

MECHANICAL ABBREVIATIONS

A	AMPERE, AIR	HT	HEIGHT
AC	AIR CONDITIONING, AIR CONDITIONER	HUMID	HUMIDIFIER
AD	ACCESS DOOR	HV	HEATING & VENTILATING UNIT
ADA	AMERICANS WITH DISABILITIES ACT	HVAC	HEATING, VENTING & AIR CONDITIONING (UNIT)
AFF	ABOVE FINISHED FLOOR	HW	HOT WATER
AHU	AIR HANDLING UNIT	HWR	HOT WATER RETURN
AMB	AMBIENT	HWS	HOT WATER SUPPLY
AMS	AIRFLOW MONITORING STATION	HX	HEAT EXCHANGER
APD	AIR PRESSURE DROP	HZ	HERTZ
APPROX	APPROXIMATELY	ID	INSIDE DIAMETER
AS	AIR SEPARATOR	IN	INCHES
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	INDIR	INDIRECT WASTE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	KW	KILOWATT
ASSY	ASSEMBLY	L	LOUVER, LENGTH
ATT	ACOUSTIC ATTENUATOR	LAT	LEAVING AIR TEMPERATURE
BDD	BACKDRAFT DAMPER	LBC	LINEAR BAR GRILLE
BHP	BRAKE HORSEPOWER	LBS	POUNDS
BLDG	BUILDING	LDB	LEAVING DRY BULB
BTU	BRITISH THERMAL UNIT	LF	LINEAR FEET
BTUH	BTU PER HOUR	LOC	LOCATION/LOCATED
CAP	CAPACITY	LRA	LOCKED ROTOR AMPS
CC	COOLING COIL	LW	LOW TEMPERATURE
CD	CONDENSATE DRAIN	LWB	LEAVING WET BULB
CENT	CENTRIFUGAL	LWT	LEAVING WATER TEMPERATURE
CFM	CUBIC FEET/MINUTE	MAX	MAXIMUM
CH	CHILLER	MAX PD	MAXIMUM PRESSURE DROP
CHW	CHILLED WATER	MBH	1000 BTU PER HOUR
CHWR	CHILLED WATER RETURN	MBU	1000 BTU
CHWS	CHILLED WATER SUPPLY	MCA	MINIMUM CIRCUIT AMPERES
CLG	CEILING	MECH	MECHANICAL
C	CENTERLINE	MERV	MINIMUM EFFICIENCY REPORTING VALUE
CO	CLEANOUT, CARBON MONOXIDE	MFR	MANUFACTURER
CO2	CARBON DIOXIDE	MFR	MINIMUM
CONN	CONNECTION	M	MOTOR
CONC	CONCRETE	MTG	MOUNTING
COND	CONDENSATE, CONDITIONS, CONDENSING	N/A	NOT APPLICABLE
COP	COEFFICIENT OF PERFORMANCE	NAT'L	NATURAL
CS	CURRENT SENSOR	N/C	NOT IN CONTRACT
CU	CONDENSING UNIT	NC	NOISE CRITERIA, NORMALLY CLOSED
CUH	CABINET UNIT HEATER	NO	NUMBER, NORMALLY OPEN
CW	COLD WATER	NPT	NATIONAL PIPE THREAD
CWS	COLD WATER SUPPLY	NTS	NOT TO SCALE
D	DEPTH, DAMPER	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
DB	DRY BULB	OA	OUTSIDE AIR
dB	DECIBELS	OAT	OUTSIDE AIR TEMPERATURE
DDC	DIRECT DIGITAL CONTROLS	OBD	OPPOSED BLADE DAMPER
DEG	DEGREES	OC	ON CENTER
.DIA	DIAMETER	OD	OUTSIDE DIAMETER
DIFF	DIFFERENTIAL	OED	OPEN ENDED DUCT
DISCH	DISCHARGE	OEP	OPEN ENDED PIPE
DISPL	DISPLACEMENT	OS&Y	OUTSIDE STEM & YOKE
DL	DRUM SLOT LOUVER	P	PUMP, PITCH OR PRESSURE
DN	DOWN	PC	PUMPED CONDENSATE
DOM	DOMESTIC	PD	PRESSURE DIFFERENCE
DP	DIFFERENTIAL PRESSURE	PH	PHASE
DPDT	DOUBLE POLE, DOUBLE THROW	POS	POSITIVE
DPS	DIFFERENTIAL PRESSURE SWITCH	PRESS	PRESSURE
DWG	DRAWING	PRV	PRESSURE REDUCING VALVE
DX	DIRECT EXPANSION	PSI	POUNDS PER SQUARE INCH
E	EXISTING, EXHAUST	PSIG	POUNDS PER SQUARE INCH GAGE
EA	EXHAUST AIR, EACH	PVC	POLY VINYL CHLORIDE
EAT	ENTERING AIR TEMPERATURE	QTY	QUANTITY
EDB	ENTERING DRY BULB TEMPERATURE	R	RADIUS, RETURN
EER	ENERGY EFFICIENCY RATIO	RA	RETURN AIR
EF	EXHAUST FAN	RAT	RETURN AIR TEMPERATURE
EFF	EFFICIENCY	RF	RETURN FAN
ELEC	ELECTRIC	REFRIG	REFRIGERANT
ELEV	ELEVATION, ELEVATOR	REQ'D	REQUIRED
EQUIP	EQUIPMENT	RH	RELATIVE HUMIDITY, RANGE HOOD
ERV	ENERGY RECOVERY VENTILATOR	RL	REFRIGERANT LIQUID
ESP	EXTERNAL STATIC PRESSURE	RLA	RUNNING LOAD AMPERES
EUH	ELECTRIC UNIT HEATER	RM	ROOM
EWB	ENTERING WET BULB TEMPERATURE	RPM	REVOLUTIONS PER MINUTE
EWT	ENTERING WATER TEMPERATURE	RPZ	REDUCED PRESSURE ZONE
EXIST	EXISTING	RS	REFRIGERANT SUCTION
EXP	EXPANSION	S	SUPPLY
EXT	EXPANSION TANK	SA	SUPPLY AIR, SOUND ATTENUATOR
"F	DEGREES FAHRENHEIT	SAT	SUPPLY AIR TEMPERATURE, SUSPENDED ACOUSTICAL TILE
FACP	FIRE ALARM CONTROL PANEL	SC	SENSIBLE COOLING
FBO	FURNISHED BY OWNER	SD	SMOKE DAMPER
FC	FLEX CONNECTOR, FAN COIL	SEER	SEASONAL ENERGY EFFICIENCY RATIO
FCO	FLOOR CLEANOUT	SF	SQUARE FOOT, SUPPLY FAN
FD	FLOOR DRAIN, FIRE DAMPER	SIM	SIMILAR
FE	FIRE EXTINGUISHER	SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION
FF	FINISH FLOOR	SP	STATIC PRESSURE
FLA	FULL LOAD AMPS	SQ	SQUARE
FLR	FLOOR	SS	STAINLESS STEEL
FPM	FEET PER MINUTE	T	THERMOSTAT, TRANSFER
FR	FINTUBE RADIATION	TC	TOTAL COOLING
FS	FLOW SWITCH	TCP	TEMPERATURE CONTROL PANEL
FSD	FIRE AND SMOKE DAMPER	TEMP	TEMPERATURE
FT	FOOT/FEET	TF	TRANSFER FAN
G	GAS	TS	TEMPERATURE SENSOR
GA	GAUGE	TSP	TOTAL STATIC PRESSURE
GAL	GALLONS	TYP	TYPICAL
GALV	GALVANIZED	UH	UNIT HEATER
GPH	GALLONS PER HOUR	UL	UNDERWRITERS LABORATORY
GPM	GALLONS PER MINUTE	V	VENT, VALVE, VOLTS
GRV	GRAVITY RELIEF VENTILATOR	VAV	VARIABLE AIR VOLUME
GWB	GYPNUM WALLBOARD	VEL	VELOCITY
GYP	GYPNUM WALLBOARD	VFD	VARIABLE FREQUENCY DRIVE
H	HUMIDIFIER/HUMIDISTAT, HEIGHT	VUH	VERTICAL UNIT HEATER
H2O	WATER	W	WIDTH
HC	HEATING COIL	WITH	WITH
HTG	HEATING	WB	WET BULB
HGT	HEIGHT	WC	WATER COLUMN
HQA	HAND-OFF-AUTOMATIC	WG	WATER GAUGE
HORIZ	HORIZONTAL	WH	WATER HEATER
HP	HORSEPOWER	WPD	WATER PRESSURE DROP
HR	HOUR		

	SYMBOL PER ABBREVIATION LIST
	EQUIPMENT SEQUENCE NUMBER
	AIR INLET OR OUTLET WITH CFM
	FINTUBE DESIGNATION
	MBH
	GPM SETTING FOR BALANCING VALVE
	KEYNOTE
	CONNECT TO EXISTING
	RETURN GRILLE/REGISTER
	SUPPLY DIFFUSER/REGISTER/GRILLE
	EXHAUST GRILLE/REGISTER
	SIDEWALL REGISTER/GRILLE
	LINEAR SLOT DIFFUSER/RETURN
	ACCESS DOOR ON BOTTOM OF DUCT
	DUCT
	FLEXIBLE CONNECTION
	RETURN DUCT UP
	EXHAUST DUCT UP
	SUPPLY DUCT UP
	SQUARE ELBOW WITH TURNING VANES
	FLEXIBLE DUCT
	LINED DUCTWORK
	FINTUBE RADIATION AND ENCLOSURE
	UNIT HEATER
	TERMINAL UNIT, VARIABLE VOLUME
	DIRECTION OF AIR FLOW
	MANUAL DAMPER
	FIRE DAMPER
	SMOKE DAMPER
	MOTORIZED DAMPER
	HEATING COIL
	CHILLED WATER COOLING COIL
	DIRECT EXPANSION COOLING COIL
	ROOF VENTILATOR, EXHAUST/RELIEF

MECHANICAL LINE TYPE LEGEND

	REMOVE ITEMS
	EXIST ITEMS TO REMAIN
	PROVIDE ITEMS
	CHILLED WATER SUPPLY
	CHILLED WATER RETURN
	HOT WATER SUPPLY
	HOT WATER RETURN
	CONDENSATE DRAIN
	PUMPED CONDENSATE
	GAS
	CONTROL WIRING

MECHANICAL SYMBOLS LEGEND

	ELBOW DOWN
	PIPE TEE UP OR UP AND DOWN
	ELBOW UP OR UP AND DOWN
	PIPE TEE DOWN
	STRAINER
	BALL VALVE
	BUTTERFLY VALVE
	GATE VALVE
	PRESSURE GAGE
	CHECK VALVE
	CHECK VALVE, SPRING TYPE
	GLOBE VALVE
	CALIBRATED BALANCING VALVE WITH POSITIVE SHUTOFF
	AUTOMATIC FLOW CONTROL VALVE
	PIPE PITCH DOWN
	PRESSURE RELIEF VALVE
	2-WAY AUTOMATIC CONTROL VALVE
	3-WAY AUTOMATIC CONTROL VALVE
	PRESSURE REDUCING VALVE
	PIPE ANCHOR
	CAP
	UNION
	ALIGNMENT GUIDE
	PIPE REDUCER/INCREASER
	OS&Y VALVE
	THERMOMETER
	AIR VENT, AUTOMATIC
	AIR VENT, MANUAL
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	VACUUM BREAKER
	FLEXIBLE CONNECTOR
	IN-LINE PUMP
	AQUASTAT
	AIR SEPARATOR
	OS&Y VALVE IN VERTICAL
	BALL VALVE IN VERTICAL
	TEMPERATURE SENSOR
	LOW TEMPERATURE FREEZE STAT
	OCCUPANCY SENSOR
	PRESSURE SWITCH
	FLOW SWITCH
	CARBON MONOXIDE SENSOR
	CURRENT SENSOR
	DIFFERENTIAL PRESSURE SWITCH
	VARIABLE FREQUENCY DRIVE
	AIR FLOW MONITORING STATION
	CARBON DIOXIDE SENSOR
	MANUAL SWITCH
	RELAY
	TRANSFORMER
	JUNCTION BOX
	FLUID PRESSURE SENSOR
	DUCT MOUNTED SMOKE DETECTOR
	START/STOP CONTROLLER
	AIR PRESSURE SENSOR
	DUCT MOUNTED TEMPERATURE SENSOR
	FLUID TEMPERATURE SENSOR WITH WELL
	THERMOSTAT, WALL MOUNTED TEMPERATURE SENSOR
	CONDENSER
	STARTER/DISCONNECT
	PUMP SUCTION DIFFUSER
	PUMP
	RELATIVE HUMIDITY SENSOR
	MOTOR
	PROPELLER FAN
	CENTRIFUGAL FAN

MECHANICAL GENERAL NOTES

- ALL WORK INCLUDED IN THIS CONTRACT SHALL CONFORM TO ALL STATE, NATIONAL AND OTHER CODES AND ORDINANCES WHICH APPLY TO THIS PROJECT.
- THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS, AND REPORT ANY DISCREPANCIES TO THE OWNER. THE CONTRACTOR SHALL PROCEED WITH THE WORK ONLY AFTER THE DISCREPANCIES HAVE BEEN RESOLVED.
- CARE SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT EXISTING SYSTEMS AND SURFACES TO REMAIN. ALL DAMAGE RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AS APPROVED BY THE OWNER AT NO ADDITIONAL COST TO THE OWNER.
- AT THE END OF EACH WORKING DAY, THE CONSTRUCTION SITE SHALL BE LEFT IN A SAFE, SECURE, NEAT, WEATHER TIGHT, AND CLEAN MANNER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS THAT ARE REQUIRED FOR THE SATISFACTORY COMPLETION OF THE WORK. THE CONTRACTOR SHALL PAY ALL FEES ASSOCIATED WITH OBTAINING PERMITS.
- THE CONTRACTOR SHALL COORDINATE AND REROUTE SCHOOL PERSONNEL AND GENERAL PUBLIC AROUND WORK AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING BUILDING EGRESS ROUTES WITHIN THE WORK AREA.
- THE CONTRACTOR SHALL PROVIDE BARRICADES AT ALL WORK AREAS TO PREVENT PERSONNEL FROM ENTERING AREAS OF WORK.
- THE CONTRACTOR SHALL COORDINATE THE TIMING AND SEQUENCE OF WORK WITH THE GENERAL CONTRACTOR AND OWNER'S EMPLOYEES.
- PROTECT EXISTING AREAS NOT IN CONTRACT FROM DAMAGE DURING CONSTRUCTION ACTIVITIES INCLUDING DUST FROM PENETRATIONS.
- LEGALLY DISPOSE OF CONSTRUCTION DEBRIS. DO NOT USE SCHOOL DISTRICT DUMPSTERS.
- COORDINATE AND OBTAIN INSPECTIONS BY AUTHORITIES HAVING JURISDICTION.
- MAINTAIN VENTILATION, HEATING AND COOLING TO AREAS SERVED BY EXISTING AHUS DURING REMOVALS AND CONSTRUCTION, TO PROVIDE TENABLE CONDITIONS IN SPACES.

		<p align="center">STATE OF MAINE PUBLIC SCHOOL PROJECT</p> <p>PORTLAND PUBLIC SCHOOLS NEW FRED P. HALL ELEMENTARY SCHOOL LOCATION: 23 ORONO ROAD, PORTLAND, ME</p>	
		<p>MECHANICAL LEGEND, ABBREVIATIONS AND GENERAL NOTES</p>	
<p>DRAWN BY: Author</p> <p>CHECK BY: MSA</p>	<p>OAK POINT ASSOCIATES</p> <p>M-001</p>	<p>NO. DATE</p> <p>DESCRIPTION</p> <p>BY</p> <p>NO.</p> <p>DATE</p> <p>03/17/17</p>	<p>231 Main Street, Biddeford, Maine 04005</p> <p>207.283.9197</p> <p>233 OF 312</p>