



KITCHEN RENOVATION FOR  
US FOODS - SOUTH FLORIDA  
7598 NW 6TH AVENUE  
BOCA RATON, FL 33487

REVISIONS	
△	-
△	-
△	-
△	-
△	-
△	-
△	-
△	-
△	-
△	-

DATE	JOB NO.
1-6-20	50-1414-19
DWG BY	CHKD BY
AMK	JRO

SHEET TITLE  
ABBREVIATIONS,  
GENERAL NOTES,  
AND SYMBOLS

PRELIMINARY DWGS. |  
FINAL CONST. DWGS. |

SHEET NUMBER

H001

HVAC

GENERAL NOTES

GENERAL

- A. Provide all materials and equipment and perform all labor required to install complete and operable mechanical systems as indicated on the drawings, as specified, and as required by authorities having jurisdiction.
- B. Contract document drawings for mechanical work (HVAC and plumbing) are diagrammatic and are intended to convey scope and general arrangement only.
- C. Install all mechanical equipment and appurtenances in accordance with manufacturers' recommendations, contract documents, and applicable codes and regulations.
- D. Provide vibration isolation for all mechanical equipment to prevent transmission of vibration to building structure.
- E. Provide vibration isolators for all piping supports connected to, and within 50 feet of, isolated equipment (except at base elbow supports and anchor points) throughout mechanical equipment rooms.
- F. The location of existing underground utilities is shown in an approximate way only. The contractor shall determine the exact location of all existing utilities before commencing work. The contractor shall pay for and repair all damages caused by failure to exactly locate and preserve any and all underground utilities unless otherwise noted.
- G. Coordinate construction of all mechanical work with architectural, structural, civil, electrical work, etc., shown on other contract document drawings.
- H. All tests shall be completed before any mechanical equipment or piping insulation is applied.
- I. Locate all temperature, pressure, and flow measuring devices in accessible locations with the straight section of pipe or duct up- and downstream as recommended by the manufacturer to ensure accuracy of measurements.
- J. Testing, adjusting, and balancing agency shall be a member of the Associated Air Balance Council (AABC) or the National Environmental Balancing Bureau (NEBB). Testing, adjusting, and balancing shall be performed in accordance with the AABC standards.
- K. Where two or more items of the same type of equipment are required, the product of one manufacturer shall be used.
- L. Coordinate all equipment connections with manufacturers' certified drawings. Coordinate and provide all duct and piping transitions required for final equipment connections to furnished equipment. Field verify and coordinate all duct and piping dimensions before fabrication.
- M. All control wire and conduit shall comply with the National Electric Code and Division 26 of the specification.
- N. When mechanical work (HVAC, plumbing, sheet metal, etc.) is subcontracted, it shall be the mechanical contractor's responsibility to coordinate subcontractors and the associated contracts. When discrepancies arise pertaining to which contractor provides a particular item of the mechanical contract or which contractor provides final connections for a particular item of the mechanical contract, it shall be brought to the attention of the mechanical contractor, whose decision shall be final.
- O. The locations of all items shown on the drawings or called for in the specifications that are not definitely fixed by dimensions are approximate only. The exact locations necessary to secure the best conditions and results must be determined by the project site conditions and shall have the approval of the engineer before being installed. Do not scale drawings.
- P. All miscellaneous steel required to ensure proper installation and as shown in details for piping, ductwork, and equipment (unless otherwise noted) shall be furnished and installed by the mechanical contractor.
- Q. Provide access panels for installation in walls and ceilings, where required, to service dampers, valves, smoke detectors, and other concealed mechanical equipment. Access panels shall be turned over to the general contractor for installation.
- R. All equipment, piping, ductwork, etc., shall be supported as detailed, specified, and required to provide a vibration-free isolation.
- S. All ductwork, piping, and equipment supported from structural steel shall be coordinate with the general contractor. All attachments to steel bar joists, trusses, or joist girders shall be at panel points. Provide beam clamps meeting MSS standards. Welding to structural members shall not be permitted.
- T. Mechanical equipment, ductwork, and piping shall not be supported from a metal deck.
- U. Locations and sizes of all floor, wall, and roof openings shall be coordinated with all other trades involved.
- V. All openings in fire walls due to ductwork, piping, conduit, etc., shall be fire stopped with a product similar to 3M or an approved equal.
- W. All air-conditioning condensate drain lines from each air handling unit and rooftop unit shall be piped full size of the unit drain outlet, with 1" trap, and piped to the nearest allowable drain in accordance with the authority having jurisdiction. See the details shown in the drawings or contract specifications for the depth of the air conditioning condensate trap.
- X. Refer to typical details for ductwork, piping, and equipment installation.

PIPING

- A. Provide all materials and equipment and perform all labor required to install complete and operable piping systems as indicated on the drawings, and as specified and required by authorities having jurisdiction.
- B. Elevations shown on the drawings are to the bottom of all pressure piping and to the invert of all gravity piping unless otherwise noted.
- C. Unless otherwise noted, all piping is overhead, tight to the underside of the structure or slab, with space for insulation if required.
- D. Install piping so all valves, strainers, unions, traps, flanges, and other appurtenances requiring access are accessible.
- E. All valves shall be installed so that the valve remains in service when equipment or piping on the equipment side of the valve is removed.
- F. All balancing valves and butterfly valves shall be provided with position indicators and the maximum adjustable stops (memory stops).
- G. Unless otherwise noted, all valves (except control valves) and strainers shall be the full size of the pipe before reducing in size to make connections to equipment and controls.
- H. Unions and/or flanges shall be installed at each piece of equipment, in bypasses, and in long piping runs (100 feet or more) to permit disassembly for alteration and repairs.
- I. Install all piping without forcing or springing.
- J. All piping shall clear doors and windows.
- K. All valves shall be adjusted for smooth and easy operation.
- L. All piping work shall be coordinate with all trades involved. Offsets in piping around obstructions shall be provided at no additional cost to the owner.
- M. Provide flexible connections in all piping systems connected to pumps, chillers, cooling towers, and other equipment which require vibration isolation except water coils. Flexible connections shall be provided as close to the equipment as possible or as indicated on the drawings.

HVAC/SHEET METAL

- A. Provide all materials and equipment and perform all labor required to install complete and operable HVAC systems as indicated on the drawings, and as specified and required by authorities having jurisdiction.
- B. Certain items such as rises and drops in ductwork, access doors, volume dampers, etc., are indicated on the contract document drawings for clarity for a specific location requirement and shall not be interpreted as the extent of the requirements for these items.
- C. Unless otherwise shown, locate all room thermostats and humidistats 4'-0" (top of device) above the finished floor. Notify the engineer of any rooms where the preceding location cannot be maintained or where there is a question on location.
- D. All ductwork shall clear doors and windows.
- E. All ductwork dimensions, as shown on the drawings, are internal clear dimensions and duct size shall be increased to compensate for duct lining thickness.
- F. Provide all 90-degree square elbows with double radius turning vanes unless otherwise indicated. Elbows in dishwasher, kitchen, and laundry exhausts shall be of unvaned, smooth radius construction with a radius equal to 1-1/2 times the width of the duct. Provide access doors upstream and downstream of all elbows with turning vanes.
- G. Coordinate diffuser, register, and grille locations with architectural reflected ceiling plans, lighting, and other ceiling items and make minor duct modifications to suit.
- H. All air handling units shall operate without moisture carryover.
- I. Locate all mechanical equipment (single duct, dual duct, variable volume, constant volume, and fan-powered boxes; fan-coil units; cabinet heaters; unit heaters; unit ventilators; coils; steam humidifiers, etc.) for unobstructed access to unit access panels, controls, and valving.
- J. Provide flexible connections in all ductwork systems (supply, return, and exhaust) connected to air handling units, fans, and other equipment that require vibration isolation. Flexible connections shall be provided at the point of connection to the equipment unless otherwise indicated.
- K. Unless otherwise noted, all ductwork is overhead, tight to the underside of the structure, with space for insulation if required.
- L. Runs of flexible duct shall not exceed 5 feet in length.
- M. All ductwork shall be coordinated with all trades involved. Offsets in ducts, including divided ducts and transitions around obstructions, shall be provided at no additional cost to the owner.

ABBREVIATIONS

AFB	ABOVE FINISHED FLOOR	LWT	LEAVING WATER TEMPERATURE
AFG	ABOVE FINISHED GRADE	MAX	MAXIMUM
APPROX	APPROXIMATE, APPROXIMATELY	MBH	BTU PER HOUR (THOUSAND)
BAS	BUILDING AUTOMATION SYSTEM	MCA	MINIMUM CIRCUIT AMPACITY
BFF	BELOW FINISHED FLOOR	MEZZ	MEZZANINE
BFG	BELOW FINISHED GRADE	MFS	MAXIMUM FUSE SIZE
BHP	BRAKE HORSE POWER	MIN	MINIMUM
BTU	BRITISH THERMAL UNIT	MISC	MISCELLANEOUS
BTUH	BTU PER HOUR	MOP, MOCP	MAXIMUM OVER CURRENT PROTECTION
CA	COMPRESSED AIR	MTR	MOTOR
CFH	CUBIC FEET PER HOUR	N/A	NOT APPLICABLE
CFM	CUBIC FEET PER MINUTE	N/C	NORMALLY CLOSED
CI	CAST IRON	N/O	NORMALLY OPEN
CPVC	CHORINATED POLYVINYL CHLORIDE	NG	NATURAL GAS
CU FT	CUBIC FEET	NTS	NOT TO SCALE
CU IN	CUBIC INCH	OC	ON CENTER
DEG. °	DEGREES	OD	OUTSIDE DIAMETER
DIA. Ø	DIAMETER	PSI	POUNDS PER SQUARE INCH
DN	DOWN	PSIG	PSI GAUGE
EA	EACH	POC	POINT OF CONNECTION
EL	ELEVATION	POD	POINT OF DISCONNECTION
ESP	EXTERNAL STATIC PRESSURE	PVC	POLYVINYL CHLORIDE
EWT	ENTERING WATER TEMPERATURE	REQD	REQUIRED
FLA	FULL LOAD AMPERES	RPM	REVOLUTIONS PER MINUTE
FT. '	FEET	SENS	SENSIBLE
FPM	FEET PER MINUTE	SPEC	SPECIFICATION
FPS	FEET PER SECOND	SQ FT	SQUARE FEET
GA	GAUGE	SQ IN	SQUARE INCHES
GAL	GALLON	SS	STAINLESS STEEL
GALV	GALVANIZED	STD	STANDARD
GPD	GALLONS PER DAY	TEMP	TEMPERATURE
GPH	GALLONS PER HOUR	T-STAT	THERMOSTAT
GPM	GALLONS PER MINUTE	TYP	TYPICAL
HG	MERCURY	V	VOLTS
HP	HORSE POWER	VFD	VARIABLE FREQUENCY DRIVE
HR	HOUR	W	WATTS
HZ	HERTZ	WG	WATER GAUGE
ID	INSIDE DIAMETER	W	WITH
IN. "	INCHES	W/O	WITHOUT
KW	KILOWATT		
LBS	POUNDS		

MECHANICAL SYMBOLS

LINETYPES	
	LIQUID PROPANE GAS
SYMBOLS	
	BALANCING VALVE
	CHECK VALVE - SWING
	ELBOW UP/DOWN
	ELBOW UP/DOWN W/ VALVE IN DROP
	END CAP
	FLANGE OR UNION CONNECTION
	FLEXIBLE CONNECTOR
	GLOBE VALVE
	IMMERSION THERMOSTAT
	METER
	MIXING VALVE
	POINT OF CONNECTION
	POINT OF DISCONNECTION
	PUMP
	PRESSURE GAUGE
	PRESSURE GAUGE W/ COIL SYPHON
	PRESSURE REGULATING VALVE
	SAFETY RELIEF VALVE
	SHUT-OFF VALVE
	SOLENOID VALVE
	STRAINER - Y-PATTERN
	STRAINER - Y-PATTERN W/ DRAIN
	TEE UP/DOWN
	TEE UP/DOWN W/ VALVE IN DROP
	THERMOMETER
	TRAP (RUNNING)

HVAC SYMBOLS

TWO LINE		SINGLE LINE	
	ACCESS PANEL		
	ELBOW, RADIUS		
	ELBOW W/VANES		
	FLEXIBLE DUCT		
	MANUAL BALANCING DAMPER		
	REDUCER		
	RETURN/EXHAUST, UP/DN		
	ROUND RETURN/EXHAUST, UP/DN		
	ROUND SUPPLY/INTAKE, UP/DN		
	SUPPLY/INTAKE, UP/DN		
	TAKE-OFF		
SYMBOLS			
	DAMPER - BYPASS		HUMIDISTAT
	DAMPER - FIRE		SENSOR - CARBON DIOXIDE
	DAMPER - FIRE/SMOKE		SENSOR - CARBON MONOXIDE
	DAMPER - MOTORIZED		SENSOR - DEWPOINT
	DAMPER - SMOKE		SENSOR - HYDROGEN
	FLOW ARROW		SENSOR - PRESSURE DIFFERENTIAL
	DOOR GRILLE		SENSOR - RELATIVE HUMIDITY
	DOOR UNDERCUT		SENSOR - ROOM TEMPERATURE
	POINT OF CONNECTION		SENSOR (W/ EQUIPMENT TAG)
	POINT OF DISCONNECTION		SMOKE DETECTOR
			THERMOSTAT (W/ EQUIPMENT TAG)

DRAWING INDEX

H001	ABBREVIATIONS, GENERAL NOTES, AND SYMBOLS
H101	HVAC DEMOLITION FLOOR PLAN
H201	ENLARGED HVAC FLOOR PLAN
H202	HVAC PIPING PLAN
H501	DETAILS
H801	SCHEDULES

DESIGN INFORMATION

APPLICABLE CODES:  
2017 FLORIDA MECHANICAL CODE  
2017 FLORIDA FUEL GAS CODE  
2017 FLORIDA ENERGY CONSERVATION CODE

PROJECT DESIGN CONDITIONS:  
2017 ASHRAE FUNDAMENTALS  
LOCATION: PALM BEACH INTERNATIONAL, FLORIDA  
COOLING OADB 81.7°F  
COOLING QAWB 77.7°F  
HEATING OADB 44.5°F

ROOM DESIGN CONDITIONS:  
OFFICE  
COOLING 75°F  
COOLING 50% RH  
HEATING 70°F