

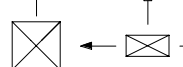





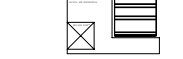

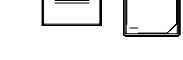
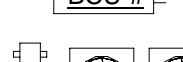
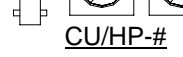


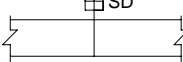
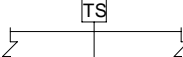
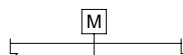


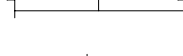


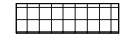






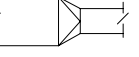
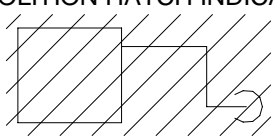



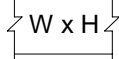
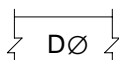




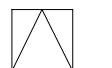
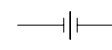
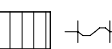
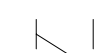
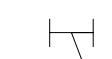

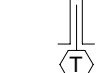



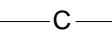
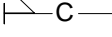
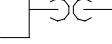
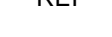




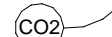



LEGEND		
ALL MAY NOT APPLY		
		SUPPLY DIFFUSER
		
OPTIONAL AIR DISTRIBUTION CORE STYLE (REFER TO MANUFACTURER FOR MORE OPTIONS)		
		RETURN GRILLE
		EXHAUST GRILLE
	AIR HANDLING UNIT (VERTICAL/HORIZONTAL)	
	CEILING RECESSED AIR HANDLER	
	WALL MOUNT AIR HANDLER	
	1 OR 4-WAY CEILING MOUNT CASSETTE AIR HANDLER	
	BC CONTROLLER	
	CONDENSING UNIT HEAT PUMP	
	CEILING MOUNTED EXHAUST FAN	
	MANUAL BALANCING DAMPER	
	DUCT MOUNTED SMOKE DETECTOR	
	DUCT MOUNTED TEMPERATURE SENSOR	
	DUCT MOUNTED MOTORIZED DAMPER	
	DUCT MOUNTED BACKDRAFT DAMPER	
	DUCT MOUNTED BAROMETRIC DAMPER	
	DUCT CONTINUES UP	
	THERMOMETER	
	PRESSURE GAUGE	
	DUCT HUMIDITY SENSOR	
	DUCT FLOW METER	
	MOTORIZED CONTROL VALVE	
	BALANCING VALVE	
	SHUT-OFF/ISOLATION VALVE	
	SA/RA TAKE-OFF WITH FLEX TAKE-OFF W/ DAMPER	
	SA/RA TAKE-OFF WITH RIGID DUCT TAKE-OFF W/ DAMPER	
	SQUARE TO ROUND	
		
DEMOLITION HATCH INDICATION		
EQUIPMENT, PIPE, DUCT, FITTINGS, ETC TO BE DEMOLISHED WILL BE INDICATED SPECIFICALLY OR BY HATCHED MARKING.		
AIR DISTRIBUTION DEVICE TAG		
	DEVICE TAG	
	AIRFLOW (CFM)	
	DEVICE SIZE	
SUPPLY/RETURN DUCT FIRST DIMENSION = WIDTH SECOND DIMENSION = HEIGHT		
		
SUPPLY/RETURN DUCT ROUND PIPE D=INSIDE DIAMETER DIMENSION		
		
	DEMOLITION KEYNOTE	
	KEYNOTE	
	CONNECT TO EXISTING AT THIS POINT	
	DEMOLISH BACK TO THIS POINT	
	ACCESS PANEL	
	UNION	
	FLEXIBLE CONNECTION	
	CHECK VALVE	
	STRAINER	
	PUMP	
	TEMPERATURE SENSOR	
	FD ► FIRE DAMPER	
	SD ► SMOKE DAMPER	
	FD/SD ► COMBINATION FIRE/SMOKE DAMPER	
	— C CONDENSATE DRAIN PIPE	
	└ C CLEAN-OUT IN CD	
	└ C CD TRAP (REFER TO DETAIL)	
	— REF — INSULATED REFRIGERANT LINES	
	T THERMOSTAT	
	S SENSOR - ZONE SENSOR	
	TS TEMPERATURE SENSOR	
	CO CARBON MONOXIDE SENSOR	
	CO2 CARBON DIOXIDE SENSOR	
	DG UC DOOR GRILLE AND 1' UNDERCUT	

ABBREVIATIONS					
ALL MAY NOT APPLY					
AHU	AIR HANDLING UNIT	EA	EXHAUST AIR	MBH	1,000 BTUS PER HOUR
BTU	BRITISH THERMAL UNIT	EAT	ENTERING AIR TEMPERATURE	MFG.	MANUFACTURER
CD	CONDENSATE	EF	EXHAUST FAN	OA	OUTSIDE AIR
CFM	CUBIC FEET PER MINUTE	ESP	EXTERNAL STATIC PRESSURE (In W.C.)	RA	RETURN AIR
CHWS	CHILLED WATER SUPPLY	EWI	ENTERING WATER TEMPERATURE	RAG	RETURN AIR GRILLE
CHWR	CHILLED WATER RETURN	EX	EXISTING	RND	ROUND
CRAH	COMPUTER ROOM AIR HANDLER	FD	FIRE DAMPER	RPM	REVOLUTIONS PER MINUTE
CRCU	COMPUTER ROOM CU	FPI	FINS PER INCH	SA	SUPPLY AIR
CHS	CONDENSING UNIT	GPM	GALLONS PER MINUTE	SD	SMOKE DAMPER
CWS	CHILLED WATER SUPPLY	HHWS	HEATING HOT WATER SUPPLY	SM	SURFACE MOUNTED
ΔP	DIFFERENCE IN PRESSURE	HHWR	HEATING HOT WATER RETURN	SS	STAINLESS STEEL
ΔT	DIFFERENCE IN TEMPERATURE	HP	HEAT PUMP	TSP	TOTAL STATIC PRESSURE
DB	DRY BULB TEMPERATURE (DEG. F)	HWS	HOT WATER SUPPLY	UNO	UNLESS NOTED OTHERWISE
DEG. F	DEGREES FAHRENHEIT	In W.C.	INCHES OF WATER COLUMN	V/PZ	VOLT/PHASE
DDC	DISTRIBUTED DIGITAL CONTROLS	LAT	LEAVING AIR TEMPERATURE	VFD	VARIABLE FREQUENCY DRIVE
DN	DOWN	LWT	LEAVING WATER TEMPERATURE	WB	WET BULB TEMPERATURE (DEG. F)

REFRIGERANT PIPING	
1.BELOW FINISHED FLOOR: COPPER TUBING - TYPE "K" SOFT ANNEALED TEMPER, NO JOINTS BELOW GRADE.	
2.ABOVE FINISHED FLOOR: COPPER TUBING - TYPE "L" HARD DRAWN TEMPER WITH WROUGHT COPPER FITTINGS AND BRAZED JOINTS AT 1100 DEG F; FLUX MATERIAL NOT ALLOWED.	
3.SUCTION LINES SHALL BE INSULATED WITH MINIMUM 3/4" ARMAFLEX INSULATION WITH TAPED JOINTS. INSULATION SHALL ALWAYS COMPLY WITH FBC-EC 403.2.10. HANGERS STRAPS OR SADDLES SHALL NOT COMPRESS INSULATION BELOW REQUIRED SIZE.	
4.EXTERIOR PIPING INSULATION SHALL BE PROTECTED FROM UV RADIATION. COVER ALL EXTERIOR REFRIGERANT LINES WITH ALUMINUM JACKET, INSTALLED TO SHED WATER AND SECURED WITH STAINLESS STEEL BANDS 12" O.C.	
5.SYSTEMS SHALL BE PLACED UNDER A VACUUM FOR REMOVAL OF NON-CONDENSABLES PRIOR TO BEING PUT INTO SERVICE.	
6.SYSTEMS SHALL BE PRESSURE TESTED USING NITROGEN PRIOR TO BEING PUT INTO SERVICE.	
7.PIPES SHALL BE SIZED BY THE EQUIPMENT MFG.	

CODE REFERENCE	
ALL MAY NOT APPLY	
THE LATEST EDITIONS OF THE ESTABLISHED STANDARDS OF THE FOLLOWING ORGANIZATIONS, AND INDIVIDUAL STANDARDS NAMED SHALL BE FOLLOWED THE SAME AS IF THEY WERE FULLY WRITTEN HEREIN AND CONSTITUTE A PART OF THE SPECIFICATION REQUIREMENTS EXCEPT WHERE OTHERWISE SPECIFIED:	
FBC, BUILDING FLORIDA BUILDING CODE 8TH EDITION	
FBC, MECHANICAL FLORIDA BUILDING CODE 8TH EDITION	
FBC, EXISTING BUILDING FLORIDA BUILDING CODE 8TH EDITION	
FBC, FUEL GAS FLORIDA BUILDING CODE 8TH EDITION	
FBC, ENERGY CONSERVATION FLORIDA BUILDING CODE 8TH EDITION	
FFPC FLORIDA FIRE PREVENTION CODE, 2023 8TH EDITION	
NFPA 13 STANDARD FOR THE INSTALLATION OF FIRE SPRINKLER SYSTEMS	
NFPA 51B STANDARD FOR FIRE PREVENTION DURING WELDING, CUTTING AND OTHER HOT WORK	
NFPA 54 NATIONAL FUEL GAS CODE	
NFPA 90A STANDARD FOR THE INSTALLATION OF AIR CONDITIONING AND VENTILATION SYSTEMS	
NFPA 90B STANDARD FOR THE INSTALLATION OF WARM AIR HEATING AND AIR CONDITIONING SYSTEMS	
NFPA 101 LIFE SAFETY CODE	
NFPA 101A GUIDE ON ALTERNATIVE APPROACHES TO LIFE SAFETY	
NFPA 101B CODE FOR MEANS OF EGRESS FOR BUILDINGS AND STRUCTURES	
NFPA 900 BUILDING ENERGY CODE	
ASTM AMERICAN SOCIETY FOR TESTING AND MATERIALS	
ANSI AMERICAN NATIONAL STANDARDS INSTITUTE	
ASME AMERICAN SOCIETY OF MECHANICAL ENGINEERS	
ADA AMERICAN WITH DISABILITIES ACT	
UL UNDERWRITERS LABORATORIES	
THESE CODE AND STANDARDS SHALL BE CONSIDERED A MINIMUM REQUIREMENT. THE CONTRACTOR SHALL NOT RELIEVED FROM PROVIDING HIGHER GRADE MATERIALS, PRODUCTS AND WORKMANSHIP WHICH MAY BE SPECIFIED WITHIN THESE DOCUMENTS.	

DUCTWORK SPECIFICATIONS	
1.SHEET METAL DUCTWORK	
1.1.DUCT MATERIAL CLASS "A" GALVANIZED STEEL OR ROLLED STEEL IN COMPLIANCE WITH SMACNA 205-3RD EDITION LOW/MEDIUM PRESSURE DUCT STANDARDS TABLE 1.1. DUCTS SHALL BE TESTED, VERIFIED AND RECORDED IN ACCORDANCE WITH ASHRAE 90.1-2013 REQUIREMENT BASED ON LEAKAGE RATE LESS THAN 4% PER 100SF OF DUCT.	
1.2.SEALER: LOW VOC MASTIC PAINT.	
2.GENERAL:	
2.1.LINES SHALL BE RUN STRAIGHT, LEVEL, PLUMB, AND ROUTED AS INDICATED IN THESE DRAWINGS. ALL LABELED DUCT DIMENSIONS ARE INTERNAL SIZES AND INDICATE FULL INSIDE CLEAR FREE AREA.	
2.2.MINOR MODIFICATIONS TO DUCT ROUTING DUE TO OBSTRUCTIONS OR COORDINATION WITH OTHER TRADES WILL BE FURNISHED WITHOUT ADDITIONAL COST TO THE OWNER. ANY CHANGES IN SIZE TO DUCTWORK MUST BE APPROVED BY THE ENGINEER PRIOR TO FABRICATION AND INSTALLATION.	
2.3.ALL MITERED RECTANGULAR DUCT 90 DEGREE ELBOWS SHALL BE PROVIDED WITH TURNING VANES.	
2.4.ALL SUPPLY, RETURN AND EXHAUST DUCTS SHALL BE EXTERNALLY INSULATED UNLESS OTHERWISE NOTED. INSULATION SHALL BE EQUAL TO JOHNS MANVILLE MICROLIGHT XL 2" THICK 0.75 PCF R6.0 OUT OF THE BOX WITH FSK VAPOR BARRIER. SEAL WITH FIRE RATED MASTIC SEAL PER UL-181A-MT AT ALL JOINTS AND SEAMS; OR APPROVED ACRYLIC FOIL PRESSURE SENSITIVE TAPE PER UL-181A-P APPLIED USING SQUEEGEE APPROVED METHOD AT JOINTS AND SEAMS. RUBBER BASE TAPES ARE NOT ALLOWED.	
2.5.DUCTBOARD IS NOT ALLOWED UNLESS SPECIFICALLY APPROVED BY THE ENGINEER OF RECORD.	
2.6.DUCTS SHALL HAVE MINIMUM INSULATION VALUES AS LISTED IN FBC-EC 403.2.9.1.	
3.FLEXIBLE DUCTS:	
3.1.DUCT TO AIR TERMINALS SHALL BE LIMITED IN LENGTH AS SHOWN IN DETAILS.	
3.2.SHALL BE UL LISTED AS A CLASS 1 AIR DUCT COMPLYING WITH UL STANDARD 181, NFPA 90A & 90B AND HAVE A FLAME SPREAD RATING OF NOT OVER 25 AND A SMOKE DEVELOPMENT RATING NOT OVER 50.	
3.3.SHALL HAVE A POSITIVE OPERATING PRESSURE OF 10" MINIMUM. FLEXIBLE DUCT SHALL HAVE BEEN TESTED FOR A MAXIMUM INTERNAL OPERATING TEMPERATURE OF 200° F UNDER CONTINUOUS OPERATION.	
3.4.SHALL BE RATED FOR A MINIMUM AIR VELOCITY OF 5000 FPM.	
3.5.INSULATION SHALL BE A MINIMUM OF 2" THICK 3/4 PCF DENSITY FIBERGLASS. SUPPLY DUCTS SHALL HAVE INSULATION WITH A MINIMUM R-VALUE OF 4.2, BUT R-6 FOR SUPPLY DUCT IN ATTIC AND OUTDOOR SPACES. OUTER LINER SHALL BE A BI-DIRECTIONAL FIBERGLASS REINFORCED METALIZED VAPOR BARRIER. FLEXIBLE DUCTWORK SHALL BE INSTALLED AS STRAIGHT AS POSSIBLE, AND SHALL BE ROUTED AND SUPPORTED WITHOUT FORMING CRIMPS OR OTHER AIR FLOW RESTRICTIONS.	
3.6.PROVIDE SQUARE TO ROUND ADAPTERS OR BOOTS TO CONNECT TO AIR DEVICE NECK WHERE REQUIRED. FLEXIBLE DUCT SHALL HAVE A FULL 10-YEAR WARRANTY.	
3.7 INNER LINER SHALL CONSIST OF A CPE CORE PERMANENTLY BONDED TO A COATED SPRING STEEL WIRE HELIX (MIN. .041" THICK).	
3.8.SHALL BE THERMAFLEX TYPE M-KE, FLEXMASTER TYPE 8M OR EQUAL.	
3.9 SHALL BE SUPPORTED SO THAT HORIZONTAL RUNS ARE STRAIGHT AND WITHOUT SAGS OR BENDS. SHEET METAL SADDLES SHALL BE PROVIDED AT ALL HANGERS FOR FLEX DUCTS TO PREVENT KINKING OF THE DUCTS AND EXCESSIVE COMPRESSION OF THE INSULATION.	

HVAC GENERAL NOTES	
1.ONLY NEW EQUIPMENT SHALL BE PROVIDED UNLESS INDICATED AS EXISTING TO REMAIN.	
2.ALL CONNECTIONS TO EQUIPMENT SHALL BE MADE WITH FLEXIBLE REGIONS FOR VIBRATION ISOLATION.	
3.ALL EQUIPMENT SHALL BE LABELED SO THAT USERS CAN IDENTIFY EACH PIECE OF EQUIPMENT. LABELS SHALL BE CONSISTENT WITH EQUIPMENT TAGS THAT ARE LISTED IN THE SCHEDULES WITHIN THESE DOCUMENTS. ANY ABOVE CEILING EQUIPMENT SHALL HAVE A LABEL PROVIDED ON THE CEILING ABOVE THE UNIT FOR EASE OF LOCATING BY MAINTENANCE PERSONNEL.	
4.ALL EQUIPMENT SHALL BE INSTALLED PER MANUFACTURERS WRITTEN INSTRUCTIONS AND RECOMMENDATIONS.	
5.INSTALL DUCTWORK AND PIPING AS HIGH AS POSSIBLE ABOVE CEILING.	
6.COORDINATE THE INSTALLATION OF DUCTWORK AND PIPING WITH ELECTRICAL EQUIPMENT SO THAT THE REQUIRED CODE CLEARANCES TO ELECTRICAL EQUIPMENT IS MAINTAINED.	
7.DUCTWORK AND PIPING INSTALLATIONS SHALL ALLOW FOR EQUIPMENT RECOMMENDED MAINTENANCE CLEARANCES. CONVENIENT ACCESS FOR REMOVAL OF FILTERS SHALL BE MAINTAINED.	
8.MATERIALS INSTALLED WITHIN A RETURN AIR PLENUM SHALL BE NONCOMBUSTIBLE.	
9.COORDINATE THE PLACEMENT AIR DISTRIBUTION EQUIPMENT WITH THE CEILING AND LIGHTING LAYOUT.	
10.THE CEILING DIFFUSERS SHALL BE 4-WAY THROW UNLESS OTHERWISE NOTED.	
11.AT THE ONSET OF TEST AND BALANCE ACTIVITIES PROVIDE NEW FILTERS TO ALL UNITS. DO NOT OPERATE UNITS WITHOUT FILTERS DURING CONSTRUCTION. SEAL ALL OPEN ENDED DUCTS DURING CONSTRUCTION.	
12.ENSURE ALL EQUIPMENT HAS BEEN CLEANED AT THE END OF THE PROJECT.	
13.DO NOT LOCATE AIR INTAKES CLOSER THAN 10 FEET FROM ANY VENT OR EXHAUST OUTLETS. ROUTE TOILET EXHAUST TO LOCATION SHOWN ON PLANS. WALL CAPS SHALL BE ALUMINUM CONSTRUCTION WITH BACKDRAFT DAMPER, BIRD AND INSECT SCREENS.	
14.PROVIDE FIRE DAMPER IF SHOWN ON PLANS, WHERE DUCT PENETRATES FIRE-RATED CONSTRUCTION. ATTACH 1/2" OR LARGER TEXT LABELING THE DAMPER ACCESS LOCATION(S).	
15.INSTALL DUCT MOUNTED SMOKE DETECTOR (FURNISHED BY DIVISION 26) IN SUPPLY AIR DUCT BEFORE ANY TAKE OFFS FOR AIR HANDLING UNITS WITH SUPPLY AIR CAPACITY OF 2000 CFM OR GREATER.	
16.WHERE FIRE, SMOKE, COMBINATION FIRE SMOKE DAMPERS CONTROL DAMPERS, VALVES, COILS OR OTHER DEVICE NEEDING ACCESS ARE INSTALLED, PROVIDE DUCT ACCESS DOORS. WHERE INSTALLED IN INACCESSIBLE LOCATIONS, PROVIDE CEILING/WALL ACCESS PANELS. PANELS LOCATED IN RATED ASSEMBLIES SHALL BEAR A UL RATINGS. COORDINATE LOCATION OF SUCH ACCESS WITH ARCHITECT PRIOR TO INSTALLATION.	
17.PROVIDE MEANS OF TEST AND BALANCE IN ALL TAKE OFF FITTINGS OF SUPPLY EXHAUST, RETURN SYSTEMS AND AT EACH POINT WHERE A BRANCH SERVES TWO OR MORE GRILLES, WHETHER SHOWN ON THE PLANS OR NOT.	
18.WHERE CONFLICTS BETWEEN LIGHT SWITCHES AND THERMOSTAT/HUMIDISTAT LOCATIONS, THE LIGHT SWITCH TAKES PRECEDENCE. CONTROLLERS SHALL BE MOUNTED ADJACENT AND WITHIN 48" AFF.	
19.EQUIPMENT AS PER SCHEDULED LIST OF ACCEPTABLE MANUFACTURERS:	
19.1. SPLIT A/C EQUIPMENT: LENNOX, TRANE, CARRIER, DAIKIN	
19.2. DOAS-HIGH % OA A/C EQUIPMENT: AAO, ADDISON, DESERT AIRE, COMPUAIRE	
19.3. AIR DISTRIBUTION: PRICE, METALAIR, TITUS	
19.4. FANS: PENNBERRY, GREENHECK, BROAN, PANASONIC, COOK	
19.5. LOUVERS: GREENHECK, RUSKIN, POTTORFF	

DESIGN CRITERIA	
BUILDING TYPE GROUP A, ASSEMBLY	
CLIMATE ZONE 2A, LEON COUNTY, FLORIDA	
OUTDOOR DESIGN CONDITIONS (SUMMER) 95 DEG Fdb, 76 DEG Fwb	
OUTDOOR DESIGN CONDITIONS (WINTER) 20 DEG Fdb	
INTERIOR DESIGN CONDITIONS 75 DEG F COOLING, 72 DEG F HEATING	
ENERGY COMPLIANCE METHOD TOTAL BUILDING PERFORMANCE	

CONDENSATE PIPING	
1.CONDENSATE DRAIN PIPING SHALL BE SCHEDULE 40 PVC WITH SOLVENT WELD FITTINGS.	
2.ALL CONDENSATE DRAIN PIPE SYSTEMS SHALL HAVE A BUILT TRAP AT EACH PIECE OF EQUIPMENT PER DETAILS.	
3.ALL LINES SHALL BE INSULATED WITH 1/2" ARMAFLEX FROM EQUIPMENT TO APPROVED DISPOSAL POINT OR OUTSIDE AT GRADE IN COMPLIANCE WITH FBC-M 307.2.1. OUTSIDE DISPOSAL AT EARTH SHALL BE MINIMUM 1 FOOT AWAY FROM BUILDING STRUCTURE AND FOUNDATION.	
4.TRAP AIR CONDITIONING CONDENSATE AND RUN TO LOCATION SHOWN ON PLANS. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE FIRST 12" OF CONDENSATE PIPE, INCLUDING TRAP. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONDENSATE PIPE AFTER 12" OF PIPE FROM THE UNIT, UP TO AND INCLUDING CONDENSATE TERMINATION.	
5.COVER ALL EXTERIOR CONDENSATE LINES WITH ALUMINUM JACKET, INSTALLED TO SHED WATER AND SECURED WITH STAINLESS STEEL BANDS 12" O.C.	
6.IF OTHERWISE UNSPECIFIED, TERMINATE CONDENSATE INTO STORM CONNECTION, OR ARCHITECT-APPROVED GRAVEL OR GREEN PATCH AT LEAST 12" AWAY FROM BUILDING.	
7.PROVIDE CONDENSATE SAFETY SWITCH AND UNIT SHUTOFF SEQUENCE IN THE EVENT OF CONDENSATE OVERFLOW OR BACKUP.	
8.CONDENSATE DRAIN SIZING (PER FBC-M TABLE 307.2.2)	
UP TO 20 TONS 3/4" DIAMETER 21 TO 40 TONS 1" DIAMETER 41 TO 90 TONS 1 1/4" DIAMETER 91 TO 125 TONS 1 1/2" DIAMETER 126 TO 250 TONS 2" DIAMETER 251 AND ABOVE SIZED BASED ON ACTUAL FLOW	

GENERAL NOTES	
1.THE ENGINEER SHALL NOT BE HELD RESPONSIBLE FOR ANY MISUSE AND/OR MISREPRESENTATION OF THIS SET OF DOCUMENTS.	
2.THE CONTRACTOR ASSUMES RESPONSIBILITY FOR THE USE OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL MAKE THEMSELVES AWARE OF PROJECT CONDITIONS AND OWNER REQUIREMENTS PRIOR TO PROCUREMENT OF EQUIPMENT AND SERVICES. CHANGES IN PROJECT COST WILL NOT BE GRANTED DUE TO FIELD CONFLICTS AND OR PROJECT CONDITIONS.	
3.THIS SET OF DRAWINGS AND SPECIFICATIONS SHALL NOT BE CONSIDERED A SET OF CONSTRUCTION DOCUMENTS UNLESS A SIGNATURE AND DATE ARE AFFIXED TO THE DRAWINGS AND SPECIFICATIONS BY THE ENGINEER OF RESPONSIBLE CHARGE OF THE GIVEN DISCIPLINE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED UNLESS EMBOSSED AND THE SHA AUTHENTICATION CODE MUST BE VERIFIED ON ELECTRONIC COPIES.	
4.CONFLICTS BETWEEN THIS SET OF DRAWINGS AND THE CONTRACT SPECIFICATIONS SHALL BE RESOLVED BY THE ENGINEER OF RECORD. THE CONTRACTOR DOES NOT HAVE THE AUTHORITY TO INTERPRET CONFLICTS AND RESOLVE ISSUES WITHOUT WRITTEN DIRECTION FROM THE ENGINEER OF RECORD.	
5.ANY CONFLICTS IN THE FIELD OR WITHIN THESE DOCUMENTS SHALL BE RECORDED AND PROVIDED TO THE ENGINEER OF RECORD ON THE CONTRACTOR'S STANDARD LETTERHEAD. WRITTEN DIRECTION RESOLVING CONFLICT WILL BE ISSUED BY THE ENGINEER OF RECORD.	
6.PRIOR TO INSTALLATION, COORDINATE AND ADJUST THE FINAL LOCATION OF ALL WALL MOUNTED DEVICES AND EQUIPMENT WITH ALL CASEWORK, SHELVING OR OTHER WALL MOUNTED FURNISHINGS.	
7.PLAN ARE DIAGRAMMATIC IN NATURE AND INTENDED TO SHOW THE GENERAL SCOPE OF THE WORK TO BE PERFORMED. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ALL DIMENSIONS.	
8.DUE TO THE SMALL SCALE OF THE DRAWINGS, AND TO UNFORESEEN JOB CONDITIONS, ALL REQUIRED OFFSETS, TRANSITIONS AND FITTINGS MAY NOT BE SHOWN BUT SHALL BE PROVIDED AT NO ADDITIONAL COST.	
9.THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AND EXISTING EQUIPMENT TO ENSURE THE EQUIPMENT SPECIFIED WILL WORK FOR THE SPACES PROVIDED. FINAL DIMENSIONS OF SYSTEMS SHOWN ON THESE PLANS SHALL BE COORDINATED IN THE FIELD. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR PROVIDING OFFSETS AND TRANSITIONS TO FIT IN SPACES PROVIDED AND AT NO COST TO THE OWNER.	
10.THE CONTRACTOR IS RESPONSIBLE FOR ANY SPECIAL REQUIREMENTS INVOLVED IN INSTALLING EQUIPMENT IN THE BUILDING. DISMANTLING AND REASSEMBLING OF ANY EQUIPMENT SHALL BE DONE AS REQUIRED TO BRING INTO THE BUILDING AND EQUIPMENT ROOMS.	
11.ALL WORK PERFORMED AS PART OF THIS PROJECT SHALL BE PERFORMED BY EXPERIENCED TRADESMEN WHO ARE TRAINED, EXPERIENCED, AND SKILLED IN THE TASKS INCIDENTAL TO THE PROJECT.	
12.ALL WORK SHALL COMPLY WITH APPLICABLE OSHA AND EPS REGULATIONS AND GUIDELINES.	
13.THE CONTRACTOR PERFORMING WORK ON THIS PROJECT WILL BE RESPONSIBLE FOR REGULARLY CLEANING THE WORK AREA OF ANY DEBRIS ASSOCIATED WITH THE WORK BEING PERFORMED. THE SITE SHALL BE CLEAN OF ALL CONSTRUCTION DEBRIS AT THE COMPLETION OF THE JOB, BEFORE FINAL PAYMENT IS MADE.	
14.REASONABLE PRECAUTIONS SHALL BE MADE FOR SAFETY AND HEALTH INCLUDING BUT NOT LIMITED TO WARNING SIGNS, SAFETY PRECAUTIONS, AND BARRICADES FOR PEDESTRIANS.	
15.COORDINATE ALL DEMOLITION, CLEANING, AND CONSTRUCTION WORK. CONTRACTOR SHALL PROVIDE OWNER A FULL CONSTRUCTION SCHEDULE.	
16.CONTRACTOR SHALL BE HELD TO PROVIDED SCHEDULE. THEY SHALL BE RESPONSIBLE FOR PROVIDING SUFFICIENT MANPOWER AND EQUIPMENT TO COMPLETE THE WORK IN THE TIME INDICATED.	
17.THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND SECURITY OF ALL EQUIPMENT AND MATERIALS. THE LOCATION OF STORAGE SHALL BE RESTRICTED SPECIFICALLY TO THE AREA ALLOTTED BY THE OWNER.	
18.ALL ITEMS INSTALLED UNDER THE SCOPE OF THIS PROJECT SHALL BE NEW, CLEAN, AND FREE OF DEFECTS.	
19.IF DRAWING CHANGES ARE NEEDED FOR INSPECTION DUE TO FIELD CHANGES MADE BY THE CONTRACTOR WITHOUT PRIOR APPROVAL OF THE ENGINEER AND AGREED UPON TERMS, THEN THE CONTRACTOR SHALL PAY HOURLY RATES TO THE ENGINEER OF RECORD FOR MAKING NECESSARY CHANGES.	
20.SUPPORTS, HANGERS, WIRING, AND PIPING SHALL BE INSTALLED IN A NEAT FASHION AND IN AN ORDERLY APPEARANCE.	
21.ALL ROOF EQUIPMENT SHALL BE SECURED TO STRUCTURE TO RESIST A 120 MPH WIND LOAD.	
22.PROTECT THE ROOF FROM DAMAGE WHENEVER ANY WORK ON THE ROOF IS REQUIRED.	
23.CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF ALL PARTITIONS LABELED WITH A SPECIAL LISTING ON THE ARCHITECTURAL PLANS. THIS INCLUDES FIRE, SMOKE ACOUSTICAL AND OTHER UL WALL OR CEILING ASSEMBLIES.	
24.STRUCTURAL PENETRATIONS INCLUDING BUT NOT LIMITED TO WALL, FLOOR, OR BEAM SHALL BE APPROVED BY THE STRUCTURAL ENGINEER. ALL BEAM SLEEVES AND REINFORCING APPROVED BY STRUCTURAL ENGINEER SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.	
25.CONTRACTOR SHALL GUARANTEE THE WORK AND MATERIALS FOR PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE. THIS GUARANTEE SHALL BE IN ADDITION TO THE WARRANTIES PROVIDED BY THE MATERIAL SUPPLIES AND MANUFACTURERS.	
26.VALUE ENGINEERING OR CHANGES TO PLANS MUST BE APPROVED BY THE ENGINEER OF RECORD AND RESUBMITTED THROUGH THE BUILDING DEPARTMENT PRIOR TO BEING INSTALLED.	

MECHANICAL SHEET INDEX		
SHEET NUMBER	SHEET NAME	
M0.1	HVAC NOTES & LEGENDS	
M1.1	FIRST FLOOR - HVAC	
M1.2	SECOND FLOOR - HVAC	
M3.1	SECTIONS - HVAC	
M5.1	HVAC DETAILS	
M5.2	HVAC DETAILS	
M6.1	HVAC SCHEDULES	

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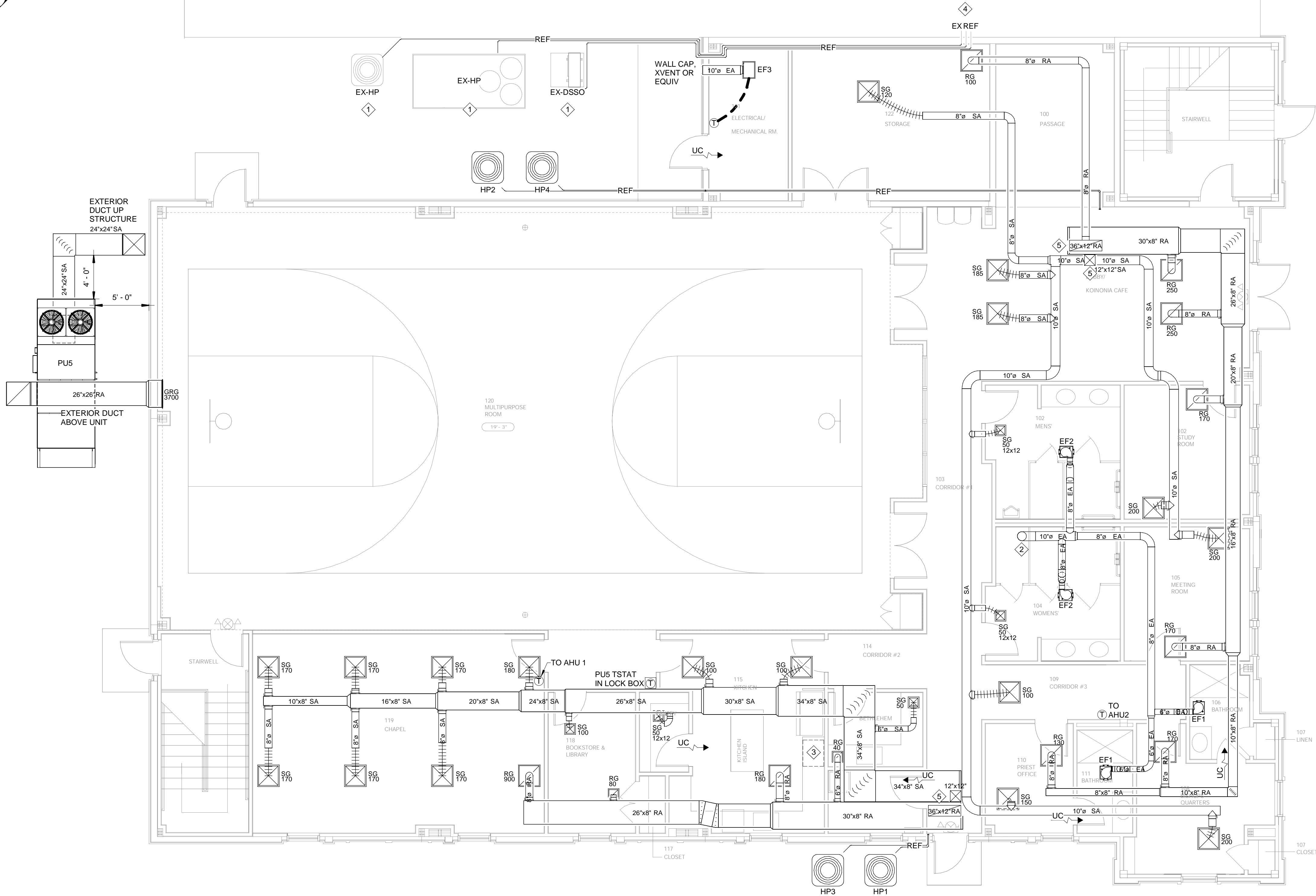
Robert E. Gelhardt II, P.E.
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FLORIDA
0500

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1
M3.1



1
M1.1

FIRST FLOOR - HVAC

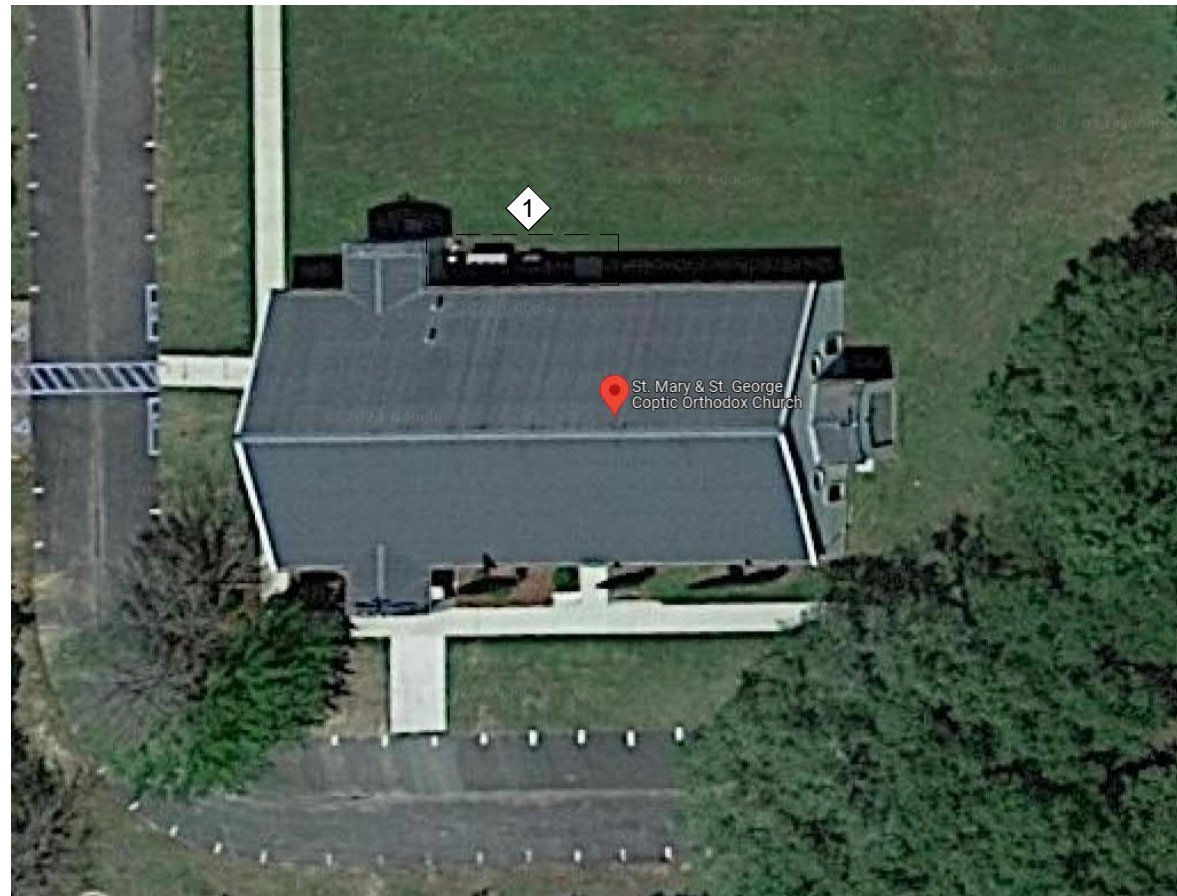
Scale: 3/16" = 1'-0"

HVAC GENERAL NOTES

- ROUTE DUCTS ALONG AND TROUGH TRUSS CAVITIES WHERE POSSIBLE. ROUTE DUCTS UNDERNEATH TRUSSES WHERE LARGER THAN 10"Ø. TRANSITION AS NEEDED TO AVOID BEAMS.
- ROUTE REFRIGERANT TO ASSOCIATED OUTDOOR UNIT. & ROUTE CONDENSATE TO HUB DRAIN LEADING TO SPLASH BLOCK OR DRY WELL.
- UNDERCUTS SHALL BE 1" PER FBC-M 601.6.

KEYED NOTES

- | | |
|---|---|
| 1 | RELOCATE EXISTING OUTDOOR UNITS TO THIS APPORXIMATE LOCATION. RE-INSTALL WITH NEW PAD. |
| 2 | UP TO EXHAUST CHASE ABOVE. |
| 3 | DUCTLESS RESIDENTIAL RECIRCULATION OVEN HOOD, LESS THAN 400CFM. CONTRACTOR SELECTED. |
| 4 | ROUTE REF FROM THE RELOCATED EXISTING OUTDOOR EQUIPMENT TO THE EXISTING INDOOR EQUIPMENT IN EXISTING BUILDING. ROUTE IN MOST DIRECT, LEAST INTRUSIVE PATH POSSIBLE, CONCEALED ABOVE CEILING OR IN FUR OUTS AS NEEDED. |
| 5 | DUCTS FROM UNIT ABOVE. |



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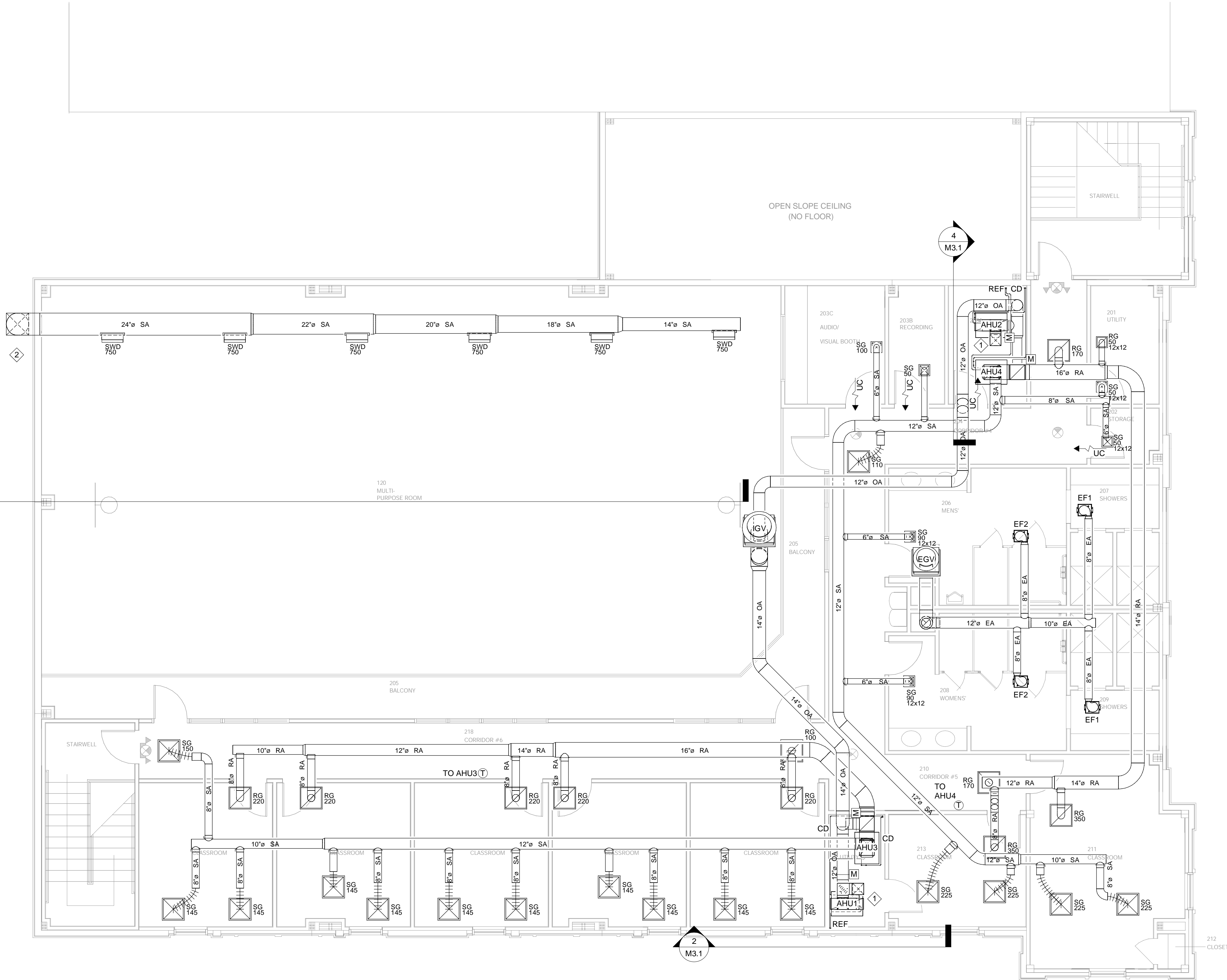
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PHASE
CONSTRUCTION DOCS

SHEET TITLE
FIRST FLOOR - HVAC

SHEET NUMBER
M1.1

1 SECOND FLOOR - HVAC
M1.2 Scale: 3/16" = 1'-0"



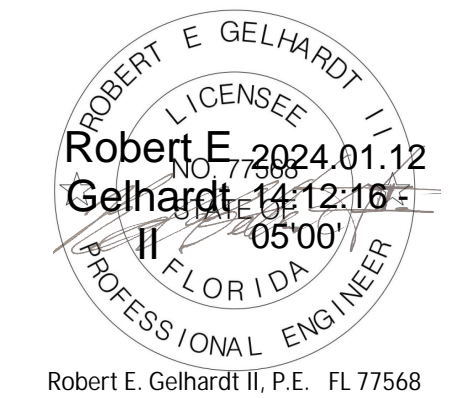
HVAC GENERAL NOTES

- ROUTE DUCTS AROUND BEAMS WHERE NECESSARY. DO NOT COMPROMISE STRUCTURAL ELEMENTS, TRANSITION DUCTS AS NEEDED TO AVOID CONFLICTS.
- ROUTE REFRIGERANT TO ASSOCIATED OUTDOOR UNIT, & ROUTE CONDENSATE TO HUB DRAIN LEADING TO SPLASH BLOCK OR DRY WELL (SHOWN ON FIRST FLOOR).
- MOUNT SWG'S IN HORIZONTAL POSITION (3 O'CLOCK).

KEYED NOTES

- AHU1+2 SHALL SERVE FIRST FLOOR SPACE. DUCT DOWN TO FIRST FLOOR THROUGH STRUCTURAL SHAFT.
- FROM UNIT BELOW, PENETRATE WALL TO SERVE AREA. PENETRATION PERIMETER SHALL BE SEALED AIR AND WATER TIGHT.

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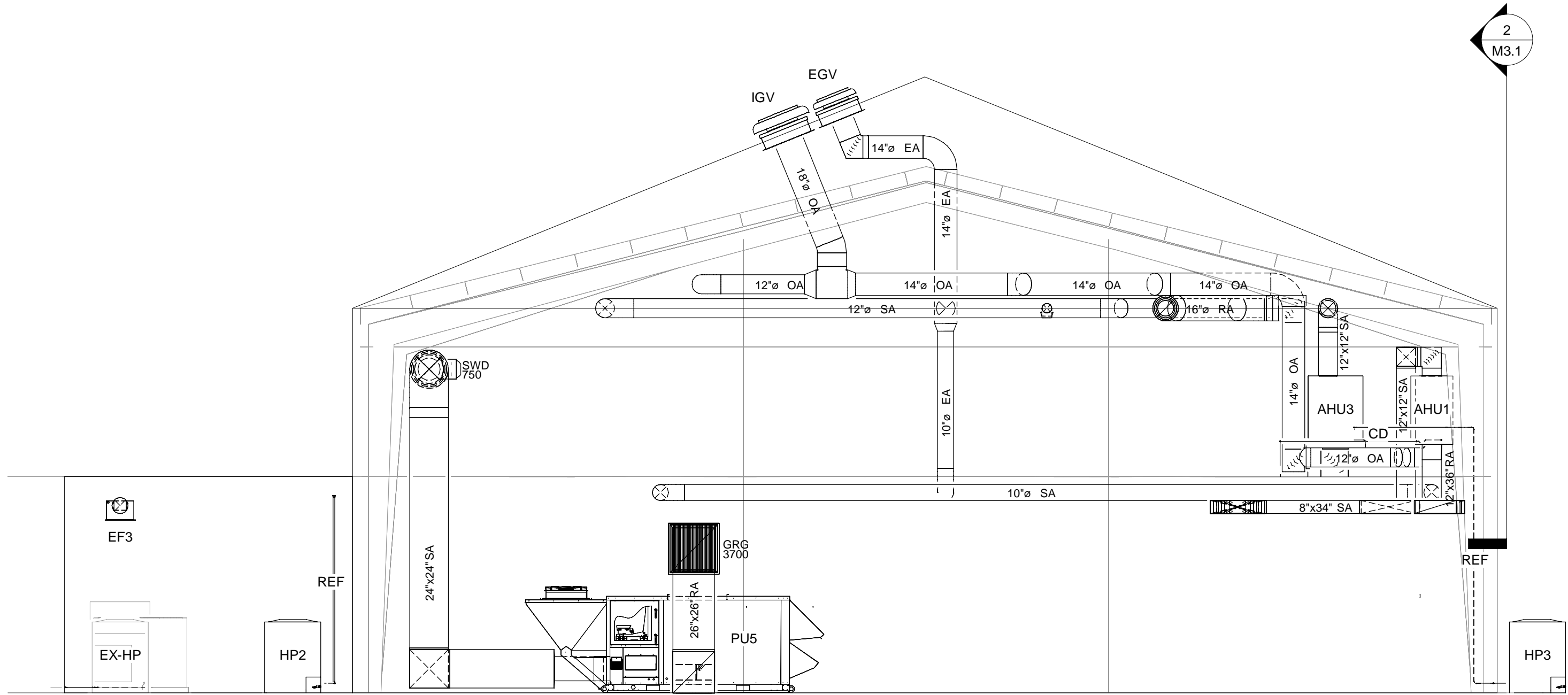
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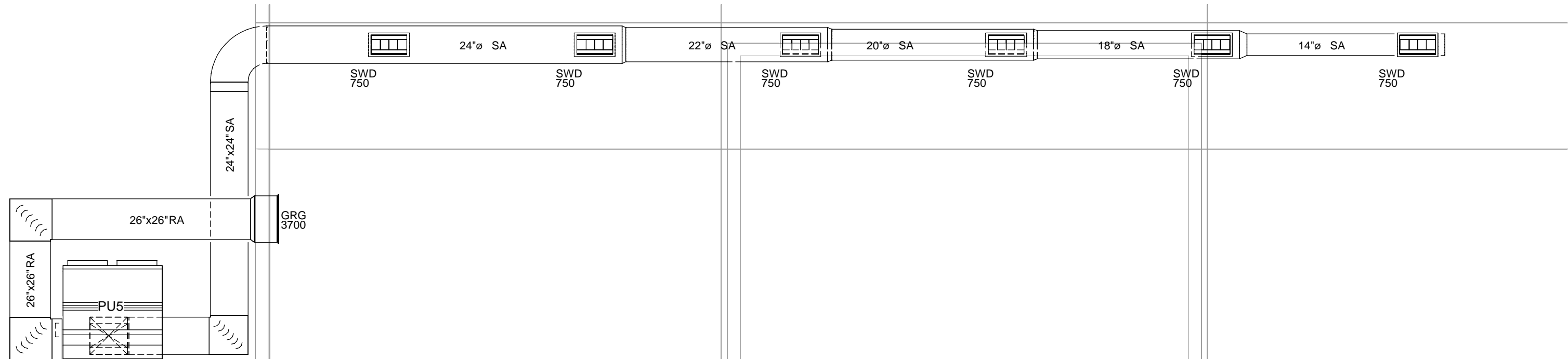
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CONSTRUCTION DOCS

SHEET TITLE
SECOND FLOOR -
HVAC

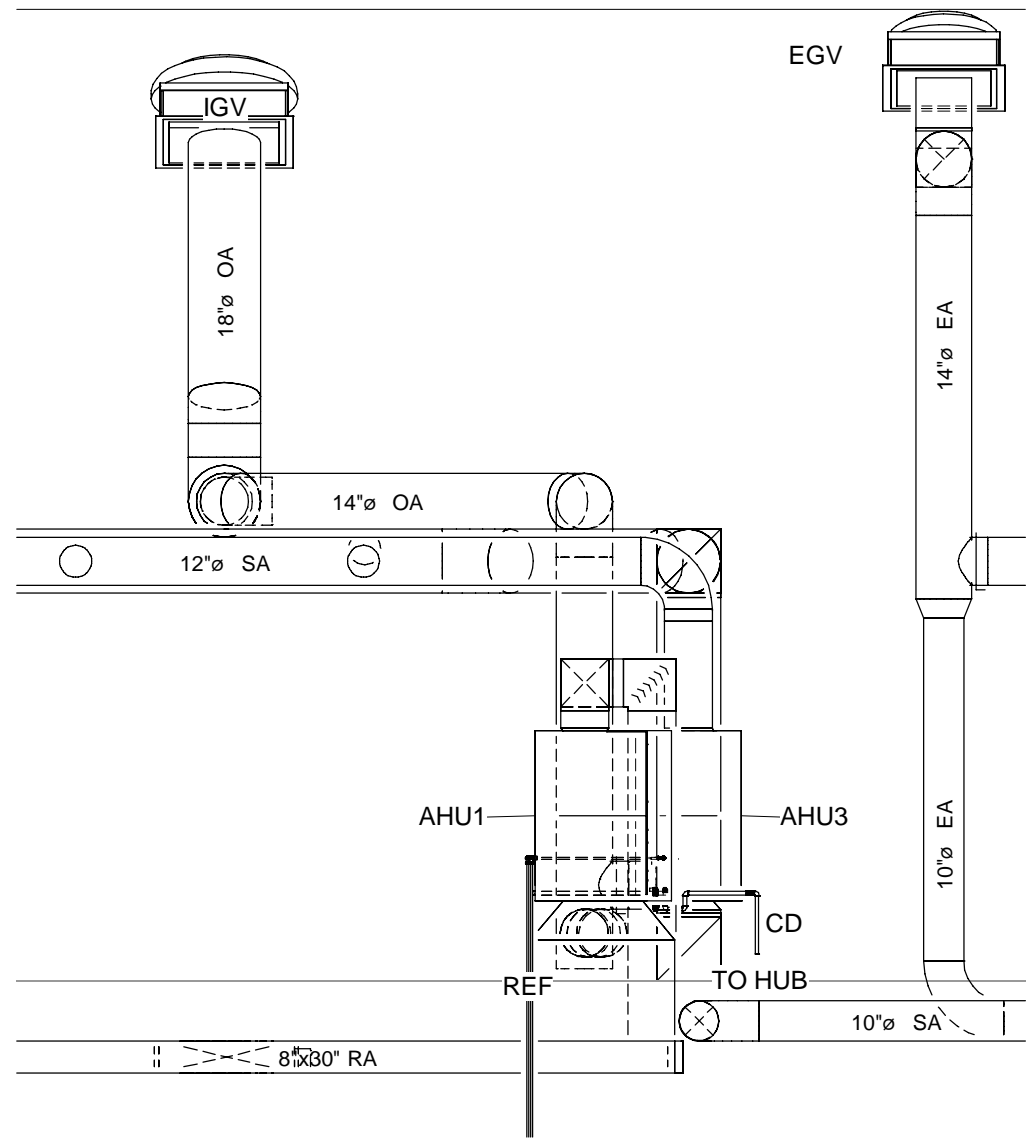
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M1.2



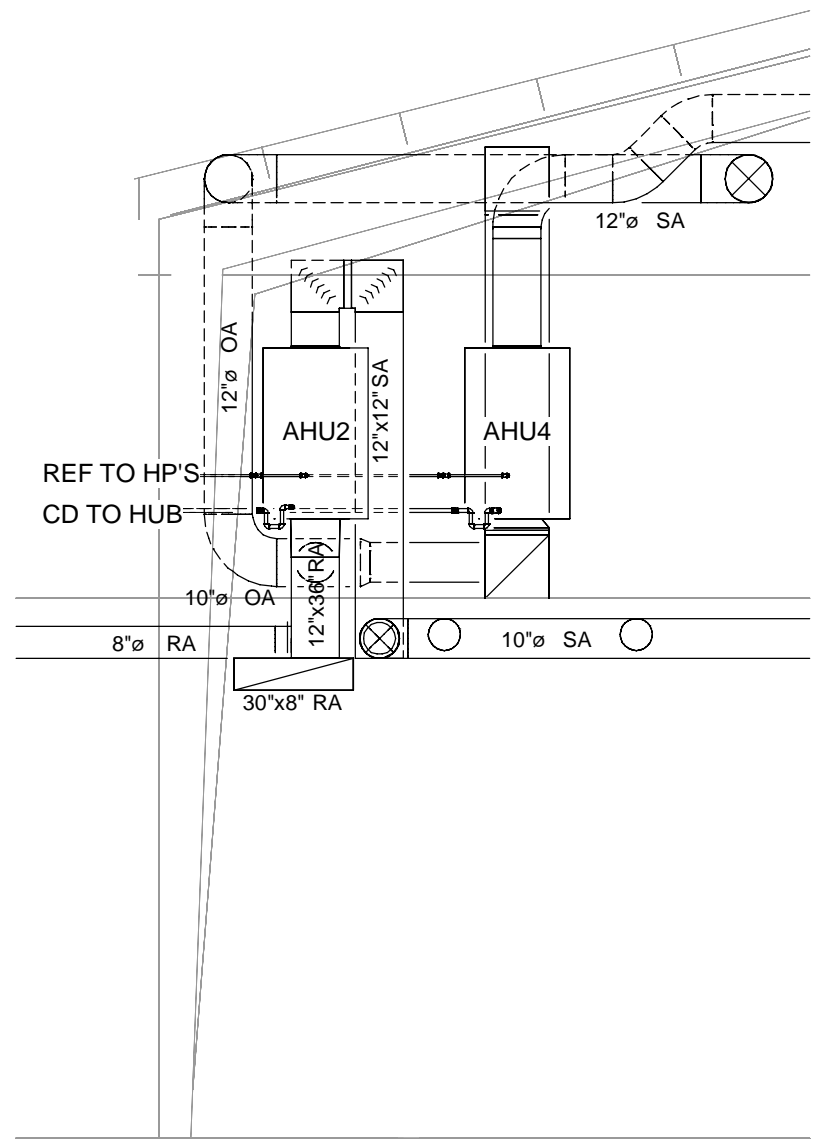
1 PARTIAL EAST SECTION
Scale: 3/16" = 1'-0"



3 MULTIPURPOSE ROOM AHU SECTION
Scale: 3/16" = 1'-0"



2 AHU1+3 PARTIAL SECTION
Scale: 1/4" = 1'-0"



4 AHU2+4 PARTIAL SECTION
Scale: 1/4" = 1'-0"

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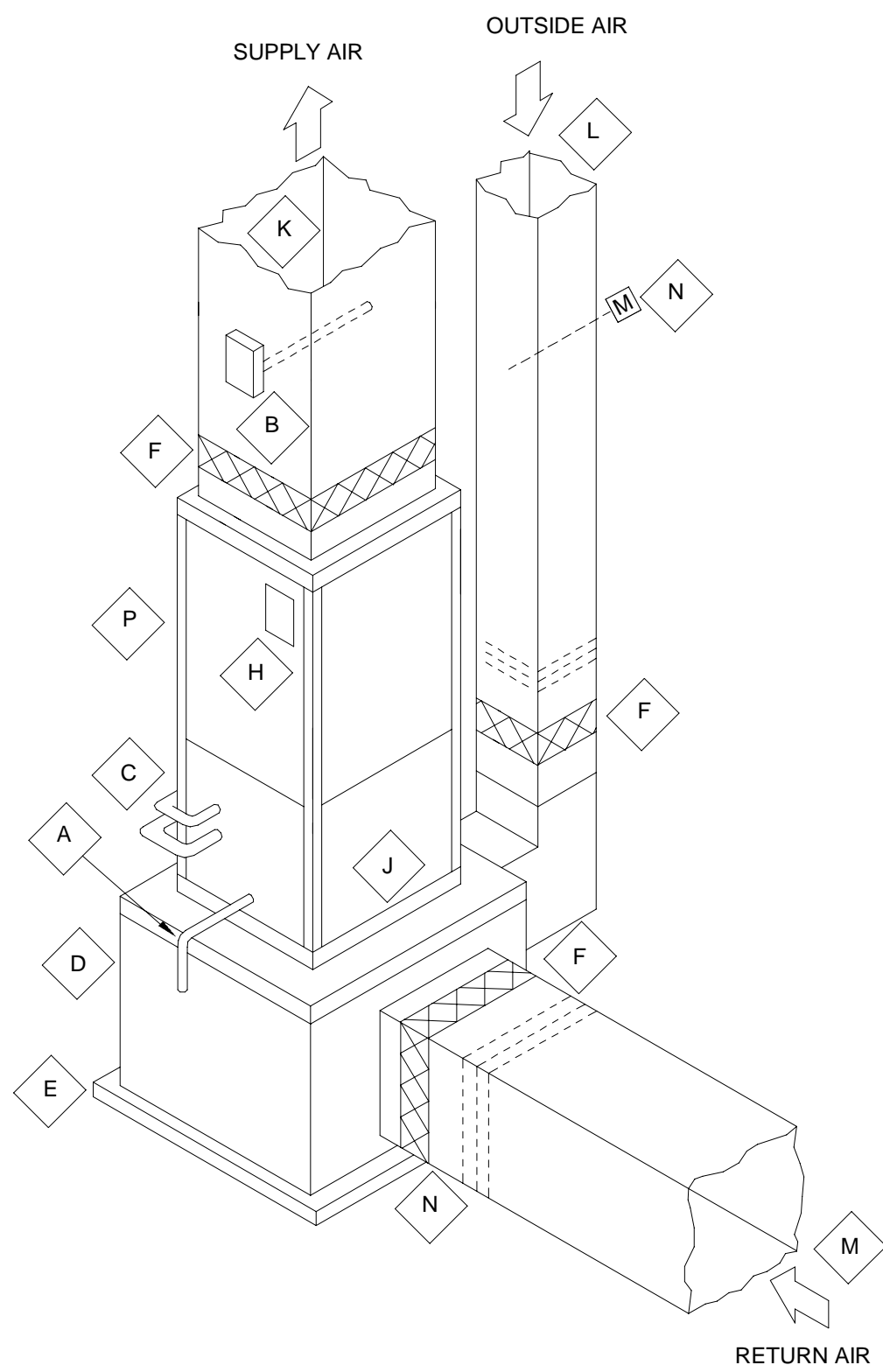
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SECTIONS - HVAC

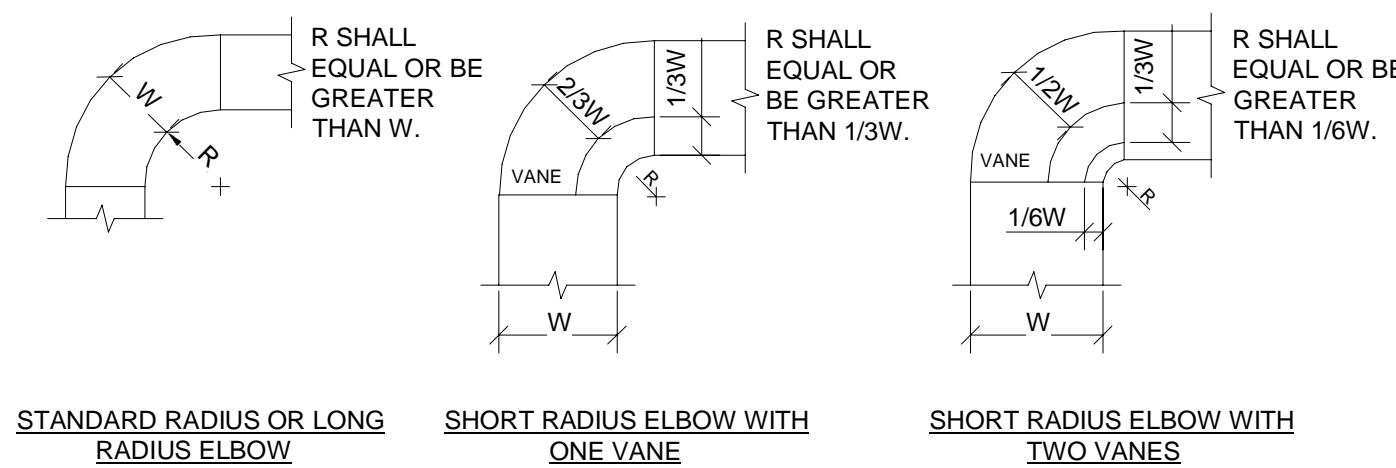
SHEET NUMBER

M3.1

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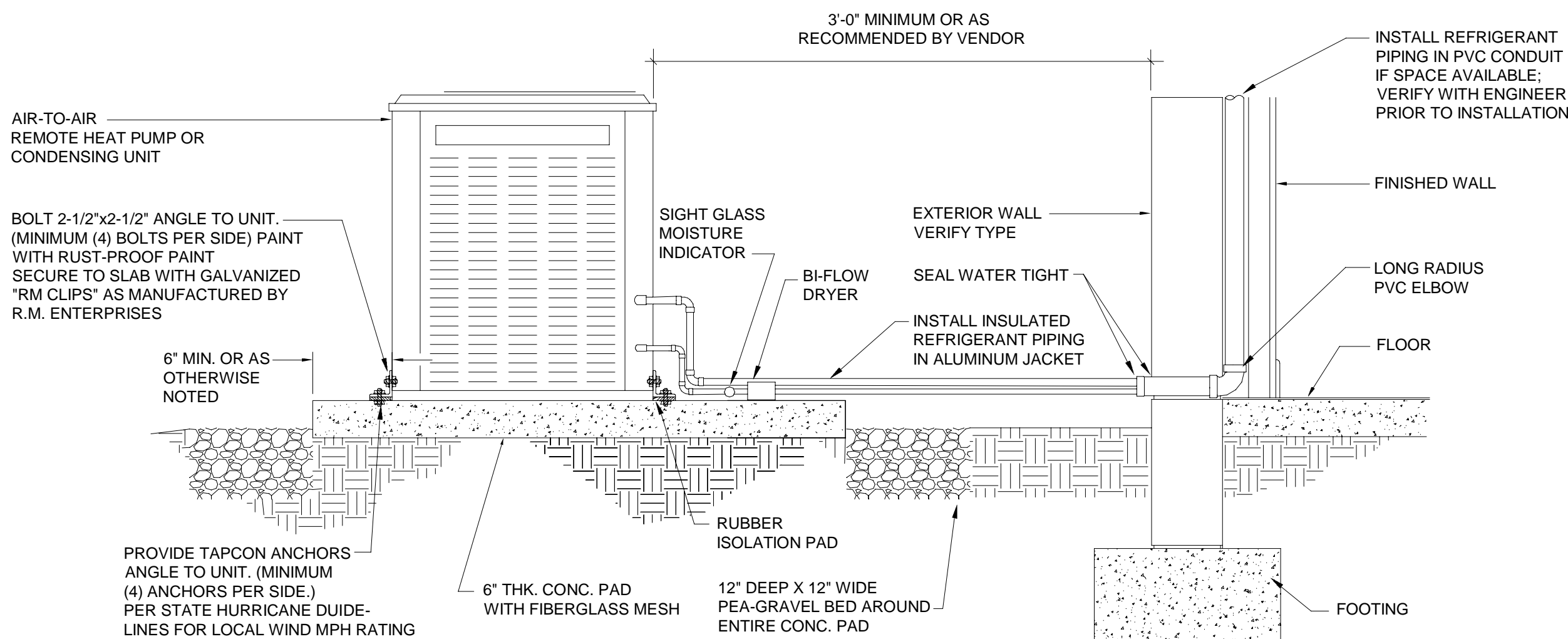


1 VERTICAL AIR HANDLING UNIT DETAIL
M5.1 SCALE: NTS

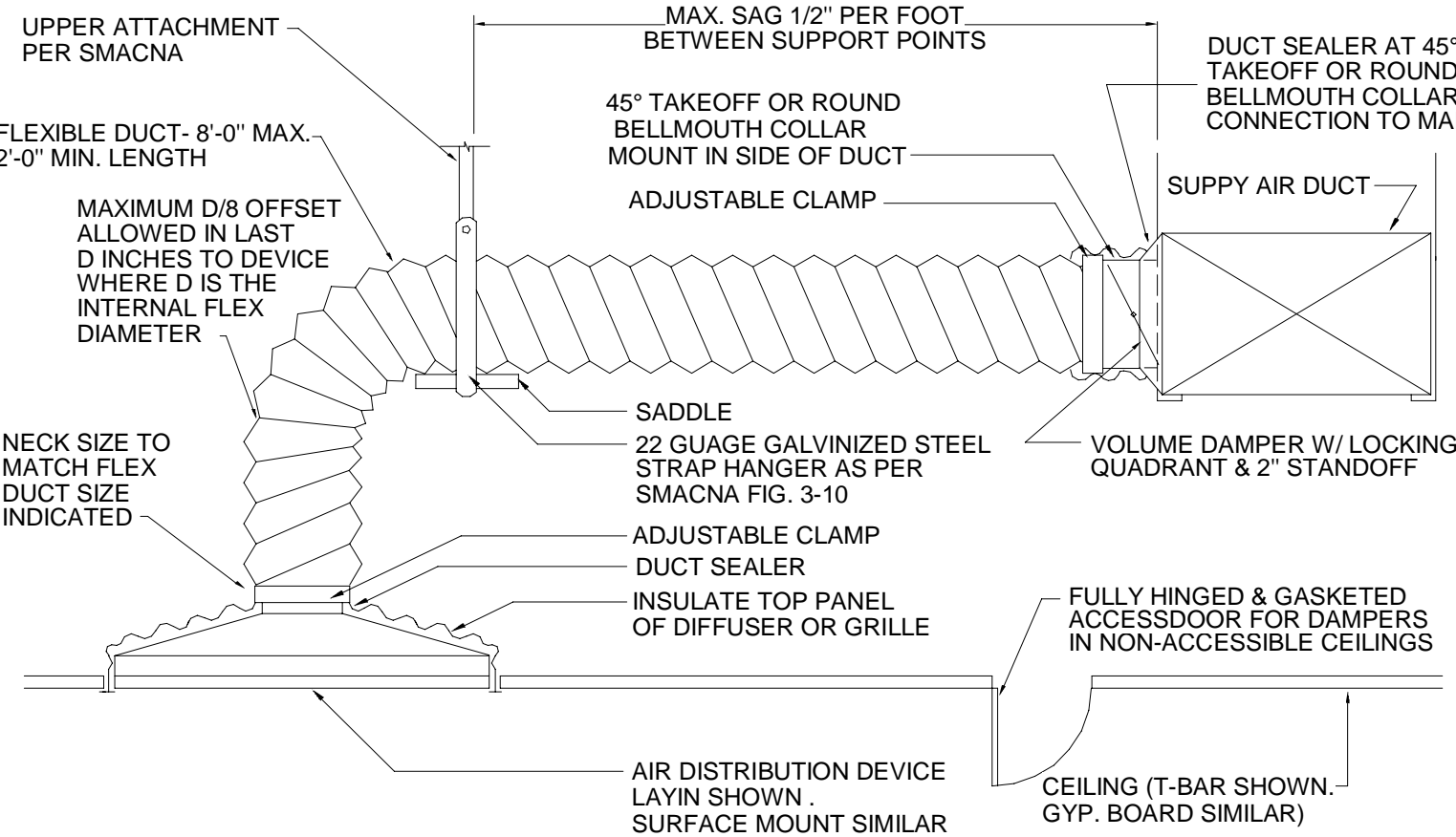


- NOTE:**
- THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND.
 - ALL STANDARD RADIUS ELBOWS CAN BE SUBSTITUTED WITH SHORT RADIUS ELBOWS. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED AND FASTENED AS RECOMMENDED BY SMACNA.

3 DUCTWORK RADIUS ELBOW DETAIL
M5.1 SCALE: NTS



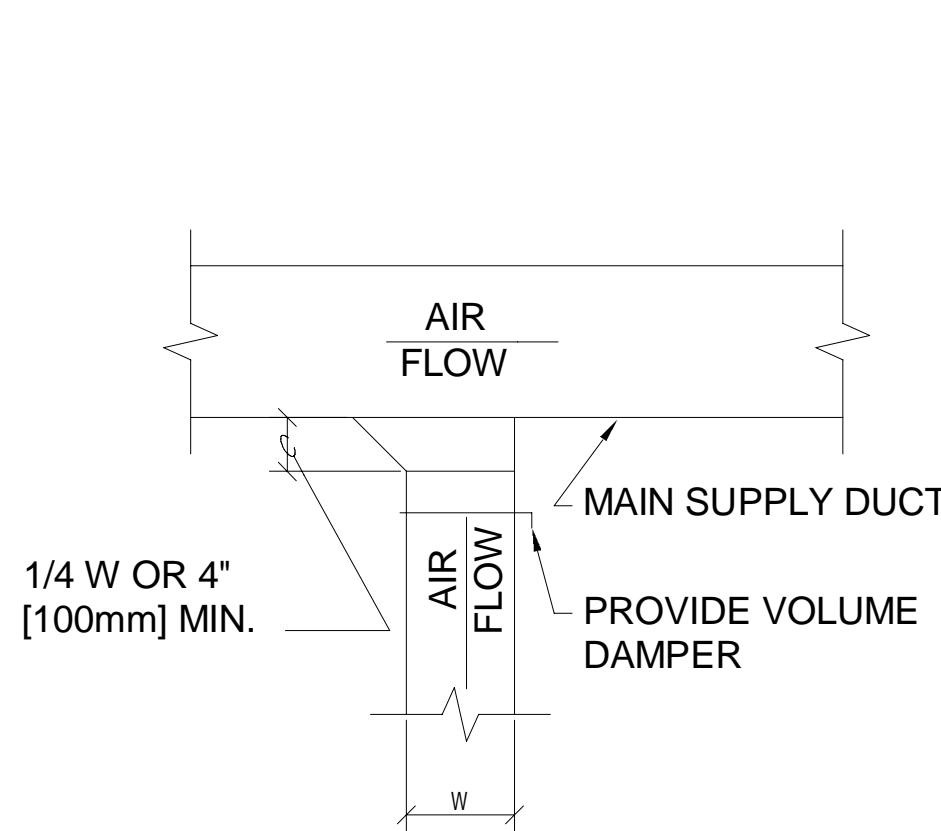
7 HEAT PUMP UNIT OUTDOOR INSTALLATION DETAIL
M5.1 SCALE: NTS



NOTES:

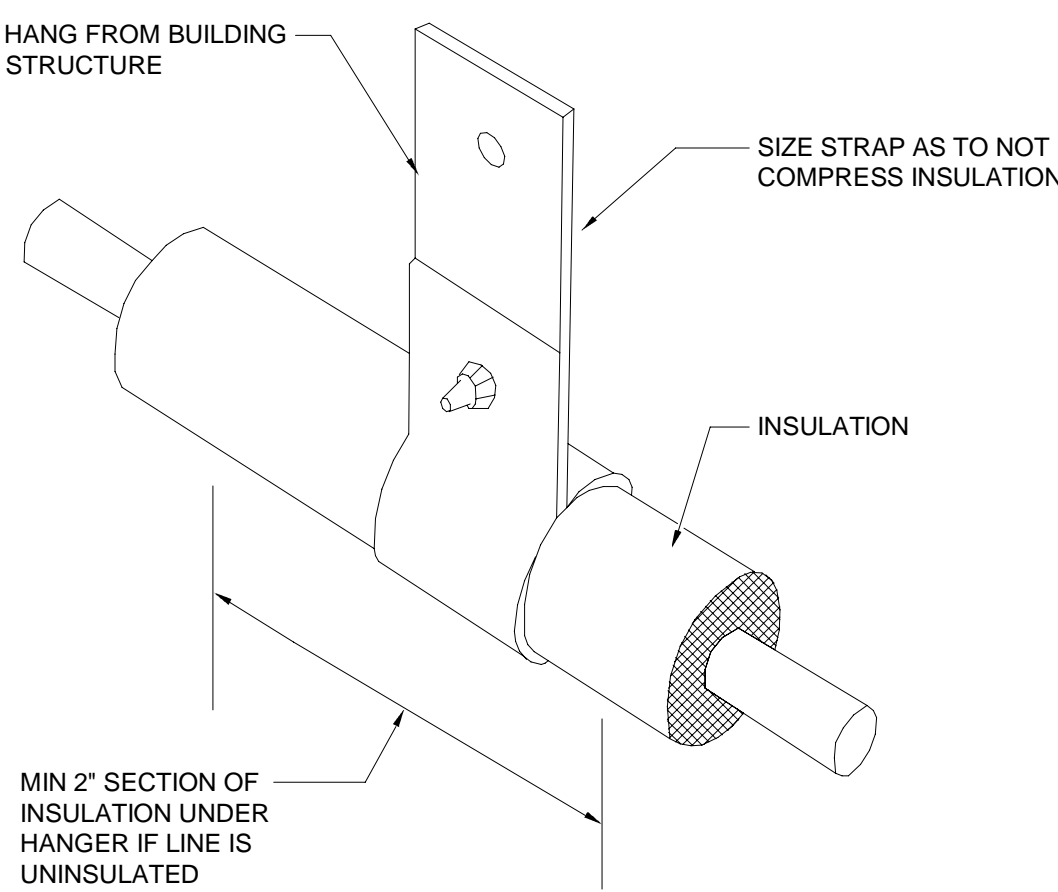
- FLEXIBLE DUCTS SHALL BE ONE PIECE AND SHALL NOT BE SPLICED TOGETHER .
- EXTEND FLEXIBLE DUCT INSULATION TO DUCT/DIFFUSER PANEL INSULATION AND SEAL WITH MASTIC .
- FLEXIBLE AIR DUCT SHALL NOT EXCEED 8 FT. WHEN EXTENDED . ELBOW RADIUS SIZED FOR NO LESS THAN $R/D = 1.0$.
- FLEXIBLE AIR DUCT SHALL NOT BE LESS THAN 5 FEET FOR ACOUSTICAL PURPOSES.

2 FLEXIBLE DUCT TAKEOFF DETAIL
M5.1 SCALE: NTS

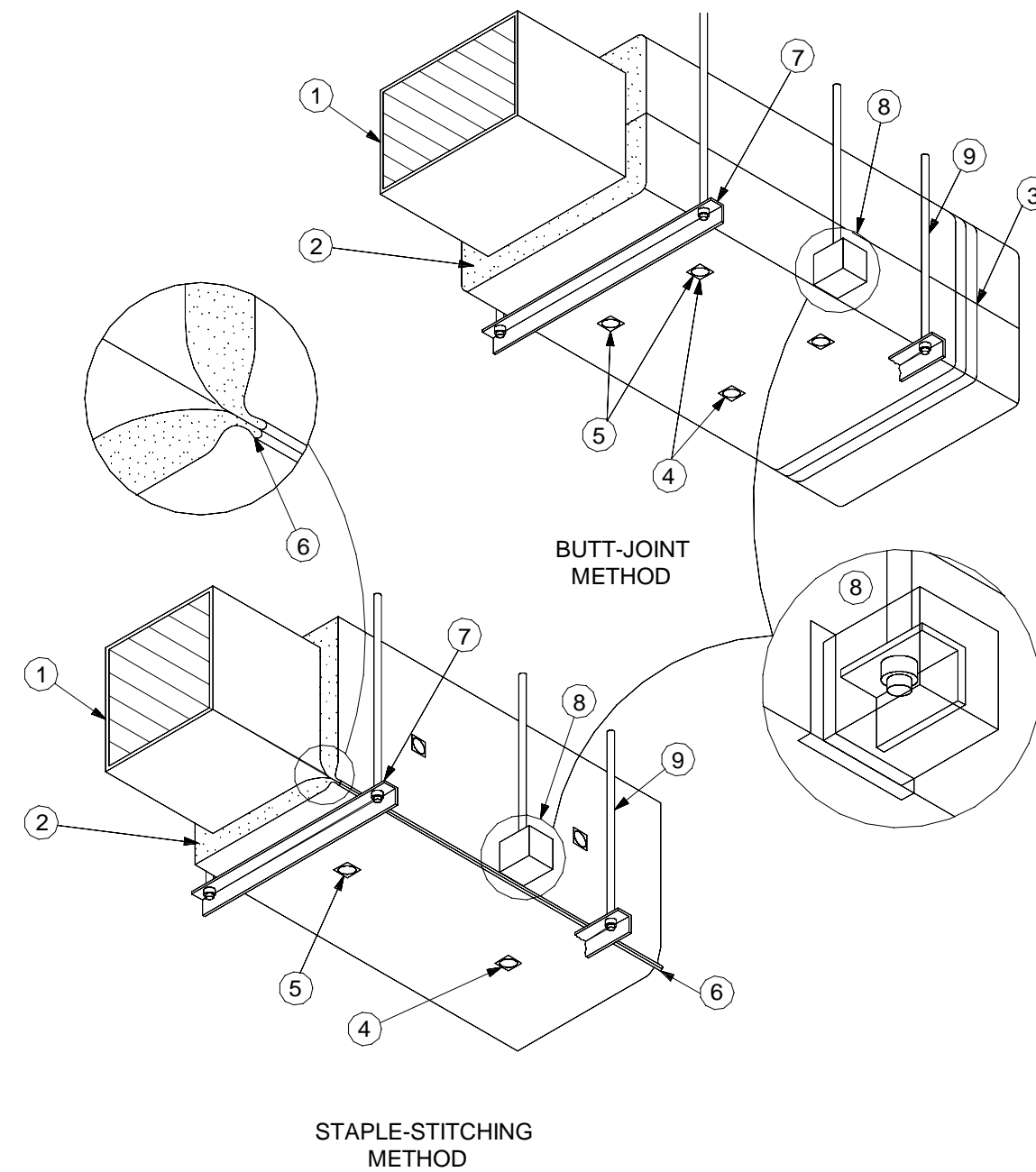


BRANCH DUCT TAKE-OFF PLAN VIEW

4 BRANCH DUCT TAKE-OFF
M5.1 SCALE: NTS



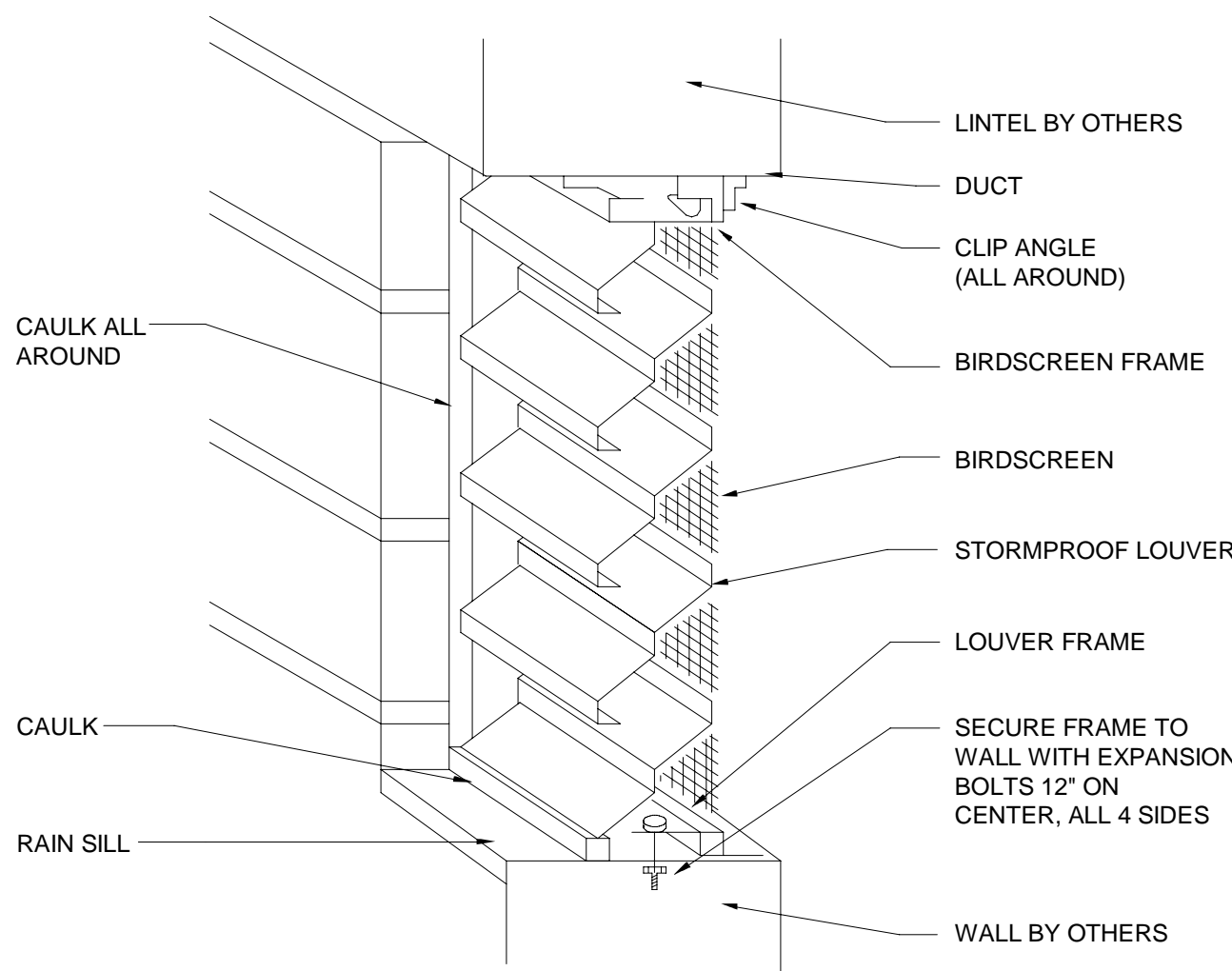
5 REFRIGERANT PIPE HANGER DETAIL
M5.1 SCALE: NTS



NOTES:

- GALVANIZED METAL DUCT WITH SEALED SEAMS AND JOINTS USING PS-S POLY TYPE NO.P-301 PRODUCT.
- BLANKET INSULATION WITH FACTORY-APPLIED VAPOR-RETARDER JACKET, 2" THICK R-6, 3/4 LB. CU. FT. DENSITY.
- FACTORY LAP ALL SEALS (SEALED WITH ADHESIVE AND/OR STAPLES AND VAPOR-RETARDER TAPE). TAPE ALL JOINTS WITH FASON (SMACNA) ALUMINUM REINFORCED PRESSURE SENSITIVE TAPE; COAT EDGES, SEAMS, AND JOINTS WITH INSUL-FOUSTIC PRODUCT BY "SURE-COAT" M-1-110" PRODUCT FIRE RESISTANT MASTIC.
- MECHANICAL FASTENERS SUPPORTING INSULATION ON UNDERSIDE OF DUCTS OVER 24" WIDE (SPACED 3" MAXIMUM FROM THE BUTT JOINT).
- VAPOR-RETARDER TAPE OVER TEARS AND PENETRATIONS OF THE VAPOR-RETARDER JACKET TO KEEP AIR TIGHT CONDITION.
- ALTERNATE METHOD OF LAP SEAL - LONGITUDINAL JOINT LAPPED AND FOLDED, THEN STAPLED SECURELY IN PLACE.
- HANGER ON EXTERIOR OF INSULATION. ENCAPSULATE EXPOSED END OF ANGLE. SEAL WITH ADHESIVE OR VAPOR-RETARDER TAPE.
- HANGER EMBEDDED IN INSULATION. ENCAPSULATE EXPOSED END OF ANGLE. SEAL WITH ADHESIVE OR VAPOR-RETARDER TAPE.
- COMPLETELY ENCAPSULATE HANGER ROD AND ANGLE. SEAL TOP PENETRATION. ENCAPSULATE AND SEAL STRAP HANGERS IN A SIMILAR MANNER.

6 BLANKET FIBERGLASS INSULATION DETAIL
M5.1 SCALE: NTS



8 TYPICAL WALL LOUVER DETAIL
M5.1 SCALE: NTS

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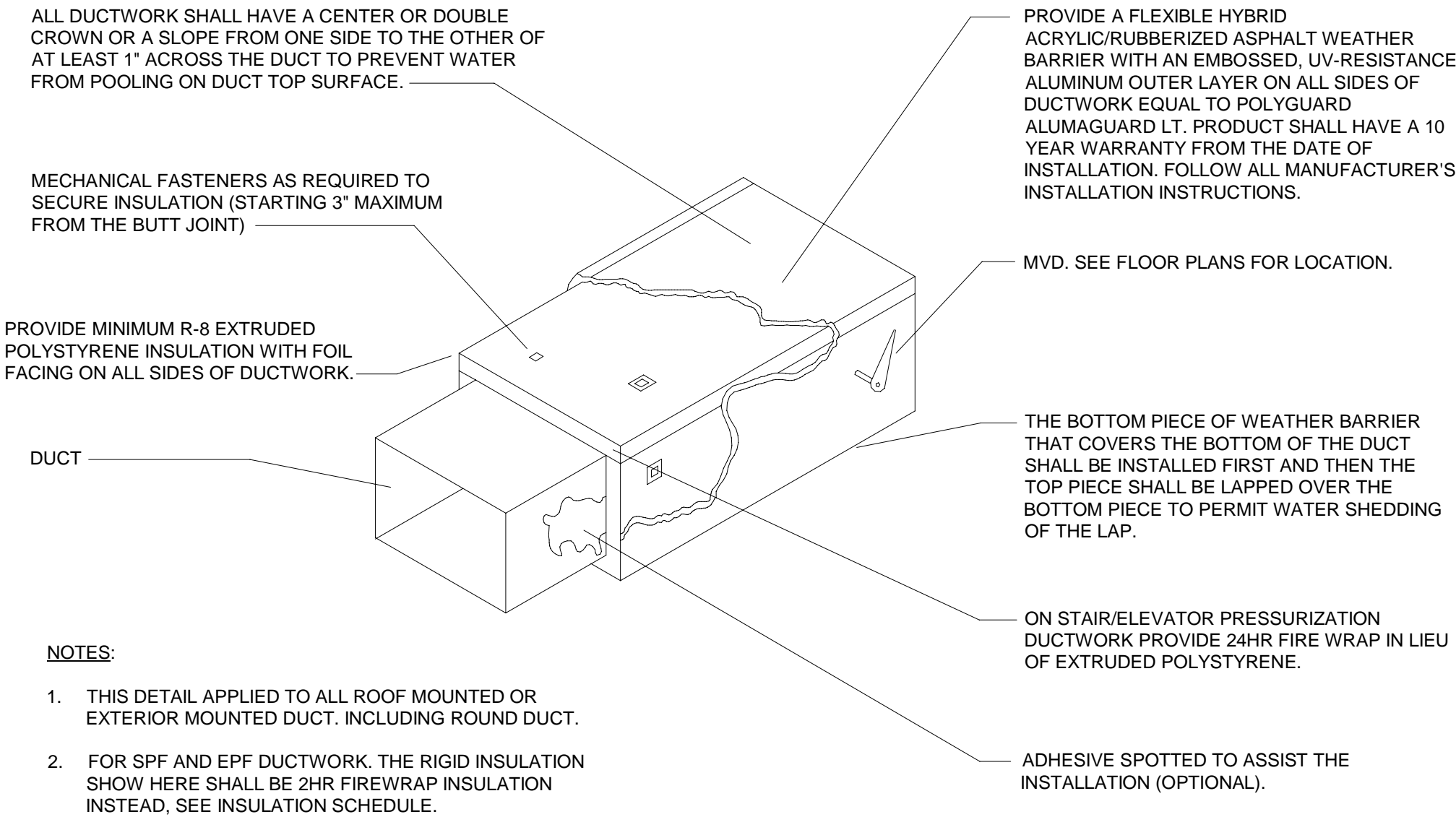
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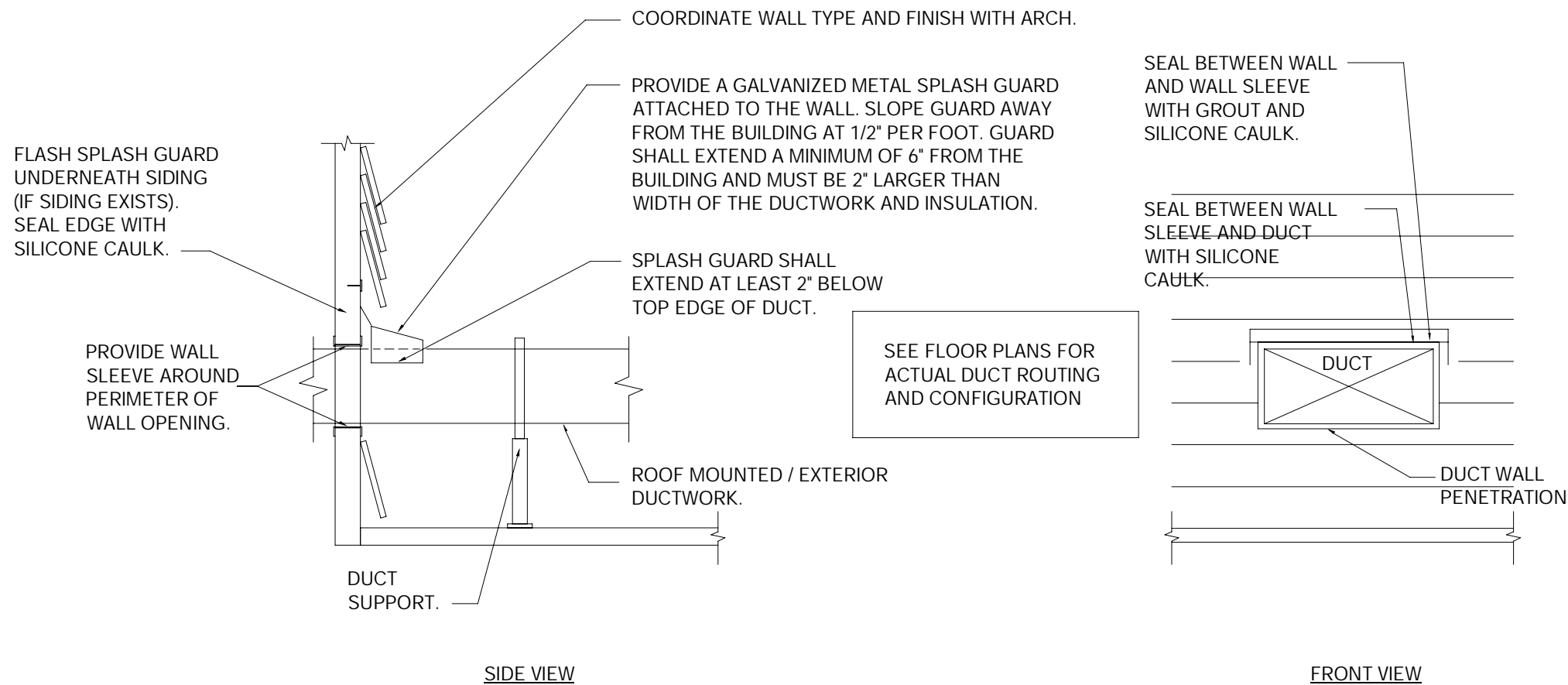
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SHEET TITLE
HVAC DETAILS

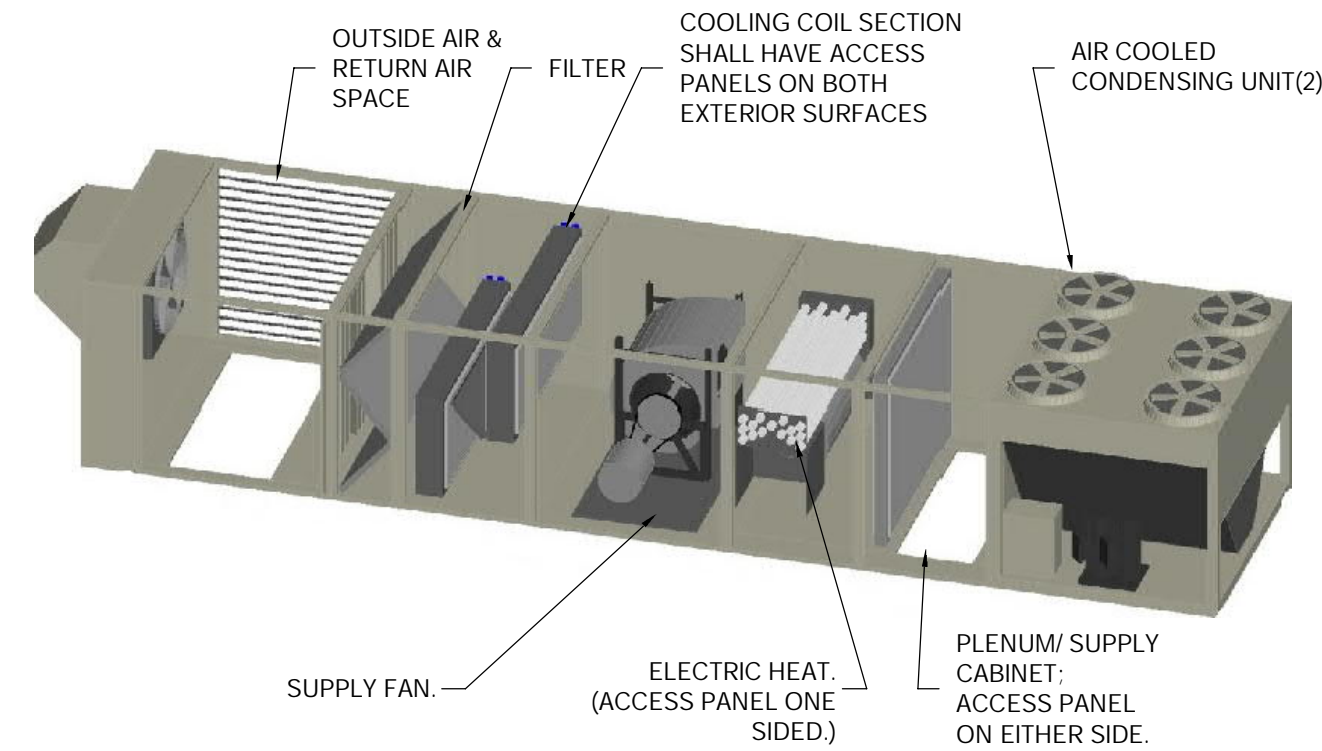
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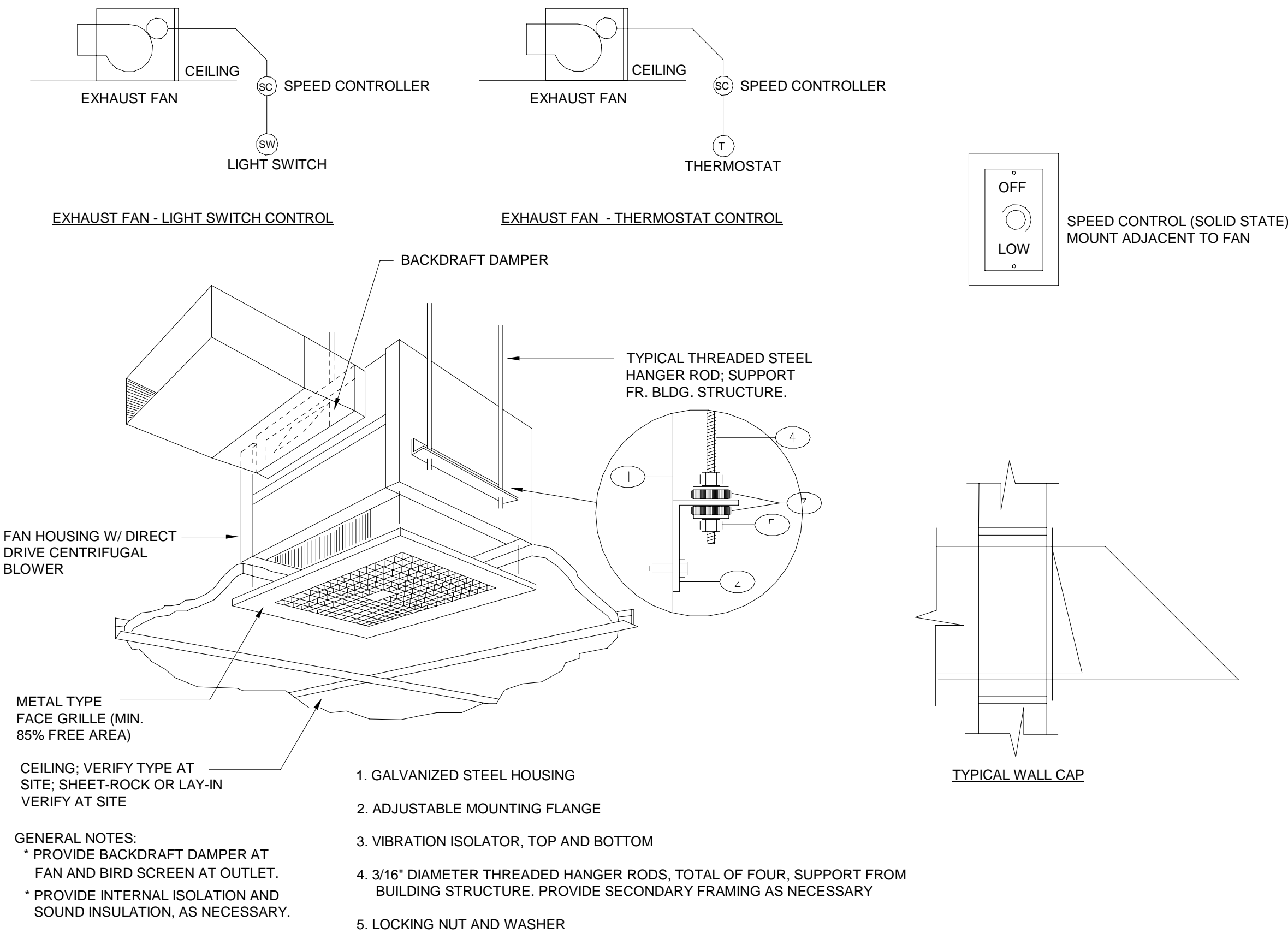
1 EXTERIOR MOUNTED DUCT INSULATION DETAIL
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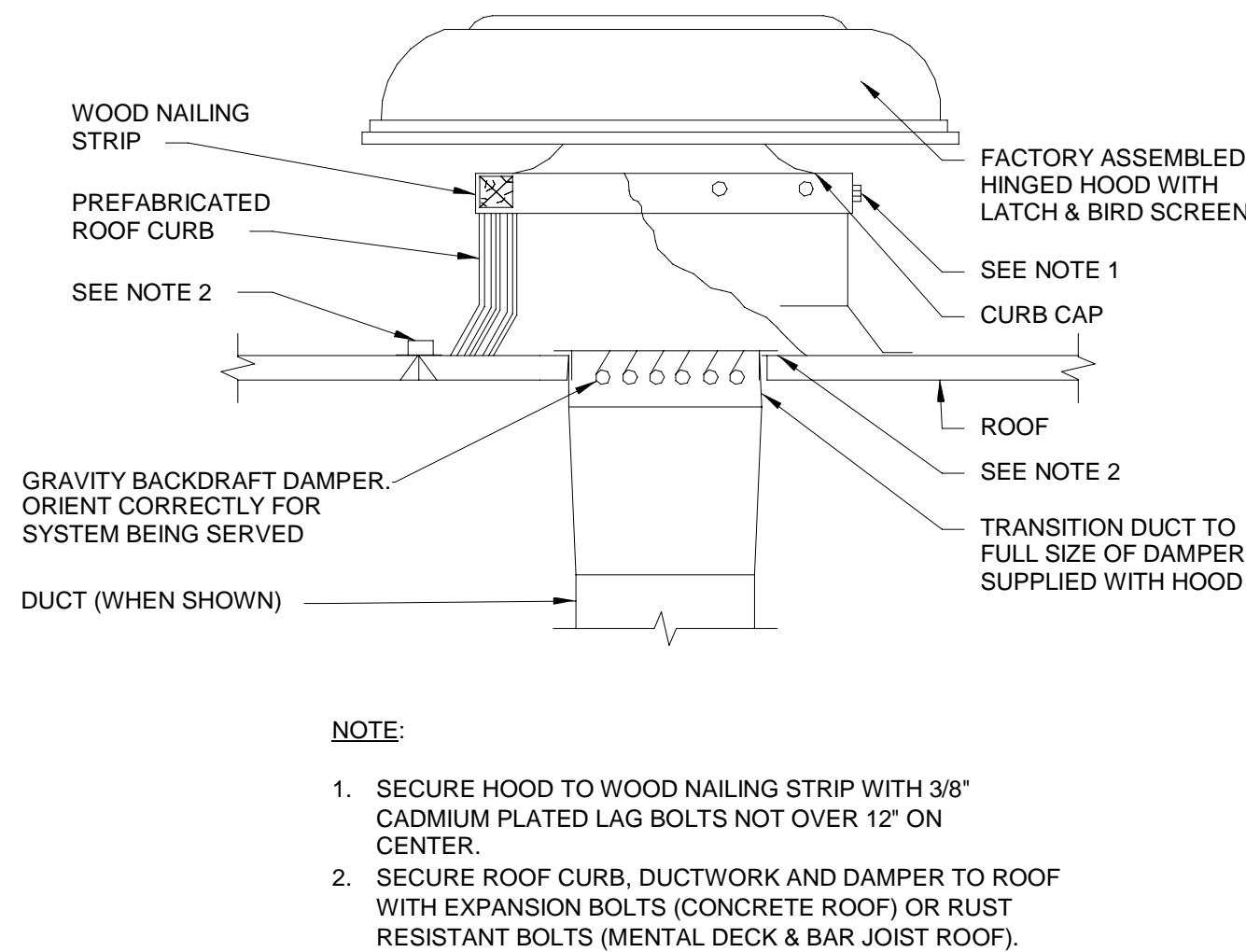
2 HORIZONTAL DUCT THROUGH EXTERIOR WALL
M5.2 SCALE: NTS



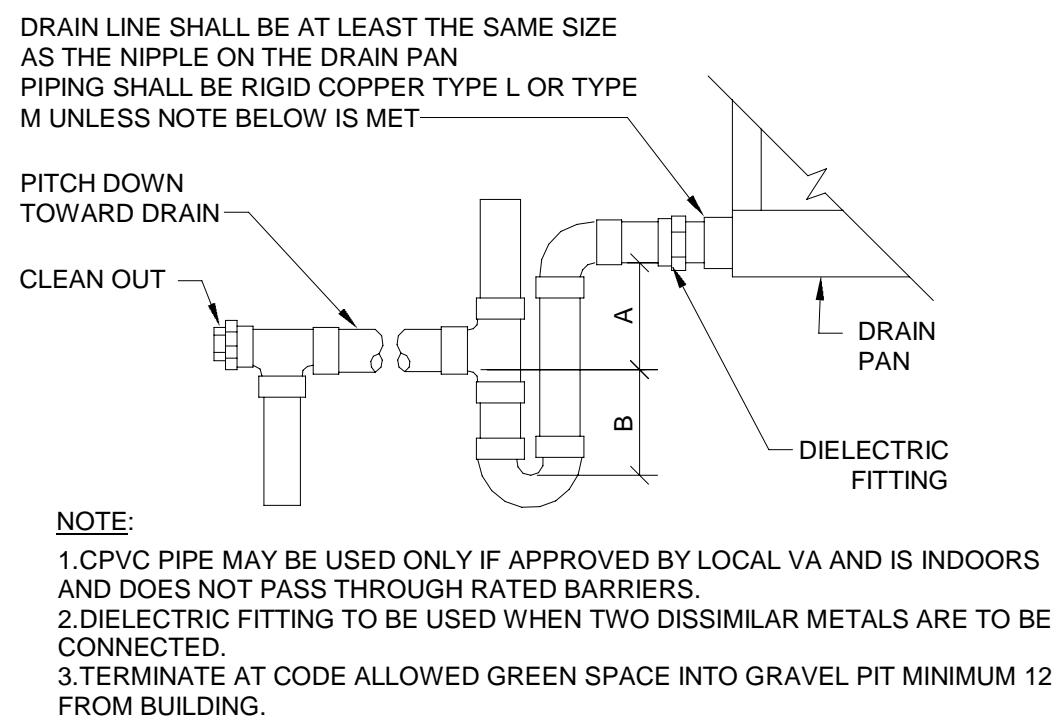
3 GENERIC PACKAGED UNIT DETAIL
M5.2 SCALE: NTS



4 EXHAUST FAN DETAIL
M5.2 SCALE: NTS



5 LOW-SILHOUETTE EXHAUST OR INTAKE HOOD
M5.2 SCALE: NTS



UNIT TYPE	A	B
DRAW THRU	2" PLUS X	X
BLOW THRU	1" MINIMUM	2X

WHERE X = STATIC PRESSURE IN PAN

6 AHU DRAIN TRAP
M5.2 SCALE: NTS

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90%	11/09/23	DO	BK
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SHEET TITLE
HVAC DETAILS




SHEET NUMBER

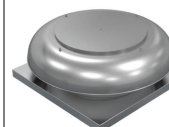
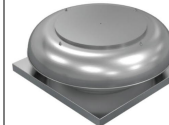
M5.2

AIR HANDLER SCHEDULE														
MARK	MANUFACTURER	MODEL	MATCHING UNIT	TOTAL CFM	OA CFM	EXT. SP	MOTOR HP	VOLTAGE/PHASE	EAT (DB/WB)	LAT (DB/WB)	AUX HEATER	MCA	MOCP	REMARKS
AHU1	LENNOX	CBA25UHV-048	HP1	1600	400	0.50 in-wg	1	208 V/1	80 °F/67 °F	55 °F/54 °F	5000 W	30	30	1-3
AHU2	LENNOX	CBA25UHV-042	HP2	1440	200	0.50 in-wg	1	208 V/1	80 °F/67 °F	55 °F/54 °F	5000 W	30	30	1-3
AHU3	LENNOX	CBA25UHV-048	HP3	1600	400	0.50 in-wg	1	208 V/1	80 °F/67 °F	55 °F/54 °F	5000 W	30	30	1-3
AHU4	LENNOX	CBA25UHV-042	HP4	1440	350	0.50 in-wg	1	208 V/1	80 °F/67 °F	55 °F/54 °F	5000 W	30	30	1-3
REMARKS: 1. PROVIDE SINGLE PONT POWER CONNECTION WITH INTEGRAL DISCONNECT. 2. MERV13 FILTER. 3. INSTALL WITH MANUFACTURER'S THERMOSTAT AND DRAIN PAN OVERFLOW SWITCH.														


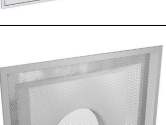
HEAT PUMP UNIT SCHEDULE												
MARK	MANUFACTURER	MODEL NUMBER	NOMINAL TON	TOTAL COOLING	SENSIBLE COOLING	SEER(EER)	TOTAL HEATING	HSPF(COP)	VOLTAGE/PHASE	MCA	MOCP	REMARKS
HP1	LENNOX	ML17XP1-048-230	4	47800.0 Btu/h	37600.0 Btu/h	15.8(12.5)	48000.0 Btu/h	8.3(3.8)	208 V/1	34 A	50 A	1-4
HP2	LENNOX	ML17XP1-042-230	3.5	41600.0 Btu/h	32500.0 Btu/h	15.4(13)	42000.0 Btu/h	8.1(3.8)	208 V/1	26 A	40 A	1-4
HP3	LENNOX	ML17XP1-048-230	4	47800.0 Btu/h	37600.0 Btu/h	15.8(12.5)	48000.0 Btu/h	8.3(3.8)	208 V/1	34 A	50 A	1-4
HP4	LENNOX	ML17XP1-042-230	3.5	41600.0 Btu/h	32500.0 Btu/h	15.4(13)	42000.0 Btu/h	8.1(3.8)	208 V/1	26 A	40 A	1-4
REMARKS: 1. FOLLOW EQUIPMENT MANUFACTURER'S GUIDELINES FOR CLEARANCES AND REFRIGERANT LINE SIZING. 2. COMPRESSOR SOUND BLANKET, 500-HR SALT SPRAY ON CONDENSER COILS, CRANKCASE HEATER. 3. PROVIDE SINGLE-POINT POWER CONNECTION WITH INTEGRAL DISCONNECT. 4. TIE DOWN FOR LOCAL WIND RATINGS.												

PACKAGAED AIR HANDLING UNIT SCHEDULE																						
MARK	MANUFACTURER	MODEL NUMBER	TOTAL COOLING	SENSIBLE COOLING	TOTAL CFM	OA CFM	AREAS SERVED	EXT. SP (IN WG)	FILTER EFF.	MOTOR HP	DRIVE TYPE	REF	WIEGHT (LBS)	EER	VOLTAGE/ PHASE	AUX HEATER KW	NO. COMPRESSORS	COMP. RLA (EA)	FAN FLA (EA)	MIN. CIRCUIT AMPACITY	MAX FUSE AMPS	REMARKS
PU5	ADDISON	PRMA150B2C2D	160000.0 Btu/h	109000.0 Btu/h	4500	1800	MULTIPURPOSE	1.00 in-wg	MERV13	4	DIRECT ECM	R-410A	2820	14	208 V/3	26250 W	2	22	3	205	225	1-4
REMARKS: 1. PROVIDE SINGLE PONT POWER CONNECTION WITH INTEGRAL DISCONNECT. 2. SALT SPRAY COATING, SIDE RETURN, PAD MOUNTED, 16KW UNIT, RELIEF WITH HOOD, ENERGY RECOVERY, HOT GAS REHEAT, 1HP EXHAUST FAN. 3. INSTALL WITH MANUFACTURER'S THERMOSTAT AND CONDENSATE OVERFLOW SWITCH, SS DRAIN PAN. 4. MOTORIZED OA DAMPER, NORMALLY OPEN, MAX POSITION OF 1800 CFM DURING OCCUPIED HOURS, MIN POSITION OF 300 CFM DURING UNOCCUPIED HOURS.																						

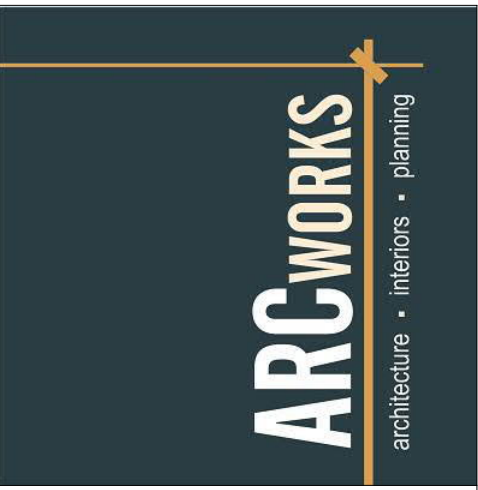
EXHAUST FAN SCHEDULE													
MARK	MANUFACTURER	MODEL NUMBER	CFM	AREAS SERVED	DRIVE TYPE	MOTOR HP	STATIC PRESSURE	LwA	SONES	UNIT WEIGHT	VOLTS/PHASE	NOTES	IMAGE
EF1	COOK	GC-148	125	PRIVATE BATHROOMS AND SHOWERS	DIRECT	0.04	0.20 in-wg	55	2.5	15	115/1	ALUMINUM, CEILING	
EF2	COOK	GC-186	225	GANG BATHROOMS	DIRECT	0.04	0.20 in-wg	66	5.5	15	115/1	ALUMINUM, CEILING	
EF3	COOK	GC-542	300	ELEC RM	DIRECT	0.06	0.20 in-wg	65	6	25	115/1	ALUMINUM, CEILING	
REMARKS: 1. TIE BATHROOM EXHAUST CONTROL TO LIGHT SWITCH, & ELECTRICAL ROOM EXHAUST CONTROL TO THERMOSTAT. PROVIDE FAN SPEED CONTROLLER AND BACKDRAFT DAMPER.													

GRAVITY VENT SCHEDULE								
MARK	MANUFACTURER	MODEL	CFM	AREAS SERVED	STATIC PRESSURE	UNIT WEIGHT	NOTES	IMAGE
EGV	COOK	16PR	1400	BATHROOMS	0.15 in-wg	25	EXHAUST VENT	
IGV	COOK	20PR	1350	AHU OA	0.05 in-wg	40	INTAKE AIR	

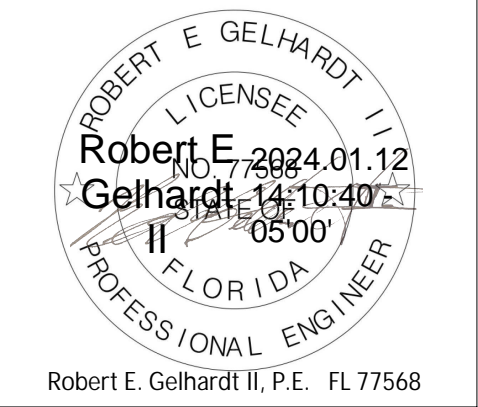
BUILDING PRESSURIZATION TABLE					
MARK	TOTAL CFM	RA CFM	EA CFM	OA CFM	AIR BALANCE
AHU1	1600	1200	0	400	400
AHU2	1440	1240	0	200	200
AHU3	1600	1200	0	400	400
AHU4	1440	1090	0	350	350
EF1	0	0	125	0	-125
EF1	0	0	125	0	-125
EF1	0	0	125	0	-125
EF1	0	0	125	0	-125
EF2	0	0	225	0	-225
EF2	0	0	225	0	-225
EF2	0	0	225	0	-225
EF2	0	0	225	0	-225
PU5	4500	2700	1000	1800	800
TOTAL	10580	7430	2400	3150	750

AIR DISTRIBUTION DEVICE SCHEDULE									
TAG	SERVICE	MFG	MODEL	CFM RANGE	NECK SIZE	FACE SIZE	DETAILS		IMAGE
GRG	RETURN	PRICE	95FH	2500-3800	30"x30"	2' - 6"x2' - 6"	HEAVY DUTY GYM RETURN GRILLE, STEEL, MOUNTING FRAME, OPTIONAL FILTER FRAME.		
RG 1x1	RETURN	PRICE	APDDR	0-100	6"ø	1' - 0"x1' - 0"	LAYIN OR SURFACE MOUNTED; ALUMINUM MATERIAL; PERFORATED FACE; DUCTED RETURN.		
RG 2x2	RETURN	PRICE	APDDR	105-210	8"ø	2' - 0"x2' - 0"	LAYIN OR SURFACE MOUNTED; ALUMINUM MATERIAL; PERFORATED FACE; DUCTED RETURN.		
SG 1x1	SUPPLY	PRICE	SCD	0-100	6"ø	1' - 0"x1' - 0"	4 WAY DIRECTIONAL; LAYIN OR SURFACE MOUNTED DIFFUSER; ALUMINUM MATERIAL.		
SG 2x2	SUPPLY	PRICE	SCD	100-250	8"ø	2' - 0"x2' - 0"	4 WAY DIRECTIONAL; LAYIN OR SURFACE MOUNTED DIFFUSER; ALLUMINUM MATERIAL.		
SWD	SUPPLY	PRICE	HCD	600-1100	24"x13"	1' - 0"x2' - 0"	HIGH-CAPACITY DRUM LOUVERS - SPIRAL DUCT FRAME, 0 DEGREE DEFLECTION. INSTALL WITH VOLUME CONTROL DAMPER, VCS5 OR SIMILAR.		

SINGLE ZONE VENTILATION SCHEDULE							
AHU1							
Space No. Name	Zone Area, Az (ft²)	Zone Population, Pz (People)	People Outdoor Airflow Rate, Rp (CFM/Person)	Area Outdoor Airflow Rate, Ra (CFM/ft²)	Unoccupied Zone Outdoor Airflow Rate (CFM)	Breathing Zone Outdoor Airflow Rate, Vbz (CFM)	Zone Outdoor Airflow Rate, Voz (CFM)
CHAPEL	484	46	5	0.06	36	259	324
LIBRARY	115	1	5	0.12	17	19	24
KITCHEN	278	0	7.5	0.12	42	33	42
BETHLEHEM	60	1	5	0.06	4	9	11
UTILITY	48	0	0	0	0	0	0
Max	484	46	7.5	0.12	42	259	324
Totals	985	48			100	320	400
OUTDOOR AIR INTAKE FLOW RATE, Vot (CFM):						400	
SINGLE ZONE VENTILATION SCHEDULE							
AHU2							
Space No. Name	Zone Area, Az (ft²)	Zone Population, Pz (People)	People Outdoor Airflow Rate, Rp (CFM/Person)	Area Outdoor Airflow Rate, Ra (CFM/ft²)	Unoccupied Zone Outdoor Airflow Rate (CFM)	Breathing Zone Outdoor Airflow Rate, Vbz (CFM)	Zone Outdoor Airflow Rate, Voz (CFM)
CORRIDOR	430	0	0	0.06	32	26	32
PRIEST OFFICE	132	1	5	0.06	10	13	16
BISHOP	200	1	5	0.06	15	17	21
WOMENS	146	0	0	0	0	0	0
MEETING ROOM	140	4	5	0.06	11	28	36
MENS	146	0	0	0	0	0	0
STUDY ROOM	140	1	5	0.06	11	13	17
LOBBY	544	4	5	0.06	41	53	66
Max	544	4	5	0.06	41	53	66
Totals	1878	11			119	150	188
OUTDOOR AIR INTAKE FLOW RATE, Vot (CFM):						188	
SINGLE ZONE VENTILATION SCHEDULE							
AHU3							
Space No. Name	Zone Area, Az (ft²)	Zone Population, Pz (People)	People Outdoor Airflow Rate, Rp (CFM/Person)	Area Outdoor Airflow Rate, Ra (CFM/ft²)	Unoccupied Zone Outdoor Airflow Rate (CFM)	Breathing Zone Outdoor Airflow Rate, Vbz (CFM)	Zone Outdoor Airflow Rate, Voz (CFM)
CLASSROOM	152	4	10	0.12	23	58	73
CLASSROOM	152	4	10	0.12	23	58	73
CLASSROOM	152	4	10	0.12	23	58	73
CLASSROOM	152	4	10	0.12	23	58	73
CLASSROOM	152	4	10	0.12	23	58	73
CORRIDOR	415	0	0	0.06	31	25	31
Max	415	4	10	0.12	31	58	73
Totals	1175	20			145	316	395
OUTDOOR AIR INTAKE FLOW RATE, Vot (CFM):						395	
SINGLE ZONE VENTILATION SCHEDULE							
AHU4							
Space No. Name	Zone Area, Az (ft²)	Zone Population, Pz (People)	People Outdoor Airflow Rate, Rp (CFM/Person)	Area Outdoor Airflow Rate, Ra (CFM/ft²)	Unoccupied Zone Outdoor Airflow Rate (CFM)	Breathing Zone Outdoor Airflow Rate, Vbz (CFM)	Zone Outdoor Airflow Rate, Voz (CFM)
CLASSROOM	174	8	10	0.12	26	101	126
CLASSROOM	234	10	10	0.12	35	128	160
WOMENS	184	0	0	0	0	0	0
SHOWERS	98	0	0	0	0	0	0
MENS	184	0	0	0	0	0	0
SHOWERS	98	0	0	0	0	0	0
STORAGE	30	0	0	0	0	0	0
UTILITY	66	0	5	0.06	5	4	5
ELEC/MECH	125	0	0	0	0	0	0
A/V BOOTH	90	1	5	0.06	7	10	13
CORRIDOR	298	0	0	0.06	22	18	22
Max	298	10	10	0.12	35	128	160
Totals	1581	19			95	261	327
OUTDOOR AIR INTAKE FLOW RATE, Vot (CFM):						327	
SINGLE ZONE VENTILATION SCHEDULE							
PU5							
Space No. Name	Zone Area, Az (ft²)	Zone Population, Pz (People)	People Outdoor Airflow Rate, Rp (CFM/Person)	Area Outdoor Airflow Rate, Ra (CFM/ft²)	Unoccupied Zone Outdoor Airflow Rate (CFM)	Breathing Zone Outdoor Airflow Rate, Vbz (CFM)	Zone Outdoor Airflow Rate, Voz (CFM)
MULTIPURPOSE	2740	140	7.5	0.06	206	1214	1518
STORAGE	267	0	5	0.06	20	16	20
ELEC/MECH RM	119	0	0	0	0	0	0
BALCONY	369	24	7.5	0.06	28	202	253
Max	2740	140	7.5	0.06	206	1214	1518
Totals	3495	164			253	1433	1791
OUTDOOR AIR INTAKE FLOW RATE, Vot (CFM):						1791	
Notes: Ventilation calculations are formatted to satisfy FBC Mech Section 403. Refer to Section 403 for more details. Equation 4-1: Vbz = Rp*Pz + Ra*Az Equation 4-2: Voz = Vbz/Ez Ceiling supply of warm air and ceiling return has an Ez of 0.8. Refer to Table 403.1.1.1.2 for Zone Effectiveness Values. Equation 4-3: Vot = Voz							
Zone Effectiveness, Ez:							0.8



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SUBMITTAL			
PHASE	DATE	DRAWN	CHECK
50%	10/27/23	BK	BK
75%	11/03/23	KW	BK
90%	11/09/23	DO	BK
100%	11/17/23	DO	BK
PERMIT	01/08/23	BK	REGII

REVISIONS		
#	DATE	REMARKS

PROJECT NUMBER	AW230001
PHASE	CONSTRUCTION DOCS
SHEET TITLE	HVAC SCHEDULES

SHEET NUMBER	M6.1
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