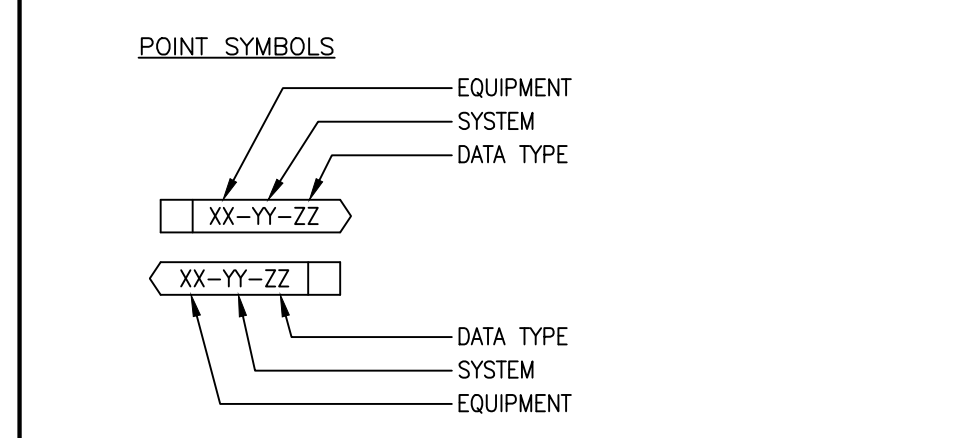


P&ID SYMBOLS LEGEND

SYMBOL	DESCRIPTION
(FI)	FLOW METER/FLOW ELEMENT
(PI)	PRESSURE GAUGE/PRESSURE INDICATOR
(PSH)	PRESSURE SWITCH HIGH
(SD)	DUCT SMOKE DETECTOR
(T)	THERMOSTAT
(TE)	TEMPERATURE ELEMENT
[DSP]	DUCT STATIC PRESSURE TRANSDUCER
[H]	HUMIDITY SENSOR
[VFD]	VARIABLE FREQUENCY DRIVE PANEL
[PC]	VAV CONTROLLER

P&ID ABBREVIATIONS LEGEND

ABBREVIATION	DESCRIPTION
AS	AIR SEPARATOR
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
DPS	DIFFERENTIAL PRESSURE SWITCH
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
DSP	DUCT STATIC PRESSURE TRANSDUCER
EAD	EXHAUST AIR DAMPER
HHWS	HEATING HOT WATER SUPPLY
HHWR	HEATING HOT WATER RETURN
OAD	OUTSIDE AIR DAMPER
RAD	RETURN AIR DAMPER
VFD	VARIABLE FREQUENCY DRIVE



MECHANICAL ABBREVIATIONS

SYMBOL ABBR	DESCRIPTION
AFF	ABOVE FINISHED FLOOR
C.I.D.	CLEAR INSIDE DIMENSION
CN	CONDENSATE RETURN
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
DTR (E)	DOWN THRU ROOF (EXISTING)
HWR	HEATING WATER RETURN
HS	HIGH PRESSURE STEAM
HWS	HEATING WATER SUPPLY
IA	INSTRUMENT AIR
LS	LOW PRESSURE STEAM
MS	MEDIUM PRESSURE STEAM
VP	VENT PIPE
WH	DOMESTIC HOT WATER
WP	WASTE PIPE
EAT	ENTERING AIR TEMPERATURE
EXP	EXPANSION
FA	FIRE ALARM
FDO	FLOOR CLEAN OUT
FLEX.	FLEXIBLE
FFM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FOOT
FS	FLOW SWITCH
GA	GAGE OR GAUGE
GAL	GALLON
GCO	GRADE CLEAN OUT
GPM	GALLONS PER MINUTE
HD	HEAD
HR	HOUR
HP	HORSEPOWER
HZ	HERTZ
IN	INCH
IPS	INCHES PER SECOND
KW	KILOWATTS
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LIN FT	LINEAR FEET
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	BRITISH THERMAL UNITS PER HOUR (THOUSANDS)
MBM	MINIMUM
MMBH	BRITISH THERMAL UNITS PER HOUR (MILLIONS)
(N)	NEW
NC	NORMALLY CLOSED
N.I.C.	NOT IN CONTRACT
NO	NORMALLY OPEN
NO.	NUMBER
NOM	NOMINAL
NPSH	NET POSITIVE SUCTION HEAD
OA	OUTSIDE AIR
OAT	OUTSIDE AIR TEMPERATURE
OC	ON CENTER
OFOI	OWNER FURNISHED OWNER INSTALLED
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
PH	PHASE
POC	POINT OF CONNECTION
PRESS	PRESSURE
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAGE
PSI	POUNDS PER SQUARE INCH
RA, R/A	RETURN AIR
RET	RETURN
RFM	REVOLUTIONS PER MINUTE
RH	RELATIVE HUMIDITY
RM	ROOM
SA, S/A	SUPPLY AIR
SAT	SUPPLY AIR TEMPERATURE
SCFM	STANDARD CUBIC FEET PER MINUTE
SENS	SENSIBLE COOLING CAPACITY
SP	STATIC PRESSURE
SQ	SQUARE
SQ FT	SQUARE FEET
SQRD	SQUARE TO ROUND TRANSITION
STD	STANDARD
TD	TEMPERATURE DIFFERENTIAL
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE
TON	REFRIGERATION CAPACITY (1TON=12,000BTUH)
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UG	UNDERGROUND
UTR	UP THRU ROOF
V	VOLTAGE
VTR	VENT THRU ROOF
WB	WET BULB TEMPERATURE
WC	WATER COLUMN
WCO	WALL CLEAN OUT
WPD	WATER PRESSURE DROP



MECHANICAL SYMBOLS LEGEND

SYMBOL	ABBR	DESCRIPTION
		AIR VENT
		ARROW INDICATES DIRECTION OF FLOW
		AUTOMATIC 2-WAY/TEMPERATURE CONTROL VALVE
		AUTOMATIC 3-WAY/TEMPERATURE CONTROL VALVE
	CKV	CHECK VALVE
		CAPPED PIPE
		FLANGE
	RPA	REDUCED PRESSURE ASSEMBLY
		ECCENTRIC INCREASER/DECREASER
		BACKFLOW PREVENTOR
		MANUAL BUTTERFLY VALVE
		CONCENTRIC PIPE REDUCER
		DRAIN VALVE - HOSE THREAD
		FLEXIBLE PIPE CONNECTION
		FLOW METER VENTURE
		GATE VALVE
		GLOBE VALVE
		PIPE TEE
		PRESSURE REDUCING VALVE
		PRESSURE RELIEF VALVE
		AUTOMATIC AIR VENT WITH BALL VALVE
		PIPE DOWN
		PIPE UP
	PVC	PLUG VALVE/ BALANCING COCK
		POINT OF CONNECTION (NEW TO EXISTING)
		LIMIT OF DEMOLITION (TO BE REMOVED)
		SOLENOID VALVE
		STRAINER
		STRAINER WITH BLOW DOWN VALVE
		STOP COCK
		TEE DOWN
		TEE UP
		UNION
		GAUGE WITH GAUGE CLOCK
	FTT	FLOAT AND THERMOSTATIC TRAP
		AUTOMATED BUTTERFLY VALVE
		BALL VALVE
		TEE STRAINER
		ANCHOR
		VACUUM BREAKER
		FLOAT VALVE
		STOP CHECK VALVE
		FLOW CONTROL VALVE
		CIRCULATING PUMP
	WHA	WATER HAMMER ARRESTOR
		CONDUCTIVITY CONTROLLER
		HARDWARE INTERLOCK
		PNEUMATIC
		WATER TREATMENT
		MOTORIZED DAMPER
		ARROW INDICATES DIRECTION OF FLOW
		ELECTRIC SIGNAL
		DIFFERENTIAL PRESSURE GAUGE
		SOLENOID VALVE
		TEMPERATURE GAUGE
		TEMPERATURE SENSOR

MECHANICAL SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	DUCT SECTION - SUPPLY
	DUCT SECTION - RETURN
	DUCT SECTION - EXHAUST
	DUCTWORK DIMENSIONS FOR SHEET METAL SECOND SIZE IS SIDE DOWN
	DOUBLE WALL INSULATED DUCTWORK
	DUCT RISE IN DIRECTION OF FLOW, RISE (UP) OR DROP (DN)
	FLEXIBLE DUCT CONNECTOR
	RADIUS DUCT ELBOW
	MOTOR OPERATED DAMPER (MOD)
	MANUAL BALANCING DAMPER W/LOCKING QUADRANT
	BRANCH CONNECTOR 45 DEG THROAT W/ MANUAL ELBOW AWAY
	ELBOW AWAY
	ELBOW TOWARD
	SQUARE TO ROUND TRANSITION
	ROUND
	DUCT TURNING DOWN
	DUCT TURNING UP
	CEILING DIFFUSER
	CEILING RETURN GRILLE
	CONDENSATE DRAIN
	TEE DOWN
	TEE UP
	UNION
	COMBINATION FIRE SMOKE DAMPER
	DUCT SMOKE DETECTOR

PIPE IDENTIFICATION LEGEND

EQUIPMENT	SYMBOL ABBR	DESCRIPTION
	AC	AIR COMPRESSOR
	ADS	AIR DIRT SEPARATOR
	AHU	AIR HANDLING UNIT
	B	BOILER
	BDD	BACKDRAFT DAMPER
	CGT	COMBUSTION GAS TURBINE
	CH	CHILLER
	CHP	CHILLED WATER PUMP
	CRP	CONDENSATE RETURN PUMP
	CRU	CONDENSATE RETURN UNIT
	CSP	CONDENSATE SURGE PUMP
	CT	COOLING TOWER
	CTP	CONDENSATE TRANSFER PUMP
	CWP	CONDENSER WATER PUMP
	DCW	DOMESTIC COLD WATER
	DIA	DIAMETER
	EC	EVAPORATIVE COOLER
	ED	EXHAUST AIR DUCT
	EF	EXHAUST FAN
	EG	EXHAUST AIR GRILLE
	ER	EXHAUST AIR REGISTER
	EXT	EXPANSION TANK
	FC	FAN COIL UNIT
	FD	FIRE DAMPER
	FWP	FEED WATER PUMP
	GHX	50% GLYCOL HEAT EXCHANGER
	HRSG	HEAT RECOVERY STEAM GENERATOR
	HX	HEAT EXCHANGER
	OBDD	OPPOSED BLADE DAMPER
	P	PUMP
	PRV	PRESSURE REDUCING VALVE
	RAR	RETURN AIR REGISTER
	SAR	SUPPLY AIR REGISTER
	SAF	SUPPLY AIR FAN
	SP	SECONDARY PUMP
	TG	TRANSFER GRILLE
	TU	TERMINAL UNIT

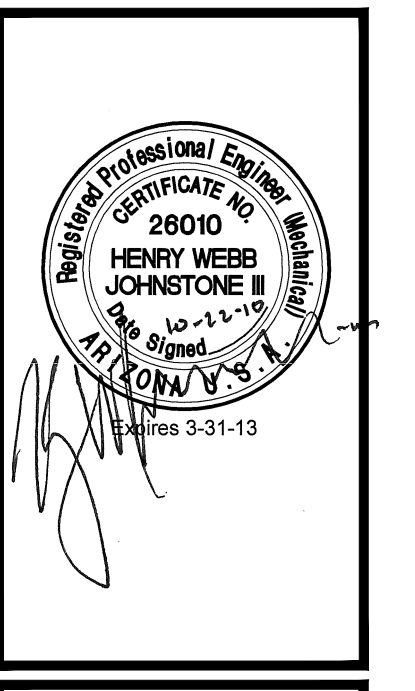
PIPE IDENTIFICATION LEGEND

EQUIPMENT	SYMBOL ABBR	DESCRIPTION
	UH	UNIT HEATER
	VFD	VARIABLE FREQUENCY DRIVE
	WH	WATER HEATER
	WL	WALL LOUVER
	BSW	BUILDING SERVICE WATER
	CD	CONDENSATE DRAIN
	CHWS	CHILLED WATER SUPPLY
	CHWR	CHILLED WATER RETURN
	D	DRAIN
	DCW	DOMESTIC COLD WATER
	DHW	DOMESTIC HOT WATER
	DIP	DUCTILE IRON PIPE
	FOS,R	FUEL OIL SUPPLY, RETURN
	GCR	GRAVITY CONDENSATE RETURN
	GHWS,R	50% GLYCOL HEATING WATER SUPPLY, RETURN
	HPS	HIGH PRESSURE STEAM (125PSI)
	HWSR	HEATING WATER SUPPLY, RETURN
	IA	INSTRUMENT AIR
	ICW	INDUSTRIAL COLD WATER
	LPR	LOW PRESSURE RETURN (GRAVITY CONDENSATE)
	LPS	LOW PRESSURE STEAM (15 PSI)
	MPS	MEDIUM PRESSURE STEAM (45 PSI)
	NG	NATURAL GAS
	NPW	NON POTABLE WATER
	PA	PLANT AIR
	PCHWS,R	PROCESS CHILLED WATER SUPPLY, RETURN
	PCR	PUMPED CONDENSATE RETURN
	RC	UNDERGROUND RAIN CONDUCTOR
	RDL	ROOF DRAIN LEADER
	RV	REFRIGERANT VENT
	SFS,R	SAND FILTER SUPPLY, RETURN
	VP	VENT PIPE
	WP	WASTE PIPE

PIPE SYMBOLS LEGEND

	LONG RADIUS ELBOW
	SHORT RADIUS ELBOW
	STRAIGHT TEE
	REDUCING TEE
	PIPE UP
	PIPE DOWN
	REDUCER (CONCENTRIC)
	REDUCER (ECCENTRIC)
	90° ELBOW ROLLED DOWN
	45° ELBOW
	STRAINER
	BUTTERFLY VALVE (MANUAL)
	BUTTERFLY VALVE (AUTOMATIC)
	WELDNECK FLANGE
	EXISTING PIPING
	NEW HEATING WATER SUPPLY
	NEW HEATING WATER RETURN
	NEW CHILLED WATER RETURN
	NEW CHILLED WATER SUPPLY

NOTE: NOT ALL SYMBOLS AND/OR ABBREVIATIONS ARE APPLICABLE.



PROJ. NO.	1021.00
DESIGNED BY:	TCM
DRAWN BY:	PMF
CHECKED BY:	HWJ
DATE:	OCTOBER 22, 2010
REVISIONS	