

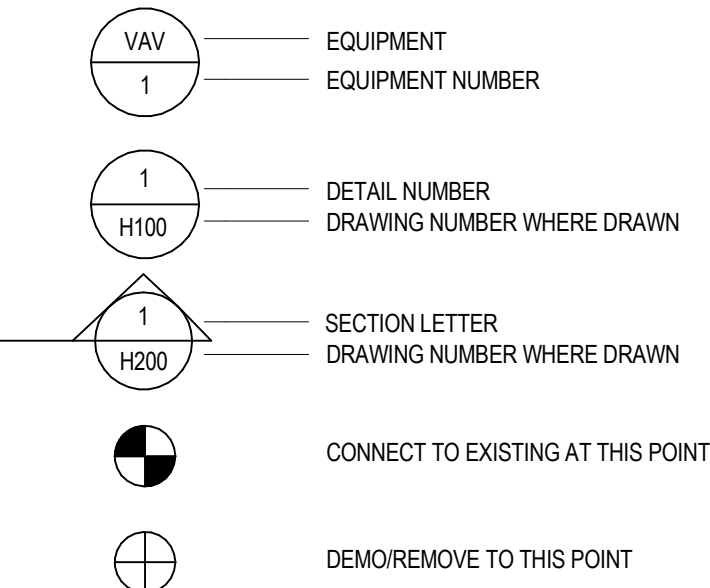
MISCELLANEOUS ABBREVIATIONS

ABV	ABOVE	IME	INSULATED METAL ENCLOSURE
APPROX	APPROXIMATELY	IN	INCHES
AUTO	AUTOMATIC	INCL	INCLUDED
AAV	AUTOMATIC AIR VENT	INSUL	INSULATION
AD	ACCESS DOOR	INTERL	INTERLOCK
AFF	ABOVE FINISHED FLOOR	INV	INVERT
AFMD	AIR FLOW MEASURING DEVICE	IER	INVERTED ECCENTRIC REDUCER
AP	ACCESS PANEL	ISV	ISOLATION VALVE STATION
ATC	AUTOMATIC TEMPERATURE CONTROL		
AWT	AVERAGE WATER TEMPERATURE	LTG	LIGHTING
		LAT	LEAVING AIR TEMPERATURE
BLDG	BUILDING	LDB	LEAVING DRY BULB
BLW	BELOW	LF	LINEAR FEET
BC	BALANCING COCK	LSDC	LINEAR SUPPLY DIFFUSER CEILING
BDD	BACKDRAFT DAMPER	LWB	LEAVING WET BULB
		LWT	LEAVING WATER TEMPERATURE
CAP	CAPACITY		
CFH	CUBIC FEET/HOUR	MAX	MAXIMUM
CHK V	CHECK VALVE	MECH	MECHANICAL
CHWS	CHILLED WATER SUPPLY	MANUF	MANUFACTURER
CHWR	CHILLED WATER RETURN	MIN	MINIMUM
CHWS&R	CHILLED WATER SUPPLY/RETURN	MTD	MOUNTED
CLD	CEILING	MTL	METAL
CLG MTD	CEILING MOUNTED	MTR	MOTOR
COL	COLUMN	MAT	MIXED AIR TEMPERATURE
CONC	CONCRETE	MAV	MANUAL AIR VENT
CONN	CONNECTION	MBH	ONE THOUSAND BTU/HOUR
CONTR	CONTRACTOR	MOD	MOTOR OPERATED DAMPER
CONT	CONTINUE	MNDL	MANHOLE
CONV	CONVECTOR	MECH	MECHANICAL EQUIPMENT ROOM
CORR	CORRIDOR		
CFM	CUBIC FEET PER MINUTE	NTS	NOT TO SCALE
CO	CLEANOUT	NA	NOT APPLICABLE
CV	CONTROL VALVE		
DB	DRY BULB	OPER	OPERATED
DHW	DOMESTIC HOT WATER	OPNG	OPENING
DCW	DOMESTIC COLD WATER	OA	OUTSIDE AIR
DIFF	DIFFUSER	OB	OPPOSED BLADE DAMPER
DISCH	DISCHARGE	OSBY	OUTSIDE SCREW AND YOKE
DN	DOWN		
DO	DITTO	PC	PLUMBING CONTRACTOR
DPR	DAMPEN	PRD	PRESSURE DIFFERENTIAL VALVE
DR	DRAIN	PD	PUMP DISCHARGE
DWG	DRAWING	PG	PRESSURE GAUGE WITH COCK
DX	DIRECT EXPANSION	PRV	PRESSURE REDUCING VALVE
		PT	PRESSURE TAP
EA	EXHAUST AIR	REDD	REQUIRED
EMER	EMERGENCY	RET	RETURN
EQUIP	EQUIPMENT	REX	REMOVE EXISTING
EXH	EXHAUST	RM	ROOM
ETR	EXISTING TO REMAIN	RA	RETURN AIR/RELIEF AIR
EAT	ENTERING AIR TEMPERATURE	RV	RELIEF VALVE
EC	ELECTRICAL CONTRACTOR		
EDB	ENTERING DRY BULB	SA	SCHEDULE
EWS	ENTERING WET BULB	SCH	SUPPLY AIR
EWT	ENTERING WATER TEMPERATURE	SHT	SHEET
EX	EXISTING	SHT MTL	SHEET METAL
		STL	STEEL
FLG C	FLANGE CONNECTION	STR	STRAINER
FLR	FLOOR	SD	SMOKE DAMPER
FRM	FROM	SP	STATIC PRESSURE
FT HD	FEET OF HEAD	SPS	STATIC PRESSURE SENSOR
FAT	FINAL AIR TEMPERATURE		
FC	FLEXIBLE CONNECTION	TA	THROWAWAY
FD	FIRE DAMPER	TDV	TRIPLE DUTY VALVE
SFD	SMOKE/FAIR DAMPER	TEMP	TEMPERATURE
FLR DR	FLOOR DRAIN	TH	THERMOMETER
		TRANS	TRANSITION
GA	GAUGE	TYP	TYPICAL
GL V	GLOBE VALVE	TSTAT	THERMOSTAT
GRAV	GRAVITY	TCV	TEMPERATURE CONTROL VALVE
GC	GENERAL CONTRACTOR	TR	TEMPERATURE RISE
GPM	GALLONS PER MINUTE	TV	TURNING VANES
GV	GATE VALVE		
		UC	UNDERCUT
HC	HEATING CONTRACTOR		
HP	HORSE POWER	V	VALVE
HPP	HIGH PRESSURE DRIP	VD	VOLUME CONTROL DAMPER
HTG	HEATING	VFS	VENTURI FLOW STATION
HV	HIGH VELOCITY		
		WB	WET BULB
HWR	HOT WATER RETURN	WMD	WATER FLOW MEASURING DEVICE
HWS	HOT WATER SUPPLY	WG	WATER GAUGE
HWS&R	HOT WATER SUPPLY AND RETURN	WTD	WATER TEMPERATURE DROP
		WI	WITH
		WIO	WITH OUT

EQUIPMENT TAG ABBREVIATIONS

ACC	AIR COOLED CHILLER	FT	FINNED TUBE RADIATION
ACCU	AIR COOLED CONDENSING UNIT	FOU	FAN COIL UNIT
ACCU M	ACCUMULATOR	FPB	FAN POWERED BOX
AHU	AIR HANDLING UNIT	FU	FURNACE
ASHP	AIR SOURCE HEAT PUMP		
		GV	GRAVITY INTAKE VENTILATOR
B	BOILER	GRV	GRAVITY ROOF VENTILATOR
BB	BASEBOARD HEATER		
BD	BARKMETRIC DAMPER	H	HUMIDIFIER
BDD	BACK DRAFT DAMPER	HC	HOT WATER HEATING COIL
		HU	HORIZONTAL UNIT HEATER
CC	CHILLED WATER COOLING COIL		
CD	CONDENSATE DRAIN	RG	RETURN GRILLE
CIRC	CIRCULATOR	RR	RETURN REGISTER
CMR	COMPRESSOR	RQ	RETURN AIR GRILLE
CONV	CONVECTOR	RCP	RADIANT CEILING PANEL
CP	CONDENSATE PUMP	RTU	ROOF TOP UNIT
CUH	CABINET UNIT HEATER		
		SF	SUPPLY FAN
DC	DRY COOLER	SSAC	SPLIT SYSTEM AIR CONDITIONING UNIT
		SSFC	SECURITY SUPPLY DIFFUSER CEILING
EF	EXHAUST FANS	SSSF	SECURITY SMOKE EXHAUST FAN
ER	EXHAUST REGISTER	SSGC	SECURITY SUPPLY GRILLE CEILING
ERW	EXHAUST REGISTER WALL	SSGW	SECURITY SUPPLY GRILLE WALL
ET	EXPANSION TANK	SLSD	SUPPLY LINEAR SLOT DIFFUSER
EQH	ELECTRIC CABINET UNIT HEATER		
ELH	ELECTRIC UNIT HEATER	PTAC	PUMP
EW	ELECTRIC WALL HEATER		
EVA	EVAPORATOR	PTAC	PACKAGED TERMINAL AIR CONDITIONING UNIT
		UH	UNIT HEATER
		UV	UNIT VENTILATOR
		UCD	UNDER CUT DOOR
		VAV	VARIABLE AIR VOLUME

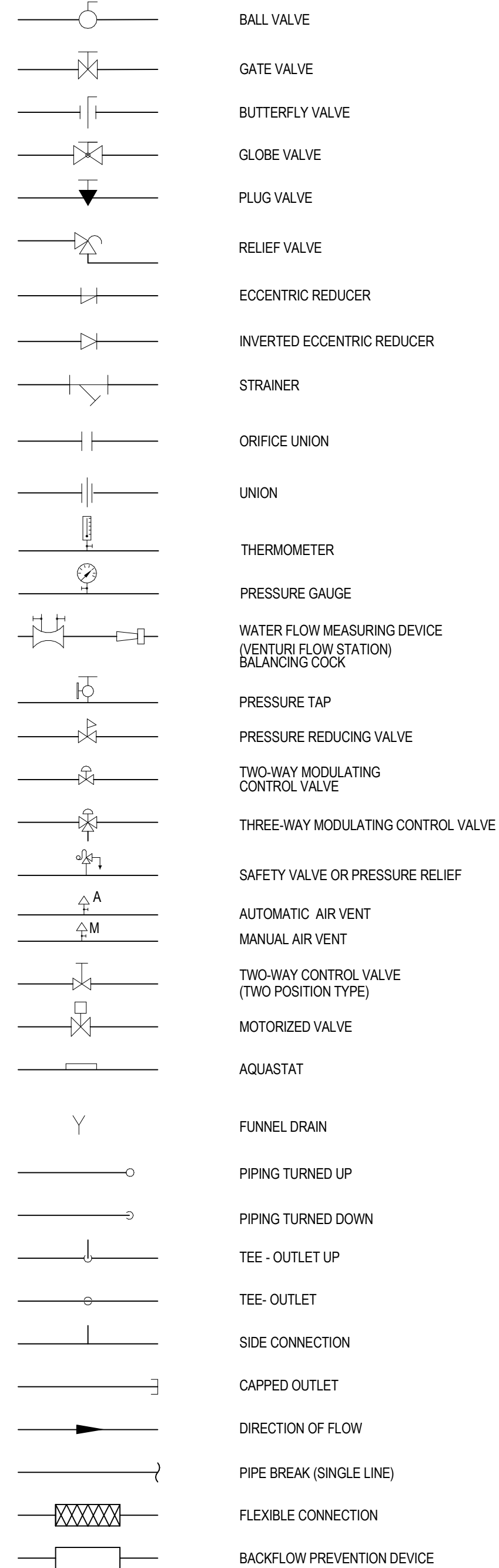
DRAWING SYMBOLS



PIPELINE ABBREVIATIONS

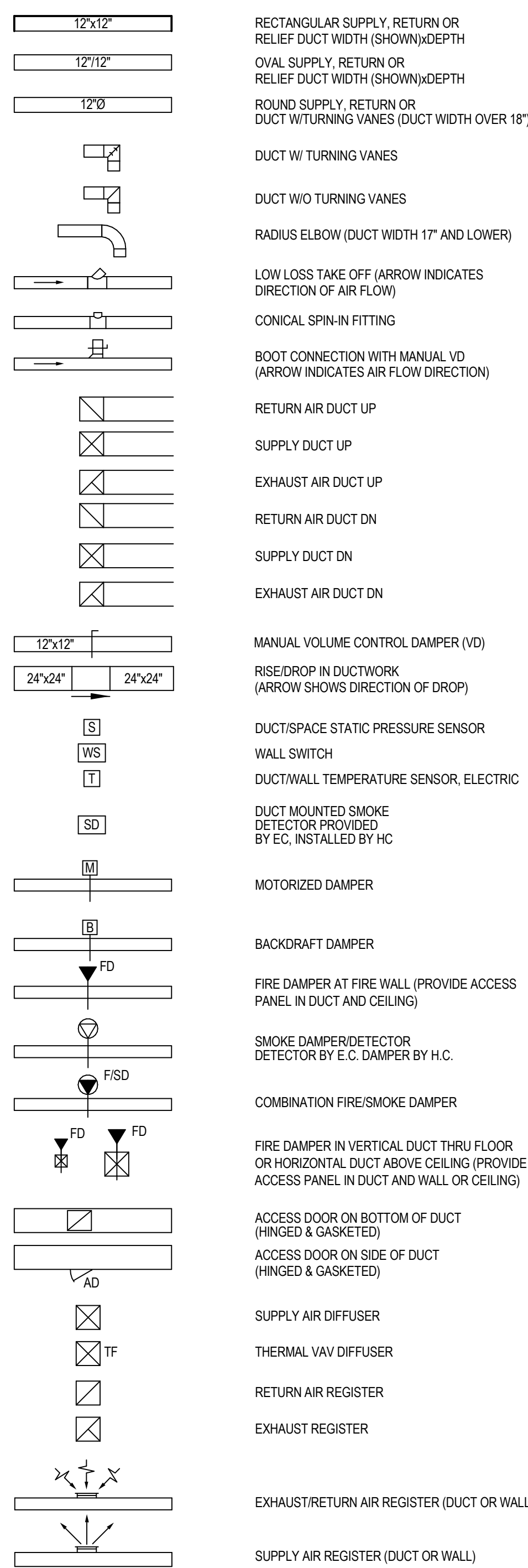
SYMBOLS	DESCRIPTION
— CD —	CONDENSATE DRAIN LINE
— CTD —	COOLING TOWER DRAIN LINE
— CHWS —	CHILLED WATER SUPPLY
— CHWR —	CHILLED WATER RETURN
— CWS —	CONDENSER WATER SUPPLY
— CWR —	CONDENSER WATER RETURN
— HWS —	HOT WATER HEATING SUPPLY
— HWR —	HOT WATER HEATING RETURN
— LPS —	LOW PRESSURE STEAM SUPPLY
— LPCR —	LOW PRESSURE CONDENSATE RETURN
— MPS —	MEDIUM PRESSURE STEAM SUPPLY
— MPCR —	MEDIUM PRESSURE CONDENSATE RETURN
— HPS —	HIGH PRESSURE STEAM SUPPLY
— HPCR —	HIGH PRESSURE CONDENSATE RETURN
— PC —	PUMPED CONDENSATE
— HRS —	ENERGY (HEAT) RECOVERY SUPPLY
— HRR —	ENERGY (HEAT) RECOVERY RETURN
— RL —	REFRIGERANT LINE
— RS —	REFRIGERANT SUCTION
— NAME —	PIPE TO BE REMOVED
— NAME —	EXISTING PIPING TO REMAIN

PIPELINE SYMBOLS

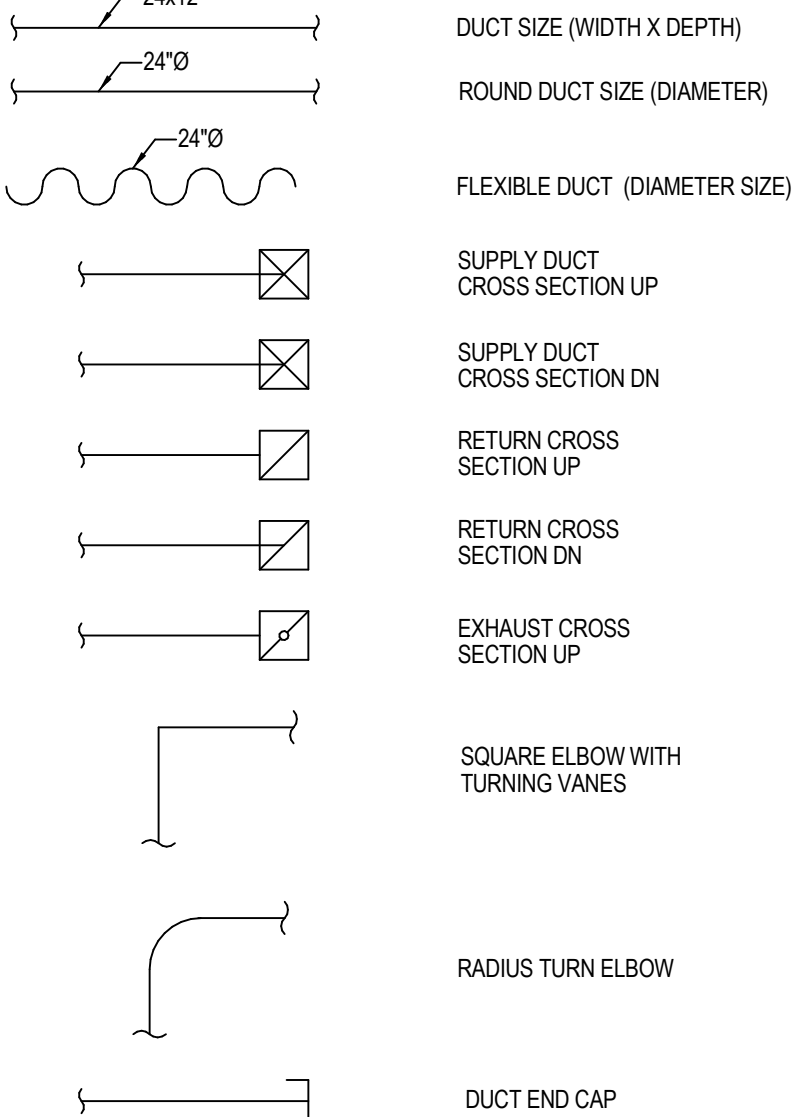


HVAC SYMBOLS

DOUBLE LINE SHEETMETAL SYMBOLS DESCRIPTION



SINGLE LINE - SHEET METAL SYMBOLS DESCRIPTION



HVAC GENERAL NOTES

- NOT ALL SYMBOLS ARE NECESSARILY USED.
- COORDINATE FINAL LOCATIONS OF DIFFUSERS AND GRILLES WITH ARCHITECTURAL REFLECTED CEILING PLANS.
- DRAWINGS ARE DIAGRAMMATIC. CONTRACTOR TO FIELD VERIFY DUCT AND PIPE ROUTING AND COORDINATE INTERFERENCE BETWEEN TRADES PRIOR TO INSTALLATION.
- ROOF OPENINGS, FLASHING, AND COUNTER FLASHING BY GENERAL CONTRACTOR. LOCATION OF OPENINGS BY HEATING CONTRACTOR.
- DUCTWORK TO BE INSTALLED TIGHT TO UNDERSIDE OF STRUCTURE ABOVE UNLESS NOTED OTHERWISE.
- PROVIDE ALL MATERIALS, EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED, AND AS REQUIRED BY CODE.
- CONTRACT DOCUMENT DRAWINGS FOR MECHANICAL WORK ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY. CONTRACTOR SHALL BE RESPONSIBLE TO FIELD SURVEY ACTUAL SITE CONDITIONS AND ACCOMMODATE ACTUAL SITE CONDITIONS AS PART OF SCOPE OF WORK AT NO COST TO OWNER.
- INSTALL ALL MECHANICAL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, CONTRACT DOCUMENTS, APPLICABLE BUILDING, STATE, AND LOCAL CODES, SEISMIC REQUIREMENTS, ENERGY CODES, AND INSURANCE UNDERWRITER REQUIREMENTS.
- COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, AND ELECTRICAL WORK, ETC. SHOWN ON OTHER CONTRACT DOCUMENT DRAWINGS.
- MAINTAIN A MINIMUM OF 6'-8" CLEARANCE TO UNDERSIDE OF PIPES, DUCTS, CONDUITS, SUSPENDED EQUIPMENT, SUPPORTS, ETC., THROUGHOUT ACCESS ROUTES IN MECHANICAL ROOMS.
- ALL TESTS SHALL BE COMPLETED AND ACCEPTED BY THE INSPECTOR BEFORE ANY MECHANICAL EQUIPMENT OR PIPING INSULATION IS APPLIED.
- LOCATE ALL TEMPERATURE, PRESSURE AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH A STRAIGHT SECTION OF PIPE OR DUCT UPSTREAM AND DOWNSTREAM, AS RECOMMENDED BY THE MANUFACTURER FOR ACCURACY.
- TESTING ADJUSTING AND BALANCING (TAB) AGENCY SHALL BE A MEMBER OF THE ASSOCIATED AIR BALANCING COUNCIL (AABO), THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB), OR THE TESTING, ADJUSTING AND BALANCING BUREAU (TABB). TAB FIRM SHALL HAVE A MINIMUM OF 5 YEARS EXPERIENCE ON SIMILAR PROJECTS. PERFORM TAB IN ACCORDANCE WITH THE REQUIREMENTS OF THE TAB PROCEDURAL STANDARD RECOMMENDED BY THE TAB TRADE ASSOCIATION THAT APPROVED THE TAB FIRMS QUALIFICATIONS.
- WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED, THE PRODUCTS OF A SINGLE MANUFACTURER SHALL BE USED.
- COORDINATE ALL FINAL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. COORDINATE AND PROVIDE ALL DUCTWORK AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DUCTWORK AND PIPING DIMENSIONS BEFORE FABRICATION.
- ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE, DIVISION 16 OF THE SPECIFICATIONS, ALL LOCAL CODES, AND OWNER'S INSURANCE UNDERWRITER REQUIREMENTS.
- WHEN MECHANICAL WORK (HVAC, PLUMBING, FIRE PROTECTION, CONTROLS, ETC.) IS SUBCONTRACTED BY THE MC, IT SHALL BE THE MECHANICAL CONTRACTOR'S RESPONSIBILITY FOR COORDINATING SUBCONTRACTORS AND THEIR ASSOCIATED SCOPE OF WORK. WHEN DISCREPANCIES ARISE PERTAINING TO WHICH SUBCONTRACTOR PROVIDES A PARTICULAR ITEM OF THE MECHANICAL CONTRACT OR WHICH SUBCONTRACTOR PROVIDES FINAL CONNECTIONS FOR A PARTICULAR ITEM OF THE MECHANICAL CONTRACT, IT SHALL BE BROUGHT TO THE ATTENTION OF THE MECHANICAL CONTRACTOR AND HIS DECISION SHALL BE FINAL.
- THE LOCATIONS AND SIZES 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 AND SIZES NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS SHALL BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL HAVE THE APPROVAL OF THE ENGINEER BEFORE BEING INSTALLED. DO NOT SCALE DRAWINGS.
- PLAN DRAWINGS AND SECTION CUTS WHICH SPECIFICALLY IDENTIFY SERVICE ROUTE OFFSETS, ELEVATION CHANGES, OBSTRUCTIONS, ACCESS DOORS, BALANCING DEVICES, ETC. ARE SHOWN FOR CLARITY WHERE SPECIFIC KNOWN CONDITIONS EXIST. MECHANICAL CONTRACTOR SHALL COORDINATE EQUIPMENT, DUCTWORK, AND PIPING ROUTINGS WITH ALL OTHER TRADES. REQUIREMENTS NOT SPECIFICALLY IDENTIFIED SHALL NOT BE INTERPRETED AS EXCLUSION FROM CONTRACTOR'S SCOPE OF WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR ACTUAL SITE CONDITIONS AND SHALL INCLUDE SUCH CONDITIONS IN SCOPE OF WORK AT NO ADDITIONAL COST TO THE OWNER.
- ALL MISCELLANEOUS STEEL REQUIRED TO ENSURE PROPER INSTALLATION AND SUPPORT OF MECHANICAL WORK AS SHOWN IN DETAILS FOR PIPING, DUCTWORK AND EQUIPMENT (UNLESS OTHERWISE NOTED) SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- PROVIDE ACCESS DOORS AND PANELS AS SPECIFIED FOR INSTALLATION IN WALLS AND CEILINGS, WHERE REQUIRED, TO SERVICE, BALANCE, ADJUST, MAINTAIN, AND/OR INSPECT DAMPERS, VALVES, SMOKE DETECTORS, CONTROLS, AND OTHER CONCEALED MECHANICAL EQUIPMENT. ACCESS PANELS SHALL BE GIVEN TO THE GENERAL CONTRACTOR FOR INSTALLATION. ACCESS PANEL LOCATIONS SHALL BE COORDINATED WITH ALL DISCIPLINES.
- ALL EQUIPMENT, PIPING, DUCTWORK, ETC., SHALL BE SUPPORTED AS DETAILED, SPECIFIED AND AS REQUIRED TO PROVIDE A VIBRATION FREE INSTALLATION.
- ALL OPENINGS IN FIRE RATED WALLS AND SMOKE PARTITIONS DUE TO DUCTWORK, PIPING, CONDUIT, ETC., SHALL BE FIRE STOPPED WITH APPROVED FIRE STOPPING MATERIALS.
- REFER TO TYPICAL DETAILS FOR DUCTWORK, PIPING AND EQUIPMENT INSTALLATION.
- UNLESS OTHERWISE SHOWN, LOCATE ALL ROOM THERMOSTATS 48" (CENTER LINE) ABOVE FINISHED FLOOR IN ACCORDANCE WITH ADA REQUIREMENTS. NOTIFY THE ENGINEER OF ANY ROOMS WHERE THE ABOVE LOCATION CAN NOT BE MAINTAINED OR WHERE THERE IS A QUESTION ON LOCATION. COORDINATE FINAL LOCATIONS WITH OWNER.
- LOCATE ALL MECHANICAL EQUIPMENT (VAV BOXES, CABINET HEATERS, UNIT HEATERS, ETC.) FOR UNOBSTRUCTED ACCESS TO UNIT ACCESS PANELS, FILTERS, CONTROLS AND VALVING. DO NOT LOCATE FAN POWERED VAV BOXES ABOVE LIGHTING FIXTURES.
- PROVIDE FLEXIBLE CONNECTIONS IN ALL DUCTWORK SYSTEMS (SUPPLY, RETURN AND EXHAUST) CONNECTED TO FANS AND OTHER EQUIPMENT WHICH REQUIRE VIBRATION ISOLATION. FLEXIBLE CONNECTIONS SHALL BE PROVIDED AT THE POINT OF CONNECTION TO THE EQUIPMENT UNLESS OTHERWISE INDICATED.
- ALL LOUVERS SHALL BE FURNISHED AND INSTALLED BY THE GENERAL CONTRACTOR (UNLESS OTHERWISE NOTED). GENERAL CONTRACTOR SHALL COORDINATE SIZES, LOCATIONS, AND CONNECTIONS WITH MECHANICAL CONTRACTOR. DUCTWORK CONNECTIONS TO LOUVERS SHALL BE FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR.
- PROVIDE AN AIR VENT AT THE HIGH POINT OF EACH DROP IN HYDRONIC WATER PIPING SYSTEMS. ALL PIPING SHALL SLOPE TO LOW POINTS. PROVIDE HOSE END DRAIN VALVES AT THE BOTTOM OF ALL RISERS AND LOW POINTS.
- INSTALL PIPING SO THAT ALL VALVES, STRAINERS, UNIONS, TRAPS, FLANGES, AND OTHER APPURTENANCES REQUIRING ACCESS ARE ACCESSIBLE.
- ALL ISOLATION VALVES SHALL BE IN A LOCATION AND ELEVATION WHICH ALLOWS FOR EQUIPMENT AND BRANCH PIPING REMOVAL, WHILE MAINTAINING SERVICE UPSTREAM OF THE ISOLATION VALVE.
- ALL BALANCING VALVES AND ISOLATION VALVES USED TO ADJUST FLOW RATES SHALL BE PROVIDED WITH POSITION INDICATORS AND MAXIMUM ADJUSTABLE STOPS (MEMORY STOPS).
- ALL ISOLATION VALVES (EXCEPT CONTROL VALVES), STRAINER, AND PIPING SPECIALTIES AND STRAINERS SHALL BE FULL LINE SIZE BEFORE REDUCING SIZE TO MAKE CONNECTIONS TO EQUIPMENT AND CONTROLS.
- MECHANICAL JOINTS SUCH AS UNIONS, FLANGES, OR THREADED FITTINGS SHALL BE INSTALLED AT EACH EQUIPMENT CONNECTION, IN BYPASSES, AT FLOOR PENETRATIONS, AT CONTROL DEVICES, AND IN LONG PIPE RUNS (100 FEET OR MORE) TO PERMIT DISASSEMBLY FOR ALTERATION AND REPAIRS.
- MEASURE, CUT, AND INSTALL PIPE LENGTH ACCURATELY TO MINIMIZE MISALIGNMENT. INSTALL ALL PIPING WITHOUT FORCING OR SPRINGING.
- PROVIDE FLEXIBLE CONNECTIONS IN ALL PIPING SYSTEMS CONNECTED TO PUMPS 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.
- PROVIDE VIBRATION ISOLATION FOR ALL MECHANICAL EQUIPMENT TO PREVENT VIBRATION TRANSMISSION TO BUILDING STRUCTURE.
- CONCRETE HOUSEKEEPING PADS SHALL BE FURNISHED AND INSTALLED BY THE GENERAL CONTRACTOR. MECHANICAL CONTRACTOR SHALL PROVIDE EQUIPMENT WEIGHTS, SIZES, AND LOCATION TO GENERAL CONTRACTOR. MINIMUM CONCRETE PAD THICKNESS SHALL BE IN ACCORDANCE WITH STRUCTURAL DETAILS. PAD SHALL EXTEND BEYOND THE EQUIPMENT FOOTPRINT A MINIMUM OF 6 INCHES ON EACH SIDE.
- ALL DUCTWORK, PIPING, AND EQUIPMENT SUPPORTED FROM STRUCTURAL STEEL SHALL BE COORDINATED WITH GENERAL CONTRACTOR. ALL ATTACHMENTS TO STEEL MEMBERS, BAR JOISTS, TRUSSES, OR JOIST GIRDERS SHALL BE APPROVED BY STRUCTURAL ENGINEER. WELDING TO STRUCTURAL MEMBERS SHALL NOT BE PERMITTED.
- MECHANICAL EQUIPMENT, DUCTWORK, AND PIPING SHALL NOT BE SUPPORTED FROM ROOF OR DECK ASSEMBLY. SUPPORTS SHALL ATTACH TO STRUCTURAL MEMBERS. COORDINATE WITH STRUCTURAL DRAWINGS.
- PROVIDE MANUFACTURER'S MATCHING ROOF CURBS FOR ALL ROOF MOUNTED EQUIPMENT. COORDINATE ACTUAL ROOF PITCH AND CONSTRUCTION DETAILS WITH GENERAL CONTRACTOR. PROVIDE SLOPED CURBS PER MANUFACTURER'S RECOMMENDATIONS. GENERAL CONTRACTOR SHALL INSTALL ROOF CURBS AND FLASHING PER ROOFING MANUFACTURER'S INSTALLATION REQUIREMENTS.
- UNLESS OTHERWISE NOTED, ALL PIPING AND DUCTWORK IS OVERHEAD, TIGHT TO UNDERSIDE OF STRUCTURE OR SLAB, WITH SPACE FOR INSULATION.
- PROVIDE CHAINWHEEL OPERATORS FOR ALL EXPOSED VALVES MOUNTED GREATER THAN 7'-0" ABOVE FINISHED FLOOR LEVEL. CHAIN SHALL EXTEND UNOBSTRUCTED TO 7'-0" ABOVE FLOOR LEVEL.
- ALL PIPING AND DUCTWORK SHALL CLEAR DOORS, WINDOWS, EQUIPMENT CLEARANCES, MAINTENANCE REQUIREMENTS, CODE SETBACKS, ETC. TO ASSURE PROPER OPERATION, INSPECTION, AND MAINTENANCE.
- ALL VALVES SHALL BE ADJUSTED FOR SMOOTH AND EASY OPERATION.
- PROVIDE ALL 90 DEGREE SQUARE ELBOWS WITH DOUBLE RADIUS TURNING VANES UNLESS OTHERWISE INDICATED OR SPECIFIED. PROVIDE ACCESS DOORS UPSTREAM OF ALL ELBOWS CONTAINING TURNING VANES.
- ALL DUCTS SHALL BE GROUNDED ACROSS FLEXIBLE CONNECTIONS WITH FLEXIBLE COPPER GROUNDING STRAPS. GROUNDING STRAPS SHALL BE BOLTED OR SOLDERED TO BOTH THE EQUIPMENT AND THE DUCT.
- ALL HEATING DEVICES AND SURFACES WITH ELEVATED TEMPERATURES WHICH CAN BE ACCESSED OR COME IN CONTACT WITH OWNER PERSONNEL SHALL BE PROTECTED, INSULATED, OR CONTROLLED TO REMAIN BELOW 120°F.
- PROVIDE MANUAL VOLUME DAMPERS IN ALL RUN-OUTS TO DIFFUSERS, BRANCH TAKE-OFFS FROM MAIN SUPPLY DUCT, AND IN ALL OTHER AREAS REQUIRED TO PROVIDE PROPER SYSTEM AIRFLOW BALANCING.

FULLY SPRINKLERED
ISSUED FOR CONSTRUCTION

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