

SYMBOLS

ABBREVIATIONS

GENERAL NOTES

three inches = one foot
 one and one half inches = one foot
 one inch = one foot
 one inch = one foot
 one inch = one foot
 three quarters inch = one foot
 one half inch = one foot
 one quarter inch = one foot
 three eighths inch = one foot
 one eighth inch = one foot
 one eighth inch = one foot

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	NEW WORK		DEMOLITION
	EXISTING		LIMIT OF DEMOLITION
	POINT OF NEW CONNECTION		THERMOSTAT
	TEMPERATURE SENSOR		HUMIDITY SENSOR
	HUMIDISTAT		SMOKE DETECTOR, DUCT MOUNTED
	SUPPLY AIR DEVICE		RETURN AIR DEVICE
	EXHAUST AIR DEVICE		CONSTANT VOLUME TERMINAL BOX SINGLE DUCT
	DIFFERENTIAL PRESSURE CONTROLLER		FIRE DAMPER
	MOTOR OPERATED DAMPER		SMOKE DAMPER
	MANUAL AIR VOLUME DAMPER		DUCT SIZE (N) FIRST FIGURE IS SIDE SHOWN
	ROUND DUCT SIZE (DIA IN)		CHANGE OF ELEVATION (R) RISE (D) DROP
	NEGATIVE PRESSURE DUCT IN SECTION		POSITIVE PRESSURE DUCT IN SECTION
	SUPPLY DUCT TURNED DOWN		SUPPLY DUCT TURNED UP
	RETURN DUCT TURNED DOWN		RETURN DUCT TURNED UP
	CEILING GRILLE OR CEILING REGISTER WITH VOLUME DAMPER		DUCT BRANCH CONNECTION WITH VOLUME DAMPER (ROUND x ROUND)
	DUCT BRANCH CONNECTION WITH VOLUME DAMPER (RECT. x RECT)		DUCT BRANCH CONNECTION WITH VOLUME DAMPER AND FLEXIBLE DUCT CONNECTED TO SUPPLY DIFFUSER
	FLOW MONITORING STATION		FLEXIBLE DUCT CONNECTION
	TRANSITION		SQUARE TO ROUND TRANSITION
	ELBOW WITH TURNING VANES		DIAMETER
	CHAIN OPERATED GEARED BUTTERFLY VALVE		FLOOR DRAIN

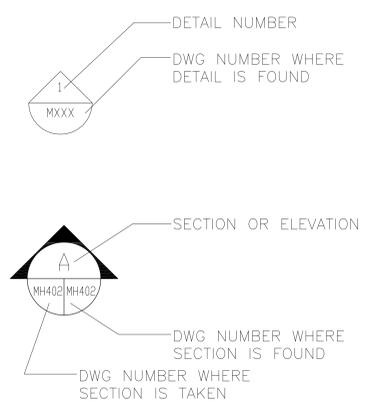
SYMBOL	DESCRIPTION
	PIPE ELBOW TURNED UP
	PIPE ELBOW TURNED DOWN
	PIPE TEE, SIDE
	PIPE TEE, BOTTOM
	PIPE TEE, TOP
	PIPE ANCHOR
	PIPE GUIDE
	CHECK VALVE
	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
	GATE VALVE (SHUT-OFF)
	GLOBE VALVE
	BALL VALVE
	COMBINATION BALANCING AND MEASURING VALVE
	BUTTERFLY VALVE
	CONTROL VALVE (2-WAY)
	CONTROL VALVE (3-WAY)
	SOLENOID VALVE
	PRESSURE RELIEF VALVE
	PRESSURE REDUCING/REGULATING VALVE
	FLOW MEASURING DEVICE (LIQUID)
	STRAINER
	FILTER
	FLOW METER
	PRESSURE GAUGE W/GAUGE COCK
	THERMOMETER W/WELL
	CAPPED PIPE
	DIRECTION OF FLOW
	PIPE UNION
	CONCENTRIC REDUCER
	PRESSURE / TEMPERATURE WELL
	VALVE IN VERTICAL PIPING
	BOILER BLOW DOWN
	BLOW DOWN
	BOILER FEED WATER
	CONTROL AIR
	CONDENSATE DRAIN
	CHEMICAL FEED
	COLD WATER
	CHILLED WATER SUPPLY
	CHILLED WATER RETURN
	CONDENSER WATER SUPPLY
	CONDENSER WATER RETURN
	DRAIN
	FUEL OIL RETURN
	FUEL OIL SUPPLY
	FUEL OIL FILL
	FUEL OIL VENT
	FEEDWATER
	GLYCOL WATER SUPPLY
	GLYCOL WATER RETURN
	HEATING HOT WATER SUPPLY
	HEATING HOT WATER RETURN
	MAKEUP WATER
	REHEAT WATER SUPPLY
	REHEAT WATER RETURN
	REFRIGERANT RELIEF
	SECONDARY HEATING WATER SUPPLY
	SECONDARY HEATING WATER RETURN

ABBREVIATION	DESCRIPTION
AD	ACCESS DOOR; AIR DEVICE
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AMB	AMBIENT
AMP	AMPERE
AP	ACCESS PANEL
APPROX	APPROXIMATE
AS	AIR SEPARATOR
BG	BOTTOM GRILLE
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BOP	BOTTOM OF PIPE
BFP	BACKFLOW PREVENTER
BDD	BACKDRAFT DAMPER
BSMT	BASEMENT
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR
°C	DEGREE CENTIGRADE
CAP	CAPACITY
CC	COOLING COIL
CD	CEILING DIFFUSER, CONDENSATE DRAIN
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
CH	CHILLER
CHP	CHILLED WATER PUMP
CHW	CHILLED WATER
CHWR/CHWS	CHILLED WATER RETURN/CHILLED WATER SUPPLY
COMPR	COMPRESSOR
COND	CONDENSER
CR	CEILING REGISTER
CU	CONDENSING UNIT
CU FT	CUBIC FEET
CU IN	CUBIC INCH
CV	CONTROL VALVE; CONSTANT VOLUME
CWP	CONDENSER WATER PUMPS
CWR/CWS	COLD WATER RETURN/COLD WATER SUPPLY
DB	DRY BULB
DEG OR°	DEGREE
DIA	DIAMETER
DN	DOWN
DWG	DRAWING
EA	EXHAUST AIR; ENTERING AIR
EAT	ENTERING AIR TEMPERATURE
EF	EXHAUST FAN
EFF	EFFICIENCY
EG	EXHAUST GRILLE
EL	ELEVATION
EQUIP/EOPM	EQUIPMENT
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EVAP	EVAPORATOR
EW	ENTERING WATER TEMPERATURE
EX	EXISTING
EXH	EXHAUST
°F	DEGREE FAHRENHEIT
FCU	FAN COIL UNIT
FD	FLOOR DRAIN; FIRE DAMPER
FH	FUME HOOD
FLEX	FLEXIBLE
FLR	FLOOR
FPM	FEET PER MINUTE; FINS PER METER
FPS	FEET PER SECOND
FS	FLOW SWITCH
FT	FOOT OR FEET
GA	GAGE OR GAUGE
GAL	GALLONS
GALV	GALVANIZED
GFCI	GOVERNMENT FURNISHED/CONTRACTOR INSTALLED
GFE	GOVERNMENT FURNISHED EQUIPMENT
GHCWS/GHCWR	GENERAL HOUSE CHILLED WATER SUPPLY OR RETURN
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GRAM
HD	HEAD
HE	HEAT EXCHANGER
HED	HOSE END DRAIN
HP	HORSEPOWER
HR	HOUR
HTG	HEATING
HUMD	HUMIDIFIER
HYAC	HEATING/VENTILATION/AIR CONDITIONING
HZ	HERTZ

ABBREVIATION	DESCRIPTION
IN	INCH OR INCHES
KW	KILOWATT
KWH	KILOWATT HOUR
LAB	LABORATORY
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LBS/HR	POUNDS PER HOUR
LF	LINEAR FEET
LG	LENGTH
LRA	LOCKED ROTOR AMPS
LWT	LEAVING WATER TEMPERATURE
M	METER (S)
MAX	MAXIMUM
MBH	BTU PER HOUR (THOUSAND)
MER	MECHANICAL EQUIPMENT ROOM
MIN	MINIMUM
MPS	MEDIUM PRESSURE STEAM
M/S	METER PER SECOND
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED, NOISE CRITERIA
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN, NUMBER
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAT	OUTSIDE AIR TEMPERATURE
QBD	OPPOSED BLADE DAMPER
OSD	OPEN SITE DRAIN
%	PERCENT
P	PUMP
Pa	PASCAL
PD	PRESSURE DROP
PH	PHASE
PSI	POUNDS PER SQUARE INCH
PSIA	PSI ABSOLUTE
PSIG	PSI GAUGE
QTY	QUANTITY
RA	RETURN AIR
RECIRC	RECIRCULATE
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RPM	REVOLUTIONS PER MINUTE
RX	REMOVE EXISTING
SA	SUPPLY AIR
SENS	SENSIBLE
SF	SUPPLY FAN
SG	SPECIFIC GRAVITY
SH	SPECIFIC HEAT
SHG	SENSIBLE HEAT GAIN
SHR	SENSIBLE HEAT RATIO
SP	SECONDARY CHILLED WATER PUMPS
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SQ	SQUARE
STD	STANDARD
T	THERMOSTAT
TD	TEMPERATURE DIFFERENCE
TEMP	TEMPERATURE
TG	TOP GRILLE
TOT	TOTAL
TR	TOP REGISTER
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
V	VALVE
VAV	VARIABLE AIR VOLUME
VEL	VELOCITY
VOL	VOLUME
W/	WITH
WB	WET BULB
WG	WATER GAUGE

- THIS LEGEND SHEET IS FOR THE CONTRACTOR'S REFERENCE ONLY. NOT ALL SYMBOLS AND/OR ABBREVIATIONS APPLY TO THIS PARTICULAR PROJECT. ANY ADDITIONS TO OR OMISSIONS FROM THIS LEGEND SHEET DO NOT IMPLY INCLUSION IN OR OMISSION, OF ANY PARTICULAR ITEM, FROM THIS PROJECT.
- ALL PHYSICAL ATTRIBUTES OF EQUIPMENT AND DEVICES ARE BASED ON THOSE MANUFACTURER'S LISTED THE SPECIFICATION AND EQUIPMENT SCHEDULES. THE CONTRACTOR IS RESPONSIBLE FOR ALL CHANGES BROUGHT ABOUT BY THE USE OF EQUIPMENT SUBSTITUTIONS.
- THE ENGINEER HAS RESERVED THE RIGHT TO REJECT EQUIPMENT BY OTHER MANUFACTURER'S IF THOSE ITEMS DO NOT MATCH THE SPECIFICATIONS OF THE ITEM LISTED.
- CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES AND POINTS OF CONNECTION BEFORE STARTING NEW WORK.
- THE CONTRACT DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. DO NOT SCALE THE DRAWINGS; FIELD VERIFY EXISTING CONDITIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR EXACT MEASUREMENTS, EXACT CONNECTION POINTS, EXACT PIPE ROUTING, AND FIELD TESTING TO ASSURE SUCCESSFUL INSTALLATION AND COORDINATION WITH OTHER TRADES AS REQUIRED.
- UTILITY SHUTDOWNS SHALL OCCUR ONLY WITH PRIOR APPROVAL OF THE OWNER. SUBMIT PROPOSED SCHEDULE AT LEAST 10 DAYS PRIOR TO SHUTDOWN DATE. UTILITY SHUTDOWNS SHALL BE IMPLEMENTED ONLY BY THE OWNER. CONTRACTOR SHALL ASSUME THAT ALL STARTERS, CIRCUIT BREAKERS, ETC. THAT ARE RELATED TO EQUIPMENT THAT IS TO BE DEMOLISHED AND OR REMOVED FROM BUILDING IS LOCKED OUT.
- THE CONTRACTOR IS TO BE RESPONSIBLE FOR PROVIDING ALL NECESSARY PERMITS AND CERTIFICATES, AND STAND BY PERSONNEL; ARRANGE FOR STEEL CLOSURES REQUIRED FOR EXISTING EQUIPMENT REMOVAL FROM BUILDING AND DISPOSAL, AND NEW EQUIPMENT TO BE INSTALLED IN BUILDING
- PROVIDE ISOLATION VALVES IN SUPPLY AND RETURN BRANCH PIPING SERVING MORE THAN ONE PIECE OF EQUIPMENT.
- PROVIDE SHUTOFF VALVES IN THE SUPPLY AND RETURN PIPING TO ALL EQUIPMENT TO ALLOW FOR SERVICING. UNIONS OF FLANGES SHALL BE ARRANGED SUCH THAT EQUIPMENT CAN BE SERVICED WITHOUT CUTTING AND WITH MINIMAL DISRUPTION OF PIPING SERVING THE EQUIPMENT. PROVIDE SHUTOFF VALVES IN THE SUPPLY AND RETURN PIPING TO ALL EQUIPMENT TO ALLOW FOR SERVICING. UNIONS OF FLANGES SHALL BE ARRANGED SUCH THAT EQUIPMENT CAN BE SERVICED WITHOUT CUTTING AND WITH MINIMAL DISRUPTION OF PIPING SERVING THE EQUIPMENT.
- ALL ITEMS THAT REQUIRE ACCESS, SUCH AS FOR OPERATING, CLEANING, SERVICING MAINTENANCE, AND CALIBRATION, SHALL BE EASILY AND SAFELY ACCESSIBLE BY PERSONS STANDING AT FLOOR LEVEL, OR STANDING ON PERMANENT PLATFORMS, WITHOUT THE USE OF PORTABLE LADDERS. EXAMPLES OF THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO: ALL TYPES OF VALVES, FILTERS AND STRAINERS, TRANSMITTERS, AND CONTROL DEVICES. PRIOR TO COMMENCING INSTALLATION WORK, REFER CONFLICTS BETWEEN THIS REQUIREMENT AND CONTRACT DRAWINGS TO THE RE/COTR FOR RESOLUTION.

SYMBOL REFERENCES



100% ISSUED FOR CONSTRUCTION
 COMPLETION ITEM NO. 3
 FULLY SPRINKLERED

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