

MECHANICAL SCOPE OF WORK SUMMARY

1. PROVIDE AND INSTALL HVAC SYSTEMS AS SHOWN ON THESE PLANS AND AS SPECIFIED IN THE PROJECT MANUAL.
2. DEMOLISH & REMOVE EXISTING EQUIPMENT, DUCTWORK, PIPING,SUPPORTS, ETC. AS SHOWN ON THE DRAWINGS.
3. PROVIDE AND INSTALL NEW HVAC EQUIPMENT AND ACCESSORIES AS SCHEDULED OR INDICATED, INCLUDING: DUCTWORK, SUPPLY AND RETURN GRILLES, EXHAUST DUCTS, INSULATION, SUPPORTS, SEALING PENETRATIONS, ETC. TO MAKE THE JOB COMPLETE AND FULLY FUNCTIONAL IN ACCORDANCE WITH THE DESIGN INTENT.
4. TEST AND BALANCE OF THE DUCTED AIR TO BE PROVIDED BY THE MECHANICAL CONTRACTOR.
5. WORK INCLUDES OBTAINING PERMITS, PROCUREMENT OF EQUIPMENT, MATERIALS, ETC.; COORDINATING BETWEEN TRADES; DEMOLITION, INSTALLATION, STARTUP, REPORTING, SYSTEMS CHECKOUT; ASSISTING THE TEST AND BALANCE CONTRACTOR, AND RESOLVING DISCREPANCIES; PERFORMING SUBSTANTIAL AND FINAL COMPLETION ACTIVITIES, TRAINING, DEVELOPING AND SUBMITTING THE OPERATION AND MAINTENANCE MANUALS, AND PERFORMING PROJECT CLOSEOUT.

GENERAL NOTES:

- FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS REQUIRED TO COMPLETE ALL WORK SHOWN ON THE CONTRACT DRAWINGS.
- ALL CONSTRUCTION SHALL CONFORM TO APPLICABLE CODE STANDARDS INCLUDING:

NFPA 70 - 2017, NATIONAL ELECTRIC CODE

NFPA 99A, AIR CONDITIONING & VENTILATION SYSTEMS

FLORIDA BUILDING CODE BUILDING (2023)

FLORIDA BUILDING CODE MECHANICAL (2023)

FLORIDA BUILDING CODE ENERGY CONSERVATION (2023)

FLORIDA BUILDING CODE FUEL GAS (2023)

FLORIDA FIRE PREVENTION CODE (8th EDITION)

STATE AND LOCAL CODES AND ORDINANCES
- SHOULD CONFLICT OCCUR BETWEEN PROJECT SPECIFICATIONS & DRAWING NOTES, THE DRAWING NOTES WILL TAKE PRECEDENCE.
- THE CONTRACTOR IS EXPECTED TO PROVIDE PROFESSIONAL WORK PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND BEST PRACTICES.
- THE WORK SHALL BE COMPLETE, FULLY OPERATIONAL, AND SUITABLE IN EVERY WAY FOR THE SERVICE REQUIRED.
- DRAWINGS INDICATE THE SCOPE AND DO NOT SHOW ALL DETAILS, DEVICES AND INCIDENTAL MATERIALS NECESSARY TO ACCOMPLISH THE WORK. THEREFORE, IT SHALL BE UNDERSTOOD THAT SUCH DEVICES AND INCIDENTAL MATERIALS REQUIRED SHALL BE PROVIDED BY THE CONTRACTOR.
- CONTRACTOR SHALL TAKE INTO ACCOUNT FIELD CONDITIONS AND COORDINATE IN ORDER TO AVOID CONFLICTS WITH EXISTING CONDITIONS AND INTERFERENCE BETWEEN TRADES.
- EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS FOR PROPER OPERATION, MAINTENANCE, AND SERVICE. IF CHANGES TO THE CONTRACT DOCUMENTS ARE NECESSARY TO AVOID CONFLICTS, THE CONTRACTOR IS RESPONSIBLE FOR REQUESTING CLARIFICATION IN A TIMELY FASHION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEFICIENCIES ASSOCIATED WITH WORK PERFORMED BEFORE OBTAINING WRITTEN CLARIFICATION.
- CONTRACTOR SHALL VERIFY SIZE, FLOW DIRECTION, AND LOCATION OF EXISTING DUCTS/PIPING TO REMAIN, RELATED BUILDING INFRASTRUCTURE/SERVICES, PRIOR TO COMMENCING WORK. ADVISE THE ENGINEER IN WRITING IF MATERIALLY DIFFERENT THAN SHOWN.
- THE CONTRACTOR SHALL TAKE DUE CARE DURING ALL PHASES OF WORK TO PROTECT BUILDING FINISHES, FURNISHINGS, EQUIPMENT, ETC. THE CONTRACTOR SHALL BEAR ALL COSTS TO REPAIR ANY DAMAGED ITEMS, FINISHES, ETC. RESULTING FROM HIS OR HIS SUBCONTRACTOR'S WORK.
- THE CONTRACTOR SHALL PROVIDE DAILY CLEANUP OF HIS WORK AREAS. UPON COMPLETION OF THE WORK THE CONTRACTOR SHALL THOROUGHLY CLEAN SPACES THAT WERE OCCUPIED BY TEMPORARY WORK AND TEMPORARY FACILITIES. REMOVE ALL DEBRIS, RUBBISH, AND EXCESS MATERIAL FROM THE SITES.
- REPAIR DAMAGE CAUSED BY INSTALLATION OR USE OF TEMPORARY FACILITIES. THIS INCLUDES LANDSCAPING, LANDSCAPING, FINISHES, ETC.
- THE CONTRACTOR SHALL DELIVER TO THE OWNER UPON SUBSTANTIAL COMPLETION OF THE WORK, TWO COPIES OF DESCRIPTIVE LITERATURE RELATED TO THE EQUIPMENT INSTALLED UNDER THIS CONTRACT, INCLUDING PARTS LISTS, WIRING DIAGRAMS, MAINTENANCE AND OPERATION MANUALS AND WARRANTIES CUSTOMARILY SUPPLIED BY MANUFACTURERS FOR EQUIPMENT INCORPORATED IN THIS WORK.
- THE LITERATURE SHALL BE NEATLY BOUND IN A 3-RING BINDER, IN ADDITION TO ELECTRONIC FORMAT ON A USB THUMB DRIVE, AND DELIVERED PRIOR TO FINAL ACCEPTANCE.
- THE CONTRACTOR SHALL LABEL NEW EQUIPMENT AND ANCILLARY SYSTEMS INCLUDED IN THE SCOPE OF THIS PROJECT. EQUIPMENT NAMES & NUMBERS WILL BE PROVIDED BY THE OWNER.
- THE CONTRACTOR SHALL GIVE A PHYSICAL DEMONSTRATION AND VERBAL INSTRUCTIONS FOR PROPER OPERATION AND MAINTENANCE OF EQUIPMENT TO THE OWNER OR HIS DESIGNATED REPRESENTATIVE. SCHEDULE THESE DEMONSTRATIONS AND INSTRUCTIONS AT THE OWNER'S CONVENIENCE.

TEST, ADJUST AND BALANCE (TAB) SCOPE OF WORK AND COORDINATION

1. THE MECHANICAL CONTRACTOR WILL CONTRACT WITH A PROFESSIONAL/AABB CERTIFIED TAB COMPANY TO TEST, ADJUST AND BALANCE THE NEW HVAC SYSTEMS.
2. THE MECHANICAL CONTRACTOR SHALL FULLY TEST THE OPERATION OF THE HVAC SYSTEM AND RESOLVE ALL KNOWN DISCREPANCIES PRIOR TO REQUESTING TAB SERVICES VIA THE CONSTRUCTION MANAGER.
3. THE MECHANICAL CONTRACTOR SHALL PARTICIPATE AND ASSIST IN THE TAB WORK , INCLUDING RESOLUTION OF TAB DISCREPANCIES.
4. TEST AND BALANCE CONTRACTOR SHALL PERFORM THE FOLLOWING TASKS:

A. MARK EQUIPMENT & DAMPER POSITIONS TO SHOW FINAL SETTINGS. MARK WITH PAINT OR OTHER SUITABLE PERMANENT IDENTIFICATION MATERIALS.

B. COMPLETE TESTING, ADJUSTING, AND BALANCING OF NEW/EXISTING HVAC SYSTEMS, AND RELATED SYSTEMS INCLUDED IN THE SCOPE OF WORK.

C. MEASURE RETURN AIR, OUTSIDE AIR, MIXED AIR, COIL LEAVING AND UNIT LEAVING AIR CONDITIONS OF EACH AHU.

D. MEASURE EXHAUST FAN AIRFLOW RATES.
5. TEST AND BALANCE CONTRACTOR SHALL PROVIDE ONE (1) PAPER AND ELECTRONIC COPY OF THE PRELIMINARY REPORT TO THE ENGINEER FOR REVIEW/COMMENTS. DISCREPANCIES SHALL BE RESOLVED, THE TAB CONTRACTOR SHALL RETEST SYSTEMS AS NEEDED AND ISSUE THREE (3) FINAL, SIGNED AND SEALED REPORTS PLUS ONE ELECTRONIC COPY AFTER ALL ISSUES ARE RESOLVED TO THE SATISFACTION OF THE ENGINEER.

DUCTWORK:

- ALL WORK SHALL COMPLY WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE. CONSTRUCT SUPPLY DUCTWORK FOR VAV SYSTEMS TO WITHSTAND 2" (MIN) AND RETURN DUCT -1" STATIC PRESSURES.
- USE EITHER ROUND OR RECTANGULAR DUCT WITH EQUAL OR GREATER EQUIVALENT FREE AREA TO ACCOMMODATE EXISTING STRUCTURE.
- CROSS BREAK DUCTS AND OTHER SHEET METAL OVER 24" WIDE.
- INTERIOR - USE GALVANIZED SHEET METAL FOR RECTANGULAR DUCT WITH EXTERIOR INSULATION, UOS. USE GALVANIZED SPIRAL SEAM ROUND DUCT WITH EXTERIOR INSULATION.
- FOR HIGH PRESSURE TAKE-OFF, USE A BELLMOUTH OR MITERED FITTING TO CONNECT ROUND DUCT TO RECTANGULAR. USE A MITER FITTING WHEN CONNECTING RECTANGULAR TO RECTANGULAR DUCT.
- FLEXIBLE DUCT ON RUNOUTS SHALL NOT EXCEED 15'. USE ROUND SPIRAL DUCT FOR LONGER RUNS.
- PROVIDE SHEET METAL CLOSURE ANGLES, ESCUTCHEONS, OR FLASHING ON BOTH SIDES OF WALL PENETRATIONS (NON RATED) AND SEAL AIR TIGHT.
- PROVIDE SMOKE TIGHT SEAL WHEN PENETRATING SMOKE COMPARTMENT WALLS.
- PROVIDE DOUBLE-THICKNESS TURNING VANES IN ALL RECTANGULAR ELBOWS AND OFFSETS.
- DUCT SIZES MAY BE CHANGED TO ACCOMMODATE CONDITION AS LONG AS THE INTERNAL FREE AREA IS NOT DIMINISHED.
- RUN-OUT DUCTS TO DIFFUSERS SHALL BE EQUAL TO DIFFUSER NECK SIZE, SEE GRILLE/FLOW SCHEDULES.
- ALL FABRICATED DUCTWORK LONGITUDINAL AND TRANSVERSE JOINTS, TAPS, AND CONNECTIONS SHALL BE SEALED WITH DUCT MASTIC REGARDLESS OF PRESSURE CLASS.
- WHERE CONTROL DAMPERS ARE INSTALLED IN DUCTWORK, PROVIDE DUCT ACCESS DOORS TO ALLOW INSPECTION OF DEVICE..
- PERMANENTLY MARK ALL DAMPER SHAFTS TO INDICATE DAMPER POSITION.
- DUCT ACCESSORIES:

- ACCESSORIES, GRILLES, ETC. SHALL BE INSTALLED PER THE MANUFACTURERS' RECOMMENDATIONS.

- ALL EXISTING DIFFUSERS AND GRILLES WILL BE REPLACED. VERIFY SIZING DATA IN SCHEDULE BEFORE ORDERING.

- MANUAL VOLUME DAMPERS IN DUCTS SHALL BE OPPOSED-BLADE TYPE, HANDLES SHALL HAVE LOCKING QUADRANTS, AND EXTENSIONS TO ACCOMMODATE EXTERNAL INSULATION.

- RECTANGULAR TAKEOFFS SHALL BE MITERED TYPE WITH MANUAL VOLUME DAMPERS. USE A PERMANENT MARKER ON THE DAMPER SHAFT TO INDICATE DAMPER POSITION.

- ROUND TAKEOFFS SHALL BE HAVE A MANUAL VOLUME DAMPER. USE A PERMANENT MARKER ON THE DAMPER SHAFT TO INDICATE DAMPER POSITION.

DAMPERS:

- ELECTRIC/MOTOR OPERATED CONTROL DAMPERS SHALL BE PARALLEL-BLADE TYPE WITH NEOPRENE BLADE EDGE SEALS EQUAL TO RUSKIN. LEAKAGE RATING TO BE CLASS 1 (4 CFM/FT2 @ 1" W.G.).
- ELECTRIC MOTOR OPERATED DAMPERS SHALL HAVE 120VAC ACTUATORS, EQUAL TO BELIMO "TF" SERIES WITH SPRING RETURN. OPERATORS SHALL BE SIZED ACCORDING TO DAMPER SIZE AND TORQUE REQUIREMENTS PER THE DAMPER/OPERATOR REQUIREMENTS (WHICHEVER IS HIGHER).
- DUCTWORK INSULATION:

- ALL DUCTWORK CONVEYING CONDITIONED OR OUTSIDE AIR AIR SHALL BE EXTERNALLY INSULATED UNLESS SPECIFIED OTHERWISE.

- INSULATION IN CONCEALED/ACCESSIBLE INTERIOR SPACES SHALL BE BLANKET TYPE. SECURE INSULATION WITH IMPALE PINS WHEN DUCT IS OVER 24" WIDE.

- BLANKET INSULATION SHALL BE FOIL BACKED R-6 (INSTALLED) INSULATION. SEAL ALL JOINTS, SEAMS, ETC. PER THE MANUFACTURER'S RECOMMENDATIONS. SEALING TAPE SHALL BE UL 181 LISTED PRESSURE-SENSITIVE TYPE.

- EXHAUST DUCT WORK THAT ROUTES THROUGH UNCONDITIONED ATTIC SPACE SHALL BE EXTERNALLY INSULATED WITH R-4.2 INSULATION TO PREVENT CONDENSATION.

- INSULATION IN MECHANICAL ROOMS AND ON DUCTS PENETRATING WALLS (WITHOUT FIRE DAMPERS) SHALL BE FIBERGLASS DUCT BOARD. EXTEND INSULATION 6" BEYOND WALL THEN TRANSITION TO DUCT WRAP (WHEN CONCEALED). USE CLIP ANGLES AT WALL TO SEAL OPENING (BOTH SIDES) UOS. SEAL PENETRATION TO COMPLY WITH THE WALL RATING. SEE ARCHITECTURAL SHEETS.

- DUCTBOARD INSULATION ON SUPPLY DUCTWORK & OUTSIDE AIR DUCTWORK SHALL BE R-6 (MINIMUM).
- DUCTBOARD INSULATION ON RETURN AIR DUCTWORK SHALL BE R-4.2 (MINIMUM).
- MECHANICAL FASTENERS (IMPALE PINS) SHALL BE ADHERED WITH MASTIC SPACED ON 18" CENTERS. NOTE: SELF-ADHESIVE TYPE IMPALE PINS ARE PROHIBITED.
- INSULATE THE BACKS OF NEW SUPPLY AIR GRILLES - SEE DETAIL.
- PROVIDE INCOMPRESSIBLE INSULATION/INSERTS AT ALL TRAPEZE-TYPE SUPPORTS TO PREVENT INSULATION COMPRESSION.
- INSTALL INSULATION PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY BEST PRACTICES FOR THE INTENDED PURPOSE.
- PROVIDE COMPOSITE MECHANICAL INSULATION (INSULATION, JACKETS, COVERINGS, SEALERS, MASTICS AND ADHESIVES) HAVING FLAME SPREAD INDEX OF 25 OR LESS, AND SMOKE DEVELOPED INDEX OF 50 OR LESS, AS TESTED BY ASTM E84 (NFPA 255) METHODS.
- VAPOR BARRIERS SHALL BE MAINTAINED COMPLETE AND CONTINUOUS. SEAL ALL GAPS, JOINTS, SEAMS, ETC.
- INSTALL INSULATION AFTER THE DUCT SYSTEMS HAVE BEEN SEALED WITH MASTIC, PRESSURE TESTED AND FOUND FREE OF ALL LEAKS.
- SURFACES SHALL BE CLEAN AND DRY BEFORE APPLYING INSULATION MASTICS OR INSULATION.
- RATED PARTITIONS & WALLS SHALL BE PENETRATED ONLY WITH INSULATION MATERIALS AND TECHNIQUES THAT ARE UL LISTED TO MAINTAIN FIRE RATING. ANY QUESTIONS SHALL BE REFERRED TO THE ARCHITECT/ENGINEER.

EXHAUST FANS:

- INSTALL NEW EXHAUST FANS AS INDICATED ON THE DRAWINGS.
- NEW GRAVITY VENTILATORS AND CURBS WILL BE INSTALLED ON THE ROOF
- NEW DUCT AND LOUVERS WILL BE INSTALLED WHERE INDICATED.

SMOKE DETECTORS:

- DUCT SMOKE DETECTORS ARE PROVIDED AND WIRED TO THE FIRE ALARM BY DIVISION 16.
- THE MECHANICAL SUBCONTRACTOR WILL BE RESPONSIBLE FOR MOUNTING DUCT FIRE/SMOKE DAMPERS/ DETECTORS AND WIRING TO THE AHU FOR SYSTEM SHUTDOWN ON ANY GENERAL FIRE ALARM.

DUCT SMOKE/FIRE DAMPERS, COMMON DAMPERS, AND DETECTORS:

- SMOKE AND FIRE DAMPERS, WHERE INDICATED, SHALL BE INSTALLED IN STRICT CONFORMANCE WITH THE MANUFACTURER'S INSTRUCTIONS. PROVIDE SLEEVES AND ANGLES WHERE REQUIRED. PROVIDE DUCT ACCESS PANELS FOR INSPECTION AND RESETTING OF FIRE DAMPERS.

EQUIPMENT INSTALLATION

GENERAL EQUIPMENT INSTALLATION REQUIREMENTS:

- INSTALL UNIT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- ALL EQUIPMENT SHALL BE SECURED TO PADS OR BUILDING STRUCTURE. INSURE THAT PROPER ACCESS TO THE UNIT IS MAINTAINED. DO NOT RUN PIPING IN FRONT OF ACCESS PANELS.
- COORDINATE WITH THE SUPPLIER TO UNDERSTAND WHICH FEATURES AND OPTIONS MUST BE FIELD INSTALLED.
- COORDINATE CONTROLS AND POWER WIRING INSTALLATION.
- START-UP ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- CLEAN FACTORY-FINISHED SURFACES. REPAIR ANY MARRED OR SCRATCHED SURFACES WITH MANUFACTURER'S TOUCH-UP PAINT. TURNOVER ANY SPECIAL TOOLS PROVIDED BY THE EQUIPMENT MANUFACTURER.
- COORDINATE TEST, ADJUST AND BALANCE WORK
- PACKAGED AIR CONDITIONER UNIT INSTALLATION:
- INSTALL UNIT ON FACTORY SUPPLIED ROOF CURB. SECURE UNIT TO CURB AND CURB TO ROOF. INSTALL CONTROLS, DUCTWORK, ETC. SEE DETAILS.
- PROVIDE EACH PRIMARY CONDENSATE DRAIN WITH TRAP AND DOWN STREAM CLEAN-OUT CAP. DEPTH OF SEAL SHALL EXCEED MAX FAN STATIC, SEE TRAP DETAIL.
- PRIOR TO START-UP, REMOVE DEBRIS FROM INSIDE THE UNIT, VACUUM INTERIOR SURFACES, WIPE DOWN INTERIOR WITH DAMP CLOTH, AND INSTALL CLEAN FILTERS.
- PERFORM FACTORY CERTIFIED START UP IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND COMPLETE START-UP REPORT.

DX SPLIT SYSTEM INSTALLATION:

- SET CONDENSING UNITS ON 1/2" THICK NEOPRENE PADS, ONE AT EACH CORNER, AND SECURE UNIT TO EQUIPMENT RAILS DESIGNATED FOR THAT PURPOSE, (OR OTHERWISE AS PROVIDED FOR WITH THE EQUIPMENT) SEE DETAIL.
- PIPE CONDENSATE TO NEAREST SAFE WASTE AND SECURE PIPING TO FLOOR ON 4' MAXIMUM CENTERS.
- PROVIDE EACH PRIMARY CONDENSATE DRAIN WITH TRAP AND DOWN STREAM CLEAN-OUT CAP. DEPTH OF SEAL SHALL EXCEED MAX FAN STATIC, SEE TRAP DETAIL.
- PRIOR TO START-UP, REMOVE DEBRIS FROM INSIDE THE UNIT, VACUUM INTERIOR SURFACES, WIPE DOWN INTERIOR WITH DAMP CLOTH, AND INSTALL CLEAN FILTERS.
- INSTALL CLEAN FILTER AND PERFORM START UP IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. COMPLETE AND SUBMIT START UP REPORT.
- PROGRAM AND TEST HUMIDISTATS/CONTROLS. CORRECT SYSTEM DEFICIENCIES.

AIR HANDLER UNIT INSTALLATION:

- LOCATE UNIT TO PROVIDE PROPER CLEARANCE TO ACCESS PANELS, PIPING, CONTROLS, ETC. OPTIMIZE AVAILABLE SPACE.
- SET UNIT ON 1/2" THICK NEOPRENE VIBRATION-ISOLATION PADS ON 2' CENTERS UNDER MAIN SUPPORTS.
- PROVIDE EACH PRIMARY CONDENSATE DRAIN WITH P-TRAP AND DOWN STREAM CLEAN-OUT CAP. DEPTH OF SEAL SHALL EXCEED MAX FAN STATIC, SEE TRAP DETAIL.
- INSTALL DUCTWORK.
- REMOVE ALL DEBRIS, DUST, METAL SHAVINGS, ETC. FROM INTERIOR OF UNIT PRIOR TO STARTUP.
- PERFORM START-UP IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND COMPLETE A STARTUP REPORT.
- PROGRAM AND TEST CONTROLS, DAMPERS, AND SAFETIES.
- PROVIDE NEW FILTERS AT SUBSTANTIAL COMPLETION.
- REFRIGERANT PIPING INSTALLATION:
- REFRIGERANT PIPING SHALL BE ACR TYPE L. PROVIDE HARD DRAWN COPPER TUBING WITH BRAZED LONG RADIUS WROUGHT COPPER FITTINGS AT ALL AIR HANDLING UNITS, CONDENSING UNITS, IN MECHANICAL ROOMS AND OTHER EXPOSED LOCATIONS. WHERE CONCEALED, REFRIGERANT PIPING MAY BE SOFT COPPER.
- PROVIDE SIGHT GLASS AND FILTER DRYER FOR EACH REFRIGERANT CIRCUIT. TAKE CARE NOT TO DOUBLE UP WHERE FILTER DRYER IS PROVIDED WITH CONDENSING UNIT.
- LEAK TEST ALL REFRIGERANT PIPING. EVACUATE, DEHYDRATE AND CHARGE SYSTEM PER MANUFACTURER'S INSTRUCTIONS.
- ROUTE PIPING ABOVE CEILING. INSTALL PIPING AS HIGH AS POSSIBLE DROPPING AS NECESSARY TOWARDS CONDENSING UNIT. CONTRACTOR SHALL INVESTIGATE OBSTRUCTIONS AND SELECT THE ROUTE RESULTING IN THE BEST PIPE APPLICATION.
- SUPPORT HORIZONTAL REFRIGERANT SUCTION PIPING 4 FEET ON CENTER. LIQUID LINE MAY BE STRAPPED TO THE INSULATED SUCTION LINE.
- INSURE THAT EXPOSED METAL PIPES DO NOT CONTACT METAL OR CONCRETE SURFACES. PROVIDE INSULATION MATERIALS OR SLEEVES AT ANY SUCH LOCATIONS.
- INSULATE REFRIGERANT VAPOR LINES WITHIN THE BUILDING WITH 3/4" CLOSED CELL ELASTOMERIC INSULATION (ARMAFLEX) THAT MEETS THE 25/50 FLAME SPREAD AND SMOKE DEVELOPED RATINGS. INSULATE EXTERIOR VAPOR LINES WITH 3/4" POLYURETHANE FOAM WITH ASJ VAPOR BARRIER AND COVER WITH ALUMINUM JACKETING AND PREFORMED ALUMINUM FITTINGS. SECURE WITH STAINLESS STEEL BANDS AND SCREWS OR RIVETS, AND SEAL ALL JOINTS WITH CLEAR SILICONE CAULK.
- PROVIDE METAL LINE-SET COVERS OVER VERTICAL PIPING ON THE EXTERIOR OF THE BUILDING. COVER TO BE SECURELY ATTACHED TO BLOCK WALL. MATERIAL TO BE GALVANIZED.

CONDENSATE & PIPING

- CONDENSATE DRAIN SHALL INCLUDE A P-TRAP, SEE DETAIL.
- PIPING SHALL BE SAME SIZE AS DISCHARGE CONNECTION, D-W-V COPPER AND FITTINGS. MINIMUM SIZE IS 3/4". SUPPORT PIPING AT P-TRAP AND ON 4' CENTERS AND SLOPE 1/4" PER FOOT TOWARD DRAIN.
- PROVIDE CLEANOUTS WITH SCREW CAPS/PLUGS AT TRAPS, ON VERTICAL DROPS, AND IN HORIZONTAL DIRECTION CHANGES.
- CONDENSATE PIPING TO BE FULLY INSULATED WITH CLOSED-CELL INSULATION TO PREVENT CONDENSATION

CONCRETE HOUSEKEEPING PADS:

- WHERE INDICATED EXTEND EXISTING CONCRETE PADS FOR EQUIPMENT SUPPORT.
- USE MECHANICAL MEANS TO REMOVE FLOOR EPOXY FINISH, ROUGHEN CONCRETE, AND CLEAN
- POUR 4" CONCRETE SLAB W/ WELDED WIRE REINFORCING. CHAMFER EDGES

MISCELLANEOUS METALS:

- INTERIOR EQUIPMENT/PIPING SUPPORTS, HARDWARE, BRACKETS, FRAMING CHANNEL, ETC. SHALL BE GALVANIZED STEEL AND EQUAL TO B-LINE.
- METAL/ELECTRICAL FRAMING/CHANNEL, SUPPORTS, ETC. IN CONTACT WITH CONCRETE OR INSTALLED OUTDOORS SHALL BE HOT-DIPPED GALVANIZED.
- MISCELLANEOUS INTERIOR SUPPORTS SHALL BE 12 GA, 1-5/8" SQ. ELECTRO-GALVANIZED FRAMING CHANNEL. (MINIMUM).

HVAC SYMBOLS/LEGEND	
DESIGNATION	DESCRIPTION
	LAY-IN SUPPLY AIR DIFFUSER
	LAY-IN RETURN AIR DIFFUSER WITH OUT DUCT CONNECTION
	SURFACE MOUNT SUPPLY GRILLE
	SURFACE MOUNT RETURN GRILLE
	ROUND DUCT WITH SIZE INDICATED
	THERMOSTAT/TEMPERATURE SENSOR & WIREWAY
	TEMP/RELATIVE HUMIDITY SENSOR AND WIREWAY
	RECTANGULAR DUCTWORK & INTERNAL SIZE (FREE AREA)
	RECTANGULAR DUCTWORK W/LINER & INTERNAL SIZE (FREE AREA)
	FLEXIBLE DUCT CONNECTION
	MITERED ELBOW FITTING WITH DOUBLE THICKNESS TURNING VANES
	MITERED TAKEOFF WITH MVD (PROVIDE INSULATION STANDOFF)
	MITERED TAKEOFF WITHOUT MVD (USE AT TAKEOFFS FOR VAV TERMINALS)
	EXTENT OF DEMOLITION
	DUCT SMOKE DETECTOR
	POINT OF CONNECTION TO EXISTING
	MANUAL VOLUME DAMPER WITH LOCKING QUADRANT
	ELECTRIC OPERATED CONTROL DAMPER
	PNEUMATIC OPERATOR
	FIRE DAMPER
	COMBINATION FIRE/SMOKE DAMPER
	SMOKE DAMPER
	AIR FLOW VIA 1" DOOR UNDERCURT
	FLOW DIRECTION
	DUCT TURNING DOWN
	DUCT TURNING UP
	AIR FLOW DIRECTION
	GRILLE AND FLOWRATE (CFM) DESIGNATION
	CENTRIFUGAL DIRECT DRIVE CABINET OA SUPPLY FAN
	CEILING MOUNTED EXHAUST FAN
	METHODS OF DENOTING DEMOLITION WORK
	RELOCATE AND RELOCATED, RESPECTIVELY
	SERVICE AREA - MAINTAIN CLEAR
	ACCESS DOOR WITH LATCH, DIMENSION INDICATES SIZE
	DUCT ELEVATION CHANGE
	SINGLE LINE DUCT (ROUND) (SIZE PER GRILLE FLOW SCHEDULE)
	FLEXIBLE DUCT (SIZE PER GRILLE FLOW SCHEDULE)

ABBREVIATIONS	
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR AS HIGH AS POSSIBLE
AHAP	BLDG AUTOMATION SYSTEM BACKDRAFT DAMPER
BAS	BRAKE HORSE POWER
BD	BOTTOM OF DUCT
BHP	BRITISH THERMAL UNIT/HOUR
BOD	CUBIC FEET PER MINUTE
BTUH	CAST IRON
CFM	CEILING
CI	CONCRETE
CLG	CHILLED WATER SUPPLY
CONC	CHILLED WATER RETURN
CHWS	DUCT DETECTOR
CHWR	DRY BULB
D	DIA OR Ø
DB	DIAMETER
DG	DOOR GRILLE
DTL	DETAIL
DW	DOMESTIC WATER
EF	EXHAUST FAN
ETR	EXISTING TO REMAIN
EX OR (E)	EXISTING EXTERNAL OR EXTERIOR
EXT	FLOOR DRAIN
FD	FLOOR
FL	GALLONS PER MINUTE
GPM	HIGH
H	HUB DRAIN
HD	HOT-DIP GALVANIZED
HDG	HORSE POWER
HP	LONG
L	LEAVING AIR TEMPERATURE
LAT	MAXIMUM
MAX	1000 BTU/HOUR
MBH	MINIMUM
MIN	NEW
N	NOT IN CONTRACT
NIC	NOMINAL PIPE SIZE
NPS	OUTSIDE AIR
OA	ON CENTER
OC	PLACES
PL	PANEL
PNL	RETURN AIR
RA	RETURN AIR GRILLE
RAG	RATED LOAD AMPS
RLA	ROOF VENT
RV	SUPPLY AIR
SA	SUPPLY AIR GRILLE
SAG	STATIC PRESSURE
SP	SQUARE
SQ	TEMPERATURE
T	TRANSFER
TF	THICK
THK	TOP OF DUCT
TOD	TYPICAL
TYP	UG
UG	UNDERGROUND
UOS	UNLESS OTHERWISE SPECIFIED
VAV	VARIABLE AIR VOLUME
V	VOLTS
WB	WET BULB
W	WIDE
WG	WATER GAUGE

INSTRUMENTATION & CONTROLS LEGEND	
DESIGNATION	DESCRIPTION
	THERMOMETER
	PRESS GAUGE & COCK
	FLOW SWITCH
	TEMPERATURE SENSOR
	MOTOR ACTUATOR
	ELECTRIC ACTUATOR
	PRESS/TEMP PORT



SEAL:

PROJECT TITLE:

FAIA
OFFICE RENOVATION
1117 Thomasville Road
Tallahassee, Florida

JOB NO.: 24.121

DESIGNED: JB

DRAWN: JB

CHECKED: JB

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REVISIONS:									

DRAWING PHASE:

100% Construction Documents

DRAWING TITLE:

Mechanical
Symbol Legend
and
General Notes

SHEET NO.:

M1.0

DATE:

August 18, 2025



JON BARBER, PE 55427 | BRIAN WALLACE, PE 75562
820 EAST PARK AVE, I-200, TALLAHASSEE, FL 32301
MFE-INC.COM | 850.681.6424

VENTILATION PROCESSING UNIT			
DESIGNATION		VPU-01	
SERVICE		100% OUTSIDE AIR	
AREAS SERVED		OFFICES	
CONFIGURATION		SIDE DISCHARGE	
PACKAGED or SPLIT		PACKAGED	
TYPE		HEAT PUMP, HGRH	
VENTILATION AIR, MAX.	CFM	1550	
VENTILATION AIR, MIN.	CFM	1000	
NOMINAL CAPACITY	TONS	12.5	
COOLING TOTAL CAPACITY	MBH	140.5	
COOLING SENSIBLE CAPACITY	MBH	70.6	
SENSIBLE HEAT RATIO	.	0.47	
COOLING DESIGN, AMBIENT	*F wb / *F db	95 / 80	
COOLING LEAVING AIR	*F wb / *F db	53 / 53	
REHEAT COIL CAPACITY	MBH	69	
REHEAT LEAVING AIR SET POINT	*F	68	
RELATIVE HUMIDITY	%	58	
HEATING CAPACITY - HEAT PUMP	MBH	81	
HEATING DESIGN, AMBIENT	*F wb / *F db	25 / 21	
HEATING ENTERING / LEAVING	*F db / *F db	25 / 75	
HEATING CAPACITY - AUXILIARY	MBH	68.4	
HEATING DESIGN, AMBIENT	*F wb / *F db	25 / 21	
HEATING ENTERING / LEAVING	*F db / *F db	25 / 55	
AUXILIARY HEAT CAPACITY / STAGES	KW / #	15.5 / 1	
FAN EXT. STATIC PRESSURE	IN W.G.	1	
FAN MOTOR SIZE	HP	1 HP	
COMPRESSOR # & TYPE		1, VARIABLE	
ELECTRICAL CHARACTERISTICS	V/Ø/HZ	208 / 3 / 60	
MIN. CIRCUIT AMPS	MCA	80.3	
MAX. CIRCUIT BREAKER	AMPS	125	
MANUFACTURER (BASIS OF DESIGN)		VALENT	
MODEL		VX-112-15A-1-F2	
SEER or IEER (MIN.)	BTUH/WATT-HR	**	
HSPF (MIN.) / COP	BTUH/WATT-HR	**	

- NOTES:
- SINGLE ZONE VAV, SUPPLY FAN WITH VFD.
 - OUTSIDE AIR FLOW RATE SHALL VARY BASED ON SCHEDULE
 - O/A DAMPER TO BE LOW LEAKAGE, FULLY MODULATING.
 - INTEGRAL NON-FUSED SERVICE DISCONNECT FOR SINGLE-POINT WIRING.
 - FILTER SECTION TO ACCOMMODATE 2" THICK MERV 13 FILTERS.
 - COMPRESSOR MOTOR SHALL BE PREMIUM EFFICIENCY, OPEN DRIP PROOF, AND RATED FOR VFD/INVERTER DUTY. ALL CONDENSER FANS TO BE ECM.
 - MICROPROCESSOR CONTROLLER WITH BUILT-IN LCD DISPLAY. PROVIDE REMOTE DISPLAY W/ CORD FOR INSTALLATION INSIDE MECHANICAL ROOM.
 - MODULATING HOT GAS REHEAT COIL.
 - ELECTRIC HEAT TO OPERATE AS BACKUP, NOT SUPPLEMENTAL. CONTROLLER TO PREVENT OPERATION OF HEATER AND COMPRESSOR.
 - HAIL GUARDS.
 - DOUBLE-WALL CASE WITH 2" INJECTED FOAM, MINIMUM R13.
 - COOLING COIL SECTION SHALL HAVE STAINLESS STEEL IAQ DRAIN PAN.
 - FACTORY PROVIDED BASE RAIL, 6" HIGH, FOR MOUNTING ON CONCRETE SLAB.
 - MFR STANDARD PAINT, MINIMUM 2,500-HR SALT SPRAY RATING.
 - INVERTER SCROLL COMPRESSOR ON LEAD CIRCUIT.
 - PROVIDE COMPARATIVE ENTHALPY ECONOMIZER.
 - PROVIDE INTERNAL AIRFLOW MONITOR, DIRTY FILTER SENSOR, & CONDENSATE OVERFLOW SWITCH.
 - PROVIDE STANDARD 1-YR PARTS & LABOR WARRANTY, PLUS 5-YR COMPLETE PARTS WARRANTY.
 - INCLUDE FACTORY STARTUP & 8 TOTAL HOURS OF OWNER TRAINING.

CONDENSATE PUMP SCHEDULE			
DESIGNATION		CPU-1	
SYSTEMS SERVED		BASEMENT	
MANUFACTURER		LITTLE GIANT	
MODEL		VCMA-20-PRO	
PUMP TYPE		CENTRIFUGAL	
FLOW RATE	GPH	42	
DYNAMIC HEAD	FT	15	
DISCHARGE SIZE	NPS	3/8" BARBED	
SHUT OFF HEAD	FT	20	
MOTOR ELECTRICAL CHARACTERISTICS	V/Ø/HZ	120/1/60	
MOTOR HORSEPOWER & CURRENT	HP (AMPS)	1/30 (1.5)	
OVERALL DIMENSIONS (LxWxH)	IN	10x5x7	

- NOTES:
- MOTOR SHALL INCLUDE THERMAL OVERLOAD, AND PERMANENTLY LUBRICATED BEARINGS.
 - MANUFACTURER STANDARD CONSTRUCTION.
 - INCLUDE ANTI-SWEAT SLEEVE.
 - RESERVOIR SHALL BE 1/2 GAL CAPACITY AND CONSTRUCTED OF ABS PLASTIC, AND INCLUDE FLOAT SWITCHES FOR PUMP ACTIVATION.
 - INCLUDE CHECK VALVE ON DISCHARGE AND 6" POWER CORD.

RANGE HOOD SCHEDULE								
TYPE	MODEL NO.	MOUNTING	LENGTH	DISCHARGE	RANGE ELECTRIC SHUT-OFF	FAN	UL LISTED	NOTES
RH-1	ACCUREX XRRS-W30-F-E-X	OVER COOKTOP	30 IN.	RECIRC. W/ CHARCOAL FILTER	YES	INTEGRAL	YES	115V, 15A BREAKER, S/S, SELF-CONTAINED FIRE SUPPRESSION SYSTEM, MANUAL PULL STATION

DX SPLIT SYSTEM SCHEDULE			
DESIGNATION		AHU-4 / HP-4	AHU-6 / HP-6
AREA SERVED		FIRST FLOOR CENTER	FIRST FLOOR SOUTH
TYPE UNIT		SPLIT HEAT PUMP	SPLIT HEAT PUMP
MANUFACTURER		TRANE	TRANE
CONDENSING UNIT MODEL		TWA090K3D	TWA090K3D
COMPRESSOR TYPE / QTY.		SCROLL / 2	SCROLL / 2
FAN COIL UNIT MODEL		TWE090K3D	TWE090K3D
COIL TYPE		DUAL CIRCUIT	DUAL CIRCUIT
SUPPLY AIR FLOW RATE	CFM	2400	3000
VENTILATION AIR FLOW RATE	CFM	450	180
FAN STATIC (EXTERNAL)	IN W.G.	1	1
FAN NOMINAL MOTOR SIZE	HP	2	2
TOTAL COOLING CAPACITY	MBH	90	90
ENTERING AIR TEMP	*F DB / *F WB	77.1°F / 65.2°F	77.1°F / 65.2°F
LEAVING AIR TEMP	*F DB / *F WB	55.5°F / 53.1°F	55.5°F / 53.1°F
IEER / EER	BTUH/WATT	14.1 IEER / 11.2 EER	14.1 IEER / 11.2 EER
HEATING CAPACITY (@ 47°F)	MBH	36.6	36.6
HEATING HSPF / COP	BTUH/WATT	3.4 COP	3.4 COP
ELECTRIC HEAT STRIP	KW	7.48	7.48
FCU-ELECTRICAL CHARACTERISTICS	V / Ø	208 / 3	208 / 3
FCU-FAN MIN CIRCUIT AMPS	AMPS	35	35
FCU-MAX. CIRCUIT BRKR	AMPS	35	35
CU-ELECTRICAL CHARACTERISTICS	V / Ø	208 / 3	208 / 3
CU-MIN. CIRCUIT AMPS	MCA	35	35
CU-MAX. CIRCUIT BREAKER	AMPS	45	45
SUCTION/LIQUID LINE SIZE (ID)	IN	2 @ 1-1/8" / 1/2"	2 @ 1-1/8" / 1/2"
NOTES/OPTIONS		ALL	ALL

- NOTES/OPTIONS:
- UNIT CONTROLS SHALL INCLUDE PROGRAMMABLE SMART THERMOSTAT, TRANE PIVOT, OR EQUAL TO WIRELESSLY CONNECT ALL SYSTEMS, PROVIDE SCHEDULING, AND OCCUPANT LIMITS AT THE THERMOSTAT.
 - ELECTRIC HEAT WITH INTERNAL CIRCUIT BREAKER PROTECTION.
 - INCLUDE SINGLE ZONE VARIABLE AIR VOLUME (SZVAV), VARIABLE SPEED FAN, WITH SYMBIO CONTROLLER.
 - INTERNAL FILTER RACK TO ACCEPT 2" MERV 13 FILTER.
 - PROVIDE SUPPORT BASE FOR VERTICAL AHU.
 - DUAL COMPRESSORS / DUAL CIRCUIT W/ SERVICE VALVES TO ISOLATE CIRCUITS
 - SINGLE-POINT POWER ENTRY KIT.
 - PROVIDE STANDARD 1-YR PARTS & LABOR WARRANTY, PLUS 5-YR COMPLETE PARTS WARRANTY.

FAN SCHEDULE			
DESIGNATION		EF-1	
AREA/ROOM SERVED & BUILDING		RESTROOMS	
SERVICE		TOILET EXHAUST	
MANUFACTURER		GREENHECK	
MODEL		G-080-VG	
TYPE		INLINE	
FAN CONSTRUCTION		ALUMINUM	
DRIVE TYPE		DIRECT	
AIR FLOWRATE DESIGN	CFM	1000	
DESIGN STATIC PRESSURE	IN	0.75	
DESIGN FAN SPEED	RPM	1667	
RADIATED SOUND POWER	SONES	7.6	
ELECTRICAL CHARACTERISTICS	V/Ø/HZ	120/1/60	
MOTOR POWER	HP or W	1/4 HP	
OPTIONS		2,3,4,5,6	
CONTROL NOTES		2	
PROJECT QTY.	# FANS	1	

- OPTIONS
- ALUMINUM GRILLE.
 - PREWIRED MOTOR DISCONNECT SWITCH, NEMA-1.
 - BACKDRAFT DAMPER.
 - COMPATIBLE WITH CONTINUOUS OPERATION.
 - VARI-GREEN MOTOR
 - FAN TO BE HUNG FROM ABOVE.
 - PROVIDE A PROGRAMMABLE, TIMER FOR EQUIPMENT SCHEDULING. INTERMATIC ET2705, OR EQUAL.
- CONTROL NOTES:
- FAN SHALL OPERATE VIA WALL SWITCH.
 - FAN WILL OPERATE DURING OCCUPIED HOURS VIA SCHEDULE, VIA RELAY TIMER.

EXISTING, RELOCATED - DX SPLIT SYSTEM SCHEDULE					
DESIGNATION		AHU-1 / HP-1	AHU-2 / HP-2	AHU-3 / HP-3	AHU-5 / HP-5
AREA SERVED		BASEMENT WEST HALF	BASEMENT SE CORNER	BASEMENT NE CORNER	FIRST FLOOR NORTH
TYPE UNIT		SPLIT HEAT PUMP	SPLIT HEAT PUMP	SPLIT HEAT PUMP	SPLIT HEAT PUMP
MANUFACTURER		TRANE	TRANE	TRANE	TRANE
CONDENSING UNIT MODEL		5TWA4060	5TWA4060	5TWA4060	5TWA4060
COMPRESSOR TYPE/STAGES		SCROLL	SCROLL	SCROLL	SCROLL
FAN COIL UNIT MODEL		5TEM4D06	5TEM4D06	5TEM4D06	5TEM4D06
SUPPLY AIR FLOW RATE	CFM	1725	1725	1725	1725
VENTILATION AIR FLOW RATE	CFM	325	185	230	180
FAN STATIC (EXTERNAL)	IN W.G.	0.8	0.8	0.8	0.8
FAN NOMINAL MOTOR SIZE	HP	-	-	-	-
TOTAL COOLING CAPACITY INSIDE	MBH	4-TON	4-TON	4-TON	4-TON
TOTAL COOLING CAPACITY OUTSIDE	MBH	5-TON	5-TON	5-TON	5-TON
SEER / EER	BTUH/WATT	-	-	-	-
HEATING CAPACITY (@ 47°F)	MBH	-	-	-	-
HEATING HSPF / COP	BTUH/WATT	-	-	-	-
ELECTRIC HEAT STRIP	KW @ 208V	7.2	7.2	7.2	3.6
FCU-ELECTRICAL CHARACTERISTICS	V / Ø	208 / 3	208 / 3	208 / 3	208 / 1
FCU-FAN MIN CIRCUIT AMPS	AMPS	6	6	6	6
FCU MCA	AMPS	32	32	32	29
FCU MOCP	AMPS	35	35	35	30
CU-ELECTRICAL CHARACTERISTICS	V/Ø/HZ	208 / 3	208 / 3	208 / 3	208 / 3
CU-MIN. CIRCUIT AMPS	MCA	22.8	22.8	22.8	22.8
CU-MAX. CIRCUIT BREAKER	AMPS	35	35	35	35
SUCTION/LIQUID LINE SIZE (ID)	IN	7/8 / 5/16	-	-	-
NOTES/OPTIONS		ALL	ALL	ALL	ALL

- NOTES/OPTIONS:
- ALL EQUIPMENT IN THIS SCHEDULE IS EXISTING AND ONSITE.
 - INSTALL EQUIPMENT IN NEW LOCATIONS; PROVIDE CONCRETE BASES FOR CONDENSING UNITS AND MAINTAIN MFR RECOMMENDED CLEARANCES; INSTALL NEW REFRIGERANT PIPING TO AIR HANDLER.
 - PROVIDE NEW SUPPORT BASE FOR VERTICAL AHU WITH ALLOWANCE FOR R/A PLENUM. INSTALL AIR HANDLERS IN A SECONDARY DRAIN PAN, COMPLETE WITH FLOAT SWITCH; REUSE EXTERNAL FILTER RACK TO ACCEPT 4" MERV 13 FILTER.
 - UNIT CONTROLS SHALL INCLUDE PROGRAMMABLE SMART THERMOSTAT, TRANE PIVOT, OR EQUAL TO WIRELESSLY CONNECT ALL SYSTEMS, PROVIDE SCHEDULING, AND OCCUPANT LIMITS AT THE THERMOSTAT.

DIFFUSER & GRILLE SCHEDULE					
TYPE	QTY	DESCRIPTION	MODEL	REMARKS	AIR PATTERN DAMPER
A	-	ARCHITECTURAL SQUARE PLAQUE SUPPLY AIR GRILLE	TITUS OMNI-AA	LAY-IN TYPE 3, SQUARE PLAQUE, ALUMINUM CONSTRUCTION, WHITE FINISH, 24x24 MODULE SIZE, WITH OPTIONAL FACTORY MOLDED INSULATION BLANKET. 6" ROUND NECK SIZE.	4-WAY NO
B	-	ARCHITECTURAL SQUARE PLAQUE SUPPLY AIR GRILLE	TITUS OMNI-AA	LAY-IN TYPE 3, SQUARE PLAQUE, ALUMINUM CONSTRUCTION, WHITE FINISH, 24x24 MODULE SIZE, WITH OPTIONAL FACTORY MOLDED INSULATION BLANKET. 8" ROUND NECK SIZE.	4-WAY NO
C	-	ARCHITECTURAL SQUARE PLAQUE SUPPLY AIR GRILLE	TITUS OMNI-AA	LAY-IN TYPE 3, SQUARE PLAQUE, ALUMINUM CONSTRUCTION, WHITE FINISH, 24x24 MODULE SIZE, WITH OPTIONAL FACTORY MOLDED INSULATION BLANKET. 10" ROUND NECK SIZE.	4-WAY NO
D	-	ARCHITECTURAL SQUARE PLAQUE SUPPLY AIR GRILLE	TITUS OMNI-AA	LAY-IN TYPE 3, SQUARE PLAQUE, ALUMINUM CONSTRUCTION, WHITE FINISH, 24x24 MODULE SIZE, WITH OPTIONAL FACTORY MOLDED INSULATION BLANKET. 12" ROUND NECK SIZE.	4-WAY NO
E	-	PERFORATED RETURN GRILLE	TITUS PAR	LAY-IN TYPE, 3/16" Ø HOLES ON 1/4" CENTERS, ALUMINUM CONSTRUCTION, WHITE FINISH, 24x24 MODULE SIZE, WITH OPTIONAL FACTORY MOLDED INSULATION BLANKET, 6" ROUND NECK SIZE	NA NO
F	-	PERFORATED RETURN GRILLE	TITUS PAR	LAY-IN TYPE, 3/16" Ø HOLES ON 1/4" CENTERS, ALUMINUM CONSTRUCTION, WHITE FINISH, 24x24 MODULE SIZE, WITH OPTIONAL FACTORY MOLDED INSULATION BLANKET, 8" ROUND NECK SIZE	NA NO
G	-	PERFORATED RETURN GRILLE	TITUS PAR	LAY-IN TYPE, 3/16" Ø HOLES ON 1/4" CENTERS, ALUMINUM CONSTRUCTION, WHITE FINISH, 24x24 MODULE SIZE, WITH OPTIONAL FACTORY MOLDED INSULATION BLANKET, 10" ROUND NECK SIZE	NA NO
H	-	PERFORATED RETURN GRILLE	TITUS PAR	LAY-IN TYPE, 3/16" Ø HOLES ON 1/4" CENTERS, ALUMINUM CONSTRUCTION, WHITE FINISH, 24x24 MODULE SIZE, WITH OPTIONAL FACTORY MOLDED INSULATION BLANKET, 12" ROUND NECK SIZE	NA NO
I	2	ARCHITECTURAL SQUARE PLAQUE SUPPLY AIR GRILLE	TITUS OMNI-AA	SURFACE-MOUNT, SQUARE PLAQUE, ALUMINUM CONSTRUCTION, WHITE FINISH, 12x12 MODULE SIZE, WITH OPTIONAL FACTORY MOLDED INSULATION BLANKET. 6" ROUND NECK SIZE.	4-WAY NO
J	1	PERFORATED RETURN GRILLE	TITUS PAR	SURFACE MOUNT. 3/16" Ø HOLES ON 1/4" CENTERS, ALUMINUM CONSTRUCTION, WHITE FINISH, 12X12 MODULE SIZE, WITH OPTIONAL FACTORY MOLDED INSULATION BLANKET, 6" ROUND NECK SIZE	NA NO
K	4	LINEAR SLOT DIFFUSER	GREENHECK XG-6610	LINEAR DIFFUSER, 48" LONG, ADJ. PATTERN CONTROLLERS, TAPE & SPACKLE, (3) 1" SLOTS, WHITE FINISH, UNIVERSAL PLENUM SIZE 10, 350 CFM	ADJ NO
L	4	LINEAR SLOT DIFFUSER	GREENHECK XG-6610R	RETURN LINEAR DIFFUSER, 48" LONG, NO PATTERN CONTROLLERS, TAPE & SPACKLE, (3) 1" SLOTS, WHITE FINISH, UNIVERSAL PLENUM SIZE 12, 350 CFM	N/A NO
M	6	LINEAR SLOT DIFFUSER	GREENHECK XG-6675T24-6	ALUMINUM, LAY-IN T-BAR, 4" WIDE GRID, ADJ. PATTERN CONTROLLER, 96" LONG, END CAP, (1) 3/4" SLOT, WHITE FINISH, UNIVERSAL PLENUM SIZE 6, 75 CFM	ADJ NO

DIFFUSER & GRILLE SCHEDULE					
TYPE	QTY	DESCRIPTION	MODEL	REMARKS	AIR PATTERN DAMPER
N	3	DUCT MOUNT SUPPLY GRILLE	TITUS 301FS	DUCT MOUNT, ALUMINUM CONSTRUCTION, 3/4" BLADE SPACING, SINGLE DEFLECTION, INDIVIDUALLY ADJ. BLADES, WHITE FINISH, 8x8	ADJ. YES
O	3	HIGH PRESS SUPPLY NOZZLE	UNICO SYSTEMS	WHITE, 2" ROUND NOZZLE WITH SOUND ATTENUATING HOSE.	NA NO
NOTES:					
1. COORDINATE FINISHES WITH ARCHITECT.					
2. ALL SUPPLY GRILLES WILL BE ADJUSTABLE AT TAKEOFF UOS.					

LAY-IN SUPPLY AIR GRILLE NECK SIZES	
AIR FLOW RANGE (CFM)	NECK SIZE SIZE (IN)
25-120	6"Ø
125-225	8"Ø
230-350	10"Ø
351-500	12"Ø
NOTES:	
1. EQUIVALENT SQUARE/RECT SIZES ARE ACCEPTABLE.	

LAY-IN RETURN/EXHAUST/TRANSFER AIR GRILLE CONNECTION SIZES (UOS)	
AIR FLOW RANGE (CFM)	NECK/DUCT CONNECTION SIZE (UOS) (IN)
0-100	6"Ø
101-175	8"Ø
176-300	10"Ø
301-450	12"Ø
451-750	14"Ø

VRF SYSTEM SCHEDULE		
DESIGNATION		FCU-7 / AC-7
ROOM SERVED		ELECTRICAL / IT ROOM
TYPE OF UNIT		WALL MOUNT COOLING ONLY
MANUFACTURER		MITSUBISHI
FAN COIL UNIT MODEL		PKA-AL12NL
CONDENSING UNIT MODEL		PUZ-AK12NL
SUPPLY AIR (LOW, MED, HIGH)	CFM	265, 290, 385
VENTILATION AIR	CFM	N/A
FAN STATIC (EXTERNAL)	IN	N/A
AHRI RATED COOLING CAPACITY	MBH	12.0
SEER	BTUH/WATT	21.3
RATED HEATING CAPACITY	MBH	N/A
UNIT ELECTRICAL CHARACT.	V/Ø/HZ	208/230 / 1 / 60
MINIMUM CIRCUIT AMPS	AMPS	16
BREAKER SIZE	AMPS	20
SUCTION/LIQUID LINE SIZE	IN	1/2" / 1/4"
MAX PIPING LENGTH	FT	165
FAN COIL DIMENSIONS (LxWxD)	IN	36X12X10
NOTES		1-3, 5-7
NOTES:		
1. VARIABLE INVERTER-DRIVEN COMPRESSOR, HIGH PRESSURE SWITCH, EXTERNAL SERVICES VALVES.		
2. INDOOR UNIT POWERED BY OUTDOOR UNIT.		
3. PROVIDE SIMPLE WIRED CONTROLLER		
4. CASSETTE TO HAVE CAPACITY TO LIFT CONDENSATE TO 33"		
5. INCLUDE MFR LINESET OF APPROPRIATE LENGTH.		
6. PROVIDE REFCO G0B1 II CONDENSATE PUMP W/ RESERVOIR & SENSOR TO OVERRIDE EQUIPMENT OPERATION ON HIGH CONDENSATE LEVEL.		
7. INCLUDE CONDENSER WALL BRACKET OR MOUNTING PAD.		



SEAL:

PROJECT TITLE:

FAIA
OFFICE RENOVATION
1117 Thomasville Road
Tallahassee, Florida

JOB NO.: 24.121

DESIGNED: JB

DRAWN: JB

CHECKED: JB

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Mechanical Schedules

SHEET NO.:

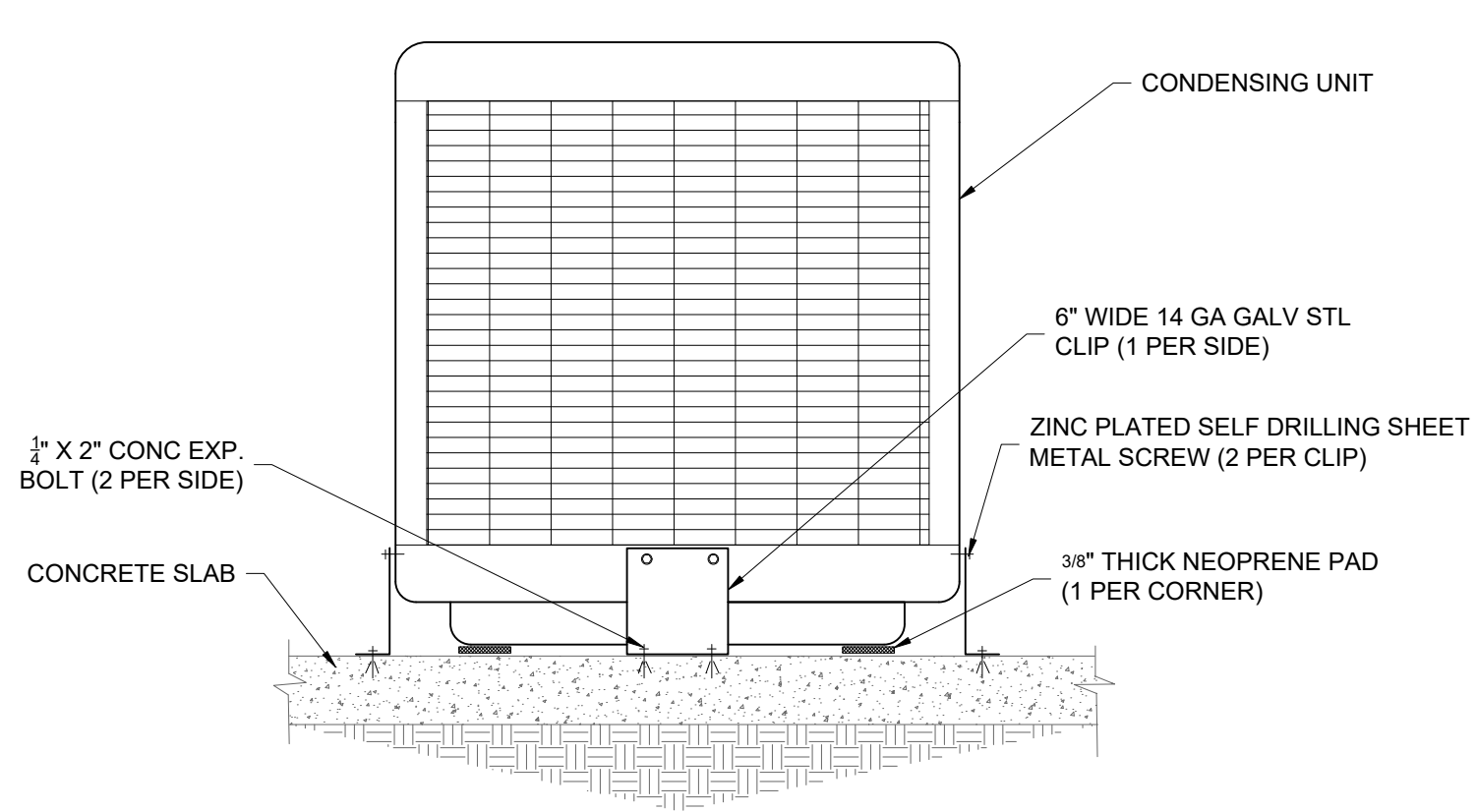
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August 18, 2025

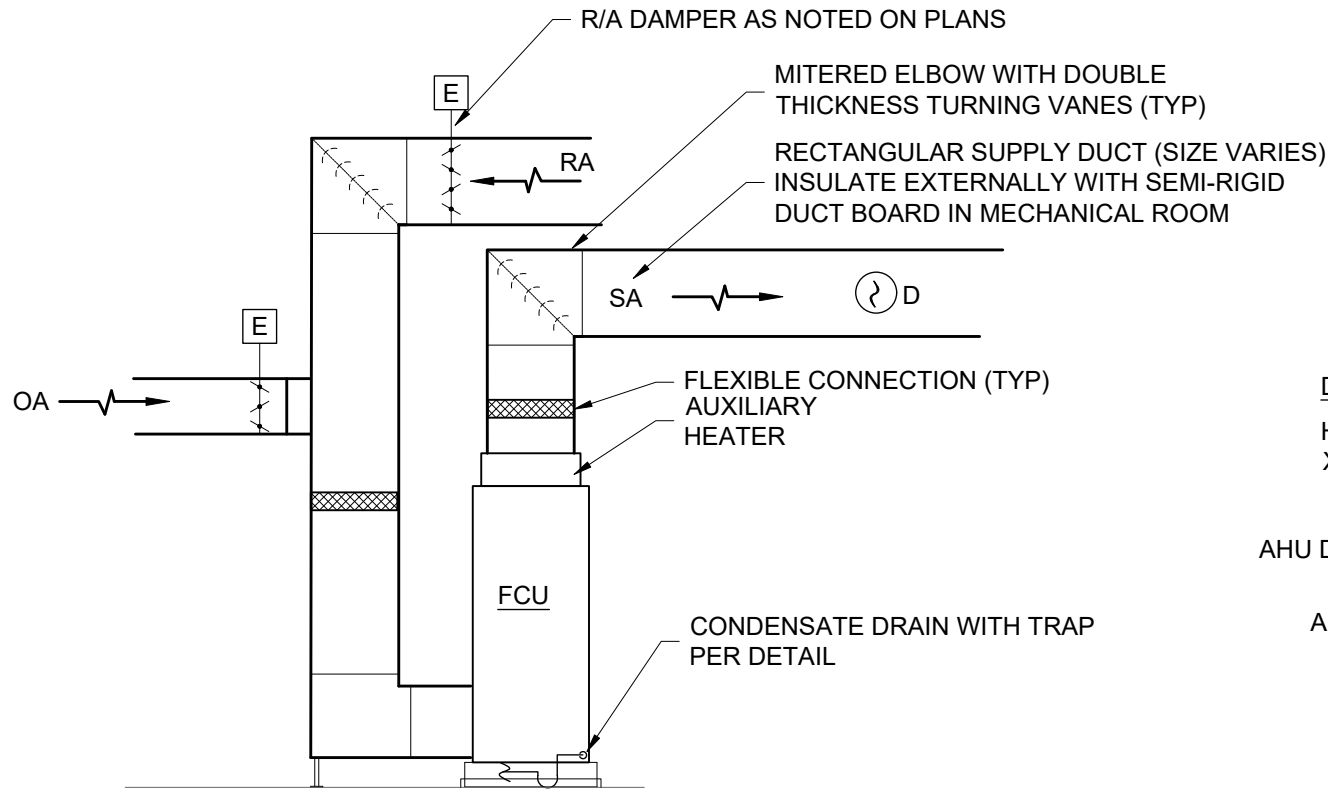


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820 EAST PARK AVE, I-200, TALLAHASSEE, FL 32301
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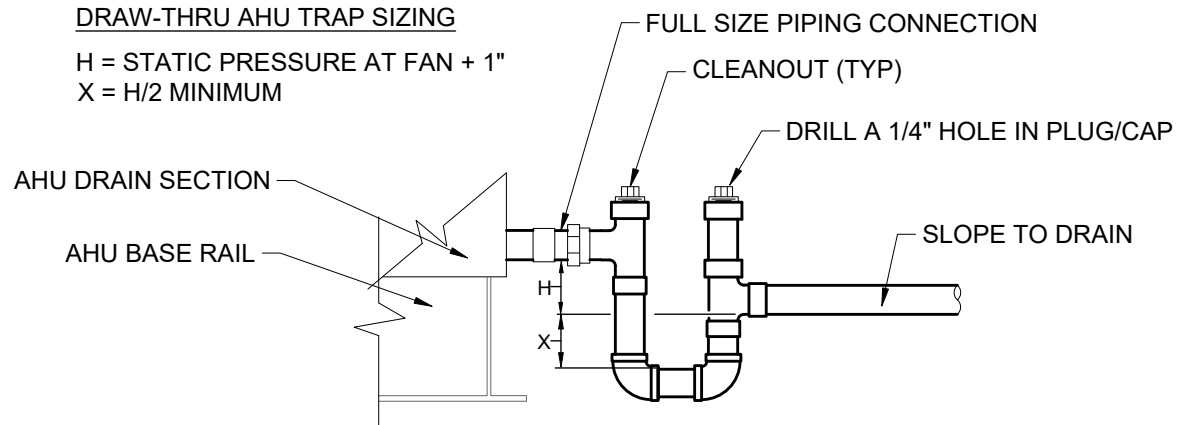
CONDENSING UNIT ANCHORING DETAIL

- NOTES:
1. PLACE UNIT ON 3/8" X 4" SQ. THICK NEOPRENE ISOLATION PADS, ONE AT EACH CORNER UNDER EACH SUPPORT/STANDOFF. USE ADDITIONAL PADS TO RAISE UNIT AS NEEDED TO MAKE THE SIDES PLUMB.
 2. SECURE UNIT TO CONCRETE WITH GALVANIZED STEEL CLIP ANGLES AS SHOWN. USE 1/4" X 2" LONG CONCRETE EXPANSION BOLTS IN CONCRETE AND HEAVY DUTY SHEET METAL SCREWS INTO UNIT CASING/CABINET.



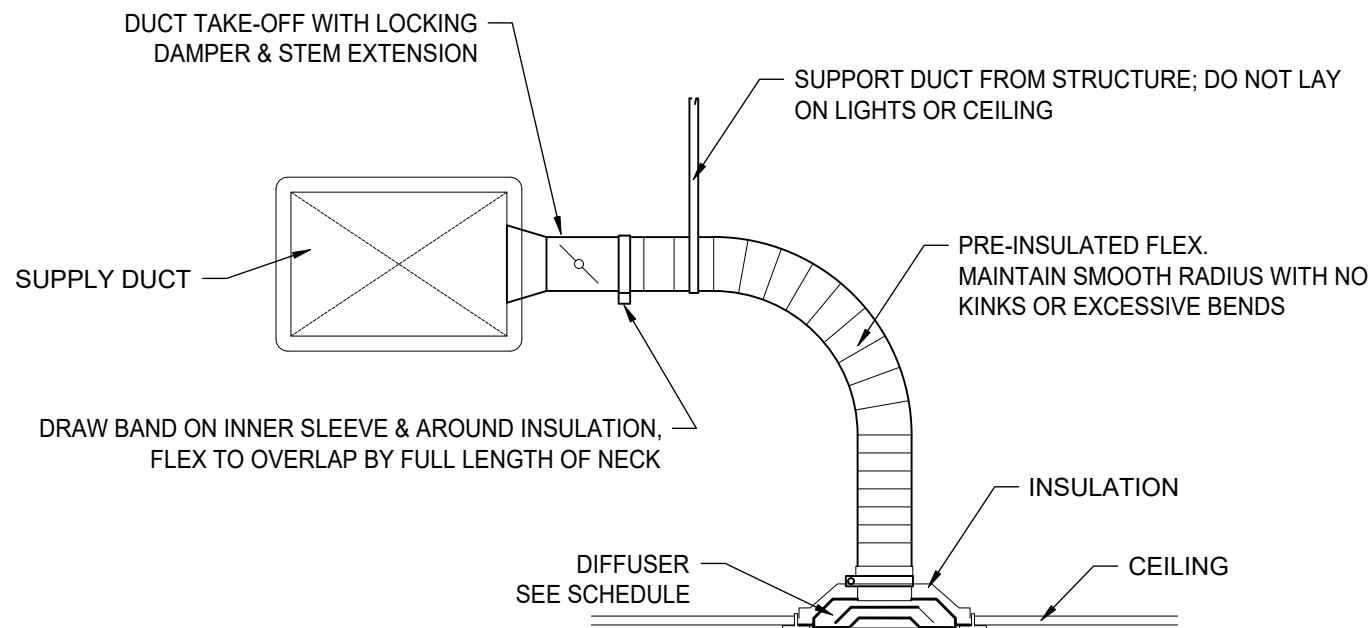
DX VERTICAL AIR HANDLER DETAIL

- SCALE: NTS
- NOTES:
1. LOCATE UNITS AND PROVIDE ACCESS PER THE MANUFACTURER'S RECOMMENDATIONS.
 2. MAINTAIN ACCESS FOR FILTER REMOVAL/REPLACEMENT.
 3. SEAL ALL DUCT/WALL PENETRATIONS SMOKE TIGHT.
 4. INSTALL SMOKE DETECTORS ON UNITS WITH >2000 CFM, OR WHERE INDICATED. DETECTORS ARE PROVIDED BY THE FIRE ALARM CONTRACTOR.
 5. PIPE CONDENSATE WITH P-TRAP TO STORM WATER SYSTEM.



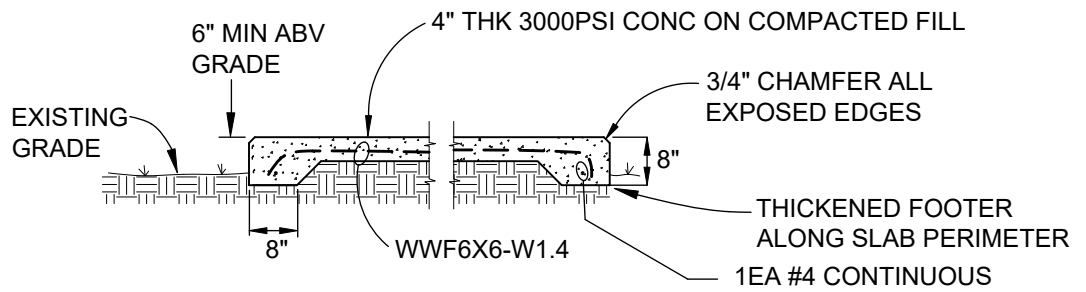
CONDENSATE P-TRAP DETAIL

- SCALE: NTS
- NOTES:
1. CONDENSATE PIPING SHALL BE FULL SIZE DWV OR TYPE L COPPER WITH CAST DWB OR PRESSURE SOLDER JOINTS.
 2. ROUTE CONDENSATE PIPING TO CONDENSATE DRAIN.
 3. SLOPE CONDENSATE PIPING 1/4" PER FOOT TOWARD DRAIN.
 4. INSULATE PIPING WITH ARMAFLEX



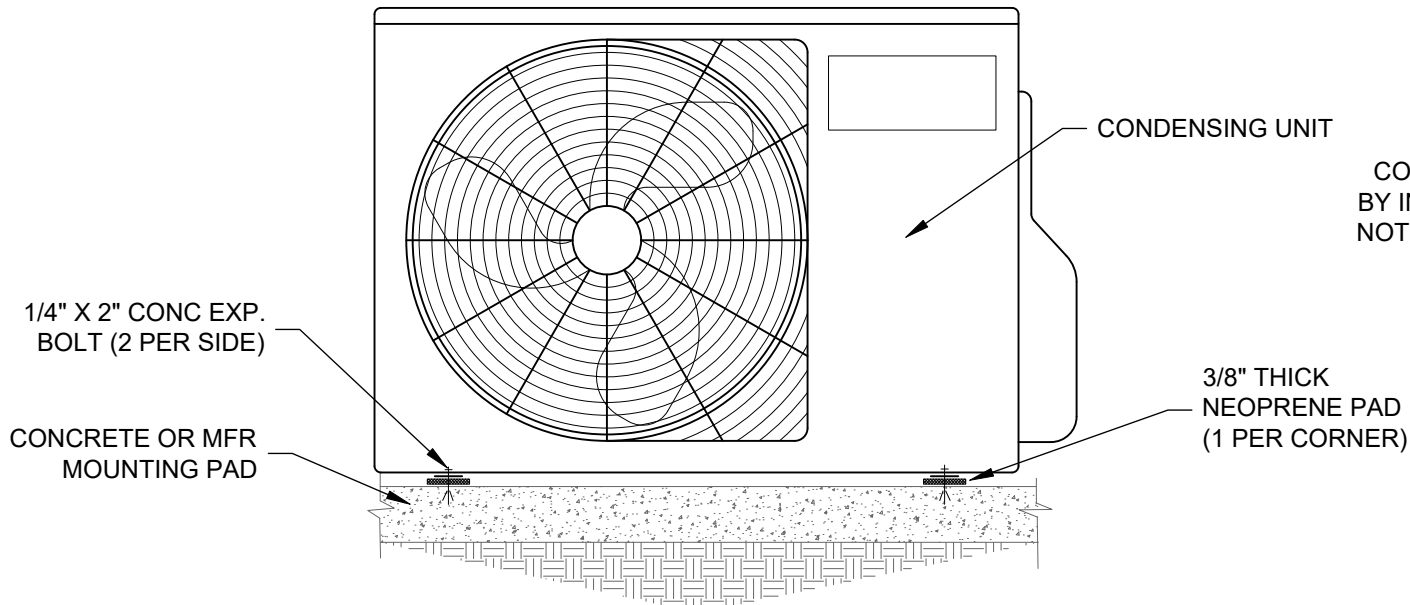
DIFFUSER INSTALLATION DETAIL

- NOTES:
1. FLEXIBLE DUCT SHOWN, BUT RECTANGULAR DUCT IS SIMILAR.
 2. SEAL INSULATION EDGES, SEAMS, JOINTS, ETC. WITH TAPE.
 3. EXHAUST DUCTS WILL NOT BE INSULATED, BUT GRILLE WILL HAVE FACTORY INSULATION.



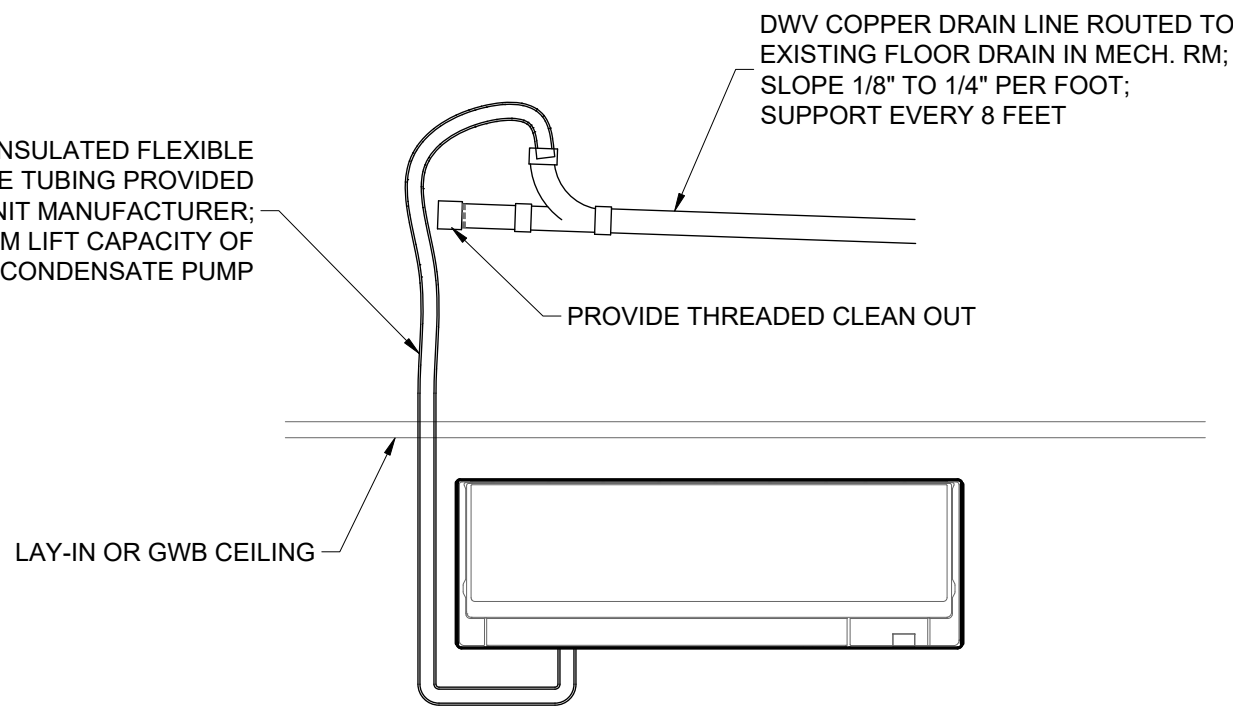
CONCRETE PAD (EXTERIOR) DETAIL

- SCALE: NTS
- NOTES:
1. USE 3000 PSI (MIN) CONCRETE PLACED ON COMPACTED FILL.
 2. DIMENSIONS OF PAD SHALL BE 6" WIDER THAN EQUIPMENT ON ALL SIDES.
 3. SECURE EQUIPMENT TO PAD WITH EXPANSION BOLTS PER THE MANUFACTURER'S RECOMMENDATIONS OR AS SPECIFIED.



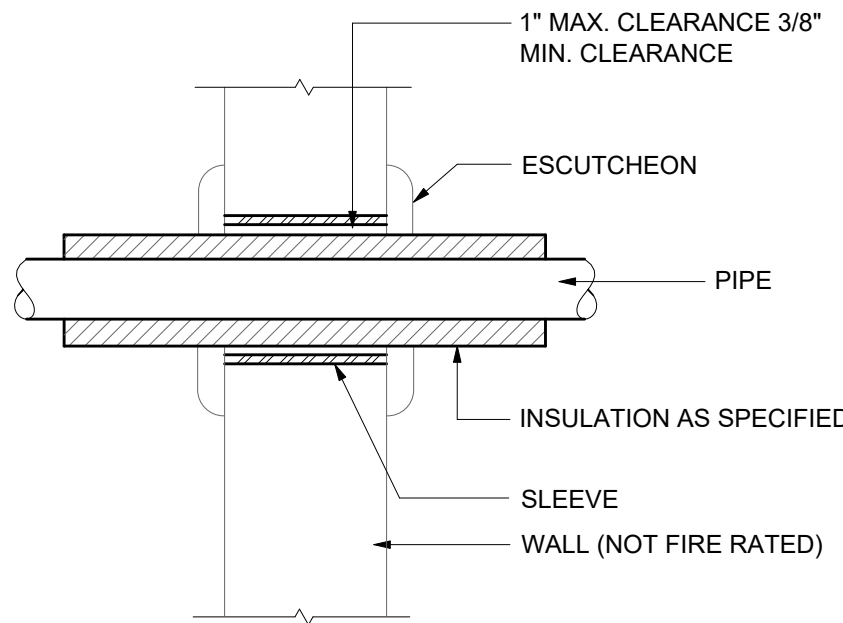
CONDENSING UNIT ANCHORING DETAIL

- SCALE: NTS
- NOTES:
1. PLACE UNIT ON 3/8" X 4" SQ. THICK NEOPRENE ISOLATION PADS, ONE AT EACH CORNER UNDER EACH SUPPORT/STANDOFF. USE ADDITIONAL PADS TO RAISE UNIT AS NEEDED TO MAKE THE SIDES PLUMB.
 2. SECURE UNIT TO PAD USING SUPPLIED MOUNTING POINTS. USE 1/4" X 2" LONG CONCRETE EXPANSION BOLTS IN CONCRETE.



INDOOR UNIT CONDENSATE REMOVAL

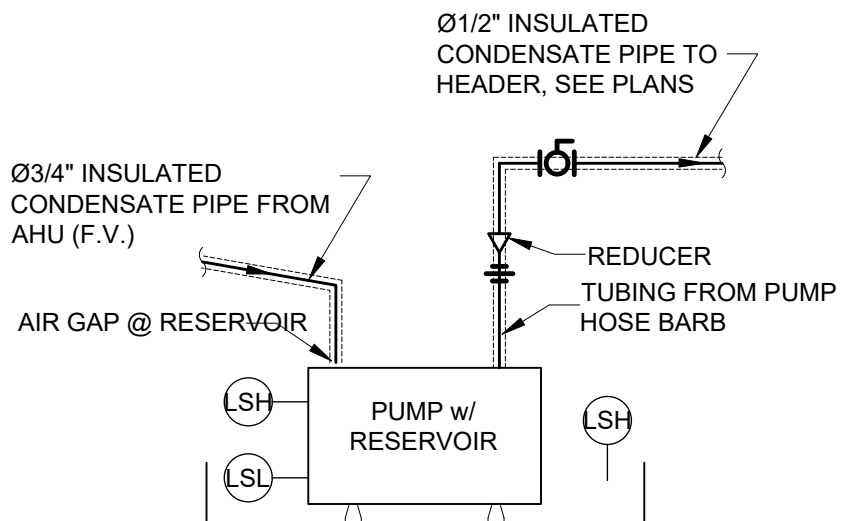
SCALE: NTS



NON-RATED WALL PENETRATION

SCALE: NONE

- NOTES:
1. SUBMIT MANUFACTURER'S UL LISTED APPROVAL FOR WALL SYSTEM AND RATING TO ARCHITECT/ENGINEER FOR REVIEW/APPROVAL.
 2. SEE PLAN FOR WALL RATINGS.
 3. INSTALL PRODUCTS IN STRICT ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS AND RATING.



CONDENSATE PUMP DETAIL

SCALE: NTS

- NOTES:
1. PUMP TO BE INSTALLED LEVEL ON FLOOR.
 2. SECURE PUMP TO PREVENT MOVEMENT.
 3. PUMP PACKAGE INCLUDES RESERVOIR FOR COLLECTING CONDENSATE, AND A CHECK VALVE.
 4. ON FAILURE OF THE PUMP, THE RESERVOIR SHOULD WILL OVERFLOW TO THE SECONDARY CONTAINMENT PAN AND TERMINATE AIR HANDLER OPERATION.
 5. THE LEVEL SWITCHES WILL AUTOMATICALLY START AND STOP THE PUMP
 6. THE INLET & OUTLET CONDENSATE PIPING SHALL BE INSULATED
 7. INLET PIPING TO PUMP SHALL MATCH THE CONDENSATE CONNECTION ON THE AHU.

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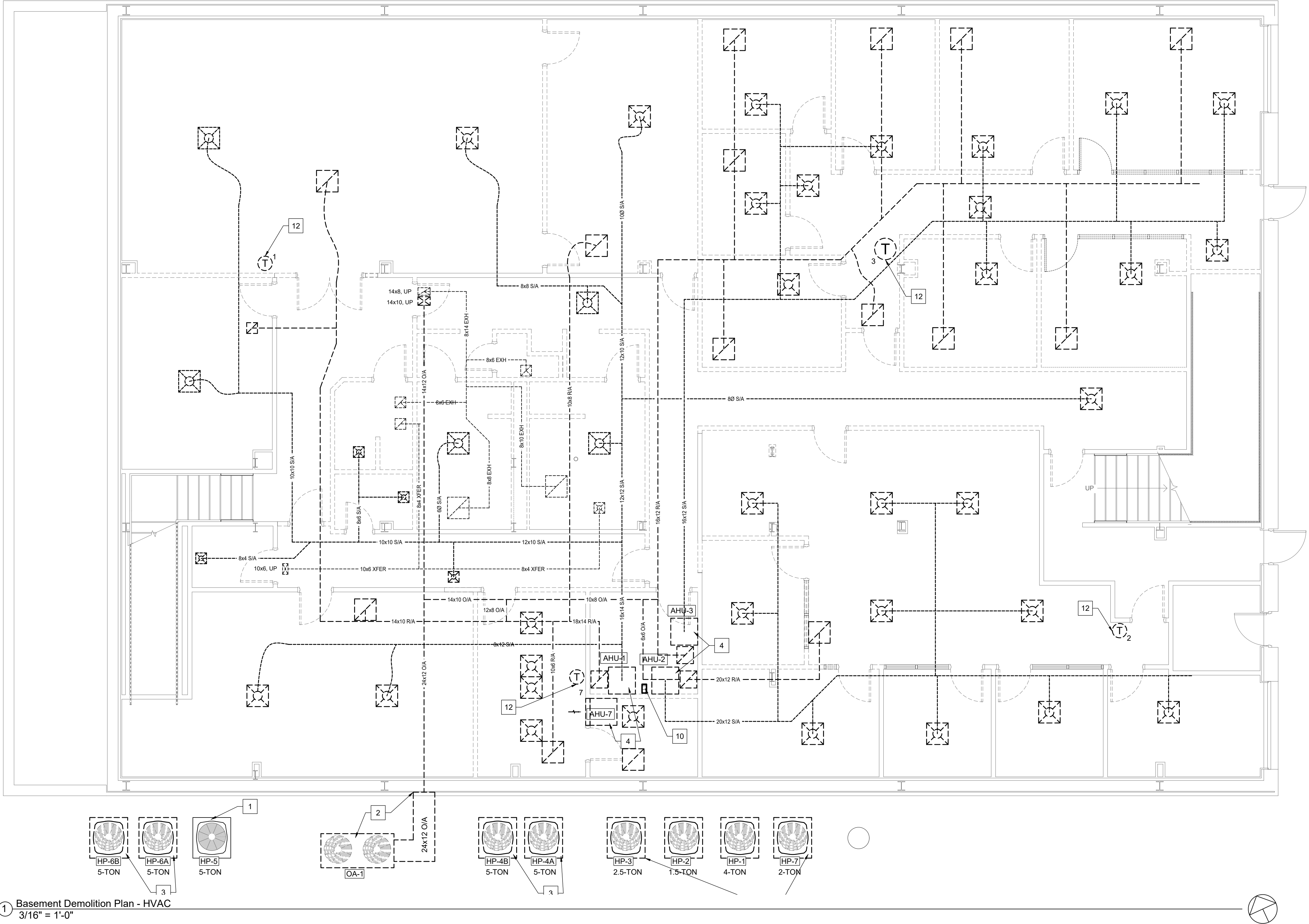
Mechanical Details

SHEET NO.:

M1.2

DATE:

August 18, 2025



① Basement Demolition Plan - HVAC
3/16" = 1'-0"

PLAN KEYNOTES - DEMOLITION MECHANICAL

ALL MECHANICAL SYSTEMS ARE TO BE DEMOLISHED, UNLESS NOTED OTHERWISE.

- 1 CONTRACTOR TO VERIFY THE LOCATIONS OF HP-5 & AHU-5 WILL COORDINATE WITH THE NEW WORK. THESE UNITS CAN REMAIN IN PLACE IF NO CHANGES ARE REQUIRED. VERIFY REFRIGERANT LINE SIZES MATCH MANUFACTURER REQUIRED LINED SIZES - LINES SHALL BE DEMOLISHED AND REPLACED IF THE SIZES ARE NOT CORRECT.
- 2 REMOVE THE ABANDONED VENTILATION UNIT. THE DUCT PENETRATION THROUGH THE WALL WILL BE REUSED. ADD A TEMPORARY BLANK OVER THE PENETRATION.
- 3 REMOVE CONDENSING UNITS AND BASES. THE FREON FROM ALL UNITS SHALL BE CAPTURED. REFRIGERANT LINES SHALL BE REMOVED.
- 4 REMOVE THE AIR HANDLERS IN THE MECHANICAL ROOMS.
- 5 HEAT PUMPS AND AIR HANDLERS HP-4A, HP-4B, HP-6A, HP-6B, AHU-4A, AHU-4B, & AHU-6A, & AHU-6B SHALL BE SALVAGED FOR REUSE. THESE UNITS WERE NEW IN 2025.
- 6 THE DUCT, FLEX, DAMPERS,, INSULATION, GRILLES & DIFFUSERS SHALL BE REMOVED. TYPICAL OF ALL.
- 7 THE TRANSFER AIR FROM THE FIRST FLOOR TO THE BASEMENT SHALL BE REMOVED. COVER THE OPENING IN THE FLOOR.
- 8 ALL FIRE DAMPERS ARE TO BE DEMOLISHED - THERE WILL BE NO RATED WALLS AFTER THE RENOVATION.
- 9 THE CONDENSATE PIPING FROM THE AIR HANDLERS TO THE FLOOR DRAIN IS TO BE REMOVED.
- 10 THE CONDENSATE PIPING FROM THE AIR HANDLERS TO THE CONDENSATE PUMP IS TO BE REMOVED. REMOVE CONDENSATE PIPING TO ABOVE CEILING AND CAP; PIPING WILL BE REUSED IN NEW WORK.
- 11 REMOVE THE EXHAUST FAN AND DUCT UP TO THE CONNECTION TO THE LOUVER; THE LOUVER WILL REMAIN IN SERVICE. ADVISE C.M. IF THE CONDITION OR INSTALLATION OF THE LOUVER ARE NOT ADEQUATE FOR CONTINUED SERVICE.
- 12 ALL HVAC CONTROLS - THERMOSTATS, SENSORS, CONTROLLERS, WIRING, ETC. - ARE TO BE REMOVED.

bki
ARCHITECTURE

BKJ, Inc., Architecture
1821 Physicians Dr.
Tallahassee, Florida 32308
(P) 850.524.3701 (F) 850.546.6150
www.bkjarchitecture.com
FL Architecture Corporation A200002280

SEAL:

PROJECT TITLE:

FAIA
OFFICE RENOVATION
1117 Thomasville Road
Tallahassee, Florida

JOB NO.: 24.121

DESIGNED: JB

DRAWN: JB

CHECKED: JB

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DRAWING TITLE:

**Demolition
Basement
HVAC Plan**

SHEET NO.:

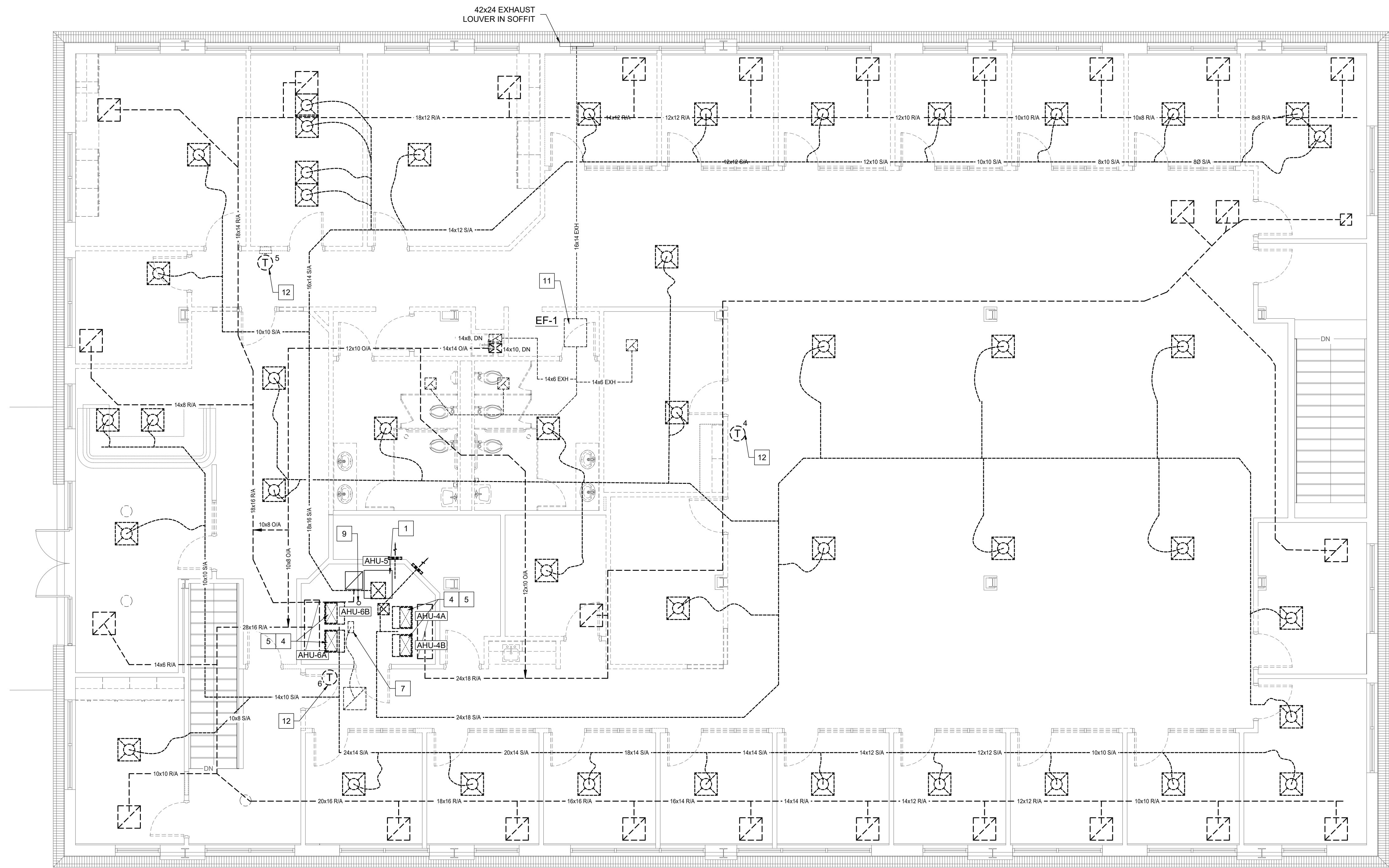
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DATE:

August 18, 2025

M F E **McGINNISS + FLEMING ENGINEERING**

JON BARBER, PE 55427 | BRIAN WALLACE, PE 75562
820 EAST PARK AVE, I-200, TALLAHASSEE, FL 32301
MFE-INC.COM | 850.681.6424



① First Floor Demolition Plan - HVAC
3/16" = 1'-0"

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bkj

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**Demolition
First Floor
HVAC Plan**

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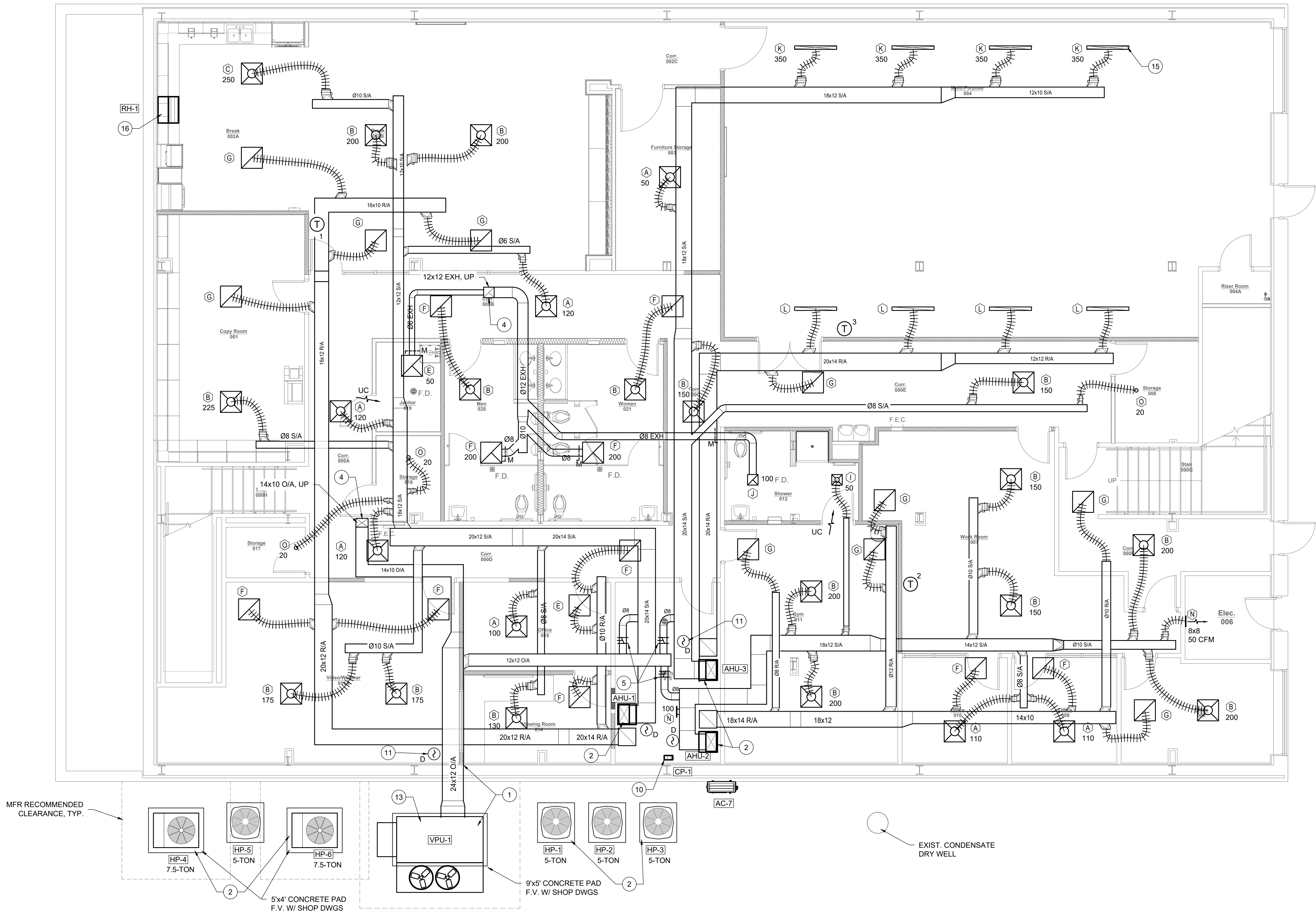
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MFE-INC.COM | 850.681.6424



1 Basement New Work Plan - HVAC
3/16" = 1'-0"

PLAN KEYNOTES - NEW WORK MECHANICAL

1. INSTALL VENTILATION PROCESSING UNIT OUTSIDE, NEAR LOCATION OF PREVIOUS EQUIPMENT. PROVIDE A NEW CONCRETE PAD; MAINTAIN SERVICE CLEARANCE; ROUTE SUPPLY DUCT THROUGH EXISTING WALL PENETRATION; MAKE PENETRATION WEATHER-TIGHT. CONNECT CONDENSATE PIPING INTO EXISTING SYSTEM & DRYWELL.
2. INSTALL NEW & EXISTING HEAT PUMPS IN OUTSIDE MECHANICAL AREA & MECHANICAL ROOMS. PROVIDE NEW REFRIGERANT PIPING. EXTERIOR INSULATION TO HAVE UV RESISTANT COATING.
3. INSTALL SUPPLY AIR, RETURN AIR, OUTSIDE AIR, AND EXHAUST DUCTS. INSTALL GRILLES AND DIFFUSERS IN THE CEILINGS; CONNECT FLEX BETWEEN DUCTS AND GRILLES & DIFFUSERS.
4. EXHAUST AIR AND OUTSIDE AIR DUCTS WILL PENETRATE THE FLOOR; COORDINATE LOCATION WITH WALLS & TRUSSES.
5. OUTSIDE AIR WILL CONNECT INTO THE SUPPLY AIR SIDE OF THE AIR HANDLERS IN 5 LOCATIONS. PROVIDE A GREENHECK ABD, AUTOMATIC AIR BALANCING DAMPER AT THESE LOCATIONS:
AHU-1, 8", 325 CFM
AHU-2, 8", 180 CFM
AHU-3, 8", 230 CFM
AHU-5, 8", 180 CFM
AHU-6, 8", 180 CFM
6. OUTSIDE AIR TO AHU-4 WILL CONNECT INTO THE RETURN DUCT. PROVIDE A MANUAL BALANCING DAMPER.
7. THE IT/ELECTRICAL CLOSET WILL HAVE COOLING VIA A DEDICATED MINI-SPLIT. INSTALL FAN COIL OVER THE DOOR. ROUTE INSULATED CONDENSATE TO ADJACENT MECHANICAL ROOM - DO NOT ROUTE PIPING OVER ELECTRICAL EQUIPMENT.
8. INSTALL IN-LINE EXHAUST FAN ABOVE THE CEILING - MAINTAIN ACCESS TO THE FAN. CONNECT DUCT TO EXISTING LOUVER. MAKE DUCT CONNECTION SELF-DRAINING AND WEATHER-TIGHT.

INSTALL AN ELECTRONIC TIMER IN THE FIRST FLOOR MECHANICAL ROOM.
9. ROUTE CONDENSATE PIPING TO EXISTING CONDENSATE DRAIN.
10. INSTALL CONDENSATE PUMP IN BASEMENT MECH ROOM. ROUTING PIPING FROM THE AIR HANDLERS TO THE PUMP RESERVOIR. CONNECT PIPING FROM THE PUMP DISCHARGE TO THE CONDENSATE PIPING ABOVE THE CEILING.
11. INSTALL DUCT DETECTORS (PROVIDED BY OTHERS) IN THE SUPPLY AIR SIDE OF ALL 6 AIR HANDLERS; INSTALL A DUCT DETECTOR IN THE OUTSIDE AIR DUCT FROM THE VPU.
12. INSTALL A REMOTE DISPLAY FOR THE VENTILATION UNIT IN THE FIRST FLOOR MECHANICAL ROOM.
13. VENTILATION UNIT LEAVING AIR TEMPERATURE WILL BE 68°F (ADJ) VIA HOT GAS REHEAT. SET THE SCHEDULE FOR OPERATION WITH THE OWNER - VPU SHALL BE ON WHEN THE BUILDING IS OCCUPIED. VPU AIR FLOW RATE WILL BE CONSTANT.

PROVIDE AN OVERRIDE BUTTON ON THE REMOTE DISPLAY FOR OPERATION FOR OCCUPANCY DURING NON-SCHEDULED HOURS.
14. SCHEDULE FOR THE EXHAUST FAN SHALL MATCH THE VPU. PROVIDE A PROGRAMMABLE TIME CLOCK IN THE FIRST FLOOR MECHANICAL ROOM. INSTALLED NEAR THE VPU REMOTE PANEL. THE FAN SHOULD NOT OPERATE IF THE VPU IS OFF. PROVIDE AN OVERRIDE BUTTON ON THE TIMER FOR OPERATION FOR OCCUPANCY DURING NON-SCHEDULED HOURS.
15. ADJUST PATTERN CONTROLLERS IN THE LINEAR DIFFUSERS TO PROVIDE EVEN AIR DISTRIBUTION IN THE SPACES.
16. INSTALL RECIRCULATING RANGE HOOD OVER COOKTOP IN BREAKROOM



SEAL:

PROJECT TITLE:

FAIA
OFFICE RENOVATION
1117 Thomasville Road
Tallahassee, Florida

JOB NO.: 24.121

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DRAWN: JB

CHECKED: JB

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**New Work
Basement
HVAC Plan**

SHEET NO.:

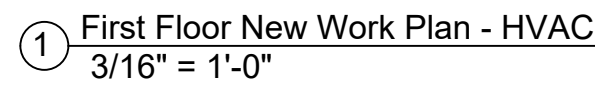
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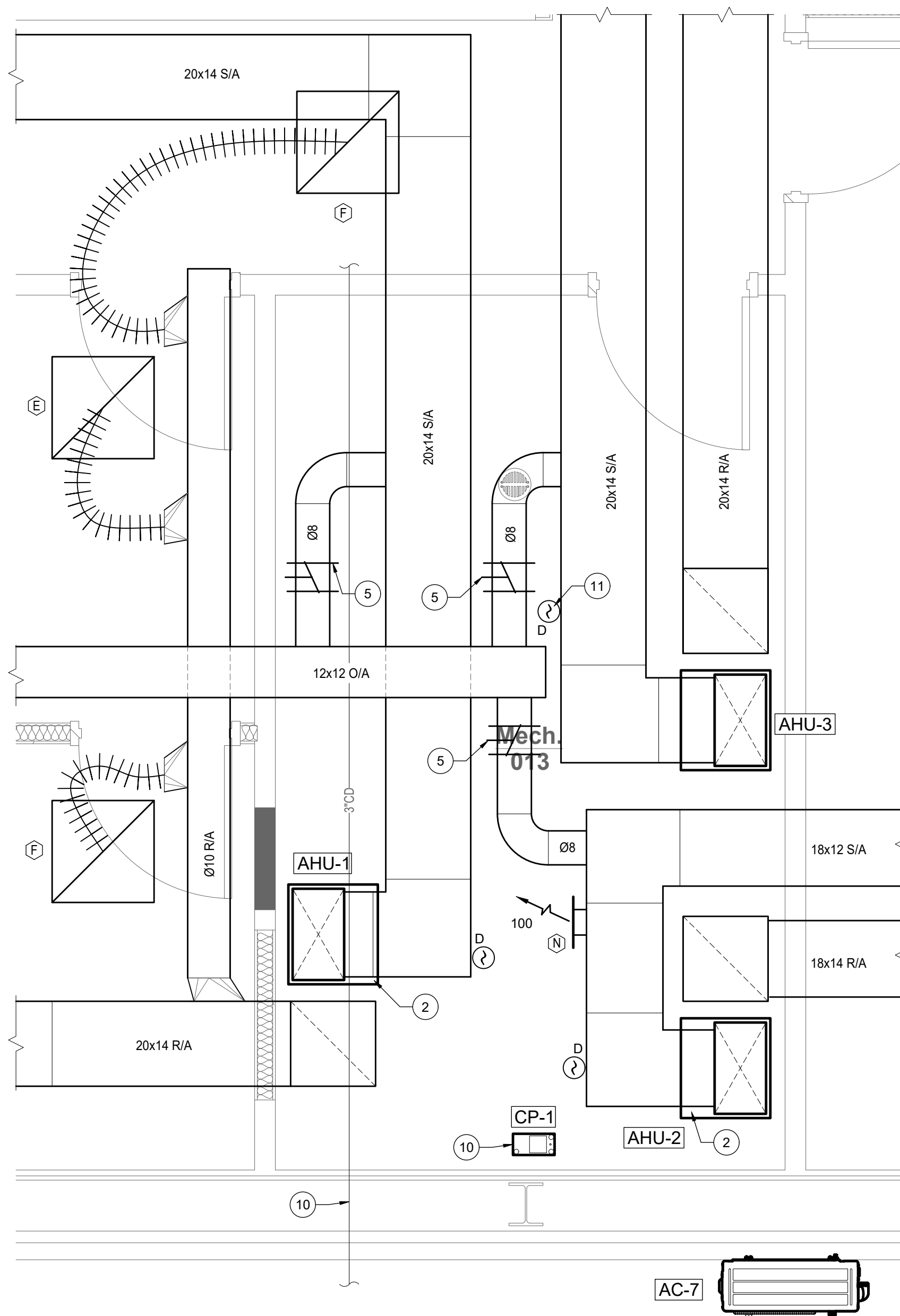
New Work First Floor HVAC Plan

SHEET NO.:

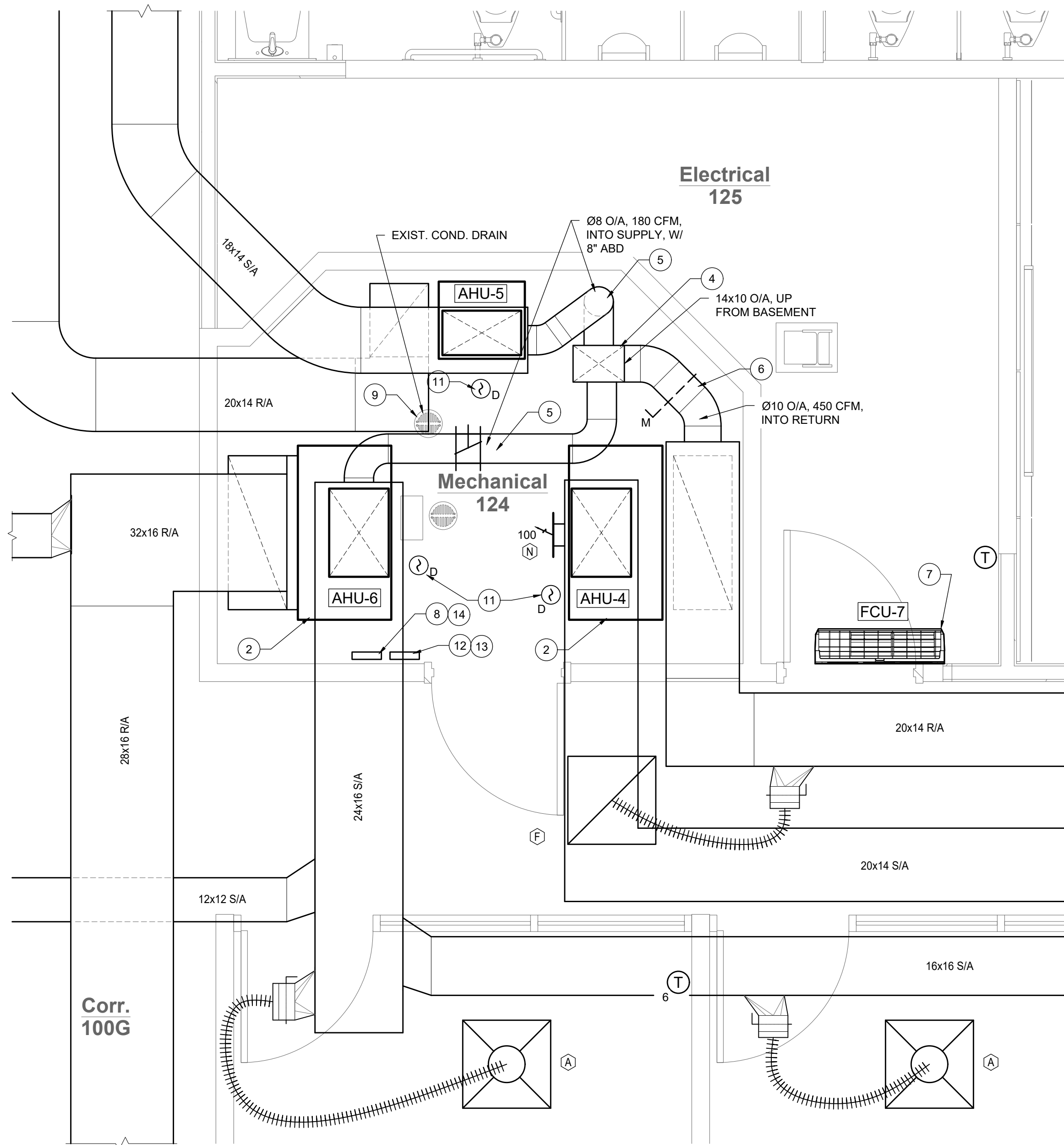
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DATE:

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1 Basement Mechanical Room Enlarged Plan
1/2" = 1'-0"



2 First Floor Mechanical Room Enlarged Plan
1/2" = 1'-0"

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New Work Enlarged Plans

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