

MECHANICAL NOTES:

ALL MECHANICAL SYSTEMS ARE TO BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE SECTIONS OF NFPA STANDARDS, ANSI STANDARDS, THE FLORIDA BUILDING CODE, NOISE & HEIGHT ORDINANCES, PLANS AND SPECIFICATIONS.

IT IS THE INTENT OF THE PLANS AND GENERAL NOTES TO PROVIDE A COMPLETE AND OPERATING INSTALLATION INCLUDING ALL NECESSARY ITEMS REQUIRED. IF ITEMS ARE NOT INDICATED ON THE DRAWINGS OR IN THE NOTES, WORK CONSIDERED NECESSARY FOR THE COMPLETION OF WORK SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

ALL MATERIALS SHALL BE NEW. ALL WORKMANSHIP AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH APPLICABLE LOCAL CODES, FLORIDA BUILDING CODE ENERGY, PRODUCT APPROVAL, RULES AND ORDINANCES. ANY DAMAGED EQUIPMENT SHALL BE REPLACED OR RESTORED TO ORIGINAL CONDITION.

THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULES OF ALL INSTALLATION TRADES. FIXED WORK SUCH AS DUCT AND PLUMBING SHALL BE INSTALLED PRIOR TO ANY TRADE WORK THAT CAN BE EASILY RELOCATED OR OFFSET SUCH AS ELECTRICAL CONDUITS AND SMALL WATER LINES.

THE MECHANICAL CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL CLEARANCES PRIOR TO FABRICATION OF DUCTWORK. PROVIDE OFFSETS AND CHANGES IN DUCT SIZES TO MEET FIELD CONDITIONS. DUCT AND PIPING OFFSETS, BENDS AND TRANSITIONS OF EQUIVALENT SIZE SHALL BE REQUIRED TO PROVIDE AND INSTALL A COMPLETE FUNCTIONAL SYSTEM, AND SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST.

THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, ACCESS PANELS, CONTROLS DEVICES, AND SERVICES NECESSARY FOR FURNISHING AND INSTALLING A COMPLETE OPERATIONAL MECHANICAL SYSTEM.

THE CONTRACTOR SHALL GUARANTEE ALL MECHANICAL EQUIPMENT (DUCTWORK, THERMOSTATS, PUMPS, FANS, ETC.), MATERIALS AND WORKMANSHIP TO BE FREE FROM DEFECT FOR ONE YEAR AFTER RECEIVING THE CERTIFICATE OF OCCUPANCY. ANY REPAIRS REQUIRING SYSTEM SHUT-DOWN SHALL BE PERFORMED DURING NON-OPERATIONAL PERIODS.

THE CONTRACTOR SHALL PROVIDE ALL SUPPLEMENTAL STEEL REQUIRED TO SUSPEND MECHANICAL EQUIPMENT, AS WELL AS THE LABOR REQUIRED TO INSTALL SUPPORT OF MECHANICAL EQUIPMENT.

ALL CUTTING AND PATCHING OF STRUCTURAL STEEL, WEATHERPROOFING, PAINTING, AND WALL OPENINGS SHALL BE PERFORMED BY THE GENERAL CONTRACTOR.

ALL OPENINGS IN THE BUILDING STRUCTURE FOR DUCTWORK, PIPING, ETC., SHALL BE AT LEAST 1/2" LARGER (ON ALL SIDES) THAN THE OUTSIDE DIMENSIONS AS REQUIRED FOR FIRE STOPPING. THE VOIDS SHALL BE FILLED WITH FIRE-RETARDANT SILICONE FOAM (e.g., CHASE-FOAM CTC PR-855 BY CHASE TECHNOLOGY CORP.), VSG THERMOFRIRER SAFING SYSTEM, OR 3M FIREPROOFING PRODUCTS, OR EQUAL.

THE CONTRACTOR SHALL VERIFY VOLTAGE WITH THE ELECTRICAL CONTRACTOR BEFORE ORDERING ANY EQUIPMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDED ELECTRICAL COSTS WHICH MAY RESULT FOR SUBSTITUTED EQUIPMENT. PROVIDE SINGLE-POINT ELECTRICAL CONNECTIONS FOR ALL HVAC EQUIPMENT, UNLESS OTHERWISE SPECIFIED. TRANSFORMERS SHALL BE PROVIDED AS REQUIRED TO OPERATE FIRESTATS, THERMOSTATS, CONDENSATE PUMPS, AND ANY OTHER EQUIPMENT IN THE MECHANICAL DRAWINGS.

ALL EQUIPMENT SHALL BE LISTED AND LABELED.

ALL DUCTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF SMACNA AND ASHRAE LOW-PRESSURE DUCT CONSTRUCTION STANDARDS. DRAWING SCALE PROHIBITS THE INDICATION OF ALL OFFSETS, FITTING, AND LIKE ITEMS. PROVIDE DUCT SEALANT AT ALL GALVANIZED DUCTWORK JOINTS.

ALL SUPPLY AIR DUCTS SHALL BE INSULATED WITH 1.5" THICK (MIN. R-4.2) JM-E-1.475 (FACING) DUCT BOARD, COMMON WITH UL STANDARDS FOR SAFETY DUCT ESTABLISHED FOR CLASS 1 AIR DUCTS, UNLESS NOTED OTHERWISE ON PLAN. DUCTWORK CONSTRUCTION SHALL COMPLY WITH THE LATEST SMACNA STANDARDS. ALL JOINTS SHALL BE SECURELY TAPED WITH FASTON 0810 OR APPROVED EQUAL PRESSURE SENSITIVE TAPE. METAL TO FIBERGLASS CONNECTIONS SHALL BE MADE USING 3" WIDE GLASS FABRIC TAPE WITH FOSTER 30/35 MASTIC OR EQUAL.

EQUIPMENT AND APPLIANCES SUPPORTED FROM THE GROUND SHALL BE LEVEL AND FIRMLY SUPPORTED ON A CONCRETE SLAB OR OTHER APPROVED MATERIAL EXTENDING NOT LESS THAN 3 INCHES ABOVE THE ADJOINING GROUND. SUCH SUPPORT SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

SUPPLY AND RETURN DUCTS IN ATTICS SHALL BE INSULATED TO A MINIMUM OF R-8 WHERE 3 INCHES IN DIAMETER AND GREATER AND R-6 WHERE LESS THAN 3 INCHES IN DIAMETER.

PIPING AND FITTINGS FOR REFRIGERANT VAPOR (SUCTION) LINES SHALL BE INSULATED WITH INSULATION HAVE A THERMAL RESISTIVITY OF NOT LESS THAN R-4 AND HAVING EXTERNAL SURFACE PERMEANCE NOT EXCEEDING 0.05 PERM WHEN TESTED IN ACCORDANCE WITH ASTM E96.

ALL RETURN AIR DUCTS SHALL COMPLY WITH UL STANDARDS FOR SAFETY DUCT ESTABLISHED FOR CLASS 1 AIR DUCTS. CONSTRUCTION SHALL COMPLY WITH THE LATEST SMACNA STANDARDS. ALL JOINTS SHALL BE SECURELY TAPED WITH FASTON 0810 OR APPROVED EQUAL PRESSURE SENSITIVE TAPE. METAL TO FIBERGLASS CONNECTIONS SHALL BE MADE USING 3" WIDE GLASS FABRIC TAPE WITH FOSTER 30/35 MASTIC OR EQUAL.

ALL EXHAUST AIR DUCTWORK SHALL BE UNINSULATED GALVANIZED SHEET METAL (MINIMUM 28-GAGE) OF LOCK-FORMING QUALITY, UNLESS NOTED OTHERWISE. PROVIDE SHEET METAL IN THICKNESS SPECIFIED IN ASTM A700. THE DUCTWORK SHALL BE CONSTRUCTED FOR 2" VG IN ACCORDANCE WITH THE LATEST SMACNA STANDARDS.

ALL FLEXIBLE DUCTS SHALL BE SPIRAL ROUND SPRING STEEL WITH ALUMINIZED SHEATHING OR CORRUGATED ALUMINUM SHALL COMPLY WITH UL 181. PROVIDE 1.5-INCH THICK (R-6.0 MIN) CONTINUOUS FLEXIBLE FIBERGLASS SHEATH WITH ALUMINIZED VAPOR BARRIERS JACKET. MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL NOT EXCEED 6 FEET AND SHALL SERVICE ONE AIR DEVICE ONLY.

DUCT WRAP SHALL BE 1 1/2" THICK, (R-4.2 MIN.) OF 1 POUND PER CUBIC FOOT DENSITY FIBERGLASS WITH FOIL FACING. ALL JOINTS SHALL BE SECURELY TAPED WITH FASTON 0810 OR APPROVED EQUAL PRESSURE SENSITIVE TAPE. METAL TO FIBERGLASS CONNECTIONS SHALL BE MADE USING 3" WIDE GLASS FABRIC TAPE WITH FOSTER 30/35 MASTIC OR EQUAL. STICK CLIPS ON LARGE DUCT IS ACCEPTABLE. OUTSIDE PLENUMS SHALL BE INSULATED WITH 2" RIGID BOARD 3 POUND DENSITY INSULATION AND ALL PURPOSE VAPOR BARRIER TYPE CLOTH COVERING.

SUPPORT DUCTS WITH 1X2X1 CHANNELS (MIN.) AND STRAP OF 22-GAUGE WIRE AND Z-BAR FROM BUILDING CONSTRUCTION. SUSPEND FROM JOINTS WITH BEAM CLAMPS. PROVIDE HOT DIPPED GALVANIZED STEEL FASTENERS, ANCHORS, RODS, STRAPS, TRIM, AND ANGLES FOR SUPPORT OF DUCTWORK. DUCTWORK SHALL NOT SAG MORE THAN 1/2" PER FOOT BETWEEN SUPPORTS.

DUCTWORK DIMENSIONS SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS.

DUCTWORK AND OTHER HVAC EQUIPMENT SHALL NOT BE SUPPORTED BY THE CEILING OR CEILING SUSPENSION SYSTEM.

DUCTWORK AND OTHER HVAC EQUIPMENT SHALL NOT BE SUPPORTED WITH ANCHORAGE ATTACHED TO THE PRECAST DOUBLE-TEE STEMS, WHICH CONTAIN POST-TENSIONED STEEL CABLES. ATTACHMENT TO THE UNDERSIDE OF ROOF STRUCTURE SHALL BE MADE BY ANCHORING TO THE UNDERSIDE OF THE DOUBLE-TEE FLANGES.

CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE HVAC EQUIPMENT WITH OTHER DISCIPLINES. PLUMBING SHALL BE POSITIONED BENEATH PROPOSED HVAC EQUIPMENT.

UNLESS NOTED OTHERWISE, CONDENSATE WATER PIPES SHALL BE PVC, SCH 40.

CONTROL SYSTEM:

CONTROL SYSTEM SHALL BE COMPLETE IN ALL RESPECTS INCLUDING ALL LABOR, MATERIAL, AND SERVICES NECESSARY TO MEET THE FUNCTIONAL DESCRIPTION.

ALL CONTROL WIRING AND CONDUIT SHALL BE PROVIDED BY THE CONTROL CONTRACTOR.

FURNISH AND INSTALL ALL SENSORS, ACTUATORS, RELAYED, ETC., AS NOTED ON THE DRAWINGS TO MEET THE DESIGN INTENT AND FUNCTIONAL DESCRIPTION OF THE CONTROL SYSTEM.

ALL WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE, AND ALL LOCAL CODES.

OWNER'S REPRESENTATIVE SHALL BE FULLY INSTRUCTED IN THE OPERATION OF THE CONTROL SYSTEM.

SYMBOL LEGEND	
	REFRIGERANT DISCHARGE
	REFRIGERANT SUCTION
	GATE
	GATE, ANGLE
	GLOBE
	GLOBE, ANGLE
	REDUCER, CONCENTRIC
	CENTRIFUGAL
	DIRECTION OF FLOW
	SHEET METAL (ROUND OR RECTANGULAR DUCT)
	DUCT SECTION, SUPPLY
	DUCT SECTION, RETURN
	DUCT SECTION, EXHAUST
	CHANGE OF ELEVATION RISE (R) DROP (D)
	ACCESS DOORS, VERTICAL OR HORIZONTAL
	COWL, (GOOSENECK) AND FLASHING
	DUCT LINING
	FLEXIBLE CONNECTION
	FLEXIBLE DUCT
	SENSOR, TEMPERATURE
	SUPPLY FAN
	TRANSITION
	TURNING VANES
	SMOKE DETECTORS
	BACKDRAFT DAMPER
	FIRE DAMPER
	MOTORIZED CONTROL DAMPER
	MANUAL CONTROL DAMPER
	SMOKE DAMPER
	SIDEWALL INLET, (EXHAUST) OUTLET, REGISTER, AND GRILLES
	SIDEWALL OUTLET, REGISTERS, AND GRILLES
	RECTANGULAR FOUR-WAY OUTLET, SUPPLY
	TRANSFER GRILLE OVER LOUVER
	DOOR GRILLE OR LOUVER
	UNDERCUT DOOR
	CEILING DIFFUSER, RECTANGULAR
	ROUND OUTLET
	LINEAR OUTLET
	EXHAUST FAN

ABBREVIATIONS	
AFF	ABOVE FINISHED FLOOR
ABS	ABSOLUTE
ACU	AIR CONDENSER UNIT.
AHU	AIR HANDLER UNIT
AC	ALTERNATING CURRENT
AWG	AMERICAN WIRE GAGE
BP	BOILING POINT
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNIT
CFM	CUBIC FEET PER MINUTE
DPT	DEWPOINT
DIA	DIAMETER
ID	INSIDE DIAMETER
OD	OUTSIDE DIAMETER
DBT	DRY-BULB TEMPERATURE
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
GAL	GALLONS
GPM	GALLONS PER MINUTE
HP	HORSEPOWER
RH	RELATIVE HUMIDITY
KW	KILOWATT
KWH	KILOWATT HOUR
LH	LATENT HEAT
LMTD	LEAST MEAN TEMP. DIFFERENCE
LN	LOGARITHM (NATURAL)
LOG	LOGARITHM BASE 10
OZ	OUNCE
OA	OUTSIDE AIR
PPM	PARTS PER MILLION
PSI	POUND PER SQUARE INCH
PSIA	PSI ABSOLUTE
PSIG	PSI GAGE
SHR	SENSIBLE HEAT RATIO
TD	TEMPERATURE DIFFERENCE
T STAT	THERMOSTAT
DB	DRY BULB TEMPERATURE
WB	WET BULB TEMPERATURE

ISSUE	DATE	3. CITY OF MIAMI COMMENTS	4. CITY OF MIAMI COMMENTS
	12/23/2022		
	01/27/2023		

AMERICANO
MEDIA GROUP
STUDIO
2920 NW 7 ST
MIAMI, FL 33125

MECHANICAL
NOTES



7875 NW 12th Street, Ste. 101
Doral, FL 33126
(786) 762-2204
www.ves-us.com
C.A. #32810

FELIX F. RODRIGUEZ, PE, SE
FLORIDA PE #74481
Civil, Structural, Mechanical
admin@ves-us.com

VDES PROJECT #22D078

DATE
11/04/2022

SHEET
M-00