

HVAC ABBREVIATIONS

ABOVE	ABV	INCHES)	IN
ABOVE FINISHED FLOOR	AFF	INCHES (WATER COLUMN)	IN WC
ACCESS DOOR	AD	INSULATION(ED)	INSUL
AIR CONDITIONING	AC	INVERT	INV
AIR CONDITIONING UNIT	ACU	IONIZATION DETECTOR	ID
AIR COOLED CONDENSER	ACC	IRON PIPE SIZE	IPS
AIR COOLED CONDENSING UNIT	ACCU	KILOWATT	KW
AIR HANDLING UNIT	AHU	KILOWATT HOUR	KWH
AIR SEPARATOR	AS	LATENT HEAT	LH
AIR VENT	AV	LEAST MEAN TEMP DIFFERENCE	LMTD
ALARM	ALM	LEAVING AIR TEMPERATURE	LAT
ALTERNATING CURRENT	AC	LEAVING WATER TEMPERATURE	LWT
ALUMINUM	ALUM	LIQUIFIED PETROLEUM GAS	LPG
AQUASTAT	AQST	LOCKED ROTOR AMPS	LRA
ARCHITECT(URAL)	ARCH	LOUVER	LVR
ARCHITECT/ENGINEER	A/E	LOW PRESSURE CONDENSATE	LPC
AUTOMATIC	AUTO	LOW PRESSURE STEAM	LPS
AUTOMATIC AIR VENT	AAV	1,000 BTUH	MBH
BACKDRAFT DAMPER	BDD	MAKE-UP AIR UNIT	MAU
BALANCING VALVE	BAL V	MANUFACTURER	MFR
BALL VALVE	BV	MATCHLINE	ML
BOILER	BLR	MECHANICAL	MECH
BOILER FEED WATER	BFW	MECHANICAL JOINT	MJ
BOILER HORSEPOWER	BHP	MEDIUM PRESSURE CONDENSATE	MPC
BOILER FEED WATER	BFW	MEDIUM PRESSURE STEAM	MPS
BOTTOM OF DUCT (INCLUDING INSUL)	BOD	MINIMUM CIRCUIT AMPACITY	MCA
BOTTOM OF PIPE (INCLUDING INSUL)	BOP	MIXED AIR TEMPERATURE	MAT
BRITISH THERMAL UNITS (1000) PER HOUR	MBH	MOTOR CONTROL CENTER	MCC
BRITISH THERMAL UNITS PER HOUR	BTUH	MOTORIZED DAMPER	MD
BUILDING	BLDG	MULTI ZONE	MZ
BUTTERFLY VALVE	BFV	NOISE CRITERIA	NC
CABINET HEATER	CH	NOISE REDUCTION	NRC
CENTER LINE	CL	NOISE REDUCTION COEFFICIENT	NRC
CHECK VALVE	CKVA	NORMALLY CLOSED	NC
CHEMICAL FEED PUMP	CFP	NORMALLY OPEN	NO
CHILLED WATER RETURN	CHWR	NOT TO SCALE	NTS
CHILLED WATER SUPPLY	CHWS	OPEN ENDED DUCT	OED
CHILLER	CH	OUTLET VELOCITY	OV
COLD WATER	CW	OUTSIDE AIR	OA
CONDENSATE DRAIN	CD	PERFORATED	PERF
CONDENSER WATER RETURN	CWR	PHASE	PH
CONDENSER WATER SUPPLY	CWS	PLUMBING	PLBG
CONNECTION	CONN	PNEUMATIC	PNEU
CONTRACT LIMIT LINE	CLL	POUNDS PER SQUARE INCH	PSI
CONTRACT(OR)	CONTR	POUNDS PER SQUARE INCH ABSOLUTE	PSIA
CONTROL VALVE	CV	POUNDS PER SQUARE INCH GAGE	PSIG
COOLING COIL	CC	POWER FACTOR	PF
COOLING TOWER	CT	PRESSURE DROP	PD
CUBIC FEET PER MINUTE	CFM	PRESSURE REDUCING VALVE	PRV
CYCLE	CY	PROJECT	PROJ
DETAIL	DTL	PUMP	P
DIAMETER	DIA	PUMP DISCHARGE LINE	PD
DIFFUSER	DIF	REFRIGERANT LIQUID	RL
DOUBLE POLE, DOUBLE THROW	DPDT	REFRIGERANT SUCTION	RS
DOUBLE POLE, SINGLE THROW	DPST	REGISTER	REG
DOWN	DN	RELATIVE HUMIDITY	RH
DRAWING	DWG	REQUIRED	REQD
DRY BULB	DB	RETURN AIR	RA
DUAL TEMPERATURE RETURN	DTR	RETURN AIR FAN	RAF
DUAL TEMPERATURE SUPPLY	DTSS	REVOLUTIONS PER MINUTE	RPM
ECONOMIZER	ECON	ROOFTOP UNIT	RTU
ELECTRICAL	ELEC	RUNNING LOAD AMPS	RLA
ENGINEER	ENGR	SCHEDULE	SCHED
ENTERING AIR TEMPERATURE	EAT	SCHEDULED HEATING WATER RETURN	SHWR
ENTERING WATER TEMPERATURE	EWT	SCHEDULED HEATING WATER SUPPLY	SHWS
EQUIPMENT	EQUIP	SECTION	SECT
EXHAUST	EXH	SENSIBLE HEAT	SH
EXHAUST AIR FAN	EF	SENSIBLE HEAT RATIO	SHR
EXISTING	EXST	SINGLE POLE, DOUBLE THROW	SPDT
EXPANSION TANK	EXP TK	SINGLE POLE, SINGLE THROW	SPST
EXPLOSION PROOF	EPRF	SLEEVE	SLV
FAN COIL UNIT	FCU	SMOKE DAMPER	SMD
FEED WATER	FDW	SPECIFICATIONS	SPEC
FEET (FOOT)	FT	SPLITTER DAMPER	SD
FEET PER MINUTE	FFM	SQUARE FOOT	SQ FT
FIRE ALARM	FA	SUPERVISORY SWITCH	SS
FIRE DAMPER	FD	SUPPLY AIR	SA
FLEXIBLE DUCT	FLEX D	SUPPLY AIR FAN	SF
FLEXIBLE CONNECTION	FC	SWITCH	SW
FLOAT AND THERMOSTATIC	F&T	TEMPERATURE	TEMP
FLOW SWITCH	FS	TEMPERATURE CONTROL PANEL	TCP
FUEL OIL	FO	TEMPERATURE CONTROL VALVE	TCV
FUEL OIL RETURN	FOR	TERMINAL UNIT	TU
FUEL OIL SUPPLY	FOS	THERMOSTAT	TT
FUEL OIL VENT	FOV	THERMOSTATIC TRAP	TT
FULL LOAD AMPS	FLA	TOTAL PRESSURE	TP
GAGE (GAUGE)	GA	UNDER FLOOR DUCT	UFD
GALLON	GAL	UNIT HEATER	UH
GALLONS PER MINUTE	GPM	UNIT VENTILATOR	UV
GAS	G	UNLESS OTHERWISE NOTED	UON
GATE VALVE	GV	UTILITY	UTIL
GENERAL CONTRACTOR	GC	VALVE	V
GLYCOL RETURN	GR	VARIABLE AIR VOLUME	VAV
GLYCOL SUPPLY	GS	VARIABLE FREQUENCY DRIVE	VFD
HEAT PUMP LOOP SUPPLY	HPS	VERIFY IN FIELD	VF
HEAT PUMP LOOP RETURN	HPR	VERTICAL UNIT HEATER	VUH
HAND-OFF-AUTO	HOA	VOLT	V
HEATING, VENTILATION, AIR CONDITIONING	HVAC	VOLUME DAMPER	VD
HEATING COIL	HG	WALL LOUVER AND SCREEN	WLS
HEATING WATER RETURN	HWR	WATER SOURCE HEAT PUMP	WSHP
HEATING WATER SUPPLY	HWS	WATER COLUMN	WC
HERTZ	HZ	WATER HEATER	WH
HIGH TEMPERATURE HEATING WATER RETURN	HTHWR	WET BULB	WB
HIGH TEMPERATURE HEATING WATER SUPPLY	HTHWS	WIRE MESH SCREEN	WM
HORSEPOWER	HP		

HVAC SYMBOLS-VALVES & SPECIALTIES

	SHUT-OFF VALVE (GATE)
	BALANCING VALVE (X INDICATES GPM)
	TWO-WAY AUTOMATIC CONTROL VALVE
	THREE-WAY AUTOMATIC CONTROL VALVE
	CHECK VALVE
	STRAINER
	GLOBE VALVE
	BALL VALVE
	BUTTERFLY VALVE
	PRESSURE REDUCING VALVE
	TRIPLE DUTY VALVE
	RELIEF VALVE (X INDICATES P - PRESSURE T - TEMPERATURE PT - COMBINATION PRESS./TEMP.)
	BRANCH CONNECTION - BOTTOM
	BRANCH CONNECTION - TOP
	ELBOW - TURNED DOWN
	ELBOW - TURNED UP
	FLEXIBLE CONNECTOR
	CAP
	DIRECTION OF FLOW
	DIRECTION OF DOWNWARD PITCH
	SENSOR/SWITCH (X INDICATES P - PRESSURE T - TEMPERATURE F - FLOW)
	GAUGE (X INDICATES P - PRESSURE T - TEMPERATURE F - FLOW)
	PRESSURE/TEMPERATURE TAP
	CIRCULATING PUMP
	UNION
	PIPE GUIDE (PG)
	PIPE ANCHOR (PA)

HVAC SYMBOLS-PIPING DESIGNATIONS

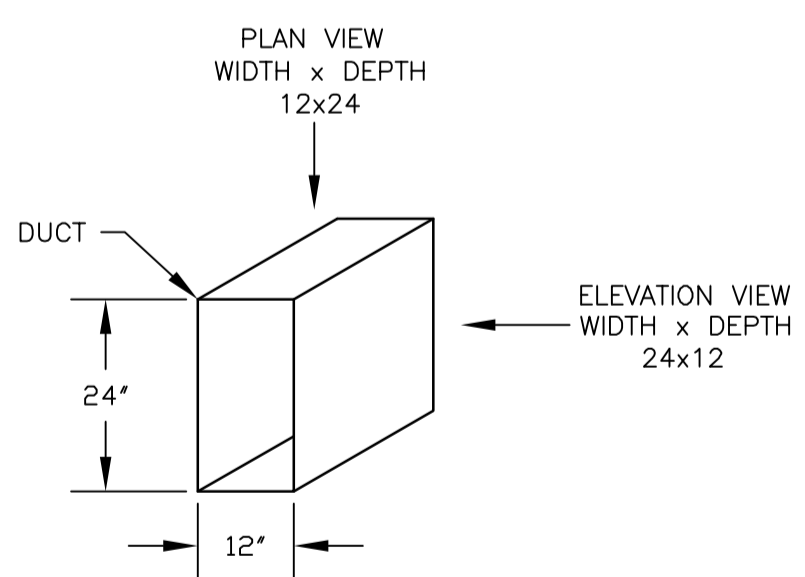
	DRAIN
	HEATING WATER SUPPLY
	HEATING WATER RETURN
	MAKE-UP WATER
	NATURAL GAS
	STEAM (WITH DESIGN PRESSURE/PSI)
	CLEAN STEAM (WITH DESIGN PRESSURE/PSI)
	CONDENSATE (WITH DESIGN PRESSURE/PSI)
	CHILLED WATER SUPPLY
	CHILLED WATER RETURN
	GLYCOL HOT WATER SUPPLY
	GLYCOL HOT WATER RETURN
	CONDENSER WATER SUPPLY
	CONDENSER WATER RETURN
	HEAT RECOVERY PIPING LOOP
	LOW VOLTAGE SIGNAL CABLE FOR DDC INSTRUMENTATION

PIPING LABEL EXAMPLE:

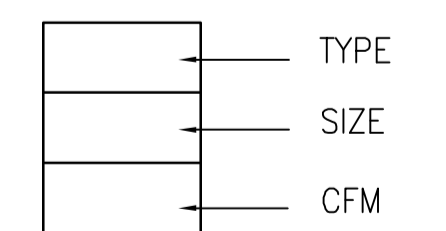
 PIPE DESIGNATION (GLYCOL HOT WATER RETURN)
 PIPE SIZE

HVAC SYMBOLS-DUCTWORK

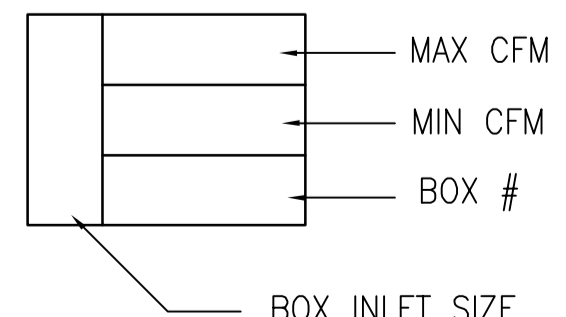
	AIRFLOW - SUPPLY/OUTDOOR AIR
	AIRFLOW - RETURN/EXHAUST AIR
	RECTANGULAR DUCTWORK (FIRST NUMBER INDICATES VISIBLE DIMENSION)
	ROUND DUCTWORK
	LINED DUCTWORK
	FLAT OVAL DUCTWORK
	FLEXIBLE DUCT
	RECTANGULAR CEILING DIFFUSER
	CIRCULAR CEILING DIFFUSER
	RETURN/EXHAUST REGISTER OR GRILLE WITH SQUARE TO ROUND TRANSITION
	LINEAR DIFFUSER
	DIFFUSER / REGISTER / GRILLE TYPE
	NECK SIZE / NOMINAL DUCT SIZE / RETURN GRILLE SIZE
	AIR FLOW
	RECTANGULAR/ROUND SUPPLY AIR DUCTWORK UP
	RECTANGULAR/ROUND RETURN OR EXHAUST AIR DUCTWORK UP
	RECTANGULAR/ROUND SUPPLY AIR DUCTWORK DOWN
	RECTANGULAR/ROUND RETURN AIR DUCTWORK DOWN
	COMBINED FIRE DAMPER AND SMOKE DAMPER WITH ACCESS DOOR
	FIRE DAMPER WITH ACCESS DOOR
	SMOKE DAMPER WITH ACCESS DOOR
	MOTOR OPERATED DAMPER
	FLEXIBLE DUCT CONNECTION
	SMOKE DETECTOR
	DUCT MOUNTED SENSOR (X INDICATES SP - STATIC PRESSURE, T - TEMPERATURE)
	WALL MOUNTED DDC TEMPERATURE SENSOR
	WALL MOUNTED THERMOSTAT
	CAPPED DUCT
	BALANCE TO "X" CFM
	MITERED ELBOW / JOINT ALL MITERED CONNECTIONS TO CONTAIN TURNING VANES
	RECTANGULAR TO ROUND DUCT FITTING



DIFFUSER/REGISTER TAG



VAV BOX TAG



GENERAL NOTES

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- THE PLANS ARE DIAGRAMMATIC AND INDICATE ONLY THE SIZE AND GENERAL ARRANGEMENT OF PIPING/DUCTWORK AND EQUIPMENT. EXACT LOCATION OF ALL ELEMENTS SHALL BE DETERMINED AS WORK PROGRESSES, IN COOPERATION AND COORDINATION WITH THE WORK OF ALL TRADES. THEY ARE NOT INTENDED TO SHOW EVERY ITEM OF WORK OR MINOR PIECE OF EQUIPMENT. CONTRACTOR SHALL FURNISH AND INSTALL WITHOUT ADDITIONAL REMUNERATION ANY COMPONENT NECESSARY TO COMPLETE THE SYSTEM IN ACCORDANCE WITH THE BEST PRACTICE OF THE TRADE.
- ITEMS OF WORK OR EQUIPMENT SHOWN ON THE DRAWINGS ONLY, OR CALLED FOR THE SPECIFICATIONS ONLY, SHALL BE FURNISHED AND INSTALLED IN THE SAME MANNER AS IF THEY APPEARED ON BOTH THE DRAWINGS AND THE SPECIFICATIONS.
- DRAWINGS DO NOT INDICATE ALL OFFSETS, CHANGES IN ELEVATION, ETC. WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL MAKE SUCH CHANGES IN PIPING/DUCTWORK AND LOCATION OF EQUIPMENT, ETC. TO ACCOMMODATE WORK, OBSTACLES, AND WORK OF OTHER CONTRACTORS.
- INSTALL EQUIPMENT AND PIPING/DUCTWORK TO AVOID INTERFERENCE WITH THE OPERATION, SERVICE, AND MAINTENANCE OF EQUIPMENT.
- PIPES AND/OR DUCTS PENETRATING FIRE WALLS AND FLOORS SHALL BE FIRESTOPPED USING UL APPROVED MATERIAL. REFER TO THE ARCHITECTURAL DRAWINGS FOR FIRE WALL AND FLOOR LOCATIONS. PROVIDE FIRE/DAMPERS AT ALL DUCT PENETRATIONS OF RATED SHAFT WALLS AND OF 2HR RATED EQUIPMENT ROOM WALLS.
- ALL PHYSICAL ATTRIBUTES OF EQUIPMENT AND DEVICES ARE BASED ON THOSE MANUFACTURERS LISTED IN THE SPECIFICATIONS AND/OR THE EQUIPMENT SCHEDULES. THE RESPECTIVE CONTRACTORS ARE RESPONSIBLE FOR ALL CHANGES BROUGHT ABOUT BY USE OF ITEMS BY OTHER MANUFACTURERS. THE ARCHITECT/ENGINEER HAS RESERVED THE RIGHT TO REJECT ITEMS BY OTHER MANUFACTURERS IF THOSE ITEMS DO NOT MATCH THE PHYSICAL ATTRIBUTES OF THE MANUFACTURERS LISTED.
- DRAWING KEYNOTES ON EACH INDIVIDUAL DRAWING SHEET REFER TO THE KEYNOTE "CALL-OUTS" WITHIN THE AREA ADDRESSED BY THAT SHEET ONLY. THE AREA ADDRESSED BY THE SHEET IS CLEARLY SHADED ON THE KEY PLAN OF THE DRAWING.
- REFER TO DETAIL DRAWINGS FOR EQUIPMENT CONNECTIONS.

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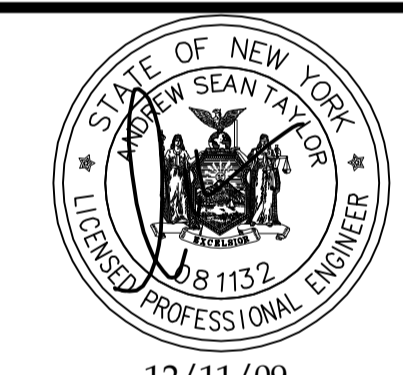
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12/11/09

TITLE: MECHANICAL LEGEND, SYMBOLS & NOTES



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