

GENERAL NOTES:

- ALL P&ID'S GENERALLY FOLLOW PROCESS INDUSTRY PRACTICES (PIP) GUIDELINES.
- ALL P&ID'S CONTAINING PSM SYSTEMS MUST BE CONTROLLED, EASILY ACCESSABLE, & AS-BUILT AT ALL TIMES.
- ALL SINGLE VALVE VENTS & DRAINS IN PROCESS & STEAM SYSTEMS TO BE PLUGGED, CAPPED, OR BLIND FLANGED.
- ALL VENTS & DRAINS TO BE 1/2" UNLESS NOTED OTHERWISE.
- ALL GRAVITY PIPING TO BE SLOPED A MINIMUM OF 1/8" PER 1'-0".
- IN OPEN PRESSURE RELIEF SYSTEMS, THE RELIEF VALVE DISCHARGE SHALL BE FREE OF OBSTRUCTIONS & SHALL BE VENTED INTO OPEN SUMP, DRAIN, OR AT A MINIMUM OF 10'-0" ABOVE GRADE OR WORKING PLATFORM.
- IN CLOSED PRESSURE RELIEF SYSTEMS, THE RELIEF VALVE DISCHARGE SHALL BE FREE OF OBSTRUCTIONS TO THE TOP OF THE DISCHARGE HEADER.
- ALL PRESSURE RELIEF VALVES IN PROCESS SYSTEMS SHALL BE PROTECTED BY A RUPTURE DISC UPSTREAM OF THE RELIEF VALVE.
- REDUCERS IN PRESSURE RELIEF VALVE INLET OR OUTLET PIPING SHALL BE INSTALLED IMMEDIATELY ADJACENT TO THE PRESSURE RELIEF VALVE.

STANDARD ABBREVIATIONS:

AG = ABOVE GROUND
ATM = ATMOSPHERE
BL = BATTERY LIMIT
BTL = BOTTOM TANGENT LINE
BV = BY VENDOR
BYP = BYPASS
CC = CHEMICAL CLEANOUT
CL = CENTERLINE
CLEANOUT
CONN = CONNECTION
COP = CHAIN OPERATOR
CS = CARBON STEEL
CSC = CAR SEAL CLOSED
CSO = CAR SEAL OPEN
CTR = CENTER
DCS = DISTRIBUTED CONTROL SYSTEM
DES = DESIGN
DIA = DIAMETER
DP = DESIGN PRESSURE
D/P = DIFFERENTIAL PRESSURE
DRN = DRAIN
DT = DESIGN TEMPERATURE
DWG = DRAWING
(E) = EXISTING
EA = EACH
EL = ELEVATION
ESD = EMERGENCY SHUTDOWN
(F) = FURNISHED
FC = FAIL CLOSED
FI = FAIL INDETERMINATE
FL = FAIL LOCKED
FLG = FLANGE
FO = FAIL OPEN
FOF = FACE OF FLANGE
FP = FULL PORT
FRP = FIBERGLASS REINFORCED PLASTIC
FT = FEET
FV = FULL VACUUM
GO = GEAR OPERATOR
GR = GRADE
HC = HOSE CONNECTION
HDR = HEADER
HH = HAND HOLE
HOA = HAND/OFF/AUTOMATIC
HP = HIGH PRESSURE
HPT = HIGH POINT
HT = HIGH TEMPERATURE
IAS = INSTRUMENT AIR SUPPLY
IN = INCHES
ISBL = INSIDE BATTERY LIMITS
LC = LOCKED CLOSE
L/F = LINEAL FEET
LO = LOCKED OPEN
LP = LOW PRESSURE
LPT = LOW POINT
LT = LOW TEMPERATURE
MAX = MAXIMUM
MH = MANHOLE
MIN = MINIMUM
MOV = MOTOR OPERATED VALVE
MTL = MATERIAL
MW = MANWAY
NC = NORMALLY CLOSED
NNF = NORMALLY NO FLOW
NO = NORMALLY OPEN
NOZ = NOZZLE
O/C = OPEN/CLOSE
O/O = ON/OFF
OP = OUTPUT
OSBL = OUTSIDE BATTERY LIMITS
OVHD = OVERHEAD
PLC = PROGRAMMABLE LOGIC CONTROLLER
PSM = PROCESS SAFETY MANAGEMENT
PRESS = PRESSURE
PV = PROCESS VARIABLE
QTY = QUANTITY
(R) = RELOCATE
REQD = REQUIRED
RTD = RESISTANCE TEMPERATURE DETECTOR
SC = SAMPLE CONNECTION
SCH = SCHEDULE
SD = SHUTDOWN
SG = SPECIFIC GRAVITY
SIS = SAFETY INSTRUMENTED SYSTEM
SO = STEAM OUT
SP = SET POINT
SQ/FT = SQUARE FEET
SS = STAINLESS STEEL
STD = STANDARD
T/C = THERMOCOUPLE
TDH = TOTAL DIFFERENTIAL HEAD
TEMP = TEMPERATURE
THRD = THREADED
TL = TANGENT LINE
TSO = TIGHT SHUT-OFF
T/T = TANGENT TO TANGENT
TYP = TYPICAL
UG = UNDERGROUND
VAC = VACUUM
VNT = VENT
VB = VACUUM BREAKER
VXB = VORTEX BREAKER
W/ = WITH
W/O = WITHOUT

SERVICE CODES:

ACE = ACETIC ACID
ACT = ACETONE
AHC = ANHYDROUS HYDROGEN CHLORIDE
AMA = AMMONIA
AMR = AMINE RETURN
AMS = AMINE SUPPLY
ANA = ANHYDROUS AMMONIA
AQA = AQUEOUS AMMONIA
BBD = BOILER BLOWDOWN
BFW = BOILER FEED WATER
BRA = BREATHING AIR
CAS = CAUSTIC SODA
CHR = CHILLED WATER RETURN
CHS = CHILLED WATER SUPPLY
CLF = COLD FLARE
CO2 = CARBON DIOXIDE
CTW = CITY WATER
CWR = COOLING WATER RETURN
CWS = COOLING WATER SUPPLY
DAC = DOWTHERM A CONDENSATE
DAV = DOWTHERM A VAPOR
DLS = DILUTION STEAM
DMW = DEMINERALIZED WATER
DRN = DRAIN, GENERAL SERVICE
FEL = FLUE GAS
FLW = FILTERED WATER
FLO = FUEL OIL
FPW = FIRE PROTECTION WATER
FRA = FRESH AIR SUPPLY
GBR = GLYCOL BRINE RETURN
GBS = GLYCOL BRINE SUPPLY
GPR = GENERAL PROCESS
HCA = HYDROCHLORIC ACID
HEP = HEPTANE
HPC = HIGH PRESSURE STEAM CONDENSATE
HPS = HIGH PRESSURE STEAM
HYD = HYDROGEN
INA = INSTRUMENT AIR
IPA = ISOPROPYL ALCOHOL
LBO = LUBE OIL
LNG = LIQUID NATURAL GAS
LPC = LOW PRESSURE STEAM CONDENSATE
LPG = LIQUID PETROLEUM GAS
LPS = LOW PRESSURE STEAM
MAG = MAGNESIUM
MAW = MAKE UP WATER
MBR = METHANOL BRINE RETURN
MBS = METHANOL BRINE SUPPLY
MEN = MENTHOL
MET = METHANOL
MPC = MEDIUM PRESSURE STEAM CONDENSATE
MPS = MEDIUM PRESSURE STEAM
NGS = NATURAL GAS SUPPLY
NTA = NITRIC ACID
OXY = OXYGEN
PBP = PROCESS BYPRODUCT
PER = PEROXIDE
PLA = PLANT AIR
PN2 = PLANT NITROGEN
PPH = PHOSPHORIC ACID
PRC = PROCESS CONDENSATE
PRS = PROCESS SEWER
PRV = PROCESS VAPORS
PRW = PROCESS WATER
PTW = POTABLE WATER
RAR = REAGENT RETURN
RAS = REAGENT SUPPLY
RAW = RAW WATER
REF = REFRIGERANT
SAS = SANITARY SEWER
SBR = SODIUM CARBONATE BRINE RETURN
SBS = SODIUM CARBONATE BRINE SUPPLY
SFA = SULPHURIC ACID
SFW = SOFT WATER
SLO = SEAL OIL
SLW = SEAL WATER
SPH = SODIUM PHOSPHATE
STS = STORM SEWER
SWR = SEA WATER RETURN
SWS = SEA WATER SUPPLY
TWR = TEMPERED WATER RETURN
TWS = TEMPERED WATER SUPPLY
VND = VENDOR SUPPLIED PIPE
VTA = VENT TO ATMOSPHERE
WAW = WASTE WATER
WLW = WELL WATER
WMF = WARM FLARE

EQUIPMENT TAGGING CONVENTION

EQUIPMENTS USE THE FOLLOWING TAGGING CONVENTION:

TT--NNN

- TT = EQUIPMENT TYPE
- ABS = ABSORBER
 - B = BOILER
 - BL = BLOWER
 - COL = COLUMN
 - COM = COMPRESSOR
 - CON = CONVEYOR
 - DA = DEARATOR
 - DR = DRYER
 - FL = FILTER/STRAINER
 - FUR = FURNACE
 - HX = HEAT EXCHANGER
 - MD = MECHANICAL DRIVER
 - ME = MIST ELIMINATOR
 - MTR = MOTOR
 - MXR = MIXER
 - P = PUMP
 - RX = REACTOR
 - SL = SILENCER
 - SS = SAFETY SHOWER
 - ST = STEAM TRAP
 - STK = STACK
 - TK = TANK
 - VS = VESSEL

NNN = THREE DIGIT IDENTIFICATION NUMBER

EXAMPLE: (TK-001) IS TANK NUMBER 001

DIVISION OF WORK AREAS:

(PROJECT SPECIFIC)

- 00 = COMMON
01 = QUENCH VESSEL
02 = REACTORS
03 = INTERMEDIATE TANK
04 = STACK
05 = STRUCTURAL & ACCESS STEEL
06 = CIVIL
07 = ELECTRICAL
08 = INSTRUMENTS

LINE NUMBERING CONVENTION

LINE NUMBERS USE THE FOLLOWING NAMING CONVENTION:

NNNN--D--SSS--CCCCCCC--II--TT

NNNN = LINE NUMBER (0001 THRU 9999)

D = NOMINAL PIPE DIAMETER

SS = SERVICE CODE (SEE SERVICE CODES THIS DWG)

CCCCCCC = PIPE CODE (SEE PIPE CODES THIS DWG)

II = INSULATION TYPE

- AC = ACOUSTIC CONTROL INSULATION
- CC = COLD SERVICE INSULATION
- CP = CONDENSATE PROTECTION INSULATION
- FP = FIRE PROTECTION INSULATION
- HC = HEAT CONSERVATION INSULATION
- NI = NO INSULATION
- PF = PREVENTION FROM FREEZE INSULATION
- PP = PERSONNEL PROTECTION INSULATION
- PS = PROCESS STABILITY INSULATION

TT = TRACING TYPE

- CJ = CHILLED FLUID JACKETED
- CT = CHILLED FLUID TRACED
- ET = ELECTRIC TRACED
- HJ = HOT FLUID JACKETED
- HT = HOT FLUID TRACES
- HV = HOT VAPOR JACKETED
- NT = NO TRACING
- SJ = STEAM JACKETED
- ST = STEAM TRACED

EXAMPLE: (0001-2"-CWS-150CPA-CI-NT) IS LINE NUMBER 0001, 2" NPS, FOR CHILLED WATER SUPPLY, CLASS 150, PLAIN CARBON STEEL, COLD PIPE INSULATION, & NO TRACING.

PIPE SPEC NAMING CONVENTION

PIPE SPEC'S USE THE FOLLOWING NAMING CONVENTION:

PPPPMMV

PPPP = PRESSURE CLASS

- 0000 = OTHER
- 0125 = CLASS 125 (125 LB)
- 0150 = CLASS 150 (150 LB)
- 0300 = CLASS 300 (300 LB)
- 0400 = CLASS 400 (400 LB)
- 0600 = CLASS 600 (600 LB)
- 0900 = CLASS 900 (900 LB)
- 1500 = CLASS 1500 (1500 LB)
- 2500 = CLASS 2500 (2500 LB)

MM = MATERIAL TYPE

- CG = CARBON STEEL, GALVANIZED
- CL = CARBON STEEL, LINED
- CP = CARBON STEEL, PLAIN
- P1 = PVC
- P2 = CPVC
- P3 = FRP
- S1 = STAINLESS STEEL, 304
- S2 = STAINLESS STEEL, 316
- SL = STAINLESS STEEL, LINED

V = VARIANT CODE (A THRU Z)

EXAMPLE: (150S1A) IS CLASS 150, 304 STAINLESS STEEL PIPE VARIANT A.

MANUAL VALVE TAGGING CONVENTION

MANUAL VALVES USE THE FOLLOWING TAGGING CONVENTION:

TT--NNNN

TT = VALVE TYPE

- AV = ANGLE VALVE
- BA = BALL VALVE
- BF = BUTTERFLY VALVE
- CH = CHECK VALVE
- DA = DAMPER
- DI = DIVERTER VALVE
- DV = DIAPHRAGM VALVE
- FW = 4-WAY VALVE
- GA = GATE VALVE
- GL = GLOBE VALVE
- KG = KNIFE GATE VALVE
- NV = NEEDLE VALVE
- PG = PLUG VALVE
- PI = PINCH VALVE
- RV = ROTARY VALVE
- SC = STOP CHECK VALVE
- TW = 3-WAY VALVE
- VB = VACUUM BREAKER

NNNN = FOUR DIGIT IDENTIFICATION NUMBER

EXAMPLE: (BA-0001) IS BALL VALVE NUMBER 0001

AVAIABLE PIPE SPEC'S

0150P1A - SCH 40, PVC, GLUED SOCKET, FLANGED, & THREADED
0150P1B - SCH 80, PVC, GLUED SOCKET, FLANGED, & THREADED

0150P2A - SCH 80, CPVC, GLUED SOCKET, FLANGED, & THREADED

0000P3A - FRP, GLUED SOCKET, FLANGED, & THREADED (CONLEY COMPOSITES)

0125CGA - CLASS 125, CARBON STEEL GALVANIZED, FLANGED & THREADED
0150CGA - CLASS 150, CARBON STEEL GALVANIZED, FLANGED & THREADED

0150CPA - CLASS 150, CARBON STEEL PLAIN, FLANGED, WELDED & THREADED
0150CPB - CLASS 150, CARBON STEEL PLAIN, FLANGED & WELDED
0300CPA - CLASS 300, CARBON STEEL PLAIN, FLANGED, WELDED, & THREADED
0300CPB - CLASS 300, CARBON STEEL PLAIN, FLANGED & WELDED
0600CPA - CLASS 600, CARBON STEEL PLAIN, FLANGED, WELDED & THREADED
0600CPB - CLASS 600, CARBON STEEL PLAIN, FLANGED & WELDED
0900CPA - CLASS 900, CARBON STEEL PLAIN, FLANGED, WELDED & THREADED
0900CPB - CLASS 900, CARBON STEEL PLAIN, FLANGED & WELDED
1500CPA - CLASS 1500, CARBON STEEL PLAIN, FLANGED, WELDED & THREADED
1500CPB - CLASS 1500, CARBON STEEL PLAIN, FLANGED & WELDED
2500CPA - CLASS 2500, CARBON STEEL PLAIN, FLANGED, WELDED & THREADED
2500CPB - CLASS 2500, CARBON STEEL PLAIN, FLANGED & WELDED

0150S1A - CLASS 150, 304L STAINLESS STEEL, FLANGED, WELDED, & THREADED
0150S1B - CLASS 150, 304L STAINLESS STEEL, FLANGED & WELDED
0300S1A - CLASS 300, 304L STAINLESS STEEL, FLANGED, WELDED, & THREADED
0300S1B - CLASS 300, 304L STAINLESS STEEL, FLANGED & WELDED
0600S1A - CLASS 600, 304L STAINLESS STEEL, FLANGED, WELDED, & THREADED
0600S1B - CLASS 600, 304L STAINLESS STEEL, FLANGED & WELDED
0900S1A - CLASS 900, 304L STAINLESS STEEL, FLANGED & WELDED
0900S1B - CLASS 900, 304L STAINLESS STEEL, FLANGED & WELDED
1500S1A - CLASS 1500, 304L STAINLESS STEEL, FLANGED, WELDED & THREADED
1500S1B - CLASS 1500, 304L STAINLESS STEEL, FLANGED & WELDED
2500S1A - CLASS 2500, 304L STAINLESS STEEL, FLANGED, WELDED & THREADED
2500S1B - CLASS 2500, 304L STAINLESS STEEL, FLANGED & WELDED

0150S2A - CLASS 150, 316L STAINLESS STEEL, FLANGED, WELDED, & THREADED
0150S2B - CLASS 150, 316L STAINLESS STEEL, FLANGED & WELDED
0300S2A - CLASS 300, 316L STAINLESS STEEL, FLANGED, WELDED, & THREADED
0300S2B - CLASS 300, 316L STAINLESS STEEL, FLANGED & WELDED
0600S2A - CLASS 600, 316L STAINLESS STEEL, FLANGED, WELDED, & THREADED
0600S2B - CLASS 600, 316L STAINLESS STEEL, FLANGED & WELDED
0900S2A - CLASS 900, 316L STAINLESS STEEL, FLANGED, WELDED, & THREADED
0900S2B - CLASS 900, 316L STAINLESS STEEL, FLANGED & WELDED
1500S2A - CLASS 1500, 316L STAINLESS STEEL, FLANGED, WELDED & THREADED
1500S2B - CLASS 1500, 316L STAINLESS STEEL, FLANGED & WELDED
2500S2A - CLASS 2500, 316L STAINLESS STEEL, FLANGED, WELDED & THREADED
2500S2B - CLASS 2500, 316L STAINLESS STEEL, FLANGED & WELDED

General Notes

00	INITIAL ISSUE, FOR PRELIMINARY COMMENTS	J.ANDRUS
REV NO	REVISION DESCRIPTION	BY
		DATE



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