- PIPE ELBOW TURNED DN
- PIPE ELBOW TURNED UP
- PIPING TEE DOWN
- PIPING TEE UP
- PIPE RISER
- 45° ELBOW DOWN
- PIPING TO BE REMOVED
- CAPPED PIPING
- CAPPED BELOW FINISHED FLOOR
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- DIRECTION OF FLOW
- PIPING PITCHES DOWN
- PIPE GUIDE
- EXPANSION JOINT
- PIPE ANCHOR
- UNION
- FLANGED CONNECTION
- BACKFLOW PREVENTER
- FLEXIBLE CONNECTION
- SHUT-OFF/ISOLATION VALVE REFER TO SPECIFICATIONS
- GATE VALVE ~ OUTSIDE SCREW & YOKE (OS&Y)

- GLOBE VALVE
- LOCKABLE BALL VALVE
- PLUG VALVE
- 2-WAY CONTROL VALVE
- 3-WAY CONTROL VALVE
- LOCK & SHIELD VALVE
- CHECK VALVE
- BALANCING VALVE (CIRCUIT SETTER)
- AIR VENT ~ REFER TO SPECIFICATIONS
- STRAINER WITH BLOWDOWN VALVE AND CAP
- EXPANSION VALVE (AUTOMATIC)
- RELIEF/SAFETY VALVE
- PRESSURE GAUGE WITH COCK
- SIGHT GLASS
- PRESSURE REDUCING VALVE
- FLOW SWITCH
- SELF-CONTAINED TEMP. CONTROL VALVE WITH REMOTE SENSOR

- STEAM TRAP (FLOAT & THERMOSTATIC INDICATED T.T. = THERMOSTATIC TRAP, B.T. = BUCKET TRAP)
- PUMP ~ POINT OF TRIANGLE INDICATES DIRECTION OF FLOW
- GAS SHUT-OFF VALVE
- HOSE END DRAIN VALVE W/CAP
- TEMPERATURE/PRESSURE TAP (PETE'S PLUG)
- THERMOMETER WITH COCK
- SOLENOID VALVE
- ORIFICE FLOWMETER
- DIFFERENTIAL PRESSURE TRANSMITTER
- HUMIDIFIER (DUCT/AHU MOUNTED)
- FINNED TUBE BASEBOARD
- HOSE BIB/WALL HYDRANT
- FLOOR CLEANOUT
- FUSIBLE LINK VALVE
- WALL CLEANOUT
- AQUASTAT

- EXPANSION LOOP
- EXPANSION LOOP (BRAIDED/MANUFACTURED)
- FLOOR DRAIN
- SHOCK ABSORBER (WATER HAMMER ARRESTER)
- FIRE DEPARTMENT CONNECTION
- FREE STANDING FIRE DEPARTMENT CONNECTION
- WATER GONG
- DUCTWORK ~ FIRST DIMENSION IS SIDE SHOWN IN INCHES S= SUPPLY, R= RETURN, E= EXHAUST, OA= OUTSIDE AIR F.O. = FLAT OVAL
- ACCOUSTICAL LINING (DUCT DIMENSION FOR NET FREE AREA)
- DUCTWORK TO BE REMOVED
- SINGLE LINE DUCTWORK TO BE REMOVED
- DUCT TRANSITION
- SQUARE TO ROUND TRANSITION
- FLEX DUCT ~ DOUBLE LINE
- FLEX DUCT ~ SINGLE LINE

- CHANGE IN ELEVATION (UP/DOWN, RISE OR DROP)
- SUPPLY DUCT TURNED UP/DN
- RETURN DUCT TURNED UP/DN
- EXHAUST DUCT TURNED UP/DN
- ROUND DUCT TURNED UP/DN
- MITERED DUCT ELBOW W/TURNING VANES
- RADIUS DUCT ELBOW
- DUCT/PIPE CAP (SINGLE/DOUBLE LINE)
- VOLUME DAMPER
- FIRE DAMPER
- SMOKE DAMPER
- FIRE AND SMOKE DAMPER
- BACKDRAFT DAMPER

- MOTORIZED DAMPER
- FLEXIBLE CONNECTION
- TEMPERATURE SENSOR OR THERMOSTAT (AS SPECIFIED)
- HUMIDISTAT OR HUMIDITY SENSOR (AS SPECIFIED)
- CARBON DIOXIDE SENSOR
- CARBON MONOXIDE SENSOR
- ACCESS PANEL
- DUCT SMOKE DETECTOR
- ROOFTOP EXHAUST FAN
- ROOFTOP SUPPLY FAN
- CEILING DIFFUSER ~ 4-WAY BLOW
- CEILING DIFFUSER ~ 3-WAY BLOW
- CEILING DIFFUSER ~ 2-WAY BLOW
- CEILING DIFFUSER ~ CORNER BLOW
- CEILING RETURN GRILLE
- CEILING EXHAUST GRILLE
- POINT OF CONNECTION EXISTING TO NEW
- DIRECTION OF AIR FLOW

- R, G & D TAG
  - DIFFUSER, REGISTER OR GRILLE No.
  - QUANTITY
  - CFM AIR FLOW
- FINTUBE TAG
  - FINTUBE No.
  - LENGTH
  - GPM
- VAV TAG
  - VAV No.
  - MINIMUM CFM
  - MAXIMUM CFM
  - GPM
- EQUIPMENT TAG
  - TYPE DESIGNATOR
  - NUMBER
- EQUIPMENT TAG (ON FLOOR/ROOF ABOVE)
  - TYPE DESIGNATOR
  - NUMBER
- DETAIL No.
- DETAIL REFERENCE SYMBOL
- SHEET DETAIL LOCATED ON
- SECTION No.
- SECTION REFERENCE SYMBOL
- SHEET SECTION LOCATED ON

E1 SYMBOLS LEGEND

NONE

- AW — ACID WASTE
- ATV — AIR RELIEF
- BBD — BOILER BLOWDOWN
- C — CONDENSATE (HVAC DRAIN PAN)
- C — CONDENSATE (HVAC DRAIN PAN - BELOW FLOOR)
- CA — COMPRESSED AIR
- CHWR — CHILLED WATER RETURN
- CHWS — CHILLED WATER SUPPLY
- CWS — CONDENSER WATER SUPPLY
- CWR — CONDENSER WATER RETURN
- DOMESTIC COLD WATER
- DOMESTIC HOT WATER
- DOMESTIC WATER RECIRC.
- D — DRAIN
- FM — PUMP FORCE MAIN
- FOF — FUEL OIL FILL
- FOR — FUEL OIL RETURN
- FOS — FUEL OIL SUPPLY
- FOV — FUEL OIL TANK VENT
- FW — FEEDWATER
- GR — GLYCOL RETURN
- GS — GLYCOL SUPPLY
- H — HUMIDIFICATION LINE
- H2 — HYDROGEN GAS
- HPWR — HEAT PUMP WATER RETURN
- HPWS — HEAT PUMP WATER SUPPLY
- HPC — HIGH-PRESSURE CONDENSATE
- HPS — HIGH-PRESSURE STEAM
- HTWR — HIGH-TEMP. HOT WATER RETURN
- HWR — HOT WATER RETURN
- HWS — HOT WATER SUPPLY
- IND — INDUSTRIAL WASTE
- IW — INDIRECT WASTE
- LN — LIQUID NITROGEN
- LOX — LIQUID OXYGEN
- LPC — LOW-PRESSURE CONDENSATE
- LP — LIQUID PETROLEUM GAS
- LPR — LOW-PRESSURE CONDENSATE
- LPS — LOW-PRESSURE STEAM
- MA — MEDICAL AIR
- MPR — MEDIUM-PRESSURE CONDENSATE
- MPS — MEDIUM-PRESSURE STEAM
- MU — MAKEUP WATER
- N2 — NITROGEN
- NG — NATURAL GAS
- NO — NITROUS OXIDE
- NPW — NON-POTABLE WATER
- OX — OXYGEN
- PC — PUMPED CONDENSATE
- PCWR — PROCESSED COLD WATER RETURN
- PCWS — PROCESSED COLD WATER SUPPLY
- RD — REFRIGERANT DISCHARGE
- RL — REFRIGERANT LIQUID
- RS — REFRIGERANT SUCTION
- RW — RAIN WATER ABOVE FLOOR
- RW — RAIN WATER BELOW GRADE
- SANITARY SOIL WASTE (ABOVE FLOOR)
- SANITARY SOIL WASTE (BELOW FLOOR)
- SANITARY SOIL VENT (ABOVE FLOOR)
- SANITARY SOIL VENT (BELOW FLOOR)
- SV — SANITARY WASTE & VENT COMBINATION
- SP — SPRINKLER MAIN PIPING
- SWR — SOLAR WATER RETURN
- SWS — SOLAR WATER SUPPLY
- TP — TRAP PRIMER PIPING ABOVE GRADE
- TP — TRAP PRIMER PIPING BELOW GRADE
- TWR — TEMPERED RETURN WATER
- TWS — TEMPERED SUPPLY WATER
- VAC — VACUUM (AIR)
- VC — VACUUM CLEANING (HOUSE)
- VPD — VACUUM PUMP DISCHARGE

A1 PIPING LINETYPE LEGEND

NONE

A4 ABBREVIATIONS

AAV	AUTOMATIC AIR VENT
AC	ABOVE CEILING
ACC	AIR COOLED CONDENSER
ACU	AIR CONDITIONING UNIT
ADA	AMERICANS WITH DISABILITIES ACT
AD	ACCESS DOOR
AE	ACID EXHAUST
AW	ACID WASTE
AFF; A.F.F.	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AP	ACCESS PANEL
APPROX	APPROXIMATE; APPROXIMATELY
APMR	AS PER MFR'S RECOMMENDATIONS
ATC	AUTOMATIC TEMPERATURE CONTROL
AV	AIR VENT
BC	BALANCING COCK
BDD	BACKDRAFT DAMPER
BG	BLAST GATE
BF	BARRIER FREE
BFP	BACKFLOW PREVENTER
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BOD	BOTTOM OF DUCT
B.T.U.	BRITISH THERMAL UNIT
C; CONV.	CONVECTOR
CCW	COUNTER CLOCKWISE
CFF	CAPPED FOR FUTURE
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
CO	CLEANOUT
CM	CONSTRUCTION MANAGER
CNTR	COUNTER; COUNTERTOP
CONN	CONNECT; CONNECTION
CONT	CONTINUE; CONTINUATION
COORD	COORDINATE
CORR	CORRIDOR
CR	CHEMICAL RESISTING
CT	COOLING TOWER
CTE	CONNECT TO EXISTING
CTR	CENTER
CTRLN	CENTERLINE
CU	COPPER
CUH	CABINET UNIT HEATER
C.V.	CONTROL VALVE
CW	COLD WATER/CLOCKWISE
DB	DRY BULB TEMPERATURE, °F
DC	DOUBLE CONTAINED
DDC	DIRECT DIGITAL CONTROL
DET	DETAIL
DIA	DIAMETER
DIC	DOWN IN CHASE
DIW	DOWN IN WALL
DN	DOWN
DS	DOWNSPOUT
DT	DROP AND TRANSITION
DV	DRAIN VALVE
DWG	DRAWING
EA	EXHAUST AIR
EF	EXHAUST FAN
EG	EXHAUST GRILLE
ELEV	ELEVATION
ELONG	ELONGATE
ENC	ENCLOSURE
ER	EXHAUST REGISTER
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
(E)	EXISTING
F & T	FLOAT AND THERMOSTATIC
FBO	FURNISHED BY OTHERS
FBP	FACE AND BYPASS
FC	FLEXIBLE CONNECTION
FCO	FLOOR CLEANOUT
FD-#	FLOOR DRAIN TAG
FD	FIRE DAMPER
FIN	FINISH
FL	FLOOR
FTG	FOOTING
FTR	FINNED TUBE RADIATION
FS	FLOW SWITCH
FM	FORCE MAIN
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
GV	GRAVITY VENTILATOR
H	HUMIDIFIER
HB	HOSE BIB
HC; HDC	HANDICAP ACCESS
HGT, HT.	HEIGHT
HP	HEAT PUMP
HRU	HEAT RECOVERY UNIT
HTR	HEATER
H & V	HEATING AND VENTILATION
HVAC	HEATING, VENTILATING, & AIR COND.
HW	HOT WATER
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HX	HEAT EXCHANGER
ID	INSIDE DIAMETER
IN WG	INCHES WATER GAUGE
INCL	INCLUDING
INV EL	INVERT ELEVATION
IPS	IRON PIPE SIZE
KE-#	KITCHEN EQUIPMENT NUMBER
LD	LINEAR DIFFUSER
LE-#	SCIENCE LAB EQUIPMENT NUMBER
LP	LIQUID PETROLEUM GAS
LPR	LOW PRESSURE STEAM RETURN
LPS	LOW PRESSURE STEAM SUPPLY
MAX	MAXIMUM
MBH	1000 BTU/HR.
MFR	MANUFACTURER
MIN	MINIMUM
MOD	MOTOR OPERATED DAMPER
MPG	MEDIUM PRESSURE GAS
MPV	MULTI-PURPOSE VALVE
MTD	MOUNTED
MTG	MOUNTING
MUA	MAKE UP AIR
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
NIC	NOT IN CONTRACT
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
OD	OUTSIDE DIAMETER
OED	OPEN ENDED DUCT
P-#	PLUMBING FIXTURE TAG
PD	PUMPED DISCHARGE
PRS	PRESSURE REDUCING STATION
PRV	PRESSURE REDUCING VALVE
RA	RETURN AIR
RD	ROOF DRAIN
REC	RECOMMENDATION
REG	REGULAR
RF	RETURN FAN
RG	RETURN GRILLE
RHC	REHEAT COIL
RM	ROOM
RPZ	REDUCED PRESSURE BFP
RR	RETURN REGISTER
RV	RELIEF VALVE
RW	RAIN WATER
S	SUPPLY AIR
SA-" "	SHOCK ABSORBER OF PDI SIZE (" ") AS INDICATED
SCV	SELF CONTAINED VALVE
SD	SMOKE DAMPER
SF	SUPPLY FAN
SG	SUPPLY GRILLE
SGL	SINGLE
SHT	SHEET
SPLR	SPRINKLER
SQ FT; S. F.	SQUARE FEET
SR	SUPPLY REGISTER
S/O	SHUT OFF
S.S.	STAINLESS STEEL
TD	TRENCH DRAIN
TG	TRANSFER GRILLE
TOD	TOP OF DUCT
TP	TRAP PRIMER
TSP	TOTAL STATIC PRESSURE
TTS	TIGHT TO STEEL
TV	TURNING VANE
TW	TEMPERED WATER
TYP	TYPICAL
UH	UNIT HEATER
UIC	UP IN CHASE
UIW	UP IN WALL
UV	UNIT VENTILATOR
V	VENT
VAC	VACUUM
VB	VACUUM BREAKER
VCFF	VALVE & CAP FOR FUTURE
VD	VOLUME DAMPER - MANUAL
VLV	VALVE
VS	VENT STACK
VTR	VENT THROUGH ROOF
W	WASTE
W/	WITH
WB	WET BULB TEMPERATURE, °F
WCO	WALL CLEANOUT
WH	WATER HEATER
WHYD	WALL HYDRANT
NTS	NOT TO SCALE
Ø	DIAMETER
@	AT
&	AND
%	PERCENT

A8 GENERAL NOTES

NONE

NOTE

ALL GENERAL NOTES, SYMBOL LEGENDS, AND DETAILS ARE TO BE CONSIDERED AS APPLICABLE TO ALL PLUMBING AND HVAC DRAWINGS FOR THIS PROJECT. SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET ARE FOR REFERENCE ONLY AND DO NOT INDICATE THEIR INCORPORATION INTO THE DESIGN.

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