

MECHANICAL SYMBOLS

EQUIPMENT DESIGNATIONS	
SYMBOL	DESCRIPTION
B-1	BOILER DESIGNATION
CU-X	CONDENSING UNIT DESIGNATION
DUSS-X	DUCTLESS SPLIT SYSTEM DESIGNATION
DOOU-X	DEDICATED OUTDOOR AIR UNIT DESIGNATION
EF-X	EXHAUST FAN DESIGNATION
FCU-X	FAN COIL UNIT DESIGNATION
HP-X	HEAT PUMP DESIGNATION
P-1	PUMP DESIGNATION

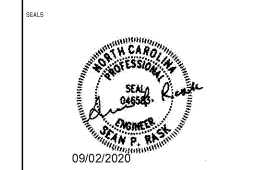
PIPING SYMBOLS	
SYMBOL	DESCRIPTION
CD	CONDENSATE DRAIN
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
HS	HEATING WATER SUPPLY
HR	HEATING WATER RETURN

DUCTWORK SYMBOLS	
SYMBOL	DESCRIPTION
⊙	TEMPERATURE SENSOR
→	AIR FLOW
⊠	SUPPLY AIR DIFFUSER
⊞	RETURN AIR GRILLE
⊞	EXHAUST AIR GRILLE
FD	FIRE DAMPER
VD	VOLUME DAMPER
FD	ELBOW W/ DOUBLE THICKNESS TURNING VANES
FD	RECTANGULAR BRANCH TAKE OFF
FD	BELL MOUTH BRANCH TAKE OFF
FD	ROUND BRANCH TAKE OFF
FD	ROUND DUCT DROP OFF BOTTOM
FD	DUCT TRANSITION
FD	SQUARE TO ROUND TRANSITION
FD	DUCTWORK CHANGE IN ELEVATION (UP OR DOWN)
FD	SUPPLY / OUTSIDE AIR DUCT RISER
FD	RETURN AIR DUCT RISER
FD	EXHAUST / RELIEF AIR DUCT RISER
FD	ROUND DUCT RISER
FD	AIR DEVICE IDENTIFICATION
FD	AIR DEVICE IDENTIFICATION

MECHANICAL ABBREVIATIONS

NOTE: THIS IS A STANDARD ABBREVIATION LIST. SOME ABBREVIATIONS MAY NOT APPEAR ON THE ACCOMPANYING DRAWINGS.

#	NUMBER, POUND	HWR	HOT WATER RECIRCULATION
\$	DOLLAR	HZ	HERTZ
%	PERCENT	IA	INSTRUMENT AIR
&	AND	ICW	INDUSTRIAL COLD WATER
+	PLUS	IHR	INDUSTRIAL HOT WATER RECIRCULATION
-	MINUS	IHW	INDUSTRIAL HOT WATER
/	DIVIDE BY, PER	IN	INCH, INCHES
<	LESS THAN	INV ELEV	INVERT ELEVATION
=	EQUALS, EQUAL TO	KW	KILOWATTS
>	GREATER THAN	L	LONG, LENGTH
x	MULTIPLY BY, BY	LA	LABORATORY AIR
x"	INCHES, INCH	LAT	LEAVING AIR TEMPERATURE
x'	FEET, FOOT	LBS	POUNDS
x ±	PLUS OR MINUS	LBSHR	POUNDS PER HOUR
≤	LESS THAN OR EQUAL TO	LN	LIQUID NITROGEN
≥	GREATER THAN OR EQUAL TO	LP	LIQUID PROPANE
@	AT	LPG	LIQUID PETROLEUM GAS
A	COMPRESSED AIR	LPR	LOW PRESSURE STEAM RETURN
AAV	AUTOMATIC AIR VENT	LPS	LOW PRESSURE STEAM SUPPLY
ACV	AUTOMATIC CONTROL VALVE	LV	LABORATORY VENT, LABORATORY VENT
AD	ACCESS DOOR, AREA DRAIN	LW	LABORATORY WASTE
AF	ANTIFREEZE	LWT	LEAVING WATER TEMPERATURE
AFF	ABOVE FINISHED FLOOR	MA	MEDICAL AIR
AR	ARGON GAS	MAV	MEDICAL VENT
ATC	AUTOMATIC TEMPERATURE CONTROL	MAV	MEDICAL VENT
BAS	BUILDING AUTOMATION SYSTEM	MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
BBB	BOILER BLOWDOWN	MCC	MOTOR CONTROL CENTER
BCWR	BEARING COOLING WATER RETURN	MEQ	MECHANICAL EQUIPMENT
BCWS	BEARING COOLING WATER SUPPLY	MH#	MOTOR HORSEPOWER
BDD	BACKDRAFT DAMPER	MIN	MINUTE
BFP	BACKFLOW PREVENTER	MISC	MISCELLANEOUS
BHP	BRAKE HORSEPOWER	MK	MOTOR OIL PIPING
BMS	BUILDING MANAGEMENT SYSTEM	MOD	MOTOR OPERATED DAMPER
BO	BLOW OFF	MPS	MEDIUM PRESSURE STEAM RETURN
BTU	BRITISH THERMAL UNIT	MPS	MEDIUM PRESSURE STEAM SUPPLY
BTUH	BRITISH THERMAL UNIT PER HOUR	MV	MEDICAL VACUUM
BV	BALANCING VALVE	N	NITROGEN
CA	CONTROL AIR	NA/NA	NOT APPLICABLE
CB	CONTINUOUS BLOWDOWN	NC	NOISE CRITERIA, NORMALLY CLOSED
CC	CAMPUS CONDENSATE	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CC	CENTRAL CONTROL AND MONITORING SYSTEM	NG	NATURAL GAS
CD	CONDENSATE DRAIN	NO	NORMALLY OPEN, NITROUS OXIDE
CF	CHEMICAL FEED	No	NUMBER
CFM	CUBIC FEET PER MINUTE	NOM	NOMINAL
CHL	CHLORINE	NPSH	NET POSITIVE SUCTION HEAD
CHL	CHLORINE	NPW	NON-POTABLE WATER
CHW	CHILLED WATER RETURN	O	OXYGEN
CHW	CHILLED WATER SUPPLY	OA	OUTSIDE AIR
CHW	CHILLED WATER HEAT EXCHANGER	OD	OVERFLOW DRAIN
CIN	CLEANOUT	OED	OPEN ENDED DUCT
CO	CARBON DIOXIDE	OF	OVERFLOW
CS	CLEAN STEAM	OS&Y	OUTSIDE STEM AND YOKE
CT	COMBUSTION TURBINE	P&ID	PROCESS AND INSTRUMENTATION DIAGRAM
CW	COLD WATER, DOMESTIC CITY WATER	PA	PLANT AIR
CR	CONDENSER WATER RETURN	PC	PUMPED CONDENSATE
CWS	CONDENSER WATER SUPPLY	PCIR	PRIMARY CHILLED WATER RETURN
C	DEGREE(S) CELSIUS	PCHS	PRIMARY CHILLED WATER SUPPLY
D	DEEP, DRAIN WATER	PCP	PUMP CONTROL PANEL
D	DEEP, DRAIN WATER	PCR	PUMPED CONDENSATE RECIRCULATION
DDC	DIRECT DIGITAL CONTROL	PCWR	PROCESS COOLING WATER RETURN
DESIG	DESIGNATION	PCWS	PROCESS COOLING WATER SUPPLY
DHR	DISTRIBUTION HEATING WATER RETURN	PD	PRESSURE DROP, PUMP DISCHARGE
DHS	DISTRIBUTION HEATING WATER SUPPLY	PG	PILOT GAS
DHW	DOMESTIC HOT WATER RETURN	PGR	PROCESS GLYCOL WATER RETURN
DHWS	DOMESTIC HOT WATER SUPPLY	PGS	PROCESS GLYCOL WATER SUPPLY
DIA, Ø	DIAMETER	PH	PHASE
DIR	DIONIZED WATER RETURN	PIR	PRIMARY HEATING RETURN
DIS	DIONIZED WATER SUPPLY	PHS	PRIMARY HEATING SUPPLY
DL	DOOR LOUVER	PIV	POST INDICATING VALVE
DN	DOWN	PHI	POUNDS PER HOUR
DSP	DRY SPRINKLER PIPE	PIV	PRESSURE REDUCING VALVE, PRESSURE REGULATING VALVE
DTR	DUAL TEMPERATURE RETURN	PSI	POUNDS PER SQUARE INCH
DTS	DUAL TEMPERATURE SUPPLY	PSIG	POUNDS PER SQUARE INCH GAUGE
DW	DISTILLED WATER	PW	POTABLE WATER
EA	EXHAUST AIR	RA	RETURN AIR, RELIEF AIR
EAT	ENTERING AIR TEMPERATURE	RAF	RETURN AIR FAN
ED	EQUIPMENT DRAIN	RD	REFRIGERANT DISCHARGE
EJ	EXPANSION JOINT	RDR	ROOF DRAIN
ELEV	ELEVATION	RH	RELATIVE HUMIDITY
EMS	ENERGY MANAGEMENT SYSTEM	RHR	REHEAT WATER RETURN
EO	EQUIPMENT, EQUALIZING	RHS	REHEAT WATER SUPPLY
ESP	EXTERNAL STATIC PRESSURE	RI	REMOVE AND REINSTALL
ETC	ETCETERA	RL	REFRIGERANT LIQUID
EVAC	GAS EVACUATION	ROR	REVERSE OSMOSIS WATER RETURN
EWT	ENTERING WATER TEMPERATURE	ROS	REVERSE OSMOSIS WATER SUPPLY
EX	EXISTING	RPM	REVOLUTIONS PER MINUTE
#2FOR	NUMBER 2 FUEL OIL RETURN	RS	REFRIGERANT SUCTION
#2FOS	NUMBER 2 FUEL OIL SUPPLY	RV	RELIEF VENT, REFRIGERANT VENT
#6FOR	NUMBER 6 FUEL OIL RETURN	RX	REMOVE EXISTING
#6FOS	NUMBER 6 FUEL OIL SUPPLY	SA	SUPPLY AIR, SHOCK ARRESTOR
F	FIRE LINE	SAN	SANITARY, SOIL, WASTE
F&T	FLOAT AND THERMOSTATIC TRAP	SCIR	SECONDARY CHILLED WATER RETURN
FC	FLEXIBLE CONNECTION	SCHS	SECONDARY CHILLED WATER SUPPLY
FD	FIRE DAMPER, FOUNDATION DRAIN	SD	STORM DRAIN, SMOKE DETECTOR
FDR	FLOOR DRAIN	SF	SQUARE FOOT
FDV	FIRE DEPARTMENT VALVE	SIR	SECONDARY HEATING WATER RETURN
FF	FINISHED FLOOR	SHS	SECONDARY HEATING WATER SUPPLY
FEE	FINISHED FLOOR ELEVATION	SL	SOUND LINING
FINFT	FINS PER FOOT	SP	STATIC PRESSURE
FININCH	FINS PER INCH	SPR	SPRINKLER LINE
FM	FLOWMETER	SQ FT	SQUARE FOOT
FMF	FLOWMETER FITTING	SS	STAINLESS STEEL
FO	FUEL OIL	SSUL	SODIUM SULFITE
FOF	FUEL OIL FILL	STDR	STORM DRAIN
FOO	FUEL OIL OVERFLOW	SW	SOFT WATER
FOR	FUEL OIL RETURN	TS	TAMPER SWITCH
FOS	FUEL OIL SUPPLY	TSP	TOTAL STATIC PRESSURE
FOSUCT	FUEL OIL SUCTION	TW	TREATED WATER
FOT	FUEL OIL TRANSFER	TWR	TEMPERED WATER RETURN
FOTP	FUEL OIL TRANSFER PUMP	TWS	TEMPERED WATER SUPPLY
FV	FUEL OIL VENT	TYP	TYPICAL
FPM	FEET PER MINUTE	ΔT	TEMPERATURE DIFFERENCE
FPS	FEET PER SECOND	UCD	UNDERCUT DOOR
FS	FLOW SWITCH	UL	UNDERWRITERS LABORATORIES
FT	FOOT, FEET	V	VACUUM, VOLTS
FW	FEED WATER	VD	VOLUME DAMPER
FWR	FEED WATER RECIRCULATION	VENT	VENTILATION
FWS	FEED WATER SUCTION	VFD	VARIABLE FREQUENCY DRIVE
F	DEGREE(S) FAHRENHEIT	VPD	VACUUM PUMP DISCHARGE
G	NATURAL GAS	VSD	VARIABLE SPEED DRIVE
GAL	GALLON, GALLONS	VTR	VENT THROUGH ROOF
GEN	GENERATOR	W	WATTS, WIDE
GHR	GLYCOL HEATING RETURN	WB	WET BULB
GHS	GLYCOL HEATING SUPPLY	WC	WATER COLUMN
GPH	GALLONS PER HOUR	WG	WATER GAUGE
GPM	GALLONS PER MINUTE	WH	WALL HYDRANT
GR	AUTOMOTIVE LUBRICATION PIPING	WWF	WELDED WIRE FABRIC
H	HIGH	WWM	WELDED WIRE MESH
HB	HOSE BIB		
HED	HOSE END DRAIN VALVE		
HP	HORSEPOWER		
HPR	HIGH PRESSURE STEAM RETURN		
HPS	HIGH PRESSURE STEAM SUPPLY		
HR	HEATING WATER RETURN		
HRR	HEAT RECOVERY RETURN		
HRS	HEAT RECOVERY SUPPLY		
HRSQ	HEAT RECOVERY STEAM GENERATOR		
HS	HEATING WATER SUPPLY		
HT	HEIGHT		
HTHR	HIGH TEMPERATURE HEATING WATER RETURN		
HTHS	HIGH TEMPERATURE HEATING WATER SUPPLY		
HW	HOT WATER		



JACKSON COUNTY
ANIMAL RESCUE CENTER AND GREEN ENERGY PARK
 DILLSBORO, NORTH CAROLINA

SHEET NO.	ISSUE DATE	DESCRIPTION	BY
1	09/02/2020	ISSUE FOR BID + PERMIT	FMM

MECHANICAL NOTES, SYMBOLS AND ABBREVIATIONS

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