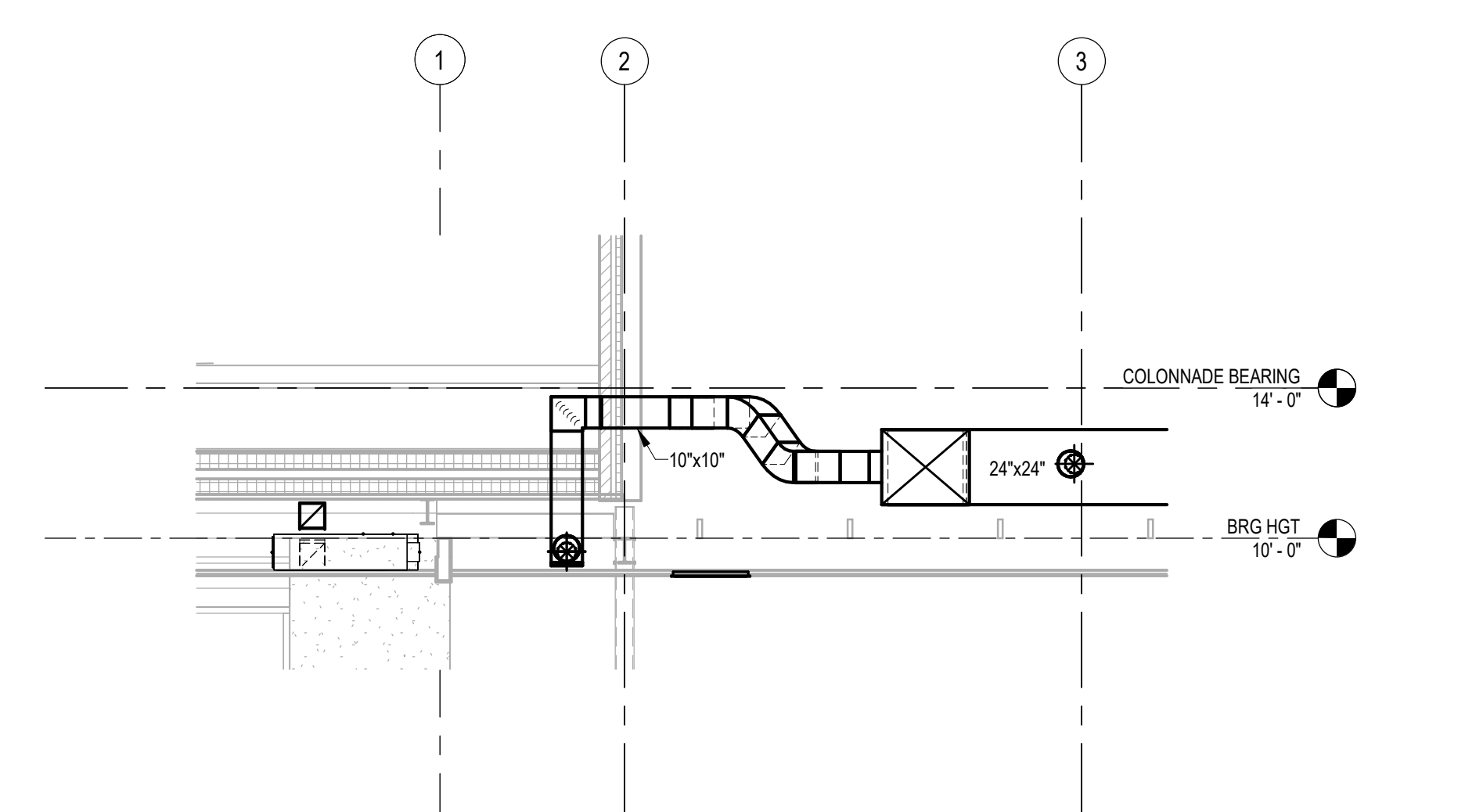
- ALL FIRST FLOOR DUCTWORK AND EQUIPMENT SERVING FIRST FLOOR SHALL BE LOCATED IN ATTIC SPACE. ROUTE DUCTWORK AND EQUIPMENT THROUGH STRUCTURAL TRUSS SUPPORTS. SEE STRUCTURAL DRAWINGS FOR TRUSS FRAMING.
- VAV BOXES LOCATED WITH ATTIC SPACE SHALL BE LOCATED BETWEEN TRUSS SUPPORTS TO ENSURE REQUIRED CLEARANCE IS PROVIDED FOR ELECTRIC HEATING COILS. VAV BOXES SHALL BE LOCATED NO HIGHER THAN 12'-0" AFF.
- MAINTAIN MINIMUM 3" CLEARANCE ON SIDE OF VAV BOX HEATING ELEMENT. OVERLAPPING VAV BOX CLEARANCES ARE ACCEPTABLE.

PLAN NOTES:

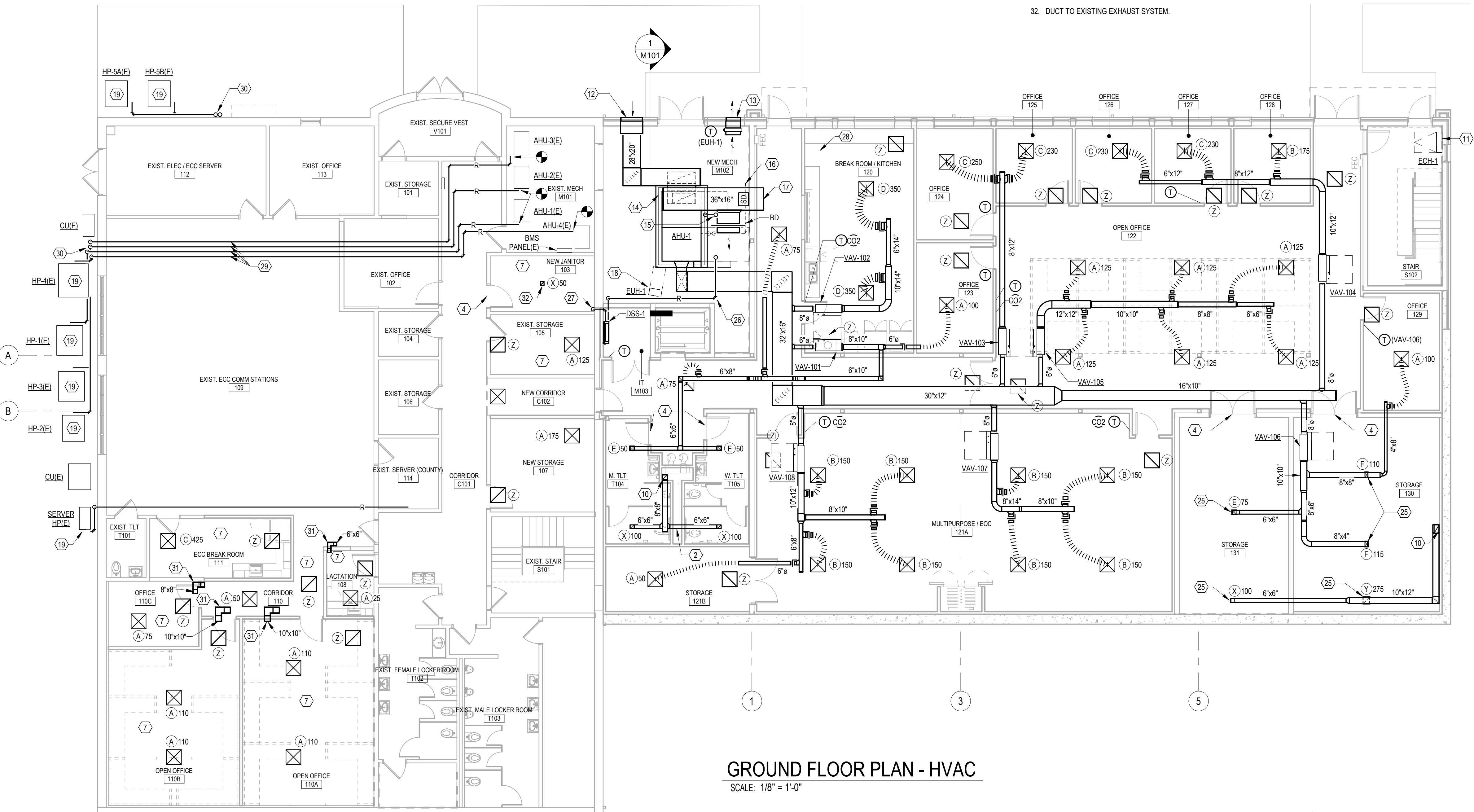
- 12"x12" EXHAUST LOUVER WITH BIRD SCREEN. MIN. FREE AREA 0.87 SQFT. MAINTAIN MIN. 3'-0" FROM OPERABLE WINDOWS.
- COORDINATE DUCT PENETRATIONS THRU PLUMBING CHASE WITH PLUMBING CONTRACTOR.
- EA DUCT FROM BELOW. COORDINATE DUCT IN CHASE WITH PLUMBING CONTRACTOR.
- UNDERCUT DOOR 1/2".
- AHU-1 / CL-1 REFRIGERANT LINESET UP/DN THRU WALL.
- SA / RA DUCT THRU ATTIC SIDEWALL TO RTU-1. SEE MECHANICAL ROOF PLAN.
- PROVIDE NEW AIR TERMINAL(S) AS NOTED ON FLOOR PLAN. MODIFY EXISTING AND PROVIDE NEW DUCT AS REQUIRED TO MAKE CONNECTIONS FROM EXISTING AIR HANDLING SYSTEM TO NEW AIR TERMINALS.
- 10"x10" EA DUCT UP TO EF-1.
- 6"x6" EA DUCT UP TO EF-2.
- EA UP THRU PLUMBING CHASE ABOVE. COORDINATE DUCT IN CHASE WITH PLUMBING CONTRACTOR.
- FLOOR-MOUNT CABINET HEATER. COORDINATE INSTALLATION W/ FLOORING.
- 30"x22" INTAKE LOUVER. MIN 17.52 SQFT FREE AREA. PROVIDE 12" DEEP PLENUM BOX. LOUVER SHALL BE LOCATED MIN. 10'-0" FROM RELIEF LOUVER.
- 24"x12" RELIEF LOUVER. MIN 17.52 SQFT FREE AREA. PROVIDE 12" PLENUM BOX WITH MOTOR OPERATED DAMPER. TERMINATE W/ 1/2" WIRE MESH SCREEN. LOUVER SHALL BE LOCATED MIN. 3'-0" FROM OPERABLE DOORS AND 10'-0" FROM OUTSIDE AIR INTAKE LOUVER.
- PROVIDE CONCRETE HOUSING PAD. PAD SHALL EXTEND MIN. 4" BEYOND UNIT IN ALL DIRECTIONS.
- REFRIGERANT LINESET TO/FROM WALL CHASE ABOVE TO CL-1 ON ROOF.
- PIPE COOLING COIL CONDENSATE DRAIN LINE AND SPILL TO FLOOR DRAIN.
- EXTEND RA DUCT 12" THRU WALL AND TERMINATE W/ 1/2" WIRE MESH SCREEN.
- MOUNT BOTTOM OF UNIT HEATER NO MORE THAN 9'-0" AFF. DIRECT HEATER AND LOUVERED OUTLET TOWARDS DOORS.
- RELOCATED EXISTING SPLIT-SYSTEM HEAT PUMP CONDENSING UNITS ON NEW CONCRETE PAD. PROVIDE NEW REFRIGERANT LINESETS FOR EACH UNIT FROM CORRESPONDING EXISTING TO-REMAIN INDOOR AIR HANDLING UNIT.
- LOCATE EF-2 THERMOSTAT AT TOP OF HOISTWAY. COORDINATE LOCATION WITH ELEVATOR INSTALLER TO ENSURE THERMOSTAT DOES NOT IMPEDE ELEVATOR OPERATION.
- PROVIDE DUCT ACCESS DOOR ACCESSIBLE FROM CORRIDOR FOR FIRE DAMPER ACCESS. EXTEND DUCT 4" THRU HOISTWAY AND TERMINATE WITH WIRE MESH GRILLE. COORDINATE LOCATION WITH ELEVATOR INSTALLER TO ENSURE DUCT DOES NOT IMPEDE ELEVATOR OPERATION.
- OFFSET EA DUCT TO PROVIDE VAV BOX ELECTRICAL CLEARANCE.
- FRAME OUT WALL ABOVE CEILING TO PROVIDE VAV BOX ELECTRICAL CLEARANCE.
- AHU-1 / CL-1 REFRIGERANT LINE SENT UP THRU ROOF TO CL-1.
- SUSPEND GRILLES 9'-0" AFF.
- DSS-1 / HP-1 REFRIGERANT LINESET UP/DN THRU WALL.
- PIPE CONDENSATE TO NEW JANITOR 103 FLOOR DRAIN.
- FUTURE RANGE AND ASSOCIATED HOOD TO BE INSTALLED BY OTHERS.
- CONSOLIDATE PIPING RUNS ABOVE CEILING WITHIN EXISTING ECC COM STATIONS ROOM 109 TO REDUCE DISTURBANCES TO WORKSTATIONS DURING CONSTRUCTION.
- PROVIDE LINESSET COVER ON ALL NEW EXTERIOR PIPING. COVER COLOR SHALL MATCH EXISTING AND BE INSTALLED ONLY AFTER LINESETS HAVE BEEN FILLED, TESTED, AND INSULATED.
- PROVIDE 1" ACOUSTICAL DUCT LINER. DUCT DIMENSIONS ACCOUNT FOR LINER.
- DUCT TO EXISTING EXHAUST SYSTEM.



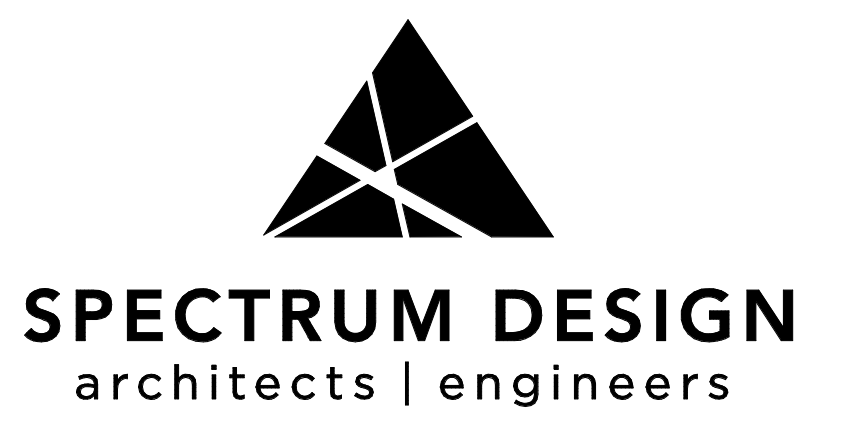
NEW MECH ROOM DUCTWORK
SCALE: 1/4" = 1'-0"



EXTERIOR SUPPLY DUCT PENETRATION
SCALE: 1/4" = 1'-0"



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



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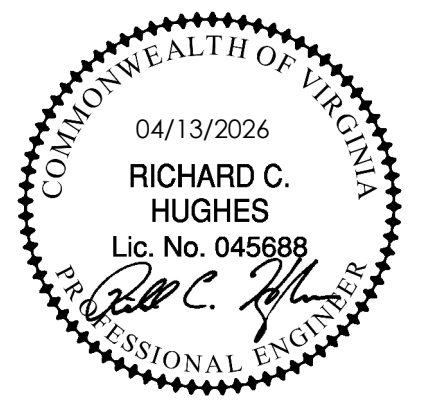
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Comm. No.: 25114
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RENOVATIONS & ADDITIONS TO

BEDFORD COUNTY SHERIFF'S OFFICE

SPECTRUM DESIGN PROJECT NO.: 24112



PROJ. MGR.: RCH
CHECKED BY: JCW
DRAWN BY: RMP

SHEET ISSUE DATE:
04.13.2026

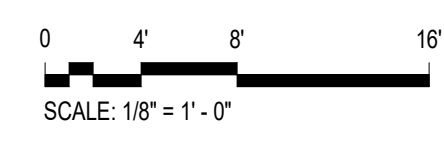
PROJECT PHASE:
CONSTRUCTION DOCUMENTS

SHEET REVISIONS:

PLAN NORTH
SITE NORTH

SHEET NAME:
FLOOR PLANS - HVAC

SHEET NUMBER:
M101



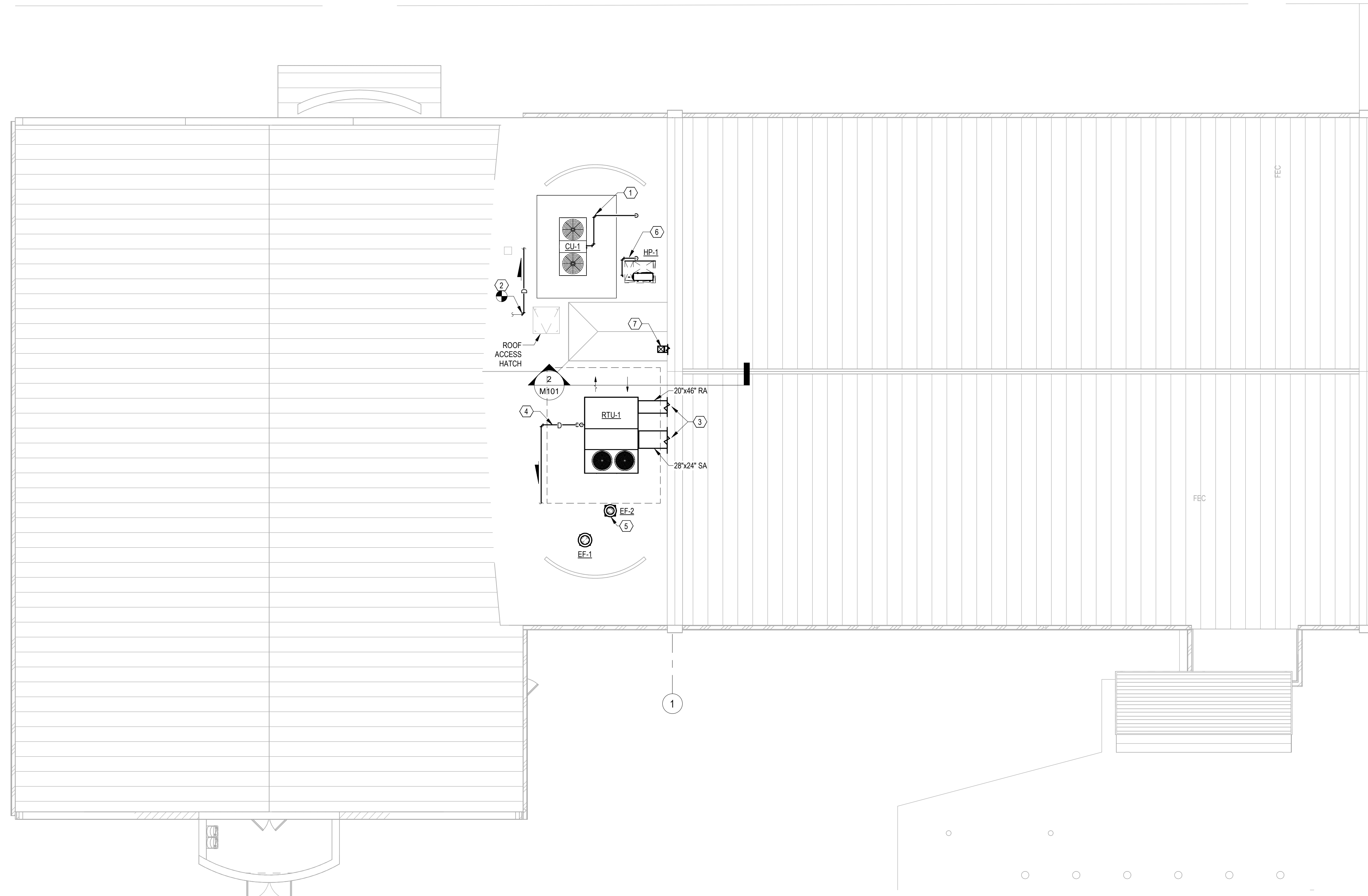
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GENERAL NOTES:

1. SLOPE COOLING CONDENSATE PIPE NO LESS THAN 1/8" PER 12" OF PIPE TOWARDS ROOF DRAIN.
2. SEE MECHANICAL SCHEDULES FOR EQUIPMENT ROOF CURB AND EQUIPMENT RAIL MOUNTING TYPES.

PLAN NOTES: Ⓢ

1. REFRIGERANT LINESET SIZED PER MANUFACTURER INSTRUCTIONS TO/FROM INDOOR AIR HANDLING UNIT AHU-1 LOCATED IN NEW MECHANICAL ROOM M102.
2. CONNECT TO EXISTING COOLING COIL CONDENSATE DRAIN LINE WITH SAME SIZE PIPE. ROUTE AND SLOPE NEW PIPE TOWARDS AND SPILL TO NEAREST ROOF DRAIN.
3. SIDEWALL DUCT PENETRATION INTO ATTIC SPACE. COORDINATE PENETRATION LOCATION WITH ROOF TRUSS SPACING. INSULATE ALL EXTERIOR DUCT PER SPECIFICATION Z30700 AND MECHANICAL DETAILS.
4. PROVIDE COOLING COIL CONDENSATE DRAIN FROM NEW ROOFTOP AIR HANDLING UNIT RTU-1. PIPE SIZE SHALL NOT BE LESS THAN MANUFACTURER OUTLET CONNECTION SIZE. ROUTE AND SLOPE PIPE TOWARDS AND SPILL TO NEAREST ROOF DRAIN.
5. COORDINATE RTU-1 AND EE-2 LOCATIONS TO ENSURE PROPER MANUFACTURER SERVICE CLEARANCES.
6. REFRIGERANT LINESET SIZED PER MANUFACTURER INSTRUCTIONS TO/FROM INDOOR WALL-MOUNTED UNIT DSS-1 LOCATED IN IT M103.
7. 10"x10" SUPPLY DUCT FROM UPPER LEVEL THRU EXTERIOR WALL AND DOWN THRU EXTENDED ELEVATOR ENCLOSURE. SEE SECTION 2 ON SHEET M101.



ROOF PLAN - HVAC
SCALE: 1/8" = 1'-0"



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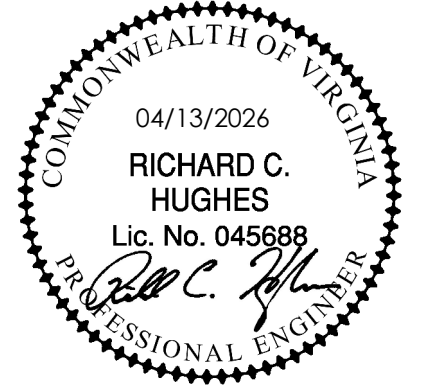
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RENOVATIONS & ADDITIONS TO

BEDFORD COUNTY SHERIFF'S OFFICE

SPECTRUM DESIGN PROJECT NO.: **24112**



PROJ. MGR.: **RCH** CHECKED BY: **JCW** DRAWN BY: **RMP**

SHEET ISSUE DATE:
04.13.2026

PROJECT PHASE:
CONSTRUCTION DOCUMENTS

SHEET REVISIONS:



SHEET NAME:
ROOF PLAN - HVAC

SHEET NUMBER:

M201

