

VALVE DESIGNATIONS

SYMBOLS		MARK	TYPE
PROCESS DRAWINGS	FLOW DIAGRAMS		
		G	GATE VALVE
		K	KNIFE GATE VALVE
		BF	BUTTERFLY VALVE
		WBF	WAFER BUTTERFLY VALVE
		P	PLUG VALVE
		GL	GLOBE VALVE
		B	BALL VALVE
		AV	ACTUATED VALVE
		C CC SC RC DC	CHECK VALVE TYPES STANDARD CHECK VALVE CUSHION CHECK VALVE SILENT CHECK VALVE RADIAL CHECK VALVE DOUBLE VANE CHECK VALVE
		SEC WEC CV BCV	CONTROL VALVE TYPES ELECTRIC CHECK VALVE (SEWAGE) (ANGLE OR GLOBE VALVE) (WATER) CONTROL VALVE BALL CONTROL VALVE
		ARV	AIR RELEASE VALVE
		CV	CONE VALVE
		PRV PSV	PRESSURE REGULATING OR RELIEF VALVE PRESSURE SUSTAINING VALVE
		PV	PINCH VALVE
		DV	DIAPHRAGM VALVE
		PD	PLUG DRAIN VALVE
		BW	BACKWATER (FLAP) VALVE
		TPSV	TAPPING SLEEVE AND VALVE
		TSV	TELESCOPIC VALVE
		.	MAGNETIC FLOW METER
		.	TURBINE FLOW METER
		.	SONIC FLOW METER
			ORIFICE METER
			WEIR
			FLOW CHANNEL
			SIMPLEX/DUPLEX BASKET STRAINER
			CHEMICAL METERING PUMP
		BPV	BACK PRESSURE VALVE
		PRV	PRESSURE RELIEF VALVE
			PUMP/BLOWER INCLUDING PRESSURE GAUGES PI = PRESSURE INDICATOR
			PI-D = PRESSURE INDICATOR W/DIAPHRAGM SEAL
			PI-P = PRESSURE INDICATOR W/PULSATION DAMPENER

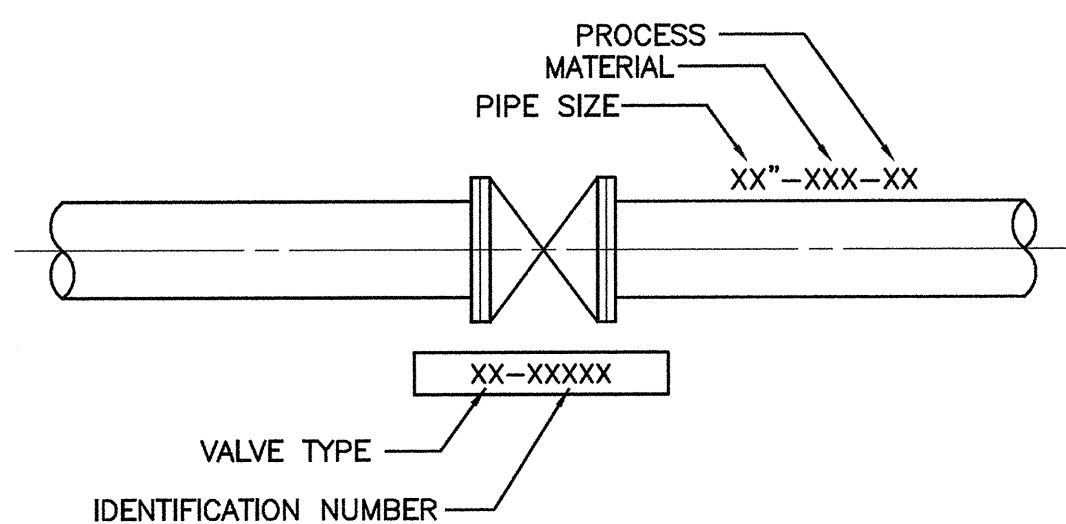
JOINT DESIGNATIONS

SYMBOL	MARK	TYPE
	FJ	FLANGED JOINT
	MJ	MECHANICAL JOINT
	SJ	SCREWED JOINT
	BSL POJ	BELL AND SPIGOT LEAD JOINT PUSH ON JOINT
	STC	SLEEVE TYPE COUPLING
	GC	GROOVED COUPLING
	WJ	SHOP WELDED JOINT (STEEL PIPE)
	FWJ	FIELD WELDED JOINT (STEEL PIPE)
	STJ	SOCKET TYPE JOINT (FRP OR PVC PIPE)
	EJ	EXPANSION JOINT
	BF	BLIND FLANGE
	FA	FLANGE ADAPTER

GATE DESIGNATIONS

SYMBOLS	MARK	TYPE
PIPEWORK DRAWINGS	FLOW DIAGRAMS	
		S SLUICE GATE (WITH STANDARD WALL THIMBLE)
		F FABRICATED SLIDE GATE
		SP STOP PLATE (SPECIFIED UNDER SLIDE GATES)

VALVE & PIPE IDENTIFICATION



SLEEVE DESIGNATIONS

SYMBOL	TYPE
	WALL SLEEVE
	FLANGE X PLAIN END WALL PIPE
	FLANGE X PLAIN END WALL PIPE
	FLANGE X FLANGE WALL PIPE
	MECHANICAL JOINT X MECHANICAL JOINT WALL PIPE
	MECHANICAL JOINT X PLAIN END WALL PIPE
	FLANGE X BELL WALL PIPE

OPERATORS

(SCHEMATICS ONLY)

SYMBOL	TYPE
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THROTTLING SERVICE

	PNEUMATIC
	ELECTRIC
	HYDRAULIC

OPEN - SHUT SERVICE

	PNEUMATIC
	ELECTRIC
	HYDRAULIC
	SOLENOID

MISCELLANEOUS

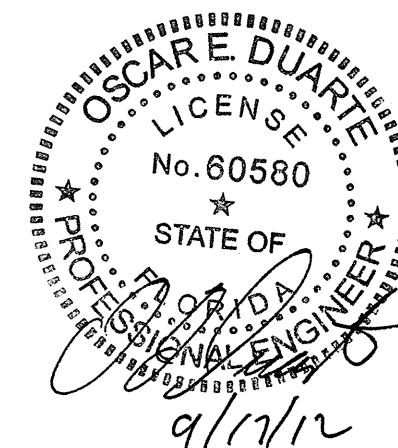
SYMBOL	TYPE
	HOSE BIBB

PIPING ABBREVIATION

BCE	BIOLOGICAL CONTACTOR EFFLUENT
BP	BYPASS
C	CENTRATE
CE	CHLORINATED EFFLUENT
CIP	CLEAN IN PLACE
CON	CONCENTRATE
D	DRAIN
DS	DIGESTED SLUDGE
EI	EQUALIZATION TANK INFLUENT
ER	EQUALIZATION TANK RETURN
ES	EQUALIZATION TANK SLUDGE
F	FILTRATE
FE	FINAL EFFLUENT
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FINAL TANK SLUDGE
FTW	FILTER TO WASTE
GD	GRIT DISCHARGE
GS	GRIT SUCTION
GRT	GRIT
HS	HEATED SLUDGE
LPA	LOW PRESSURE AIR
ML	MIXED LIQUOR
NPW	NON-POTABLE WATER
OF	OVERFLOW
PE	PRIMARY TANK EFFLUENT
PERM	PERMEATE
PEW	PLANT EFFLUENT WATER
PI	PRIMARY TANK INFLUENT
PS	PRIMARY TANK SLUDGE
PW	POTABLE WATER
RAS	RETURN ACTIVATED SLUDGE
RC	RECYCLED
RS	RAW SEWAGE
RW	RAW WATER
S	SCUM
SE	SECONDARY EFFLUENT
SN	SUPERNATANT
SPD	SUMP PUMP DISCHARGE
SWW	SURFACE WASHWATER
TE	TERTIARY EFFLUENT
THS	THICKENED SLUDGE
TO	THICKENER OVERFLOW
TS	TRANSFER SLUDGE
V	VENT
WAS	WASTE ACTIVATED SLUDGE
W	WATER MAIN
WWD	WASHWATER DRAIN
WWS	WASHWATER SUPPLY

PIPING AND VALVES GENERAL NOTES

1. INSTALL ALL PIPING SUPPORTS AND PIPING IN ACCORDANCE WITH THE LATEST EDITION OF THE ASME ANSI POWER PIPING CODE B 31.1.
2. ALL ABOVE GROUND PIPING AND FITTINGS TO BE FLANGED FITTING. ALL BELOW GROUND PIPING AND FITTINGS TO BE RESTRAINED MECHANICAL JOINT.
3. ALL GROUND BURIED PIPING TO HAVE A MINIMUM OF 3' OF EARTH COVER.
4. LOCATE PRESSURE TAPS ON THE TOP OF PROCESS PIPES.
5. LOCATE SAMPLE TAPS ON THE SIDE OF PROCESS PIPES.
6. LOCATE DRAIN TAPS ON THE BOTTOM OF PROCESS PIPES.
7. UNLESS OTHERWISE NOTED PIPE ELEVATIONS SHOWN ON PIPING DRAWINGS REFER TO CENTERLINE OF THE PIPE.
8. INSTALL ALL PLUG, BUTTERFLY AND BALL VALVES WITH THE SHAFT IN THE HORIZONTAL POSITION, UNLESS OTHERWISE DIRECTED.



SWA BIOSOLIDS PROCESSING FACILITY
INDUSTRIAL WASTE FORCE MAIN PROJECT
PALM BEACH COUNTY, FLORIDA

PROCESS PIPING LEGEND

ISSUED FOR: DATE: BY:
75% REVIEW 05/02/12 CEM
100% REVIEW 06/15/12 CEM
FINAL DESIGN 7-6-12 CEM
ENV. PERMITS 9/17/12 CEM

JOB NO.
NEF2001-01L

SHEET
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