



























































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DUCTWORK SYMBOLS	
	SUPPLY DUCT (UP & DOWN)
	EXHAUST DUCT (UP & DOWN)
	RETURN DUCT (UP & DOWN)
	ROUND AND SQUARE 4-WAY CEILING DIFFUSERS
	SQUARE 3-WAY CEILING DIFFUSERS
	SQUARE 2-WAY CEILING DIFFUSERS
	SQUARE 1-WAY CEILING DIFFUSERS
	LINEAR SLOT DIFFUSER
	SUPPLY TOP REGISTER OR GRILLE (WALL TYPE)
	EXHAUST OR RETURN CEILING REGISTER OR GRILLE (WALL TYPE)
	EXHAUST OR RETURN BOTTOM REGISTER OR GRILLE (WALL TYPE)
	EXHAUST OR RETURN REGISTER OR TOP GRILLE (WALL TYPE)
	VANED ELBOW & AIR SPLIT TYPE DUCT TAKE-OFF
	CONNECT NEW DUCT TO EXISTING DUCT
	INCLINED RISE, IN DIRECTION OF AIR FLOW
	INCLINED DROP, IN DIRECTION OF AIR FLOW
	LIMIT OF DEVOLUTION
	FLEXIBLE CONNECTION, EQUIPMENT, VIBRATION, OR SEISMIC
	VANED ELBOW (PROVIDE ALL SQUARE OR RECTANGULAR ELBOWS WITH VANES EVEN IF STRAIGHT, IS MISSING)
	VANED ELBOW (SHORT RADIUS)
	STANDARD RADIUS ELBOW (LONG RADIUS)
	STANDARD BRANCH SUPPLY OR RETURN, NO SPLITTER (45° TAP)
	DUCT MOUNTED COIL (HOT WATER OR STEAM COIL)
	DUCT MOUNTED COIL (ELECTRIC)
	NEW DUCT (INSIDE DIMENSIONS: WIDTH x DEPTH)
	EXISTING DUCT TO REMAIN
	EXISTING DUCT TO BE REMOVED
	LOUVER (LOUVER SPECIFIED IN ARCHITECTURAL SECTION)
	FLEXIBLE DUCTWORK (INSULATED)
	DUCT WITH SOUND LINING
	MANUAL VOLUME DAMPER
	FIRE DAMPER
	BACK DRAFT DAMPER
	COMBINATION FIRE/SMOKE DAMPER
	POINT OF CHANGE IN DUCT CONSTRUCTION BY STATIC PRESSURE CLASS. THE NUMBER ASSIGNS THE CLASS OF THE DUCTWORK TO BE ACCOMMODATE MAXIMUM OPERATING PRESSURE IN THE DUCT SECTION. THE SYMBOL CONTAINS THE NUMBER OF THE CLASS OF THE DUCTWORK TO BE ACCOMMODATE MAXIMUM OPERATING PRESSURE IN THE DUCT SECTION. THE SYMBOL CONTAINS THE NUMBER OF THE CLASS OF THE DUCTWORK TO BE ACCOMMODATE MAXIMUM OPERATING PRESSURE IN THE DUCT SECTION.
	AUTOMATIC CONTROL, DAMPER MODULATING
	AUTOMATIC CONTROL, DAMPER TWO POSITION
	STAINLESS STEEL DUCT
	MANUAL SPLITTER DAMPER

PIPING SYMBOLS

—195— —195— —195—	HIGH PRESSURE STEAM (60 PSIG AND ABOVE)	—195— —195— —195—	FEEDWATER PUMP DISCHARGE	—195— —195— —195—
—193— —193— —193—	HIGH PRESSURE STEAM CONDENSATE RETURN	—193— —193— —193—	CONDENSATE TRANSFER PUMP DISCHARGE	—193— —193— —193—
—191— —191— —191—	MEDIUM PRESSURE STEAM (16 PSIG THRU 59 PSIG)	—191— —191— —191—	CONDENSATE TRANSFER PUMP DISCHARGE	—191— —191— —191—
—189— —189— —189—	MEDIUM PRESSURE STEAM CONDENSATE RETURN	—189— —189— —189—	VACUUM CONDENSATE RETURN	—189— —189— —189—
—187— —187— —187—	LOW PRESSURE STEAM (15 PSIG AND BELOW)	—187— —187— —187—	PUMP RECALCULATION	—187— —187— —187—
—185— —185— —185—	LOW PRESSURE STEAM CONDENSATE RETURN	—185— —185— —185—	TUBE CLEANER WATER SUPPLY	—185— —185— —185—
—183— —183— —183—	CONDENSATE PUMP DISCHARGE	—183— —183— —183—	BOILER BLOWDOWN	—183— —183— —183—
—181— —181— —181—	HOT WATER HEATING SUPPLY	—181— —181— —181—	CONTINUOUS BLOWDOWN	—181— —181— —181—
—179— —179— —179—	HOT WATER HEATING RETURN	—179— —179— —179—	FEEDWATER PUMP DISCHARGE	—179— —179— —179—
—177— —177— —177—	HOT GLYCOL-WATER HEATING SUPPLY	—177— —177— —177—	FEEDWATER SAMPLE (FROM DEaERATOR)	—177— —177— —177—
—175— —175— —175—	HOT GLYCOL-WATER HEATING RETURN	—175— —175— —175—	CHEMICAL FEED	—175— —175— —175—
—173— —173— —173—	SOLAR WATER SUPPLY	—173— —173— —173—	OVERFLOW	—173— —173— —173—
—171— —171— —171—	SOLAR WATER RETURN	—171— —171— —171—	COMPRESSED AIR	—171— —171— —171—
—169— —169— —169—	REFRIGERANT LIQUID	—169— —169— —169—	NATURAL GAS MAIN PIPE	—169— —169— —169—
—167— —167— —167—	REFRIGERANT HOT GAS	—167— —167— —167—	NATURAL GAS (IGNITER FUEL)	—167— —167— —167—
—165— —165— —165—	CONDENSER WATER SUPPLY (FROM TOWER)	—165— —165— —165—	LIQUEFIED PETROLEUM GAS (IGNITER FUEL)	—165— —165— —165—
—163— —163— —163—	CONDENSER WATER RETURN (TO TOWER)	—163— —163— —163—	FUEL OIL SUPPLY	—163— —163— —163—
—161— —161— —161—	CHILLED WATER SUPPLY	—161— —161— —161—	FILED OIL RETURN	—161— —161— —161—
—159— —159— —159—	CHILLED WATER RETURN	—159— —159— —159—	COLD WATER (CITY WATER)	—159— —159— —159—
—157— —157— —157—	CHILLED GLYCOL-WATER SUPPLY	—157— —157— —157—	COLD WATER (WATER)	—157— —157— —157—
—155— —155— —155—	CHILLED GLYCOL-WATER RETURN	—155— —155— —155—	HOT WATER	—155— —155— —155—
—153— —153— —153—	MAKE-UP WATER	—153— —153— —153—	TEMPERARY PIPING	—153— —153— —153—
—151— —151— —151—	VEIN LINE	—151— —151— —151—	ROLLER-TYPE HANGER	—151— —151— —151—
—149— —149— —149—	GLYCOL-WATER RIN around SUPPLY	—149— —149— —149—	VEARBLE SPRING-TYPE HANGER (TYPE 31)*	—149— —149— —149—
—147— —147— —147—	GLYCOL-WATER RIN around RETURN	—147— —147— —147—	SPRING CUSHION-TYPE HANGER (TYPE 46 OR 49)*	—147— —147— —147—
—145— —145— —145—	EXISTING PIPE TO BE REMOVED	—145— —145— —145—	TRAVEZE HANGER (PROVIDE U-BOLT PIPE ATTACHMENT TO TRAVEZE EXCEPT WHERE RM ARE INDICATED)	—145— —145— —145—
—143— —143— —143—	MEDIUM PRESSURE GRAVITY CONDENSATE RETURN	—143— —143— —143—	RISER CLAMP (TYPE 42)*	—143— —143— —143—
—141— —141— —141—	MEDIUM PRESSURE GRAVITY CONDENSATE RETURN	—141— —141— —141—	WALL BRACKET (TYPE 31, 32, 33)*	—141— —141— —141—
—139— —139— —139—	LOW PRESSURE GRAVITY CONDENSATE RETURN	—139— —139— —139—	CONSTANT SUPPORT HANGER (TYPE 54, 55, 56)*	—139— —139— —139—
—137— —137— —137—		—137— —137— —137—	CLONIS-TYPE HANGER	—137— —137— —137—
—135— —135— —135—		—135— —135— —135—	WALL BRACKET (TYPE 31, 32, 33)*	—135— —135— —135—
—133— —133— —133—		—133— —133— —133—	CONSTANT SUPPORT HANGER (TYPE 54, 55, 56)*	—133— —133— —133—
—131— —131— —131—		—131— —131— —131—	CLONIS-TYPE HANGER	—131— —131— —131—
—129— —129— —129—		—129— —129— —129—	WALL BRACKET (TYPE 31, 32, 33)*	—129— —129— —129—
—127— —127— —127—		—127— —127— —127—	CONSTANT SUPPORT HANGER (TYPE 54, 55, 56)*	—127— —127— —127—
—125— —125— —125—		—125— —125— —125—	CLONIS-TYPE HANGER	—125— —125— —125—
—123— —123— —123—		—123— —123— —123—	WALL BRACKET (TYPE 31, 32, 33)*	—123— —123— —123—
—121— —121— —121—		—121— —121— —121—	CONSTANT SUPPORT HANGER (TYPE 54, 55, 56)*	—121— —121— —121—
—119— —119— —119—		—119— —119— —119—	CLONIS-TYPE HANGER	—119— —119— —119—
—117— —117— —117—		—117— —117— —117—	WALL BRACKET (TYPE 31, 32, 33)*	—117— —117— —117—
—115— —115— —115—		—115— —115— —115—	CONSTANT SUPPORT HANGER (TYPE 54, 55, 56)*	—115— —115— —115—
—113— —113— —113—		—113— —113— —113—	CLONIS-TYPE HANGER	—113— —113— —113—
—111— —111— —111—		—111— —111— —111—	WALL BRACKET (TYPE 31, 32, 33)*	—111— —111— —111—
—109— —109— —109—		—109— —109— —109—	CONSTANT SUPPORT HANGER (TYPE 54, 55,	

* THE NUMBERS REFER TO MANUFACTURER'S STANDARDIZATION SOCIETY STANDARD PRACTICE SH-38

GENERAL SYMBOLS	VALVE SYMBOLS
 <p>DIRECTION OF FIRE PITCH (DOWN)</p>	 <p>GATE VALVE - THREADED/FLANGED</p>
 <p>ANCHOR</p>	 <p>GLOBE VALVE - THREADED/FLANGED</p>
 <p>REDUCER OR INCREASER</p>	 <p>GATE VALVE WITH 3/4" HOSE ADAPTER</p>
 <p>ECCENTRIC REDUCER</p>	 <p>CHECK VALVE</p>
 <p>90° ELBOW</p>	 <p>WYE SHIFTER (WITH BALL VALVE & HOSE CONNECTION)</p>
 <p>SIDE CONNECTION</p>	 <p>FLEXIBLE CONNECTION</p>
 <p>CAPPED OUTLET</p>	 <p>ANGLE GLOBE VALVE</p>
 <p>NPS OR BRP IN PIPE</p>	 <p>BUTTERFLY VALVE</p>
 <p>PIPE UP</p>	 <p>BALL VALVE</p>
 <p>PIPE DOWN</p>	 <p>MODULATING CONTROL VALVE</p>
 <p>AIR OR GAS BETWEEN NEW AND EXISTING</p>	 <p>MODULATING CONTROL VALVE</p>
 <p>LIMIT OF DEMOLITION</p>	 <p>TWO POSITION CONTROL VALVE</p>
 <p>INVERTED BUCKET TRAP SET INCLUDING PIPING ACCESSORIES</p>	 <p>THREE-WAY MODULATING CONTROL VALVE</p>
 <p>THERMOSTATIC TRAP SET INCLUDING PIPING ACCESSORIES</p>	 <p>THREE-WAY MODULATING CONTROL VALVE</p>
 <p>THERMOMETER</p>	 <p>THREE-WAY MODULATING CONTROL VALVE</p>
 <p>PRESSURE GAGE</p>	 <p>THREE-WAY MODULATING CONTROL VALVE</p>
 <p>FLOW ELEMENT</p>	 <p>PRESSURE REGULATING VALVE</p>
 <p>RETRACTABLE SIGHT GLASS</p>	 <p>PRESSURE SAFETY VALVE</p>
 <p>TEST PULE (PRESSURE/TEMPERATURE)</p>	 <p>AUTOMATIC BALANCING CONTROL VALVE</p>
 <p>AUTOMATIC AIR VENT</p>	 <p>WATER BALANCE DEVICE</p>
 <p>MANUAL AIR VENT</p>	 <p>CIRCUIT SETTER VALVE</p>
 <p>POINT OF CONNECTION BETWEEN NEW AND EXISTING WORK</p>	 <p>GATE VALVE WITH GLOBE-VALVED PASS</p>
 <p>PRESSURE ELEMENT FOR FLOW METERING</p>	 <p>PILOT VALVE</p>
 <p>QUICK-COUPLE HOSE CONNECTOR</p>	 <p>PRESSURE VALVE (CV) - FLOAT-OPERATED</p>
 <p>INVERTED BUCKET STEAM TRAP ASSEMBLY (1)</p>	 <p>STRAINER WITH VALVED DRAIN AND QUICK-COUPLE</p>
 <p>CLOSED-FLAT-THERMOSTATIC STEAM TRAP ASSEMBLY (1)</p>	 <p>STEAM CONNECTION</p>
 <p>THERMOSTATIC STEAM TRAP (1)</p>	 <p>WATER LEVEL CONTROLLER</p>
 <p>PRESSURE GAGE WITH SIPHON ON STEAM SERVICE</p>	 <p>FLOW METER</p>
 <p>REFRIGERANT</p>	 <p>TEMPERATURE SENSOR</p>
 <p>THERMOCOUPLE</p>	 <p>CARBON DIOXIDE DETECTOR</p>

CONTROLS SYMBOLS

T	ROOM THERMOSTAT/TRANSMITTER - WALL MOUNT	LT02	LOCAL TEMPERATURE CONTROL PANEL
M	ROOM HUMIDISTAT (MOISTURE)/TRANSMITTER - WALL MOUNT	HM02	HVAC CONTROL PANEL
T	TEMPERATURE TRANSMITTER	TM02	VARIABLE SPEED MOTOR CONTROLLER
LT	TEMPERATURE TRANSMITTER, LAMENING ELEMENT	EC0	INTERGATE CONTROL POINT ON REMOTE GRAPHICS WITH COMMUNICATIONS TO REMOTE CONTROL SYSTEM
MP	MOISTURE (HUMIDITY) TRANSMITTER	TC	TEMPERATURE CONTROLLER. SEE SEQUENCE OF OPERATION
PT	PRESSURE TRANSMITTER	PC	PRESSURE CONTROLLER. SEE SEQUENCE OF OPERATION
SPS	STATIC PRESSURE SENSOR	SC	SPEED CONTROLLER. SEE SEQUENCE OF OPERATION
FT	FLOW TRANSMITTER	FC	FLOW CONTROLLER. SEE SEQUENCE OF OPERATION
C	CURRENT TRANSMITTER	FS01	FLOW SWITCH HIGH
CO	CONDUCTIVITY TRANSMITTER	FS02	FLOW SWITCH LOW
SD	SMOKE DETECTOR	WC0	TIME CLOCK CONTROLLING EQUIPMENT ON A SCHEDULE
PTT	PRESSURE DIFFERENTIAL TRANSMITTER		
PDS	PRESSURE DIFFERENTIAL SWITCH		
HS	HAND SWITCH (HAND-OFF-AUTO SWITCH)		
ZC	VALVE OR DAMPER POSITION CONTROLLER		
LC	LOCAL RECORDING TIME CLOCK (HOUR/MIN)		
TSU	TEMPERATURE SWITCH, LOW (FREEZE/STAY)		
TH	TEMPERATURE SWITCH, HIGH (FREEZE/STAY)		
LC	LEVEL CONTROLLER		

11	LEVEL TRANSMITTER
12	PRESSURE SWITCH HIGH
13	PRESSURE SWITCH LOW
14	ELECTRONIC TO PNEUMATIC TRANSDUCER
15	CARBON DIOXIDE TRANSMITTER
16	CARBON MONOXIDE TRANSMITTER
17	OCCUPANT SENSOR
18	
19	
20	

GENERAL NOTES

1. THE FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN OR INDICATE DUCT SIZES ARE NET INSIDE DIMENSIONS.
2. ACCESS PANELS IN HARD SUSPENDED CEILINGS ARE REQUIRED FOR ALL VALVES, TRAP DRAUGHTS, OUTGOING CONTROLS, ETC.
3. DIFFERENTIAL PRESSURE BETWEEN DIFFERENTIAL SPEEDS/STOPS SHALL BE FURNISHED AND DUCTS, FITTINGS, COILS, EXTENDED IN THE SCHEDULES INCLUDES DUCT SYSTEM, TERMINALS, SPLITTERS, COILS, ETC.
4. FOR TYPICAL STEAM AND WATER PIPING CONNECTIONS TO EQUIPMENT, SEE STANDARD EQUIPMENT DETAILS.
5. WATER PIPE CONNECTIONS TO AIR HEATING AND COOLING COILS SHALL BE MADE TO PROVIDE COUNTER FLOW BETWEEN WATER AND AIR.

[illegible]