

1 OVERALL MECHANICAL PLAN  
 M1.0 SCALE: 1/8" = 1'-0"

GENERAL NOTES

- SEE HVAC DIFFUSER SCHEDULE FOR BRANCH DUCT SIZES NOT SHOWN ON PLAN.
- PROVIDE MANUAL BALANCE DAMPER ON ALL BRANCH DUCTS
- COORDINATE EXACT LOCATION OF GRILLES & DIFFUSERS WITH LIGHTS. REFER TO REFLECTED CEILING PLAN.
- ROUTE CONDENSATE FROM FURNACES TO NEAREST FLOOR DRAIN.

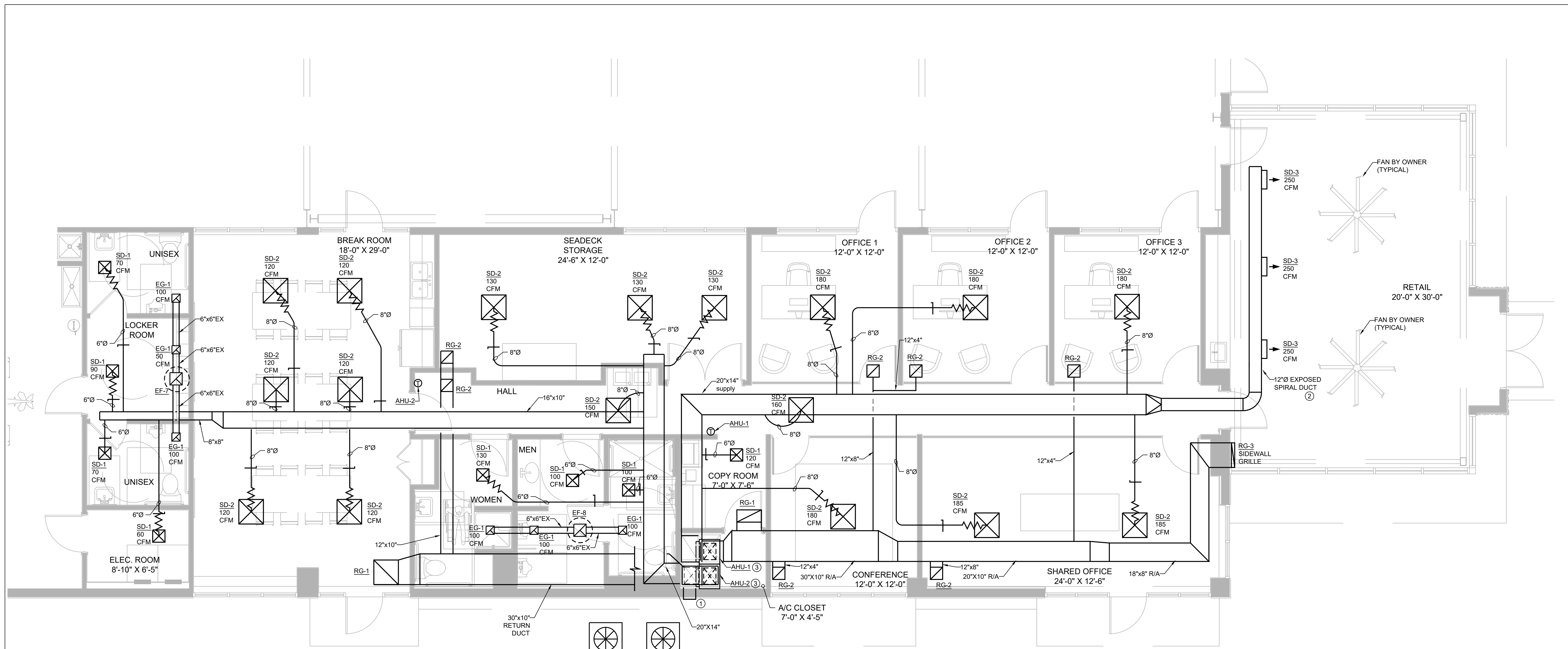
PLAN NOTES

- PROVIDE 8"x8" OUTDOOR VENTILATION AIR TO BOTH AHU-1 AND AHU-2, 250 CFM. ROUTE DUCT TO EXTERIOR OF BUILDING AND INSTALL WITH WALL LOUVER AND BIRDSCREEN. PAINT TO MATCH EXTERIOR OF BUILDING. FLASH AND SEAL WEATHERTIGHT. CONNECT 8" OUTDOOR AIR DUCT TO RETURN AIR DUCT AT EACH AIR HANDLER WITH SHUT OFF/BALANCE DAMPER. BALANCE EACH DAMPER TO 250 CFM OF OUTDOOR VENTILATION AIR.
- 12"Ø DOUBLE WALL INSULATED SPIRAL DUCT. INSTALL AS HIGH AS POSSIBLE A.F.F. PAINT DUCTWORK. FINAL LOCATION AND COLOR BY ARCHITECT/OWNER.
- ROUTE CONDENSATE TO FLOOR DRAIN.
- COORDINATE FINAL EXACT LOCATION AND HEIGHT OF LOUVER WITH ARCHITECT.
- COORDINATE FINAL EXACT LOCATION OF EXHAUST FANS WITH ARCHITECT AND OWNER AND CEILING FANS PLACEMENT.

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 REVIEW NOT  
 FOR  
 CONSTRUCTION

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1 ENLARGED MECHANICAL PLAN  
 M2.0 SCALE: 1/8" = 1'-0"

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METAL FABRICATIONS NEW FACILITY  
 4323 AVIATION AVENUE, TALLAHASSEE, FL 32310

HVAC PLAN

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## GENERAL MECHANICAL SPECIFICATIONS

COORDINATE ALL WORK WITH OTHER TRADES AS REQUIRED.

EQUIPMENT, PIPING, AND DUCTWORK LAYOUTS ARE SCHEMATIC IN NATURE. CONTRACTOR MUST ADJUST TO FIELD CONDITIONS AND COORDINATE WITH OTHER TRADES DURING CONSTRUCTION BY ADDING OFFSETS AND ELBOWS WHERE REQUIRED.

PROVIDE ALL MISCELLANEOUS HANGERS, SUPPORTS AND PIPING SUCH AS REFRIGERANT PIPING NOT SHOWN FOR CLARITY. CONTRACTOR TO PROVIDE OWNER WITH COMPLETE OPERATIONAL SYSTEMS.

COORDINATE EXACT LOCATION OF CEILING DIFFUSERS AND GRILLES WITH LIGHTS.

THIS CONTRACTOR SHALL PROVIDE ALL EQUIPMENT, MATERIAL AND LABOR REQUIRED FOR CORE DRILLING AS REQUIRED FOR INSTALLATION OF PIPING PENETRATING BUILDING CONSTRUCTION.

REFERENCE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS, TYPICAL.

PRIOR TO PROCUREMENT CONTRACTOR SHALL SUBMIT TO ARCHITECT FULL SUBMITTALS FOR ALL ENERGY CONSUMING OR PRODUCING ITEMS. SUBMITTALS SHALL BE DELINEATED WITH TAGS ON PRINTS, CONTRACTORS NAME, AND PROJECT NAME. CLEARLY INDICATE ALL MODEL NUMBERS AND ALL ACCESSORIES AND OPTIONS BEING PROVIDED. ENGINEER RESERVES THE RIGHT TO REJECT AND SUBSTITUTE ITEM.

CONTRACTOR SHALL BE RESPONSIBLE TO VISIT THE SITE TO EXAMINE ALL CONDITIONS THAT MAY IN ANY WAY AFFECT THE EXECUTION OF HIS WORK. NO EXTRAS WILL BE ALLOWED FOR FAILURE TO INCLUDE ALL REQUIRED WORK IN THE BID. CONTRACTOR SHALL GUARANTEE ALL LABOR AND MATERIALS ENTERING INTO CONTRACT FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE.

THE DRAWINGS IN THIS SECTION ARE DIAGRAMMATIC AND ARE NOT INTENDED TO DEFINE EXACT QUANTITIES, LOCATIONS OR CODIFIED REQUIREMENTS. DRAWINGS SHOW GENERAL INTENT OF SYSTEMS.

M.C. SHALL PROVIDE AND PAY FOR ALL REQUIRED PERMITS.

ALL WORK SHALL BE IN FULL ACCORDANCE WITH 2023 FLORIDA BUILDING CODE -MECHANICAL & ENERGY CONSERVATION CODE, PERTINENT STATE, COUNTY, CITY CODES AND ORDINANCES WITH LOCAL AMENDMENTS.

CONCEALED ROUND DUCTWORK SHALL BE CONSTRUCTED PER SMACNA LOW PRESSURE STANDARDS. 1" PRESSURE CLASS, SEAL CLASS B. INSULATED FLEXIBLE DUCTING FOR CONNECTIONS TO DIFFUSERS SHALL NOT EXCEED 6 FEET. FLEXIBLE DUCT EQUAL TO FLEXIBLE DUCT CLASS 1 AIR DUCT, POLYESTER FILM LAMINATED ON STEEL WIRE REINFORCING, WITH 3/4 DENSITY FIBERGLASS INSULATION AND FIRE RETARDANT REINFORCED VAPOR BARRIER.

PROVIDE SHEET METAL 90° ELBOWS FOR ALL TURNS. DO NOT USE FLEXIBLE DUCT FOR GREATER THAN 45 DEG CHANGES IN DIRECTION. PROVIDE MANUAL BALANCING DAMPERS FOR ALL SUPPLY AIR RUNS LOCATED FOR ACCESSIBILITY. ROUND DAMPERS SHALL BE SECURED ON BOTH SIDES OF DUCT AND SHALL CONTAIN LOCKING HANDLE. RECTANGULAR DUCTS SHALL USE MULTI OR SINGLE BLADE WELDED FRAMED DAMPERS WITH JACK SHAFTS AND LOCKING HANDLE. INSTALL NYLON RIBBON ON ALL DAMPER HANDLES TO AID IN LOCATION OF DAMPERS.

UPON COMPLETION OF THE MECHANICAL INSTALLATION, DEMONSTRATE TO THE ENGINEER AND THE OWNER'S SATISFACTION THAT THE SYSTEMS HAVE BEEN INSTALLED IN ACCORDANCE WITH THE DRAWINGS, SPECIFICATIONS AND APPLICABLE CODES. DEMONSTRATE THE DYNAMIC OPERATION OF EACH SYSTEM. VERIFY PROPER OPERATION OF EQUIPMENT, FILTERS ARE CLEAN AND COMPONENTS OF THE SYSTEM ARE INSTALLED AND ADJUSTED IN FULL ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.

PROVIDE GALVANIZED MINIMUM 22 GAUGE 1" WIDE STRAP TO HANG RECTANGULAR DUCTWORK. SUPPORT ALL HANGERS FROM STRUCTURE PER SMACNA STANDARDS.

INSTALL ALL INSULATION IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS IN A TIGHT AND NEAT MANNER. NO SAGGING, FRAYED OR TORN INSULATION WILL BE ACCEPTED.

DUCT INSULATION MATERIALS SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS (ON THE FLAME SPREAD TEST SCALE) AND SMOKE DEVELOPMENT OF 50 OR LESS (ON THE SMOKE TEST SCALE) OR AS DEFINED BY NFPA 255 STANDARD METHOD OF TESTING OF SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS, LOCAL CODES AND LOCAL AUTHORITIES HAVING JURISDICTION.

PROVIDE AIR BALANCE BY INDEPENDANT CONTRACTOR. CONTRACTOR SHALL BALANCE SUPPLY, RETURN, OUTSIDE, RELIEF AND EXHAUST SYSTEMS IN ACCORDANCE WITH CURRENT SMACNA, NEEP OR AABC STANDARDS TO DESIGN VALUES AND PROVIDE WRITTEN REPORT TO ARCHITECT. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL DEVICES, DRIVES, SHEAVES, MOTOR CHANGES AND REWORK AS REQUIRED TO MEET DESIGN REQUIREMENTS.

MECHANICAL CONTRACTOR SHALL ENSURE EMPLOYEES ARE MEETING AND DOCUMENTING ALL OSHA AND JOB SPECIFIC SAFETY REQUIREMENTS AS REQUIRED BY LAW AND BY CONTRACT. PERSONAL PROTECTIVE EQUIPMENT SHALL BE PROVIDED AND UTILIZED AS REQUIRED. MECHANICAL CONTRACTOR SHALL PAY ALL FINES LEVIED BY OSHA FOR FAILURE TO COMPLY WITH OSHA REQUIREMENTS.

TEMPERATURE CONTROL WORK SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. PROVIDE ALL COMPONENTS INCLUDING THERMOSTATS, THERMOSTAT WIRE, SWITCHES, ACTUATORS ETC. AS REQUIRED FOR A COMPLETE SYSTEM.

ALL EQUIPMENT AND DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

CONTRACTOR TO PROVIDE AS-BULTS AND O&M MANUALS OF HVAC SYSTEM AND EQUIPMENT TO OWNER WITHIN 90 DAYS OF SUBSTANTIAL COMPLETION.

ALL WORK SHALL CONFORM TO NGBS GREEN ENERGY REQUIREMENTS.

## SCHEDULE OF HVAC SYSTEMS

SYSTEM	CODE	MATERIALS	INSULATION
METAL DUCTWORK	2023 FBC - MECH CODE, SMACNA, NFPA 90 A & B	ASTM A 527 GALV. SHEET STEEL W/ASTM A 525 G90 ZINC COATING, UL 181 FLEXIBLE DUCT NOTE: ANY DUCTWORK PASSING THRU A 1-HR FIRE RATED WALL SHALL BE CONSTRUCTED OF NOT LESS THAN NO. 26 GAGE TO AVOID THE NEED FOR FIRE/SMOKE DAMPERS.	1-1/2" FIBERGLASS DUCT WRAP WITH VAPOR BARRIER FOR SUPPLY AND RETURN DUCTS; EXHAUST DUCTS NEED NOT BE INSULATED. PROVIDE ALUMINUM JACKETING FOR INSULATION EXPOSED TO OUTDOORS.

## EXHAUST FAN SCHEDULE

TAG	AREA SERVED	MFG	MODEL	CFM	SP	POWER	RPM	ELEC	WEIGHT (LBS)	DUCT OPENING	NOTES
EF-1	STORAGE	GREENHECK	G-090-D	450	5"	1/12 HP	1550	120/1Ø	40	10"x10"	1, 2
EF-2	WAREHOUSE	GREENHECK	G-240-G	6,000	5"	2 HP	1030	480V/3Ø	220	24"x24"	2, 3
EF-2	WAREHOUSE	GREENHECK	G-240-G	6,000	5"	2 HP	1030	480V/3Ø	220	24"x24"	2, 3
EF-2	WAREHOUSE	GREENHECK	G-240-G	6,000	5"	2 HP	1030	480V/3Ø	220	24"x24"	2, 3
EF-2	WAREHOUSE	GREENHECK	G-240-G	6,000	5"	2 HP	1030	480V/3Ø	220	24"x24"	2, 3
EF-6	WAREHOUSE	GREENHECK	G-160-A	4,500	5"	2 HP	1725	480V/3Ø	100	16"x16"	2, 3
EF-7	UNISEX	GREENHECK	G-090-D	250	5"	1/20 HP	1550	120/1Ø	20	10"x10"	4
EF-8	OFFICE RESTROOMS	GREENHECK	G-095-G	300	5"	1/12 HP	1300	120/1Ø	40	10"x10"	4

NOTES:

- CENTRIFUGAL ROOF EXHAUSTER - DIRECT DRIVE. PROVIDE WITH BIRDSCREEN AND GRAVITY BACKDRAFT DAMPER. THIS FAN SHALL RUN CONTINUOUSLY.
- INCLUDE 12" ROOF CURB.
- CENTRIFUGAL ROOF EXHAUSTER - DIRECT DRIVE. PROVIDE WITH BIRDSCREEN AND GRAVITY BACKDRAFT DAMPER. PROVIDE WITH REVERSE ACTING THERMOSTAT TO INITIATE FAN WHEN TEMPERATURE IS ABOVE 75°F. ALSO PROVIDE WITH MANUAL ON/OFF SWITCH. INTERLOCK FAN TO CORRESPONDING LOUVER - SEE SCHEDULE.
- CEILING FAN. THIS FAN SHALL RUN CONTINUOUSLY.

## ELECTRIC AIR HANDLER SCHEDULE

MECHANICAL DATA											ELECTRICAL DATA						NOTES				
MARK	NOM TONS	ARRANGEMENT	MANUFACTURER	MODEL	BLOWER DATA		COOLING COIL DATA			HEATING DATA			FURNACE		HEATER KIT (15 KW, 35 AMPS)		VOLT / PHASE				
					SUPPLY AIR CFM	E.S.P. (IN. WC.)	TOTAL MBH	EAT (°F DB/°F WB)	LAT (°F DB/°F WB)	TOTAL HEATING MBH (NORMAL HEAT PUMP MODE)	TOTAL HEATING MBH (ELECTRIC HEATER KIT)	EAT (°F DB)	LAT (°F DB) MIN.	MCA	MOCP	MCA			MOCP		
AHU-1	5	VERTICAL	GOODMAN	ARUTC61D14BA	1,900	.5	60			73°F db/61°F wb	55°F db/54°F wb	50 MBH	15 KW	70°F	100°F	6	15	46	50	208V/3Ø	1,2,3,4,5,6
AHU-2	5	VERTICAL	GOODMAN	ARUTC61D14BA	1,900	.5	60			73°F db/61°F wb	55°F db/54°F wb	50 MBH	15 KW	70°F	100°F	6	15	46	50	208V/3Ø	1,2,3,4,5,6

NOTES:

- INCLUDE FACTORY MOUNTED COOLING COIL COMPATIBLE WITH CORRESPONDING AIR CONDITIONER.
- INCLUDE ELECTRIC HEATER KIT AS SPECIFIED WITH BREAKER FOR DISCONNECT.
- PROVIDE MERV 8 FILTERS.
- REFRIGERANT SHALL BE R-410A.
- PROVIDE WITH 7 DAY PROGRAMMABLE THERMOSTAT WITH 5°F DEADBAND.
- ACCEPTABLE MANUFACTURERS INCLUDE TRANE, CARRIER, LENNOX, RHEEM, BRYANT, AND MCQUAY, OR APPROVED EQUAL.

## HEAT PUMP SCHEDULE

MECHANICAL DATA							ELECTRICAL DATA									
MARK	LOCATION	NOM TONS	MANUFACTURER	MODEL	SEER	TOTAL MBH		REFRIGERANT			TOTAL MIN CIRC AMPS	TOTAL MAX FUSE SIZE	VOLT / PHASE	STARTER BY	DISC SW BY	SEE NOTE
						COOLING	HEATING	TYPE	SUCT TEMP (F)	AMB. TEMP (F)						
HP-1	SEE PLANS	5	GOODMAN	GSZ160601AA	16	60	60	R410A	45	95	34.3	60	208/230/1	M	ELEC	1,2,3,4
HP-2	SEE PLANS	5	GOODMAN	GSZ160601AA	16	60	60	R410A	45	95	34.3	60	208/230/1	M	ELEC	1,2,3,4

- ELECTRICAL CONTRACTOR SHALL PROVIDE ALL CIRCUITING REQUIRED BETWEEN CONDENSING UNIT AND EVAPORATOR UNIT.
- PROVIDE REFRIGERATION PIPING TO CORRESPONDING AIR HANDLER PER MANUFACTURERS RECOMMENDATIONS.
- PROVIDE WITH ANCHOR BRACKET KIT FOR ROOF MOUNTED HEAT PUMPS TO MEET FLORIDA BUILDING CODE FOR HURRICANE TYPE WINDS.
- ACCEPTABLE MANUFACTURERS INCLUDE LENNOX, TRANE, RHEEM, BRYANT AND MCQUAY, OR APPROVED EQUALS.

## LOUVER SCHEDULE

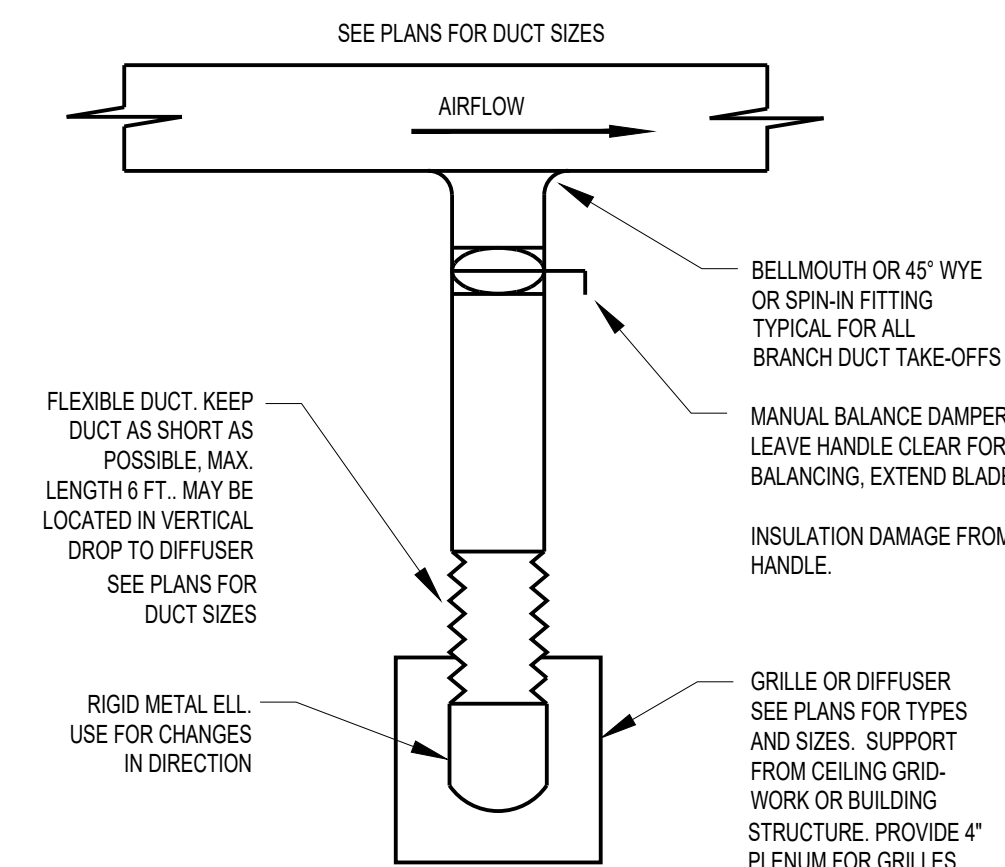
TAG	MFG	MODEL	SIZE (IN)	SERVICE	REMARKS
LV-1	RUSKIN	ELF375DXH	18"W x 18"H, 1.0 sq. ft. FREE AREA	450 CFM - EF-1	1, 2, 3, 4
LV-2	RUSKIN	ELF375DXH	60"W x 42"H, 9.0 sq. ft. FREE AREA	6,000 CFM - EF-2	1, 2, 3, 4
LV-3	RUSKIN	ELF375DXH	60"W x 42"H, 9.0 sq. ft. FREE AREA	6,000 CFM - EF-3	1, 2, 3, 4
LV-4	RUSKIN	ELF375DXH	24"W x 60"H, 9.0 sq. ft. FREE AREA	6,000 CFM - EF-4	1, 2, 3, 4
LV-5	RUSKIN	ELF375DXH	60"W x 42"H, 9.0 sq. ft. FREE AREA	6,000 CFM - EF-5	1, 2, 3, 4
LV-6	RUSKIN	ELF375DXH	24"W x 60"H, 9.0 sq. ft. FREE AREA	4,500 CFM - EF-6	1, 2, 3, 4

REMARKS:

- PROVIDE WITH BIRD SCREEN.
- PROVIDE WITH FLASHING STRIPS AS REQUIRED TO MATCH ADJACENT EXTERIOR SURFACE COLOR.
- PROVIDE WITH MOTORIZED DAMPER INTERLOCKED TO SERVICE EXHAUST FAN AS NOTED.
- COLOR BY ARCHITECT TO MATCH ADJACENT EXTERIOR SURFACES (BAKED ENAMEL FINISH).

## DIFFUSER SCHEDULE

TAG	MFG	MODEL	NECK/SIZE	CFM RATING	COLOR	TYPE
SD-1	TITUS	TMS - 12x12	6" DIA	100-135	WHITE	4-WAY LOUVER
SD-2	TITUS	TMS - 24x24	8" DIA	120 - 250	WHITE	4-WAY LOUVER
SD-3	TITUS	DL - 18"x4"	N/A	200 - 300	BY ARCH	DRUM LOUVER - LONG THROW
RG-1	TITUS	50F	24x24	500 - 1800	WHITE	EGGCRATE
RG-2	TITUS	50F	12x12	0 - 500	WHITE	EGGCRATE
RG-3	TITUS	XX	16"x12"	0 - 700	WHITE	EGGCRATE
EG-1	TITUS	50F	6x6	0-150	WHITE	EGGCRATE



## SUPPLY DIFFUSER INSTALLATION DETAIL

NO SCALE

METAL FABRICATIONS NEW FACILITY  
4323 AVIATION AVENUE, TALLAHASSEE, FL 32310

HVAC SCHEDULES & DETAILS

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