MECHANICAL SYMBOLS

EQUIPMENT DESIGNATIONS

SYMBOL	DESCRIPTION
AHU-X UH-X L-X	AIR HANDLING UNIT DESIGNATION UNIT HEATER DESIGNATION LOUVER DESIGNATION

DUCTWORK SYMBOLS

SYMBOL	DESCRIPTION
H	HUMIDITY SENSOR
T	TEMPERATURE SENSOR
C	CARBON DIOXIDE SENSOR
	DUCT SMOKE DETECTOR
	SMOKE DETECTOR (IONIZATION)
	AIR FLOW
100 CFM	TRANSFER AIR FLOW (CFM INDICATED)
DL	DOOR LOUVER
UCD	UNDERCUT DOOR
	SUPPLY AIR DIFFUSER
	RETURN AIR GRILLE
	EXHAUST AIR GRILLE
	CIRCULAR AIR DIFFUSER
	AIRFLOW MONITORING DEVICE
	STATIC PRESSURE SENSING STATION
FD	FIRE DAMPER
FSD	COMBINATION FIRE / SMOKE DAMPER
VD	VOLUME DAMPER
BDD	BACK DRAFT DAMPER
	AUTOMATIC ISOLATION DAMPER
	AUTOMATIC GAS TIGHT ISOLATION DAMPER
	MANUAL GAS TIGHT ISOLATION DAMPER
	E DAMPER
	SMOKE DETECTOR
	FLEXIBLE CONNECTION
	DUCTWORK W/ SOUND LINING
	HORIZONTAL ACCESS DOOR
	VERTICAL ACCESS DOOR
	ELBOW W/ DOUBLE THICKNESS TURNING VANES
	RECTANGULAR BRANCH TAKE-OFF
	BELL MOUTH BRANCH TAKE-OFF
	ROUND BRANCH TAKE-OFF
	ROUND DUCT DROP OFF BOTTOM
	DUCT TRANSITION
	SQUARE TO ROUND TRANSITION
UP/DN	DUCTWORK CHANGE IN ELEVATION (UP OR DOWN)
	SUPPLY / OUTSIDE AIR DUCT RISER
	RETURN AIR DUCT RISER
	EXHAUST / RELIEF AIR DUCT RISER
X XX AIR DEVICE TYPE CFM	AIR DEVICE IDENTIFIER
	POINT OF CONNECTION
	POINT OF DISCONNECTION

MECHANICAL ABBREVIATIONS

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

#	NUMBER, POUND
$	DOLLAR
%	PERCENT
&	AND
+	PLUS
-	MINUS
/	DIVIDE BY, PER
<	LESS THAN
=	EQUALS, EQUAL TO
>	GREATER THAN
x	MULTIPLY BY, BY
x"	INCHES, INCH
x'	FEET, FOOT
±	PLUS OR MINUS
≤	LESS THAN OR EQUAL TO
≥	GREATER THAN OR EQUAL TO
@	AT
A	COMPRESSED AIR
AAV	AUTOMATIC AIR VENT
ACV	AUTOMATIC CONTROL VALVE
AD	ACCESS DOOR, AREA DRAIN
AF	ANTIFREEZE
AFF	ABOVE FINISHED FLOOR
AR	ARGON GAS
ATC	AUTOMATIC TEMPERATURE CONTROL
BAS	BUILDING AUTOMATION SYSTEM
BBD	BOILER BLOWDOWN
BCWR	BEARING COOLING WATER RETURN
BCWS	BEARING COOLING WATER SUPPLY
BDD	BACKDRAFT DAMPER
BFP	BACKFLOW PREVENTER
BHP	BRAKE HORSEPOWER
BMS	BUILDING MANAGEMENT SYSTEM
BO	BLOW OFF
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
BV	BALANCING VALVE
CA	CONTROL AIR
CBD	CONTINUOUS BLOWDOWN
CC	CAMPUS CONDENSATE
CCMS	CENTRAL CONTROL AND MONITORING SYSTEM
CD	CONDENSATE DRAIN
CF	CHEMICAL FEED
CFM	CUBIC FEET PER MINUTE
CHEM	CHEMICAL
CHR	CHILLED WATER RETURN
CHS	CHILLED WATER SUPPLY
CHX	CHILLED WATER HEAT EXCHANGER
CO	CLEANOUT
CO2	CARBON DIOXIDE
CS	CLEAN STEAM
CT	COMBUSTION TURBINE
CW	COLD WATER, DOMESTIC CITY WATER
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
°C	DEGREE(S) CELSIUS
D	DEEP, DRAIN WATER
DB	DECIBEL, DRY BULB
DDC	DIRECT DIGITAL CONTROL
DESIG	DESIGNATION
DHR	DISTRIBUTION HEATING WATER RETURN
DHS	DISTRIBUTION HEATING WATER SUPPLY
DHWR	DOMESTIC HOT WATER RETURN
DHWS	DOMESTIC HOT WATER SUPPLY
DIA, Ø	DIAMETER
DIR	DEIONIZED WATER RETURN
DIS	DEIONIZED WATER SUPPLY
DL	DOOR LOUVER
DN	DOWN
DSP	DRY SPRINKLER PIPE
DTR	DUAL TEMPERATURE RETURN
DTS	DUAL TEMPERATURE SUPPLY
DW	DISTILLED WATER
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
ED	EQUIPMENT DRAIN
EJ	EXPANSION JOINT
ELEV	ELEVATION
EMS	ENERGY MANAGEMENT SYSTEM
EQ	EQUIPMENT, EQUALIZING
ESP	EXTERNAL STATIC PRESSURE
ETC	ETCETERA
EVAC	GAS EVACUATION
EWT	ENTERING WATER TEMPERATURE
EX	EXISTING
#2FOR	NUMBER 2 FUEL OIL RETURN
#2FOS	NUMBER 2 FUEL OIL SUPPLY
#6FOR	NUMBER 6 FUEL OIL RETURN
#6FOS	NUMBER 6 FUEL OIL SUPPLY
F	FIRE LINE
F&T	FLOAT AND THERMOSTATIC TRAP
FC	FLEXIBLE CONNECTION
FD	FIRE DAMPER, FOUNDATION DRAIN
FDR	FLOOR DRAIN
FDV	FIRE DEPARTMENT VALVE
FF	FINISHED FLOOR
FFE	FINISHED FLOOR ELEVATION
FINFT	FINS PER FOOT
FININCH	FINS PER INCH
FM	FLOWMETER
FMF	FLOWMETER FITTING
FO	FUEL OIL
FOF	FUEL OIL FILL
FOO	FUEL OIL OVERFLOW
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOSUCT	FUEL OIL SUCTION
FOT	FUEL OIL TRANSFER
FOTP	FUEL OIL TRANSFER PUMP
FOV	FUEL OIL VENT
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FS	FLOW SWITCH
FT	FOOT, FEET
FW	FEED WATER
FWR	FEED WATER RECIRCULATION
FWS	FEED WATER SUCTION
°F	DEGREE(S) FAHRENHEIT
G	NATURAL GAS
GAL	GALLON, GALLONS
GEN	GENERATOR
GHR	GLYCOL HEATING RETURN
GHS	GLYCOL HEATING SUPPLY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	AUTOMOTIVE LUBRICATION PIPING
H	HIGH
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
HRSG	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
HWR	HOT WATER RECIRCULATION
HZ	HERTZ
IA	INSTRUMENT AIR
ICW	INDUSTRIAL COLD WATER
IHR	INDUSTRIAL HOT WATER RECIRCULATION
IHW	INDUSTRIAL HOT WATER
IN	INCH, INCHES
INV EL	INVERT ELEVATION
KW	KILOWATTS
L	LONG, LENGTH
LA	LABORATORY AIR
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LBS/HR	POUNDS PER HOUR
LN	LIQUID NITROGEN
LP	LIQUID PROPANE
LPG	LIQUID PETROLEUM GAS
LPR	LOW PRESSURE STEAM RETURN
LPS	LOW PRESSURE STEAM SUPPLY
LV	LABORATORY VENT, LABORATORY VACUUM
LW	LABORATORY WASTE
LWT	LEAVING WATER TEMPERATURE
MA	MEDICAL AIR
MAV	MEDICAL AIR VENT
MAX	MAXIMUM
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
MCC	MOTOR CONTROL CENTER
MEQ	MECHANICAL EQUIPMENT
MH-#	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MOTOR OIL PIPING
MOD	MOTOR OPERATED DAMPER
MPR	MEDIUM PRESSURE STEAM RETURN
MPS	MEDIUM PRESSURE STEAM SUPPLY
MV	MEDICAL VACUUM
N	NITROGEN
NA, N/A	NOT APPLICABLE
NC	NOISE CRITERIA, NORMALLY CLOSED
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NG	NATURAL GAS
NO	NORMALLY OPEN, NITROUS OXIDE
No	NUMBER
NOM	NOMINAL
NPSH	NET POSITIVE SUCTION HEAD
NPW	NON-POTABLE WATER
O	OXYGEN
OA	OUTSIDE AIR
OD	OVERFLOW DRAIN
OED	OPEN ENDED DUCT
OF	OVERFLOW
OS&Y	OUTSIDE STEM AND YOKE
P&ID	PROCESS AND INSTRUMENTATION DIAGRAM
PA	PLANT AIR
PC	PUMPED CONDENSATE
PCHR	PRIMARY CHILLED WATER RETURN
PCHS	PRIMARY CHILLED WATER SUPPLY
PCP	PUMP CONTROL PANEL
PCR	PUMPED CONDENSATE RECIRCULATION
PCWR	PROCESS COOLING WATER RETURN
PCWS	PROCESS COOLING WATER SUPPLY
PD	PRESSURE DROP, PUMP DISCHARGE
PG	PILOT GAS
PGR	PROCESS GLYCOL WATER RETURN
PGS	PROCESS GLYCOL WATER SUPPLY
PH	PHASE
PHR	PRIMARY HEATING RETURN
PHS	PRIMARY HEATING SUPPLY
PIV	POST INDICATING VALVE
PPH	POUNDS PER HOUR
PRV	PRESSURE REDUCING VALVE, PRESSURE REGULATING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PW	POTABLE WATER
RA	RETURN AIR, RELIEF AIR
RAF	RETURN AIR FAN
RD	REFRIGERANT DISCHARGE
RDR	ROOF DRAIN
RH	RELATIVE HUMIDITY
RHR	REHEAT WATER RETURN
RHS	REHEAT WATER SUPPLY
RI	REMOVE AND REINSTALL
RL	REFRIGERANT LIQUID
ROR	REVERSE OSMOSIS WATER RETURN
ROS	REVERSE OSMOSIS WATER SUPPLY
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
RV	RELIEF VENT, REFRIGERANT VENT
RX	REMOVE EXISTING
SA	SUPPLY AIR, SHOCK ARRESTOR
SAN	SANITARY, SOIL, WASTE
SCHR	SECONDARY CHILLED WATER RETURN
SCHS	SECONDARY CHILLED WATER SUPPLY
SD	STORM DRAIN, SMOKE DETECTOR
SF	SQUARE FOOT
SHR	SECONDARY HEATING WATER RETURN
SHS	SECONDARY HEATING WATER SUPPLY
SL	SOUND LINING
SP	STATIC PRESSURE
SPR	SPRINKLER LINE
SQ FT	SQUARE FOOT
SS	STAINLESS STEEL
SSUL	SODIUM SULFITE
STDR	STORM DRAIN
SW	SOFT WATER
TS	TAMPER SWITCH
TSP	TOTAL STATIC PRESSURE
TW	TREATED WATER
TWR	TEMPERED WATER RETURN
TWS	TEMPERED WATER SUPPLY
TYP	TYPICAL
ΔT	TEMPERATURE DIFFERENCE
UCD	UNDERCUT DOOR
UL	UNDERWRITERS LABORATORIES
V	VACUUM, VOLTS
VD	VOLUME DAMPER
VENT	VENTILATION
VFD	VARIABLE FREQUENCY DRIVE
VPD	VACUUM PUMP DISCHARGE
VSD	VARIABLE SPEED DRIVE
VTR	VENT THROUGH ROOF
W	WATTS, WIDE
WB	WET BULB
WC	WATER COLUMN
WG	WATER GAUGE
WH	WALL HYDRANT
WWF	WELDED WIRE FABRIC
WWM	WELDED WIRE MESH

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DRAWING TITLE
MECHANICAL NOTES, SYMBOLS AND ABBREVIATIONS

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DRAWING NO.

DATE
01/06/2020

PROJECT NO
6919.8

DRAWING NO.
M-001

RELEASED FOR CONSTRUCTION 01/06/2020