LEGEND

ALL MAY NOT APPLY

- SUPPLY DIFFUSER
- OPTIONAL AIR DISTRIBUTION CORE STYLE (REFER TO MANUFACTURER FOR MORE OPTIONS) — 2-WAY, 3-WAY
- RETURN GRILLE
- EXHAUST GRILLE
- AIR HANDLING UNIT (VERTICAL/HORIZONTAL)
- CONDENSING UNIT HEAT PUMP — CU/HP-#
- CEILING MOUNTED EXHAUST FAN — EF-#
- MANUAL BALANCING DAMPER
- DUCT MOUNTED SMOKE DETECTOR — SD
- DUCT MOUNTED MOTORIZED DAMPER — M
- DUCT MOUNTED BACKDRAFT DAMPER — BD
- DUCT CONTINUES UP
- THERMOMETER
- PRESSURE GAUGE
- DUCT HUMIDITY SENSOR — H
- DUCT FLOW METER
- MOTORIZED CONTROL VALVE — M
- 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: A — DEVICE TAG; 110 — AIRFLOW (CFM); 6x6 — DEVICE SIZE
- SUPPLY/RETURN DUCT FIRST DIMENSION = WIDTH SECOND DIMENSION =HEIGHT — W x H
- SUPPLY/RETURN DUCT ROUND PIPE D=INSIDE DIAMETER DIMENSION — DØ
- DEMOLITION KEYNOTE — #
- RENOVATION KEYNOTE — #
- CONNECT TO EXISTING AT THIS POINT
- DEMOLISH BACK TO THIS POINT
- ACCESS PANEL
- UNION
- FLEXIBLE CONNECTION
- CHECK VALVE
- STRAINER
- PUMP
- FIRE DAMPER — FD
- SMOKE DAMPER — SD
- CONDENSATE DRAIN PIPE — C
- CLEAN-OUT IN CD — C
- CD TRAP (REFER TO DETAIL)
- INSULATED REFRIGERANT LINES — REF
- THERMOSTAT — T
- SENSOR - ZONE SENSOR — S
- VOLATILE ORGANIC COMPOUND SENSOR — VOC
- CARBON MONOXIDE SENSOR — CO
- CARBON DIOXIDE SENSOR — CO2
- DOOR GRILLE AND 1" UNDERCUT — DG, UC

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	EWT	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 TERMPERATURE (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-M,	MECHANICAL FLORIDA BUILDING CODE 8TH EDITION
FBC-EB,	EXISTING BUILDING FLORIDA BUILDING CODE 8TH EDITION
FBC-FG,	FUEL GAS FLORIDA BUILDING CODE 8TH EDITION
FBC-EC,	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-M 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 BELOW 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 RATING. 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.AIR DISTRIBUTION: PRICE, METALAIRE, TITUS
19.3.FANS: PENNBERRY, GREENHECK, BROAN, PANASONIC, COOK

DESIGN CRITERIA

BUILDING TYPE GROUP B, BUSINESS

CLIMATE ZONE 2A, LEON COUNTY, FLORIDA

OUTDOOR DESIGN CONDITIONS (SUMMER) 95 DEG Fdb, 77 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.PLANS 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 130 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
M001	HVAC ABBREVIATIONS, SYMBOLS & LEGENDS
M101	FLOOR PLAN - HVAC
M501	HVAC DETAILS
M502	HVAC DETAILS
M601	HVAC SCHEDULES

PHASE:	DRAWN:	REVIEWED:	DATE:	ID:	REVISION:	DRAWN:	REVIEWED:	DATE:
ADVANCED SCHEM. DESIGN	LJ	REGII	01/20/2023					
50% CONSTRUCTION DOCS.	LJ	REGII	10/02/2023					
90% CONSTRUCTION DOCS.	LJ	REGII	01/11/2024					
100% CONSTRUCTION DOCS.	LJ	REGII	02/02/2024					

Client: City of Tallahassee
Tallahassee, FL

Job Title: 1309 Alabama Street

Consultant: FSM Engineering

Seal: NOT FOR CONSTRUCTION

Project #: 21423.4
Phase: 100% Construction Documents

ALW
Architects Lewis + Whitlock
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Description:
HVAC ABBREVIATIONS, SYMBOLS & LEGENDS

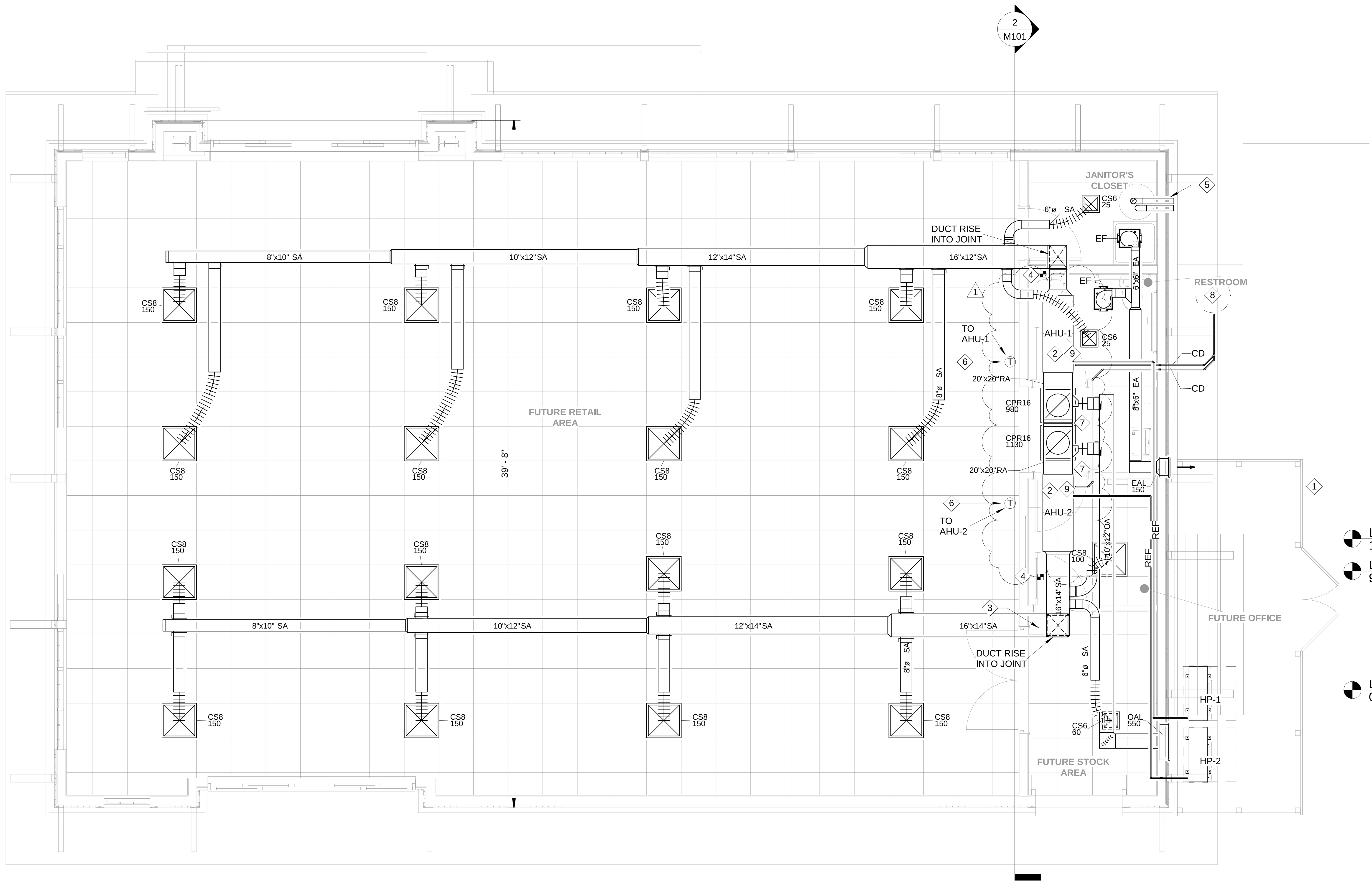
Sheet No.:
M001

HVAC RENOVATION NOTES

1. CONTRACTOR SHALL ROUTE NEW DUCTS WITHIN CEILING.
2. NEW DUCT WORK SHALL USE SHEET METAL DUCTS. NO DUCTBOARDS SHALL REMAIN.
3. CONTRACTOR SHALL PROVIDE ALL NEW GRILLES WHERE SHOWN ON FLOOR PLAN.
4. CONTRACTOR SHALL ROUTE EXHAUST AND OUTSIDE AIR DUCTS TO GRAVITY VENTILATORS. COORDINATE EXACT LOCATION WITH ARCHITECT.

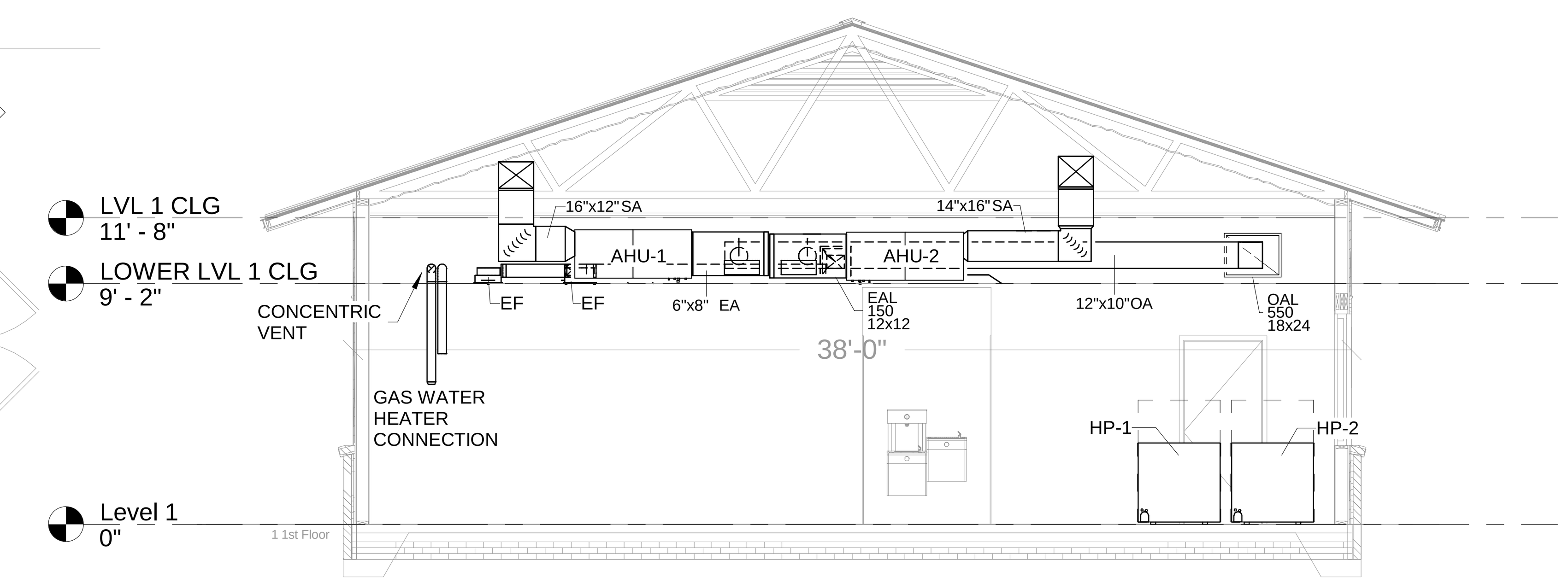
HVAC RENOVATION KEYED NOTES

1	COORDINATE WITH ARCHITECT FOR PLACEMENT OF OUTSIDE UNITS. PROVIDE ADEQUATE SPACE FOR VENDOR MATERIALS.
2	HORIZONTALLY MOUNT AIR HANDLING UNITS ABOVE CEILINGS, COORDINATE WITH ARCHITECT. CONTRACTOR SHALL MOUNT AIR HANDLING UNIT NO MORE THAN 15 FEET ABOVE FINISHED FLOOR. PROVIDE ACCESS DOOR IN HARD CEILING FOR MAINTENANCE. INSTALL UNIT IN ATTIC WITH MINIMUM 20"x30" ACCESS IN RESTROOM HARD CEILING, REFER TO FBC-M 306.3.
3	CONTRACTORS SHALL INSTALL DUCTS INTO TRUSSES.
4	PROVIDE SMOKE DETECTOR ON SUPPLY SIDE OF EACH UNIT.
5	CONCENTRIC 4" ROUND DUCT FOR COMBUSTION AIR TO GAS WATER HEATER, CONTRACTOR SHALL COORDINATE WALL PENETRATION.
6	PROVIDE THERMOSTAT IN LOCK BOX.
7	8" OUTISDE AIR DUCT TO RETURN DUCT WITH MOTORIZED DAMPER.
8	ROUTE CONDENSATE OUT TO CONDENSATE DRYWELL. REFER TO DETAIL.
9	EQUIPMENT MEETS THE REQUIREMENT FOR FREE FLOW PER MANUFACTURER'S INSTRUCTIONS.



1 M101 FLOOR PLAN - HVAC - RENOVATION

Scale: 1/4" = 1'-0"



2 M101 SECTION VIEW - HVAC

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

PHASE:	DRAWN:	REVIEWED:	DATE:
ADVANCED SCHEM. DESIGN	LJ	REGII	01/20/2023
50% CONSTRUCTION DOCS.	LJ	REGII	10/02/2023
90% CONSTRUCTION DOCS.	LJ	REGII	01/11/2024
100% CONSTRUCTION DOCS.	LJ	REGII	02/09/2024

ID:	REVISION:	DRAWN:	REVIEWED:	DATE:
1	COT COMMENTS	LJ	REGII	04/17/2024

Client: City of Tallahassee
Tallahassee, FL

Job Title: 1309 Alabama Street

Consultant: FSM Engineering

Seal:

Project #: 21423.4
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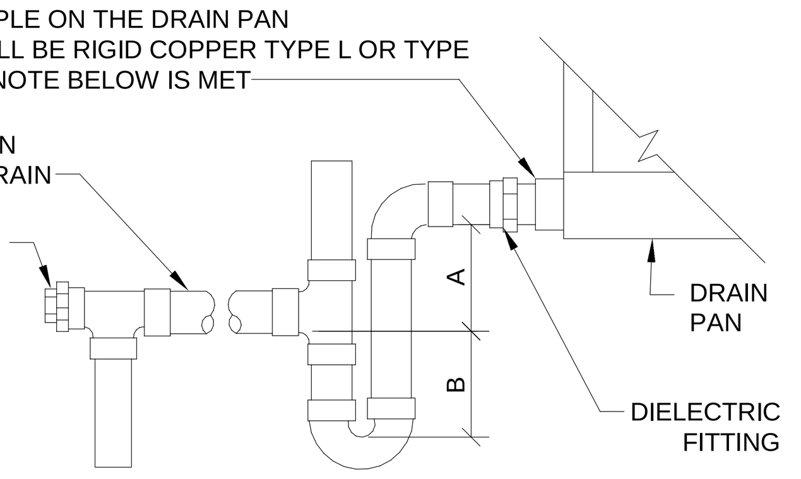
Description:
FLOOR PLAN - HVAC

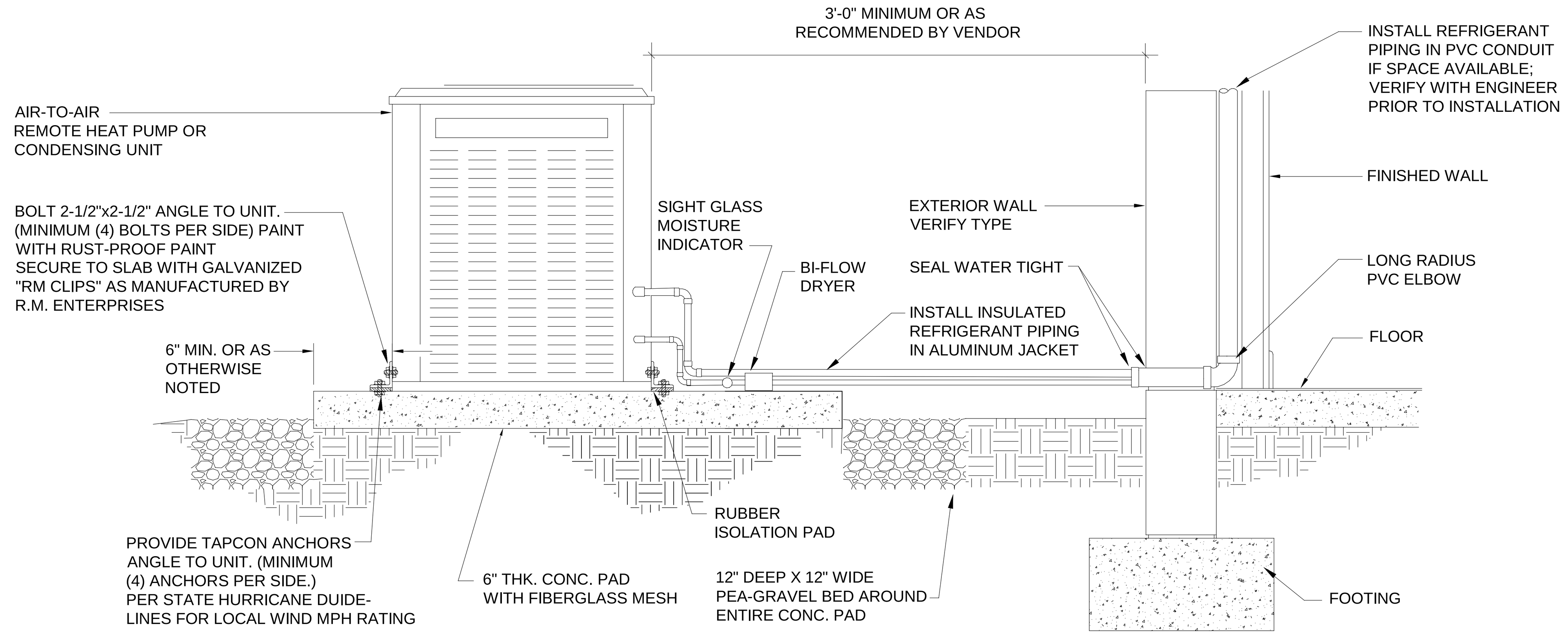
Sheet No.:
M101

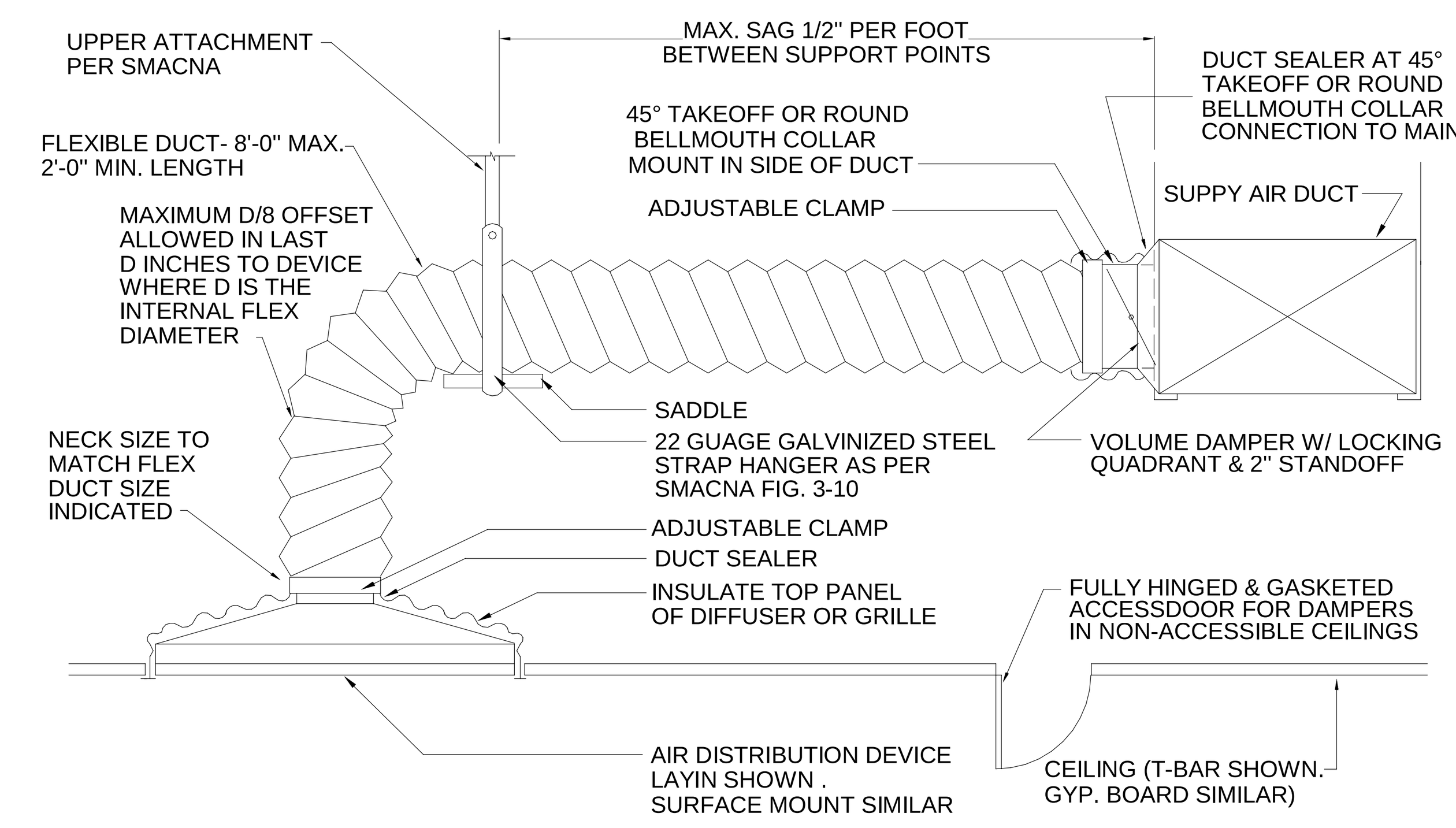


NOTE:
1.CPVC PIPE MAY BE USED ONLY IF APPROVED BY LOCAL VA AND IS INDOORS AND DOES NOT PASS THROUGH RATED BARRIERS.
2.DIELECTRIC FITTING TO BE USED WHEN TWO DISSIMILAR METALS ARE TO BE CONNECTED.
3.TERMINATE AT CODE ALLOWED GREEN SPACE INTO GRAVEL PIT MINIMUM 12" FROM BUILDING.

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

WHERE X = STATIC PRESSURE IN PAN



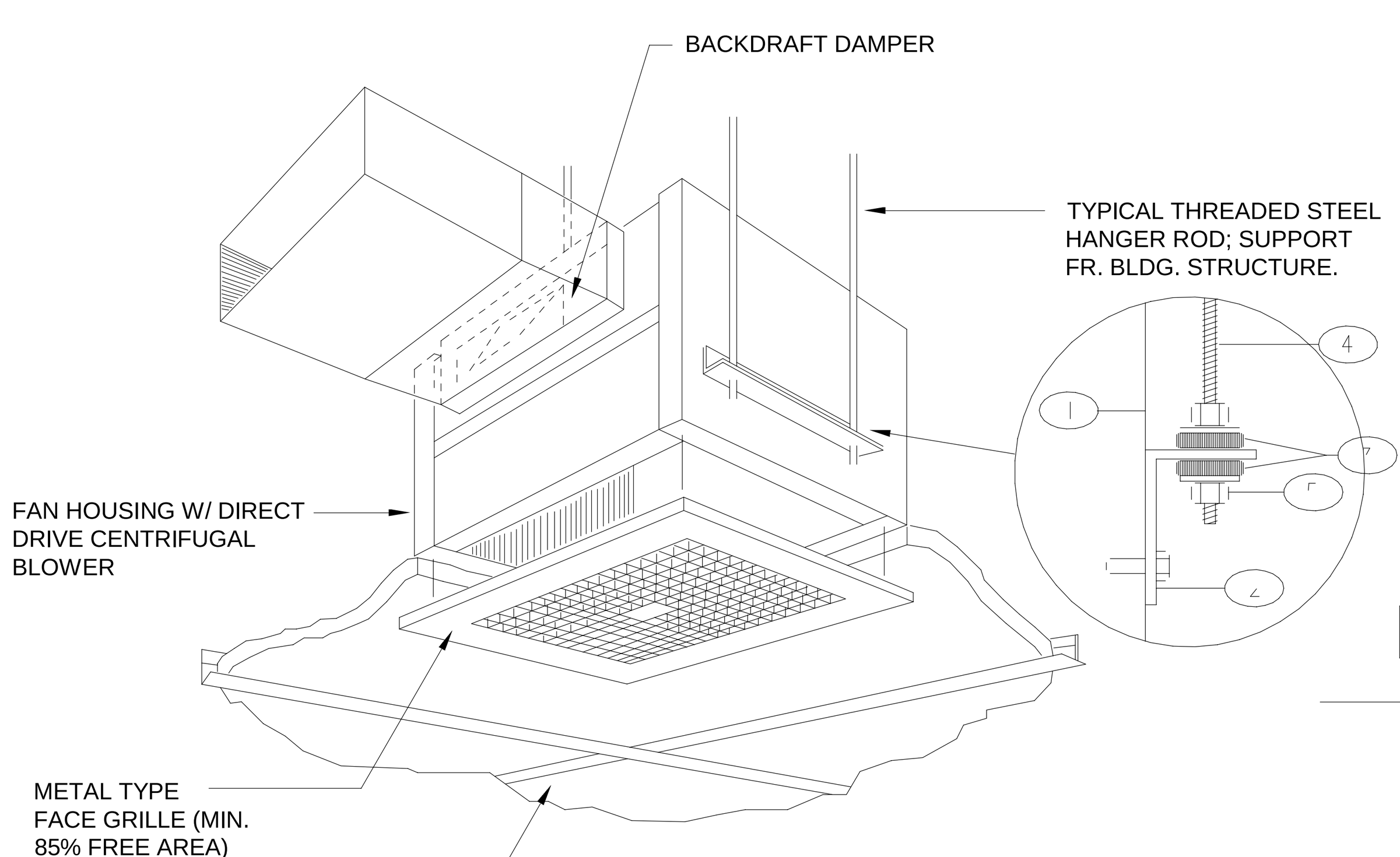


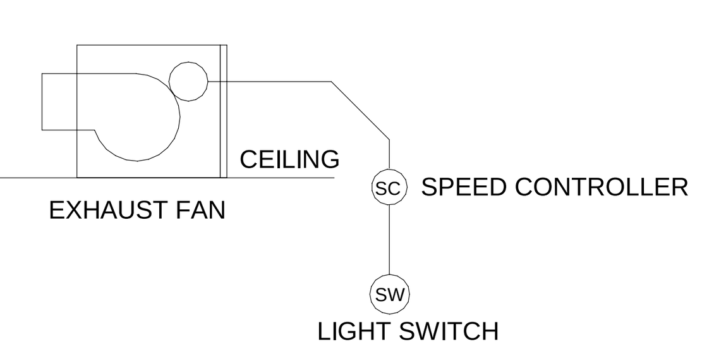
NOTES:
1. FLEXIBLE DUCTS SHALL BE ONE PIECE AND SHALL NOT BE SPLICED TOGETHER .
2. EXTEND FLEXIBLE DUCT INSULATION TO DUCT/DIFFUSER PANEL INSULATION AND SEAL WITH MASTIC .
3. FLEXIBLE AIR DUCT SHALL NOT EXCEED 8 FT. WHEN EXTENDED . ELBOW RADIUS SIZED FOR NO LESS THAN R / D = 1.0 .
4. FLEXIBLE AIR DUCT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

1 AHU DRAIN TRAP
M501
No Scale

2 HEAT PUMP UNIT OUTDOOR INSTALLATION DETAIL
M501
No Scale

3 FLEXIBLE DUCT TAKEOFF DETAIL
M501
No Scale

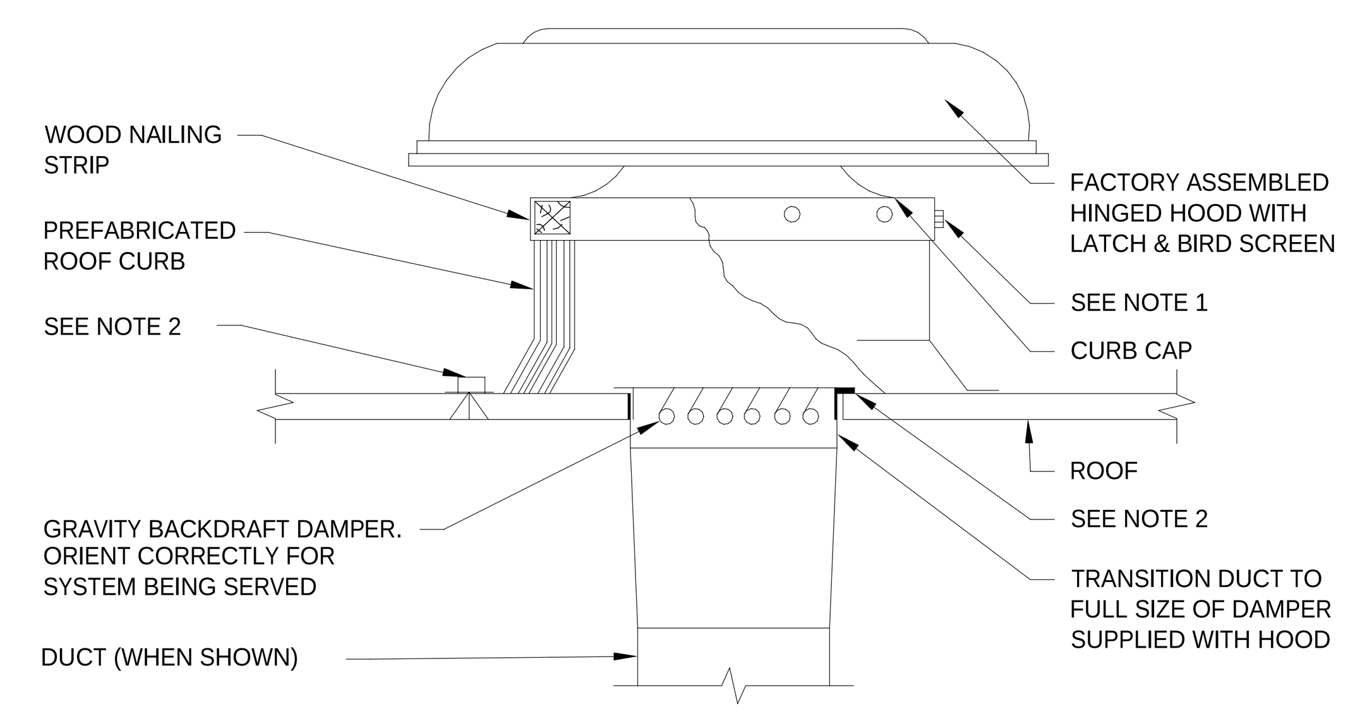




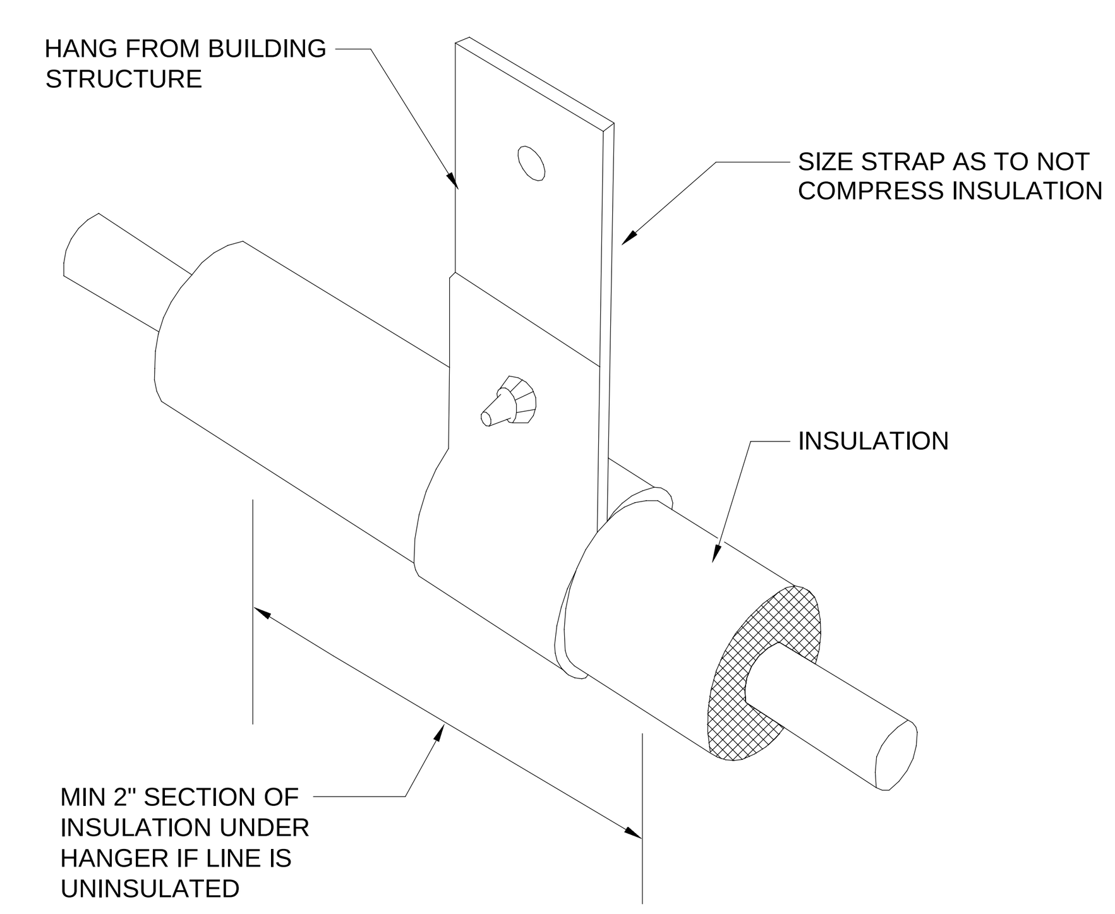
EXHAUST FAN - LIGHT SWITCH CONTROL

GENERAL NOTES:
* PROVIDE BACKDRAFT DAMPER AT FAN AND BIRD SCREEN AT OUTLET.
* PROVIDE INTERNAL ISOLATION AND SOUND INSULATION, AS NECESSARY.

1. GALVANIZED STEEL HOUSING
2. ADJUSTABLE MOUNTING FLANGE
3. VIBRATION ISOLATOR, TOP AND BOTTOM
4. 3/16" DIAMETER THREADED HANGER RODS, TOTAL OF FOUR, SUPPORT FROM BUILDING STRUCTURE. PROVIDE SECONDARY FRAMING AS NECESSARY
5. LOCKING NUT AND WASHER



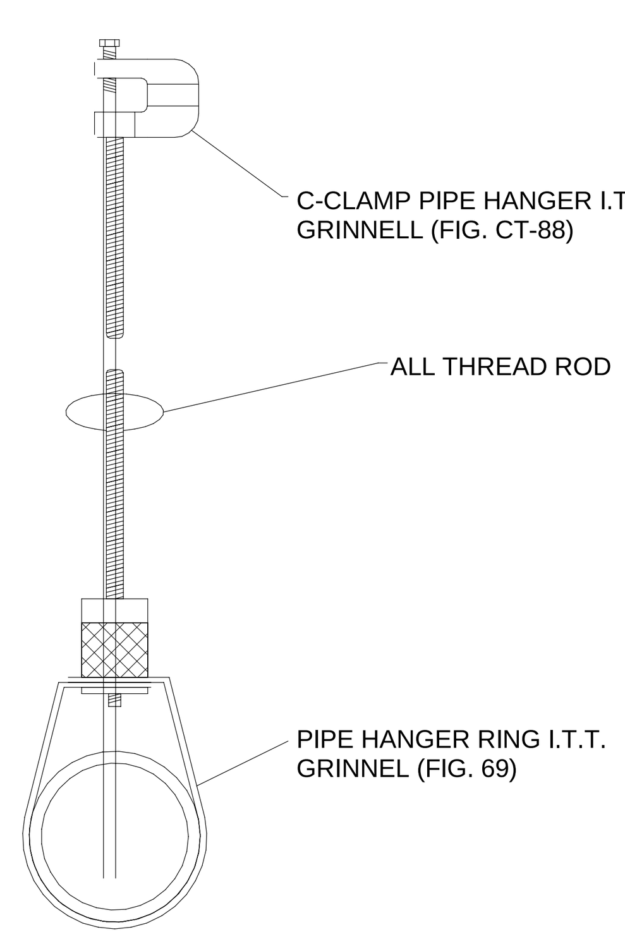
NOTE:
1. SECURE HOOD TO WOOD NAILING STRIP WITH 3/8" CADMIUM PLATED LAG BOLTS NOT OVER 12" ON CENTER.
2. SECURE ROOF CURB, DUCTWORK AND DAMPER TO ROOF WITH EXPANSION BOLTS (CONCRETE ROOF) OR RUST RESISTANT BOLTS (MENTAL DECK & BAR JOIST ROOF).



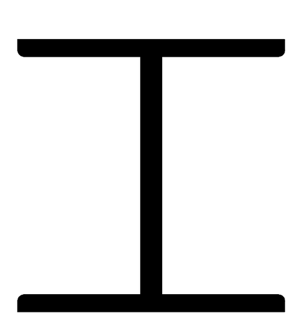
4 EXHAUST FAN DETAIL
M501
No Scale

5 ROOFTOP GRAVITY VENTILATOR
M501
No Scale

6 REFRIGERANT PIPE HANGER DETAIL
M501
No Scale



PIPE SIZE	ROD SIZE	MAX SPACE
(IN)	(IN)	(FT)
1/2	1/4	5
3/4	1/4	6
1	1/4	7
1 1/2	3/8	9
2	3/8	10
2 1/2	3/8	11
3	3/8	12
4	1/2	14



7 PIPE HANGER DETAIL U.L./F.M. APPROVED
M501
No Scale

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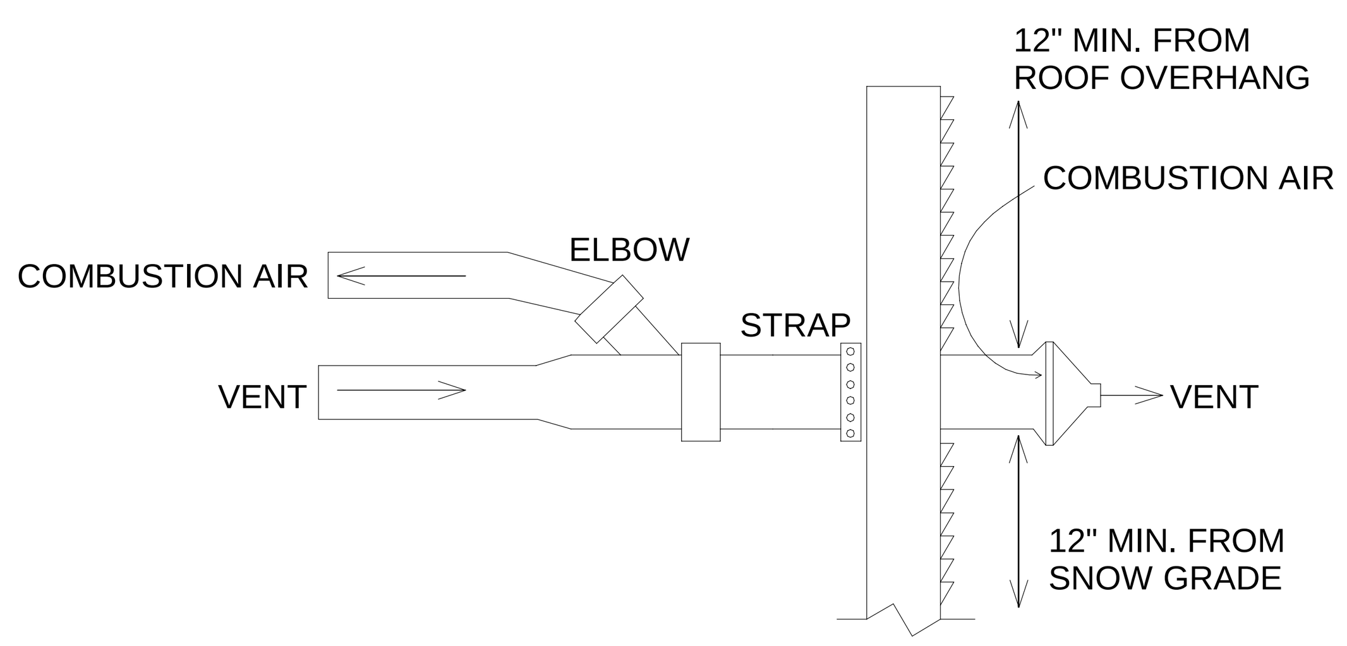
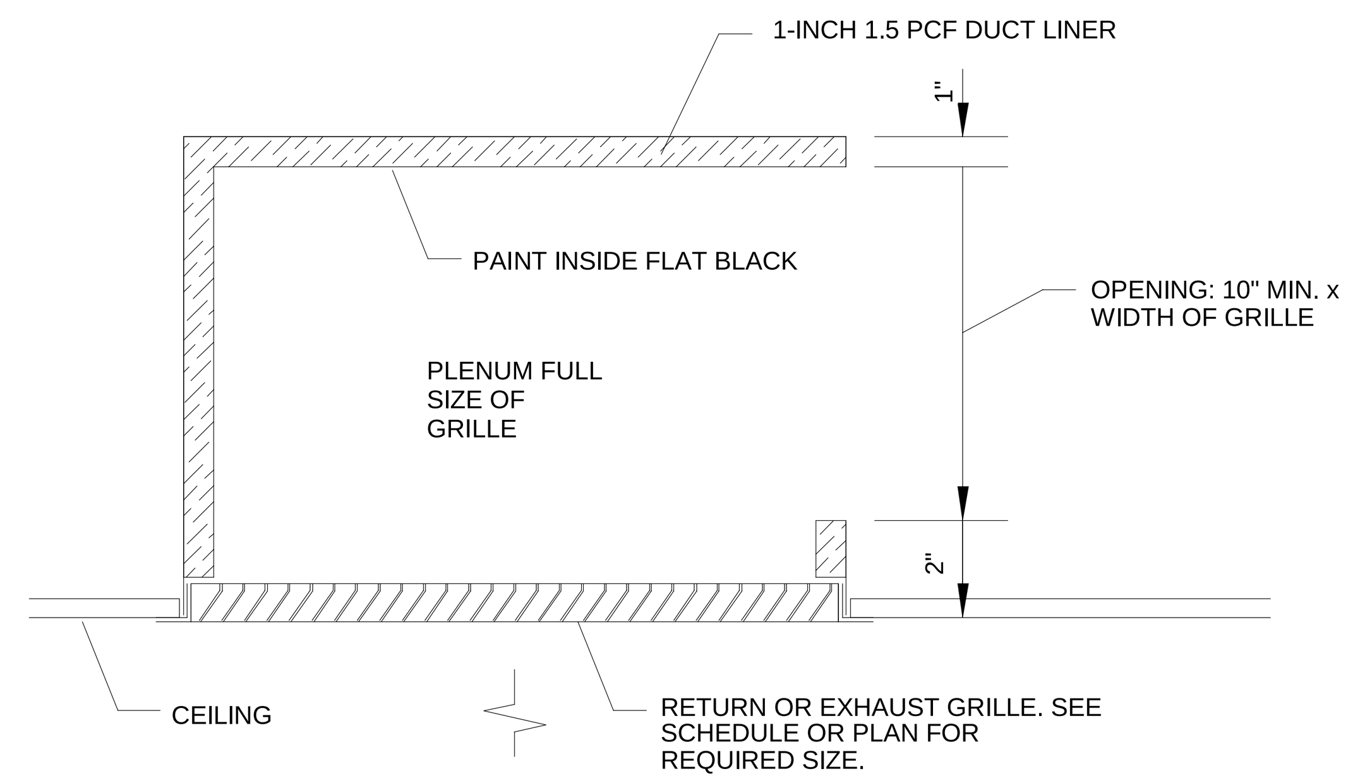


NEVER HAVE COMBUSTION AIR BELOW HORIZONTAL.

NOTE: SECURING STRAP MUST BE FIELD INSTALLED TO PREVENT MOVEMENT OF TERMINATION KIT INSIDE WALL.

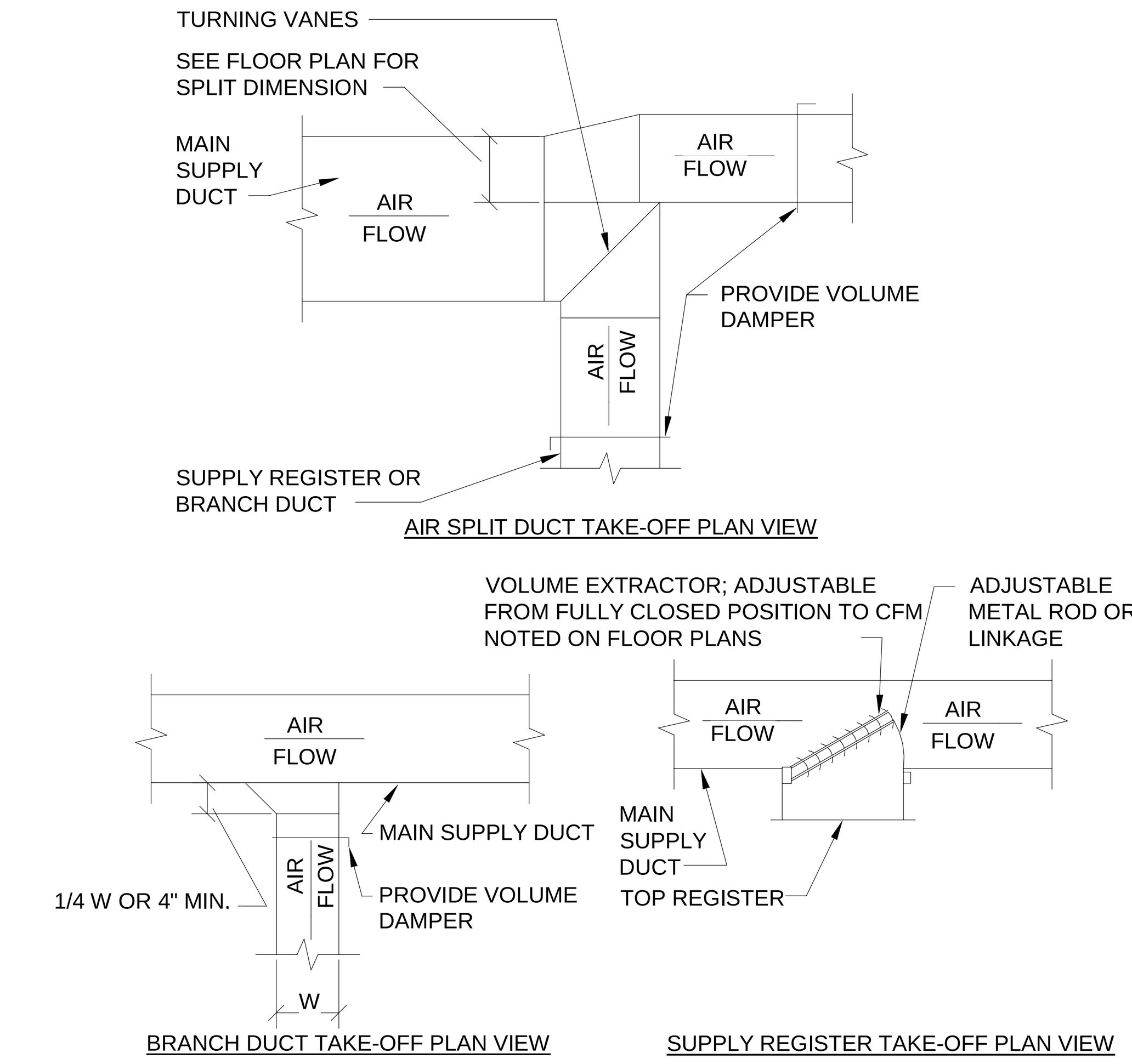
1 M502 EXHAUST FAN DETAIL
No Scale



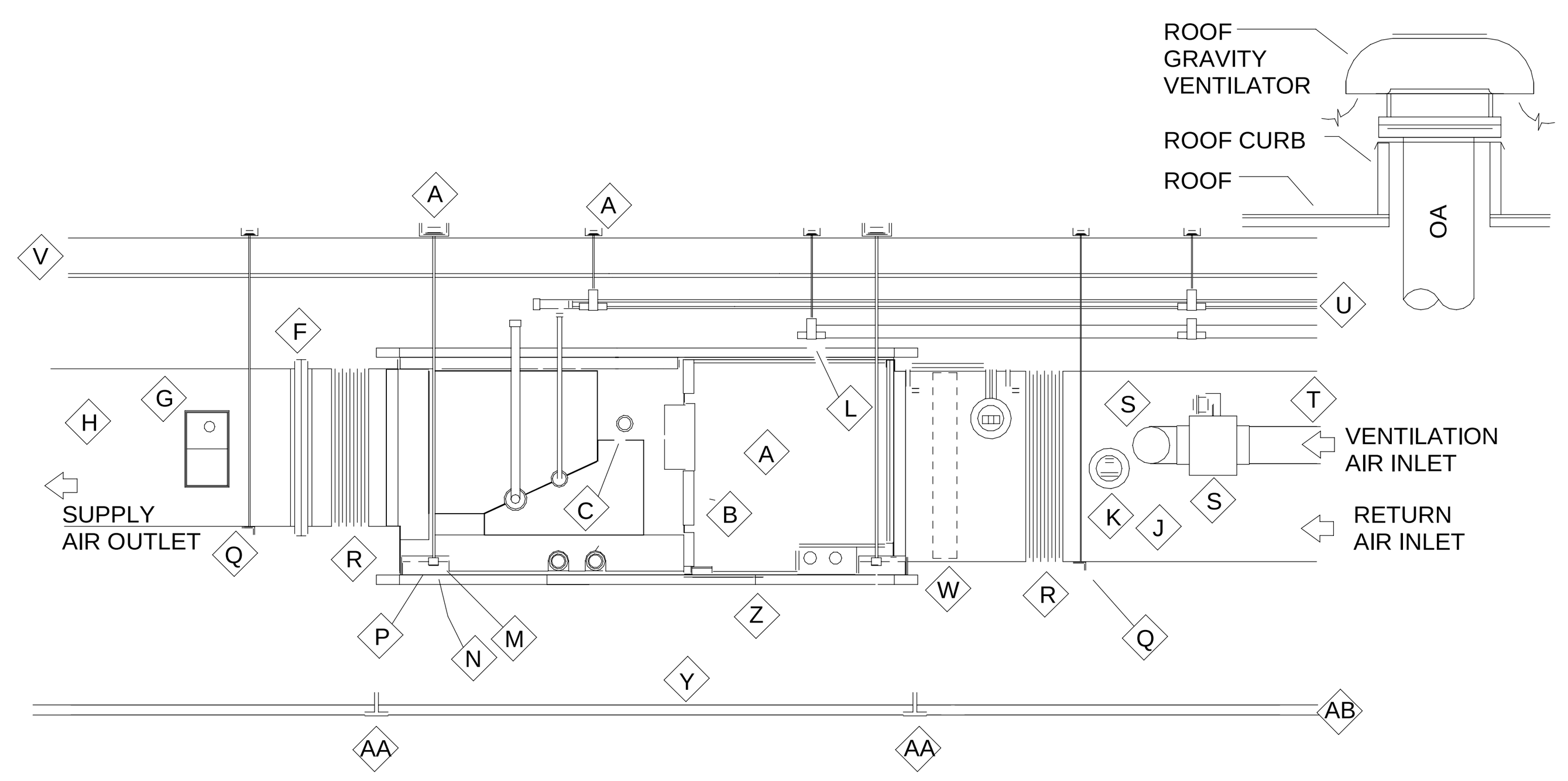
NOTES:

1. INSTALL BLADES OF GRILLE SO SIGHT LINE INTO PLENUM IS OBSCURED FROM ROOM.
2. PROVIDE APPROPRIATE MOUNTING HARDWARE FOR GRILLE TO ACCOMMODATE CEILING TYPE.

2 M502 RETURN REGISTER BOOT DETAIL
No Scale



3 M502 SUPPLY DUCTWORK TAKE-OFF DETAIL
No Scale



A. DUCTED DX TYPE FAN-COIL UNIT WITH UL APPROVED FACTORY OR FIELD INSTALLED ELECTRICAL DISCONNECT. UNIT TO BE SUPPORTED AS INDICATED IN DETAIL PER FACTORY INSTALLATION INSTRUCTIONS.

B. LOW VOLTAGE TO AHU SECONDARY DRAIN LEVEL SENSOR IN PAN WITH CONTROLLER & ALARM PANEL TO DISENGAGE FAN-COIL UNIT WHEN HIGH WATER IS DETECTED IN CONDENSATE DRAIN PER VENDOR.

C. 3/4" SCHEDULE 80 CPVC CONDENSATE DISCHARGE LINE WITH 3/4" ARMAFLEX UNICELLULAR CLOSED CELL FOAM; LINE TO BE SLOPED AT 1/8" PER FOOT. SEE P-TRAP DETAIL.

F. "DUCTMATE" GASKET TYPE FITTING FOR RECTANGULAR DUCTS SIZED AT 24" AND UP. DUCT MAY BE SUPPORTED FROM THIS FITTING PER VENDOR & 2005 SMACNA REQUIREMENTS.

G. UL APPROVED IN-LINE SMOKE DETECTOR IN SUPPLY; DEVICES ARE REQUIRED IN FREE PULLING AIR PLENUMS WHEN ALL UNITS EXCEED 2000 CFMS TOTAL AIR CAPACITY OR SINGLE AHU AT 2000 CFMS AND HIGHER. SEE SPEC'S FOR ADDITIONAL INFORMATION. CONNECT TO BUILDING FIRE ALARM PANEL.

H. SUPPLY AIR GALVANIZED METAL DUCT PER 2005 SMACNA DUCT STANDARDS BASED ON GAUGE THICKNESS IN COMPLIANCE WITH SCHEDULES; DUCT SHALL BE WRAPPED WITH INSULATED BLANKET PER SPECS, MECHANICAL MATERIAL SCHEDULES & DETAILS.

J. SAME AS NOTE ABOVE FOR RETURN AIR DUCT.

L. TYPICAL CLEVIS HANGER WITH THREADED ROD, STEEL CHANNEL & METAL SADDLE UNDER INSULATED LINE AS SHOWN. SEE DETAILS FOR ADDITIONAL INFORMATION.

M. NEOPRENE COMPRESSOR MOUNT BY MASON INDUSTRIES; TYPICAL FOR EACH UNIT BRACKET SHOWN.

N. FLAT STEEL WASHER SIZED BASED ON NEOPRENE ISOLATOR.

P. LOCKING NUT FOR ADJUSTMENT; TYPICAL FOR ALL NUTS USED FOR HANGING OR UNIT SUPPORT.

Q. SUPPORT "L" STEEL SIZED PER 2005 SMACNA DUCT STANDARDS WITH ALL THREAD ROD, STEEL FLAT WASHER & LOCKING UNIT.

R. UL 181 APPROVED FLEXIBLE DUCT CONNECTOR WITH SUPPORT FLANGE & SEALED CONNECTION; DEVICE TO BE PROPERLY SEALED AIR TIGHT AS REQUIRED PER SPECS.

S. VENTILATION DUCT CONNECTION TO MIXED AIR PLENUM WITH BACKDRAFT DAMPER

T. OPPOSED BLADE AIR BALANCING DAMPER AS INDICATED.

U. ROUTE REFRIGERANT LINES TO OUTDOOR UNIT AS REFLECTED IN PIPING SCHEMATIC DRAWING IN COMPLIANCE WITH VENDOR INSTALLATION INSTRUCTIONS.

V. ROOF OR STRUCTURE SUPPORT; VERIFY EXACT TYPE, LOCATION, MATERIAL COMPONENT, HEIGHT FROM FINISHED FLOOR, ETC.

W. UNIT AIR FILTER RACK RATED AT MERV 7 WITH ACCESSIBLE GASKET DOOR.

Y. FAN-COIL OR AIR-HANDLING-UNIT ACCESS VIA APPROVED LAY-IN CEILING TILE AS SHOWN; IF HARD SHEET-ROCKTYPE CEILING APPLIED CONTRACTOR MUST USE FIXED TYPE HINGED ACCESS DOOR WITH VANISHING HINGE & LATCH-SCREWS; HATCH MUST BE PAINTED TO MATCH SURROUNDINGS; ACCESSIBLE HATCH TO BE SIZED BASED ON UNIT DIMENSIONS REQUIRED SERVICE REQUIREMENTS; COORDINATE WITH ARCHITECT/OWNER PRIOR TO INSTALLATION.

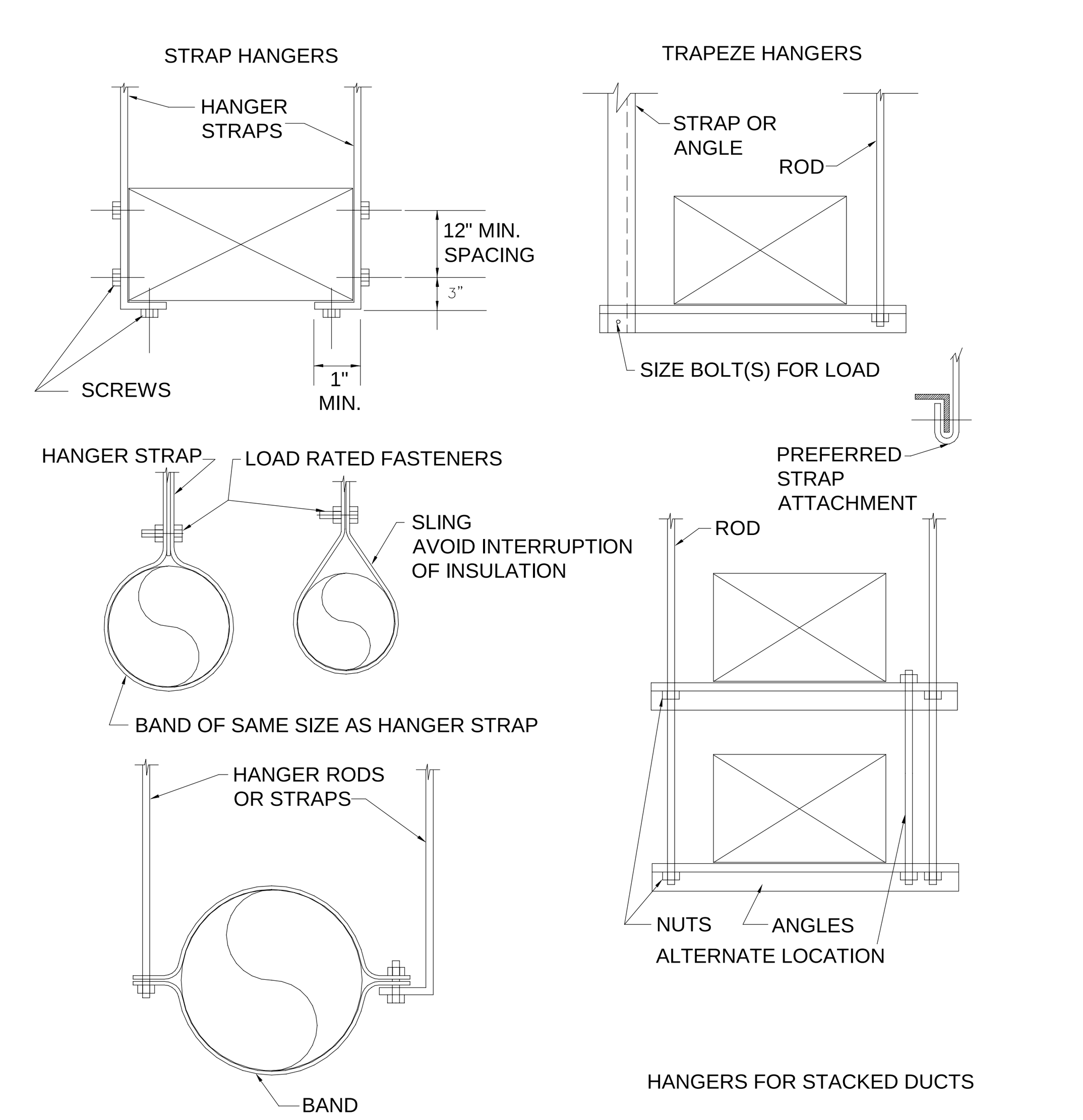
Z. FAN-COIL UNIT TO BE LOCATED ABOVE FINISHED CEILING BASED ON AVAILABLE SPACE & OTHER TRADES; BOTTOM OF UNIT SHALL NOT EXCEED 14'-0" AFF FOR ACCESSIBLE SERVICE ACCESS.

AA. TYPICAL LAY-IN CEILING GRID (BY OTHERS) OR SUPPORT FOR FIXED CEILING; VERIFY ACTUAL CONDITIONS PRIOR TO EFFORT.

AB. FINISHED CEILING MATERIAL; SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION & REQUIREMENTS.

4 M502 HORIZONTAL DX TYPE FAN-COIL UNIT DETAIL
No Scale

DUCT HANGER DETAILS

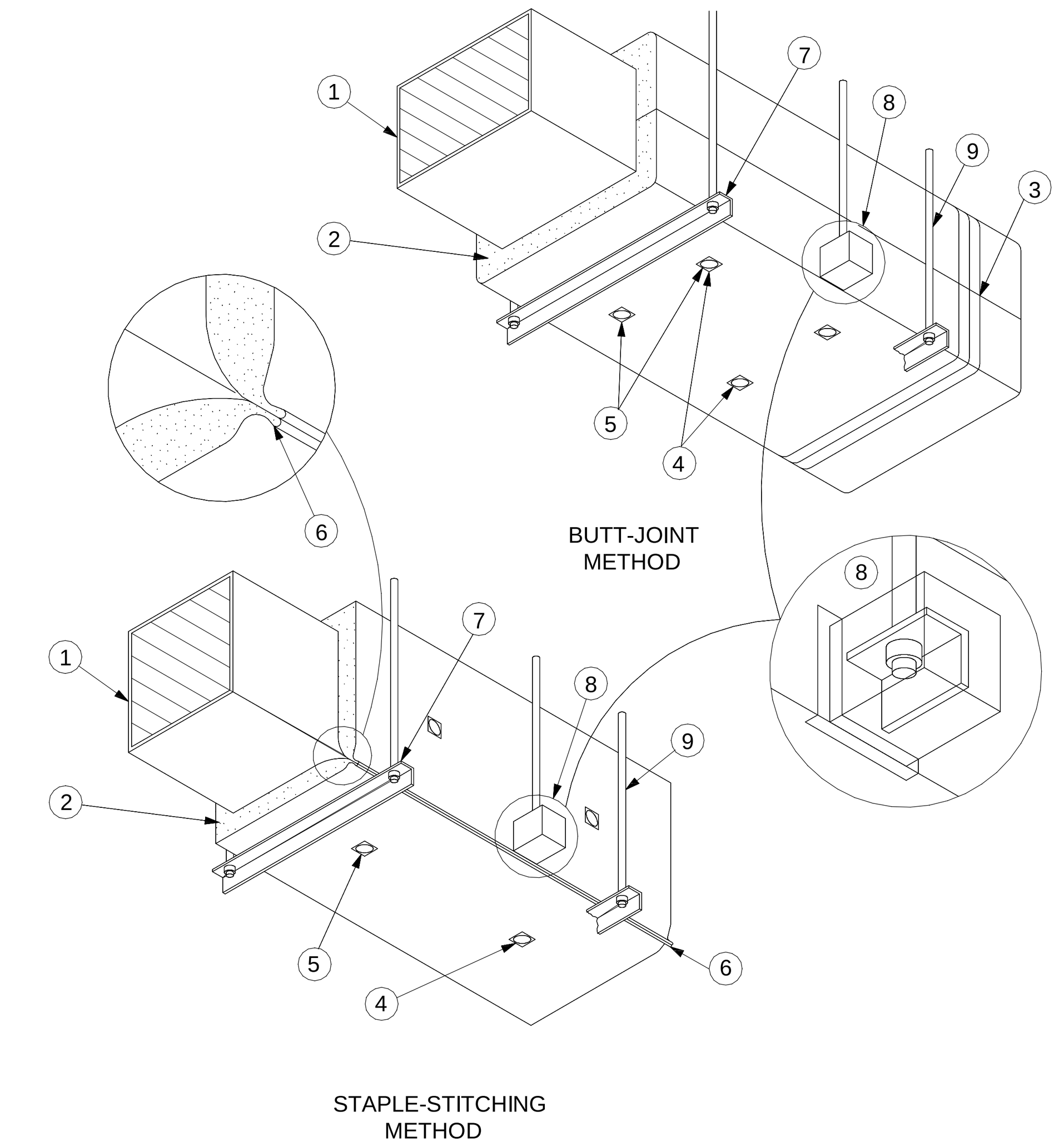


HANGERS FOR STACKED DUCTS

REINFORCEMENT MAY BE USED FOR ATTACHMENT IF IT QUALIFIES FOR BOTH DUTIES.

DO NOT EXCEED LOAD RATING FOR METHOD USED.

5 M502 HANGER DETAILS
No Scale



NOTES:

1. GALVANIZED METAL DUCT WITH SEALED SEAMS AND JOINTS USING PS-S POLY TYPE NO.P-301 PRODUCT.
2. BLANKET INSULATION WITH FACTORY-APPLIED VAPOR-RETARDER JACKET, 2" THICK R-6, 3/4 LB. CU. FT. DENSITY.
3. FACTORY LAP ALL SEALS (SEALED WITH ADHESIVE AND/OR STAPLES AND VAPOR-RETARDER TAPE). TAPE ALL JOINTS WITH FASON (SMANCA) ALUMINUM REINFORCED PRESSURE SENSITIVE TAPE; COAT EDGES, SEAMS, AND JOINTS WITH INSUL-COUSTIC PRODUCT BY "SURE-COAT" M1-110" PRODUCT FIRE RESISTANT MASTIC.
4. MECHANICAL FASTENERS SUPPORTING INSULATION ON UNDERSIDE OF DUCTS OVER 24" WIDE (SPACED 3" MAXIMUM FROM THE BUTT JOINT).
5. VAPOR-RETARDER TAPE OVER TEARS AND PENETRATIONS OF THE VAPOR-RETARDER JACKET TO KEEP AIR TIGHT CONDITION.
6. ALTERNATE METHOD OF LAP SEAL - LONGITUDINAL JOINT LAPPED AND FOLDED, THEN STAPLED SECURELY IN PLACE.
7. HANGER ON EXTERIOR OF INSULATION. ENCAPSULATE EXPOSED END OF ANGLE. SEAL WITH ADHESIVE OR VAPOR-RETARDER TAPE.
8. HANGER EMBEDDED IN INSULATION. ENCAPSULATE EXPOSED END OF ANGLE. SEAL WITH ADHESIVE OR VAPOR-RETARDER TAPE.
9. COMPLETELY ENCAPSULATE HANGER ROD AND ANGLE. SEAL TOP PENETRATION. ENCAPSULATE AND SEAL STRAP HANGERS IN A SIMILAR MANNER.

6 M502 BLANKET FIBERGLASS INSULATION DETAIL
No Scale

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AIR HANDLER SCHEDULE

MARK	MODEL	MATCHING UNIT	TOTAL CFM	OA CFM	EXT. SP (IN WG)	MOTOR HP	VOLTAGE/ PHASE	EAT (DB/WB)	LAT (DB/WB)	AUX HEATER	MCA	MOCP	REMARKS
AHU-1	DV36FECC14	DZ17VSA361	1250	220	0.50 in-wg	3/4	208 V/1	80 °F/67 °F	56 °F/55 °F	8000 W	43 A	45 A	1-5
AHU-2	DV36FECC14	DZ17VSA361	1360	230	0.50 in-wg	3/4	208 V/1	80 °F/67 °F	56 °F/55 °F	8000 W	43 A	45 A	1-5

REMARKS

1. AIR HANDLER BASED ON DAIKIN.
2. PROVIDE SINGLE POINT POWER CONNECTION WITH INTEGRAL DISCONNECT.
3. INCLUDE 8 KW ELECTRIC HEAT KIT.
4. PROVIDE SMOKE DETECTOR IN SUPPLY DUCT.
5. INSTALL WITH MANUFACTURER'S THERMOSTAT AND DRAIN PAN OVERFLOW SWITCH.

HEAT PUMP UNIT SCHEDULE

MARK	MODEL NUMBER	MATCHING UNIT	NOMINAL TON	TOTAL COOLING	SEER(EER)	SENSIBLE COOLING	TOTAL HEATING	HSPF(COP)	VOLTAGE/ PHASE	MCA	MOCP	REMARKS
HP-1	DZ17VSA361	DV36FECC14	3	36000.0 Btu/h	16(14)	28800.0 Btu/h	36000.0 Btu/h	11(3.2)	208 V/1	22.7 A	25 A	1-4
HP-2	DZ17VSA361	DV36FECC14	3	36000.0 Btu/h	16(14)	28800.0 Btu/h	36000.0 Btu/h	11(3.2)	208 V/1	22.7 A	25 A	1-4

REMARKS

1. HEAT PUMP BASED ON DAIKIN.
2. FOLLOW EQUIPMENT MANUFACTURER'S GUIDELINES FOR REFRIGERANT LINE SIZING.
3. COMPRESSOR SOUND BLANKET, 500-HR SALT SPRAY ON CONDENSER COILS.
4. SEE TO DASHED OUTLINES ON FLOOR PLAN FOR MINIMUM CLEARANCE AROUND UNIT.

ENERGY SYSTEMS - GENERAL

1.PROVIDE A TEST AND BALANCE OF THE SYSTEM IN COMPLIANCE WITH FBC-EC SECTION 408.2.2 IN ACCORDANCE WITH THE LATEST NEBB, ASHRAE, OR EQUIVALENT GUIDELINES FOR SUCH WORK. TAB CONTRACTORS SHALL BE PRE APPROVED BY THE ENGINEER OF RECORD.

2.PROVIDE OWNER A COMPLETE SET OF OPERATIONS AND MAINTENANCE MANUALS FOR ALL COOLING AND VENTILATION EQUIPMENT WITHIN 90 DAYS OF SYSTEM ACCEPTANCE OR SITE INSPECTION, WHICHEVER COMES FIRST.

3.HVAC EQUIPMENT EFFICIENCY MUST BE VERIFIED PER TABLES C403.2.3(1-11) UNDER FBC CHAPTER 4, C403.2.3.

4.PROVIDE MOTORIZED OR GRAVITY DAMPERS MEETING LEAKAGE REQUIREMENTS OUTLINED IN FBC CHAPTER 4, C403.2.4.3 ON ALL OUTDOOR AIR AND EXHAUST SYSTEMS.

5.PIPING INSULATION EXPOSED TO WEATHER SHALL BE PROTECTED FROM DAMAGE DUE TO SUNLIGHT, MOISTURE, EQUIPMENT MAINTENANCE, WIND, SOLAR RADIATION WHICH MAY CAUSE DEGRADATION TO THE PIPING MATERIAL, AND OTHER NATURAL FACTORS. ADHESIVE TAPE SHALL NOT BE PERMITTED.

6.ALL SUPPLY AND RETURN AIR DUCTS AND PLENUMS SHALL BE INSULATED WITH MINIMUM R-6 INSULATION WHERE LOCATED IN UNCONDITIONED SPACES AND MINIMUM R-8 INSULATION WHERE LOCATED OUTSIDE THE BUILDING. WITHIN THE BUILDING ENVELOPE ASSEMBLY, THE DUCT OR PLENUM SHALL BE SEPARATED FROM THE BUILDING EXTERIOR, UNCONDITIONED SPACES, OR EXEMPT SPACES BY A MINIMUM R-8 INSULATION. DUCTS AND PLENUMS LOCATED WITHIN EQUIPMENT OR WHERE THE DESIGN TEMPERATURE DIFFERENCE BETWEEN THE INTERIOR AND EXTERIOR OF THE DUCT OR PLENUM DOES NOT EXCEED 15°F ARE EXEMPT.

7.HVAC DUCTS AND PLENUMS ARE TO BE SEALED BASED ON STATIC PRESSURE AND LOCATION AS OUTLINED IN FBC CHAPTER 4, C403.2.9 AND ITS SUB-SECTIONS.

8.PROVIDE SUPPLY AIR OUTLETS AND ZONE TERMINAL DEVICES WITH AIR BALANCING MEANS IN ACCORDANCE WITH CHAPTER 6 OF THE INTERNATIONAL MECHANICAL CODE. FANS WITH MOTORS OF 1HP OR LESS ARE EXEMPT.

9.PLANS, SPECIFICATIONS, AND CALCULATIONS MUST PROVIDE ALL INFORMATION FROM WHICH COMPLIANCE CAN BE DETERMINED FOR THE MECHANICAL SYSTEMS AND EQUIPMENT, AND FOR COMPLIANCE WITH ADDITIONAL ENERGY EFFICIENCY PACKAGE OPTIONS. EXCEPTIONS TO THE STANDARD MUST BE DOCUMENTED.

10.DRAWINGS, MANUALS, AND SYSTEM BALANCING REPORTS SHALL BE PROVIDED TO THE BUILDING OWNER WITHIN 90 DAYS OF THE RECEIPT OF THE CERTIFICATE OF OCCUPANCY.

11.AUTOMATIC START CONTROLS SHALL BE PROVIDED FOR EACH HVAC SYSTEM. THE CONTROLS SHALL BE CAPABLE OF AUTOMATICALLY ADJUSTING THE DAILY START TIME OF THE HVAC SYSTEM IN ORDER TO BRING EACH SPACE THE DESIRED OCCUPIED TEMPERATURE IMMEDIATELY PRIOR TO SCHEDULED OCCUPANCY.

12.HEAT PUMPS HAVING SUPPLEMENTARY ELECTRIC RESISTANCE HEAT SHALL HAVE CONTROLS THAT, EXCEPT DURING DEFROST, PREVENT SUPPLEMENTARY HEAT OPERATION WHERE THE HEAT PUMP CAN MEET THE HEATING LOAD.

13. ZONE CONTROLS SHALL LIMIT SIMULTANEOUS COOLING AND HEATING, AND SEQUENCE HEATING AND COOLING TO EACH ZONE IN ACCORDANCE WITH FBC CHAPTER 4, C403.2.4.

14.HVAC AND SERVICE WATER-HEATING CONTROL SYSTEMS SHALL BE TESTED TO DOCUMENT THAT CONTROL DEVICES, COMPONENTS, EQUIPMENT, AND SYSTEMS ARE CALIBRATED AND ADJUSTED AND OPERATE IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS. SEQUENCES OF OPERATION SHALL BE FUNCTIONALLY TESTED TO DOCUMENT THEY OPERATE IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS.

15.HVAC PERFORMANCE EFFICIENCYAND LIGHTING SYSTEM EFFICIENCY SHALL BE CONSISTENT WITH WHAT IS SHOWN IN THE APPROVED PLANS.

ENERGY SYSTEMS - THERMOSTATS

1.HEATING AND COOLING TO EACH ZONE MUST BE CONTROLLED INDIVIDUALLY BY A THERMOSTAT CONTROL. AT LEAST ONE HUMIDITY CONTROL DEVICE SHALL ALSO BE PROVIDED FOR EACH HUMIDITY CONTROL SYSTEM.

2.THERMOSTATIC CONTROLS THAT CONTROL BOTH HEATING AND COOLING SHALL HAVE A DEADBAND OF 5°F MINIMUM WHERE WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS CAPABLE OF BEING SHUT OFF OR REDUCED TO A MINIMUM.

3.ZONES NOT CONTINUOUSLY OPERATED OR WITH FULL HVAC LOAD DEMAND EXCEEDING 6800 BTU/HR (2 KW) SHALL BE PROVIDED WITH THERMOSTATIC SETBACK CONTROLS THAT ARE CONTROLLED BY EITHER AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROL SYSTEM. THE SETBACK CONTROLS SHALL BE IN ACCORDANCE WITH FBC CHAPTER 4, C403.2.4.2.

4.INSTALL THERMOSTAT WITHIN 48" A.F.F., AND ADJACENT TO LIGHT SWITCHES WHERE POSSIBLE.

ENERGY SYSTEMS - FANS

1.FOR EACH FAN, THE SELECTED FAN MOTOR SHALL BE SIZED WITHIN ALLOWABLE LIMITS AS DICTATED BY FBC CHAPTER 4, C403.2.12.2.

AIR DISTRIBUTION DEVICE SCHEDULE

TAG	SERVICE	MFG	MODEL	CFM RANGE	NECK SIZE	FACE SIZE	DETAILS
CPR16	RETURN	PRICE	APDDR	750-1200	16"ø	2' - 0"x2' - 0"	LAYIN OR SURFACE MOUNTED; ALUMINUM MATERIAL; PERFORATED FACE; DUCTED RETURN;
CS6	SUPPLY	PRICE	SCD	0-100	6"ø	1' - 0"x1' - 0"	4 WAY DIRECTIONAL; LAYIN OR SURFACE MOUNTED DIFFUSER;ALUMINUM
CS8	SUPPLY	PRICE	SCD	100-250	8"ø	2' - 0"x2' - 0"	4 WAY DIRECTIONAL; LAYIN OR SURFACE MOUNTED DIFFUSER; ALUMINUM

BUILDING PRESSURIZATION TABLE

Mark	TOTAL CFM	RA CFM	EA CFM	OA CFM	AIR BALANCE	POSITIVE PRESSURE
AHU-1	1250	980	150	220	70	5.6%
AHU-2	1360	1130	0	230	230	16.9%
Grand total	2610	2110	150	450	300	

EXHAUST FAN SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	CFM	AREAS SERVED	DRIVE TYPE	MOTOR HP	STATIC PRESSURE	UNIT WEIGHT	VOLTS/PHASE	NOTES
EF	LAUREN COOK	GC-166	75	RESTROOM/ JAN.	DIRECT	FRACTIONAL	0.13 in-wg	25	115/1	1-2

REMARKS

1. EXHAUST FANS FUNCTION WITH LIGHT SWITCH.
2. COORDINATE INSTALLATION IN CEILING ON-SITE, REFER TO ARCH FOR COLOR MATCH.

LOUVER SCHEDULE

TAG	SERVICE	MFG	MODEL	NECK SIZE	DETAILS
EAL	EXHAUST	RUSKIN	EME520MD	12"x12"	HURRICANE RATED, 0.05 PRESSURE DROP, 0.28 FREE AREA FT^2, 28% FREE AREA
OAL	INTAKE	RUSKIN	EME520MD	24"x18"	HURRICANE RATED, 0.05 PRESSURE DROP, 1.09 FREE AREA FT^2, 36% FREE AREA

SINGLE ZONE VENTILATION SCHEDULE

AHU-1

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)
RETAIL B	996	15	7.5	0.06	75	172	215
JAN CLOSET	47	0	0	0	0	0	0
RESTROOM	46	0	0	0	0	0	0
Max	996	15	8	0	75	172	215
Totals	1089	15			75	172	215
OUTDOOR AIR INTAKE FLOW RATE, Vot (CFM):						215	

Notes:
Ventilation calculations are formatted to satisy 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 — Zone Effectiveness, Ez: 0.8

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

SINGLE ZONE VENTILATION SCHEDULE

AHU-2

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)
RETAIL A	1050	15	7.5	0.06	79	175	219
FUTURE OFFICE	57	1	5	0.06	4	8	11
FUTURE STOCK	84	0	0	0	0	0	0
Max	1050	15	8	0	79	175	219
Totals	1192	16			83	184	230
OUTDOOR AIR INTAKE FLOW RATE, Vot (CFM):						230	

Notes:
Ventilation calculations are formatted to satisy 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 — Zone Effectiveness, Ez: 0.8

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

PHASE:	DRAWN:	REVIEWED:	DATE:	ID:	REVISION:	DRAWN:	REVIEWED:	DATE:
ADVANCED SCHEM. DESIGN	LJ	REG®	01/20/2023					
50% CONSTRUCTION DOCS.	LJ	REG®	10/02/2023					
90% CONSTRUCTION DOCS.	LJ	REG®	01/11/2024					
100% CONSTRUCTION DOCS.	LJ	REG®	02/02/2024					

Client: City of Tallahassee
Tallahassee, FL

Job Title: 1309 Alabama Street

Consultant: FSM Engineering

Seal: NOT FOR CONSTRUCTION

Project #: 21423.4
Phase: 100% Construction Documents

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Description:
HVAC SCHEDULES

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