

### AIR DISTRIBUTION SYMBOLS

	RECTANGULAR DUCT. (FIRST NUMBER IS SIDE SHOWN) DIMENSIONS IN INCHES
	12 INCH ROUND DUCT
	MOTORIZED DAMPER
	FLEXIBLE DUCT
	DUCT FLEXIBLE CONNECTOR (FC)
	DUCT DROPS AND RISES IN DIRECTION OF AIR FLOW
	RETURN DUCT TURNED UP OR DOWN (DASHED)
	SUPPLY DUCT TURNED UP OR DOWN (DASHED)
	EXHAUST DUCT TURNED UP OR DOWN (DASHED)
	ACOUSTICAL LINING (DUCT DIM. FOR NET FREE AREA)
	ROUND DUCT ELBOW DOWN
	ROUND DUCT ELBOW UP
	SQUARE TO ROUND TRANSITION
	CAP (DUCT AND/OR PIPE)
	INDICATES DUCT, PIPING, EQUIPMENT TO BE REMOVED.
	EA EXHAUST AIR
	RA RETURN AIR
	SA SUPPLY AIR
	VOLUME DAMPER
	FIRE DAMPER
	SMOKE DAMPER
	COMBINATION SMOKE/FIRE DAMPER
	RECTANGULAR ELBOW W/TURNING VANES
	DIRECTION OF AIR FLOW (IN)
	DIRECTION OF AIR FLOW (OUT)
	HUMIDISTAT OR HUMIDITY SENSOR
	THERMOSTAT (T*STAT) OR TEMP. SENSOR
	SMOKE DETECTOR
	S-3 DIFFUSER, REGISTER OR GRILLE TAG CFM AIR FLOW QUANTITY TYP. 3
	FTR-2 FINNED TUBE TAG LENGTH OF FINNED ELEMENT
	A1 DETAIL NO. MH401 SHEET NO. WHERE DETAIL IS LOCATED
	CUH EQUIPMENT TAG 2 EQUIPMENT NO.

### PIPING SYMBOLS

	UNION		ORIFICE FLOWMETER
	FLANGE		FLEXIBLE PIPE CONNECTOR
	PIPE ANCHOR		EXPANSION JOINT
	PIPE GUIDE OR SLEEVES		STEAM TRAP (FLOAT AND THERMOSTATIC INDICATED T.T. THERMOSTAT, B.T. BUCKET TRAP, T.D. THERMODYNAMIC TRAP)
	PIPE ELBOW TURNED DOWN		CONCENTRIC REDUCER/INCREASER
	PIPE ELBOW TURNED UP		ECCENTRIC REDUCER/INCREASER
	PIPING TEE-DOWN		HOSE BIBB
	PIPE RISER		WALL HYDRANT
	FLOOR CLEAN OUT		DIRECTION OF FLOW
	CLEAN OUT		FIRE DEPARTMENT CONNECTION
	WALL CLEAN OUT		PUMP
	PIPE PITCHES DOWN		WATER HAMMER SUPPRESSER
	GENERIC VALVE, SEE SPECIFICATIONS FOR TYPE		FINNED TUBE BASEBOARD
	GATE VALVE		HUMIDIFIER
	BALL VALVE		DIFFERENTIAL PRESSURE TRANSMITTER
	BUTTERFLY VALVE (MANUAL)		SPRINKLER HEAD
	3-WAY CONTROL VALVE		GAS TURRET
	BALANCING VALVE (CIRCUIT SETTER)		MEDICAL OXYGEN OUTLET
	CHECK VALVE		MEDICAL VACUUM INLET
	PLUG VALVE		MEDICAL AIR OUTLET
	GLOBE VALVE		NITROUS OXIDE OUTLET
	NEEDLE VALVE		
	BACK FLOW PREVENTER		
	SOLENOID VALVE		
	PRESSURE REDUCING OR REGULATING VALVE		
	PRESSURE RELIEF VALVE		
	STRAINER		
	STRAINER W/BLOWDOWN		
	MANUAL AIR VENT		
	AUTOMATIC AIR VENT		
	PRESSURE SWITCH		
	FLOW SWITCH		
	PRESSURE GAUGE AND COCK		
	THERMOMETER AND WELL		
	TEMPERATURE & PRESSURE TAP (PETE'S PLUG)		
	HOSE END DRAIN VALVE WITH CAP		

### ABBREVIATIONS

AAV	AUTOMATIC AIR VENT	DIW	DOWN IN WALL	OA	OUTSIDE AIR
ACC	AIR COOLED CONDENSER	DN	DOWN	OBD	OPPOSED BLADE DAMPER
ACU	AIR CONDITIONING UNIT	DS	DOWNSPOUT	OED	OPEN ENDED DUCT
AD	ACCESS DOOR	DT	DROP AND TRANSITION	P-#	PLUMBING FIXTURE TAG
AE	ACID EXHAUST	DWG	DRAWING	PAE	PROCESS ACID EXHAUST
AFF	ABOVE FINISHED FLOOR	DWH	DOMESTIC WATER HEATER	PHE	PROCESS HEAT EXHAUST
AFMS	AIR FLOW MEASURING STATION	EA	EXHAUST AIR	PSE	PROCESS SOLVENT EXHAUST
AHU	AIR HANDLING UNIT	EF	EXHAUST FAN	PP	POLY-PROPYLENE
AP	ACCESS PANEL	ENC	ENCLOSURE	PPE	PRE PURCHASED EQUIPMENT
ATC	AUTOMATIC TEMPERATURE CONTROL	ER	EXHAUST REGISTER	PRS	PRESSURE REDUCING STATION
AV	AIR VENT	(E)	EXISTING	PRV	PRESSURE REDUCING VALVE
BA	BREATHING COMPRESSED AIR	EXIST.	EXISTING	PVD	PNEUMATIC VOLUME DAMPER
BB	BASEBOARD	FBO	FURNISHED BY OWNER	(R)	REMOVE
BDD	BACKDRAFT DAMPER	FBP	FACE AND BYPASS	RA	RETURN AIR
BG	BLAST GATE	FC	FLEXIBLE CONNECTION	RD	ROOF DRAIN
BFP	BACKFLOW PREVENTER	FCO	FLOOR CLEANOUT	(REL.)	RELOCATED
BLDG	BUILDING	FD-#	FLOOR DRAIN TAG	RF	RETURN FAN
BOD	BOTTOM OF DUCT	FD	FIRE DAMPER	RG	RETURN GRILLE
BOP	BOTTOM OF PIPE	FG	FIBERGLASS	RHC	REHEAT COIL
BTU	BRITISH THERMAL UNIT	F & T	FLOAT AND THERMOSTATIC	RM	ROOM
CBD	COUNTER BALANCED DAMPER	FO	FLAT OVAL	RPZ	REDUCED PRESSURE ZONE BFP
CD	CEILING DIFFUSER	FRHB	FREEZE RESISTANT HOSE BIBB	RR	RETURN REGISTER
CFF	CAPPED FOR FUTURE	FTR	FINNED TUBE RADIATION	RV	RELIEF VALVE
CFM	CUBIC FEET PER MINUTE	FS	FLOW SWITCH	SA	SUPPLY AIR
CLG	CEILING	GC	GENERAL CONTRACTOR	SCV	SELF CONTAINED VALVE
CO	CLEANOUT	GPM	GALLONS PER MINUTE	SD	SMOKE DETECTOR
CONT	CONTINUATION	H	HUMIDIFIER	SF	SUPPLY FAN
COORD	COORDINATE	HB	HOSE BIB	SG	SUPPLY GRILLE
CP	CONDENSATE PUMP & RECEIVER	HRU	HEAT RECOVERY UNIT	SR	SUPPLY REGISTER
CT	COOLING TOWER	HTR	HEATER	SS	STAINLESS STEEL
CTE	CONNECT TO EXISTING	H & V	HEATING AND VENTILATION	TE	TEMPERATURIZED ELEMENT (SENSOR)
CU	COPPER	HVAC	HEATING, VENTILATING AND AIR CONDITIONING	TG	TRANSFER GRILLE
CUH	CABINET UNIT HEATER	HW	HOT WATER	TOD	TOP OF DUCT
CV	CONTROL VALVE	HX	HEAT EXCHANGER	TOP	TOP OF PIPE
CW	COLD WATER	IN WG	INCHES WATER GAUGE	TTS	TIGHT TO STEEL
CW-P	CITY WATER-PROCESS	LD	LINED DUCT	TV	TURNING VANE(S)
DC	DOUBLE CONTAINED	MAU	MAKE UP AIR UNIT	TYP	TYPICAL
DDC	DIRECT DIGITAL CONTROL	MAX	MAXIMUM	UH	UNIT HEATER
DIA	DIAMETER	MBH	1000 BTU/HR.	UIC	UP IN CHASE
DIC	DOWN IN CHASE	ME	MECHANICAL ENGINEER	UIW	UP IN WALL
		MFR	MANUFACTURER	UV	UNIT VENTILATOR
		MIN	MINIMUM	VAV	VARIABLE AIR VOLUME BOX
		MD	MOTOR OPERATED DAMPER	VB	VACUUM BREAKER
		MPV	MULTI-PURPOSE VALVE	VTR	VENT THRU ROOF
		MTD	MOUNTED	VD	MANUAL VOLUME DAMPER
		MUA	MAKE UP AIR	VCFF	VALVED AND CAPPED FOR FUTURE
		NPW	NON-POTABLE WATER	VOC	VOLATILE ORGANIC COMPOUNDS
		NTS	NOT TO SCALE	VFD	VARIABLE FREQUENCY DRIVE
		P-#	PLUMBING FIXTURE TAG	W/	WITH
		PEA	ALKALI EXHAUST	WCO	WALL CLEANOUT
		PEH	HEAT EXHAUST	WH	WALL HYDRANT

### PIPING SYSTEMS

—10:1 HF—	10:1 HF	---GCR---	GRAVITY STEAM CONDENSATE RETURN	—MV—	MEDICAL VACUUM	—TW—	TEMPERED WATER
—AV—	ACID VENT	—GLY—	GLYCOL	—N2NP—	NON-PROCESS NITROGEN	—TWS—	TEMPERED CHILLED WATER SUPPLY
—AD—	ACID DRAIN	—GV—	GAS VENT	—N2—	PROCESS NITROGEN	---TWR---	TEMPERED CHILLED WATER RETURN
---AD---	ACID DRAIN (BELOW SLAB)	—H—	HYDROGEN	—NG—	NATURAL GAS	—VAC—	PLANT VACUUM
—BA—	BREATHING AIR	—H2O2—	HYDROGEN PEROXIDE	—HNG—	HIGH PRESSURE NATURAL GAS	—ZB—	ZONE VALVE BOX
—CD—	CONDENSATE DRAIN	---HCR---	HOT/ CHILLED WATER RETURN	—NO2—	NITROUS OXIDE	-----TEMP-----	DOMESTIC HOT WATER (TEMP °F)
—CDA—	COMPRESSED DRY AIR	—HCS—	HOT/ CHILLED WATER SUPPLY	—NEG. SOLV.—	NEGATIVE SOLVENT DRAIN	-----TEMP-----	RECIRC. DOMESTIC HOT WATER (TEMP °F)
—CHWS—	CHILLED WATER SUPPLY	—HCV—	HOUSE CLEAN VACUUM	—NPW—	NON POTABLE COLD WATER	-----CW-----	DOMESTIC COLD WATER
---CHWR---	CHILLED WATER RETURN	—HG—	HOT GAS	—O2—	OXYGEN	-----HW-----	DOMESTIC HOT WATER (120° F)
—CWS—	CONDENSER WATER SUPPLY	—HPS—	HIGH PRESSURE STEAM	—OFA—	OIL FREE COMPRESSED AIR	-----RHW-----	RECIRCULATED DOMESTIC HOT WATER (120° F)
---CWR---	CONDENSER WATER RETURN	---HPR---	HIGH PRESSURE CONDENSATE RETURN	—PCWR—	PROCESS COOLING WATER RETURN	—S, W or KW—	S SANITARY, W WASTE & KW KITCHEN WASTE
—DB—	DISTRIBUTION VALVE BOX	—HWS—	HOT WATER SUPPLY	—PC—	PUMPED STEAM CONDENSATE	—S, W or KW—	S SANITARY, W WASTE & KW KITCHEN WASTE (EXIST.)
—DIS—	DEIONIZED WATER SUPPLY	---HWR---	HOT WATER RETURN	—PD—	PUMPED DISCHARGE	—S, W or KW—	S SANITARY, W WASTE & KW KITCHEN WASTE (BELOW SLAB)
---DIR---	DEIONIZED WATER RETURN	—IAD—	ISOPROPYL ALCOHOL DRAIN	—POS. SOLV.—	POSITIVE SOLVENT DRAIN	—S, W or KW—	S SANITARY, W WASTE & KW KITCHEN WASTE (BELOW SLAB-EXIST.)
—EKCD—	EKC DRAIN	—LP—	LIQUID PROPANE GAS	—PW—	POTABLE WATER	—SD—	SD STORM DRAIN
—ESEW—	EYEWASH	—HLP—	HIGH PRESSURE LIQUID PROPANE GAS	—R—	RELIEF LINE	—SD—	SD STORM DRAIN (EXIST.)
—FCS—	FREE COOLING SUPPLY	—LPS—	LOW PRESSURE STEAM	—RL—	REFRIGERANT LIQUID	—SD—	SD STORM DRAIN (BELOW SLAB)
---FCR---	FREE COOLING RETURN	---LPR---	LOW PRESSURE RETURN	—RS—	REFRIGERANT SUCTION	—SD—	SD STORM DRAIN (BELOW SLAB-EXIST.)
—FOS—	FUEL OIL SUPPLY	—MA—	MEDICAL AIR	—SLD—	MIXED SOLVENT DRAIN	—V—	V SANITARY VENT
---FOR---	FUEL OIL RETURN	—MPS—	MEDIUM PRESSURE STEAM	—SV—	SOLVENT	—V—	V SANITARY VENT (EXIST.)
—FOV—	FUEL OIL VENT	---MPR---	MEDIUM PRESSURE RETURN	—SP—	SPRINKLER	—V—	V SANITARY VENT (BELOW SLAB)

**GENERAL NOTE**  
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144 Fore Street, P.O. Box 618  
 Portland, Maine 04104  
 Tel: (207) 772-8846  
 Fax: (207) 772-1070  
 www.smartinc.com

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 2-24-09

REV	DATE	DESCRIPTION
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 0" 1"

SCALE: NOT TO SCALE

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LEGEND AND ABBREVIATIONS

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