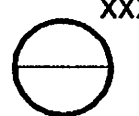
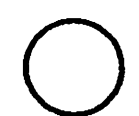

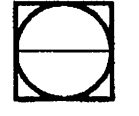
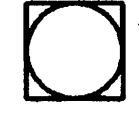


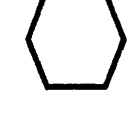

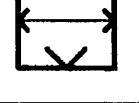
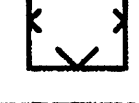
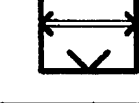
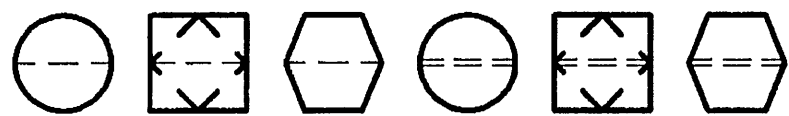


GENERAL INSTRUMENT OR FUNCTION SYMBOLS			
	PRIMARY LOCATION (b) NORMALLY ACCESSIBLE TO OPERATOR	FIELD MOUNT	AUXILIARY LOCATION (b) NORMALLY ACCESSIBLE TO OPERATOR
DISCRETE INSTRUMENTS			
SHARED DISPLAY, SHARED CONTROL			
COMPUTER FUNCTION			
PROGRAMMABLE LOGIC CONTROL			

- (a) DESIGNATIONS SUCH AS 100 (LOCAL CONTROL BOARD NO. 100), 200 (LOCAL CONTROL BOARD NO. 200), ETC., ARE USED WHEN NECESSARY TO SPECIFY INSTRUMENT OR FUNCTION LOCATION.
- (b) NORMALLY INACCESSIBLE OR BEHIND-THE-PANEL DEVICES OR FUNCTIONS ARE DEPICTED BY USING THE SAME SYMBOLS BUT WITH DASHED HORIZONTAL BARS, I.E.



SINGLE INSTRUMENT OR OTHER COMPONENT HAVING MULTIPLE FUNCTIONS

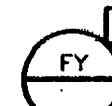


SOFTWARE OR LOGIC RESIDENT IN DISTRIBUTED CONTROL SYSTEM (DCS) AT PROGRAMMABLE LOGIC CONTROLLER (PLC) XXX. SEE ASSOCIATED LOGIC DIAGRAMS.



DESIGNATIONS OF CONTROL FUNCTIONS ASSOCIATED INSTRUMENT OR OTHER COMPONENTS.

AM	AUTO/MANUAL	RL	RAISE/LOWER
HOA	HAND/OFF/AUTO	RSL	RAISE/STOP/LOWER
HOR	HAND/OFF/REMOTE	SD	SHUTDOWN
LOS	LOCKOUT STOP	SEL	SELECT
LR	LOCAL/REMOTE	SP	SET POINT
MOA	MANUAL/OFF/AUTO	SR	START/RESET
OO	ON/OFF	SS	STOP/START
POT	POTENTIOMETER	REM	REMOTE



INSTRUMENT PANEL MOUNTED WITH COMPUTING OR CONVERTING FUNCTION

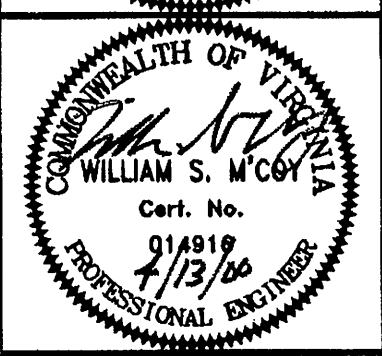
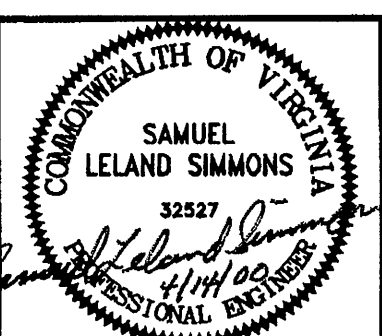
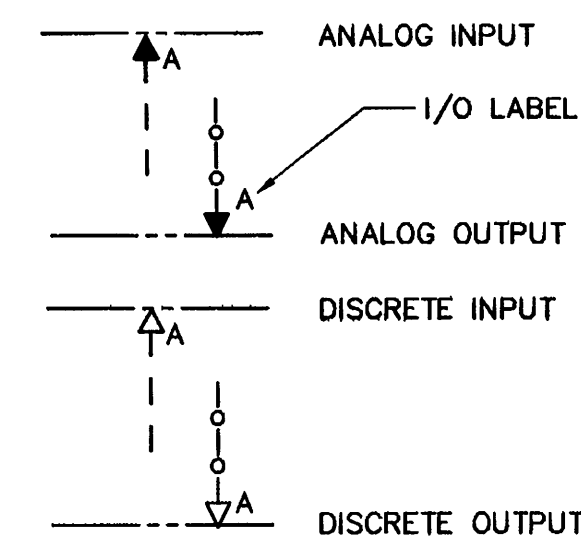


PANEL MOUNTED PILOT LIGHT WITH PANEL NUMBER DESIGNATION (i.e. xxx = 100, 200, ETC.).



INTERLOCK

I/O SYMBOLS



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Newport News, Virginia 23606

REVISIONS			
NO.	BY	DATE	REMARKS

DES B.JL/PBB
DWN J.L.C.
CKD R.C.

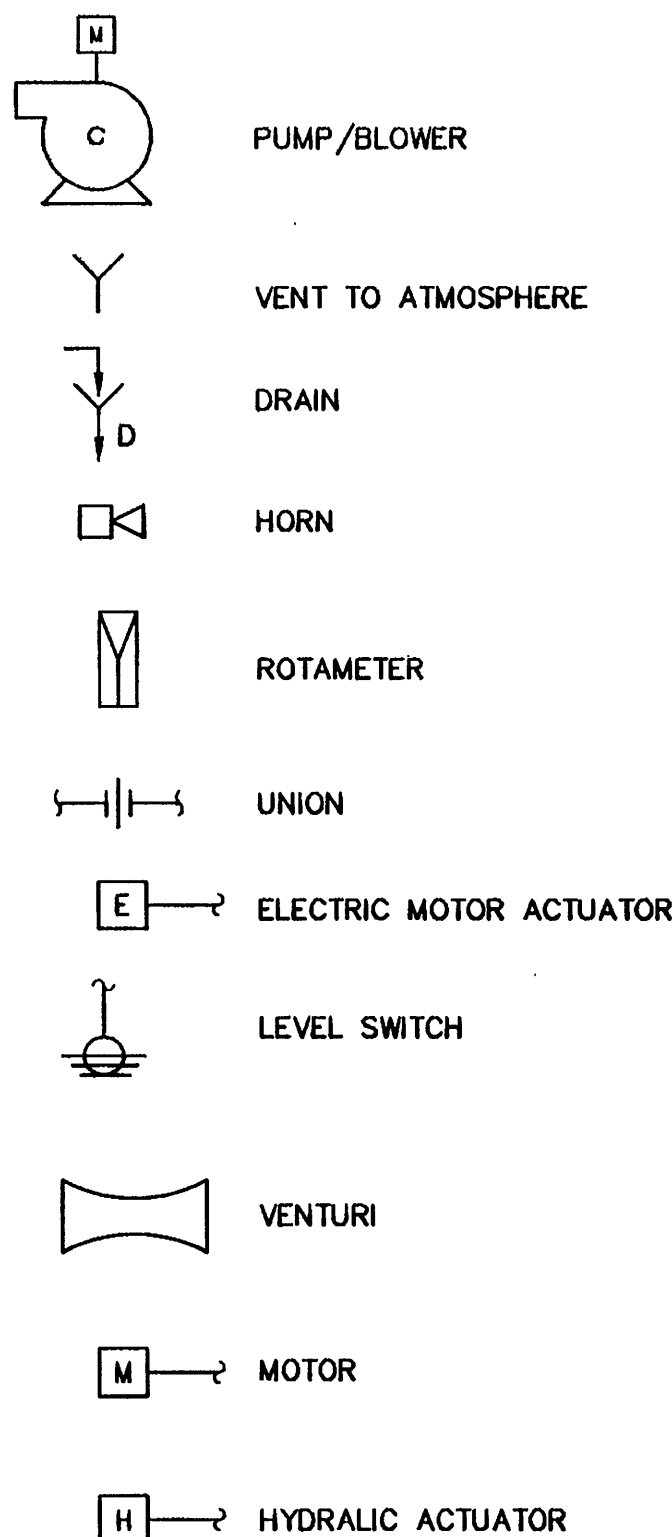


CITY OF ROANOKE, VIRGINIA WATER POLLUTION CONTROL PLANT EFFLUENT FILTER REHABILITATION

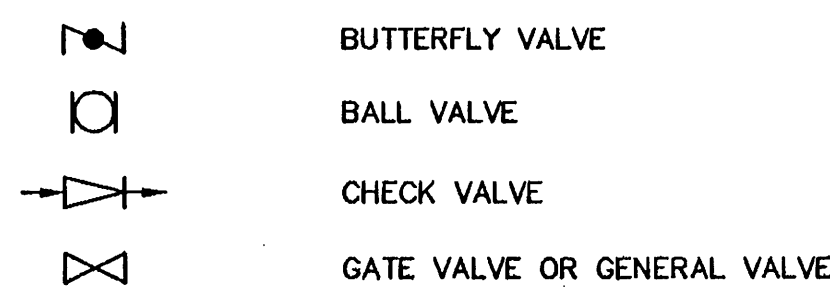
IDENTIFICATION LETTERS

	FIRST-LETTER		SUCCEEDING-LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION				
C	CONDUCTIVITY			CONTROL	CLOSED
D	DENSITY	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	GAGE		GLASS VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	MOTOR	MOMENTARY			MIDDLE, INTERMEDIATE
N	TORQUE		ISOLATE	ISOLATOR	
O			ORIFICE, RESTRICTION		OPEN
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X	INTRUSION	X-AXIS			
Y	EVENT, STATE OR PRESENCE	Y-AXIS		COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z-AXIS		DRIVER, ACTUATOR, FINAL CONTROL ELEMENT	

SYMBOLS







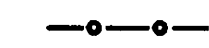
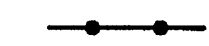

VALVE SYMBOLS



VALVES

1. ALL VALVES ARE THE SAME SIZE AS THE PIPE SIZE SHOWN UNLESS OTHERWISE NOTED.

INSTRUMENT LINE SYMBOLS

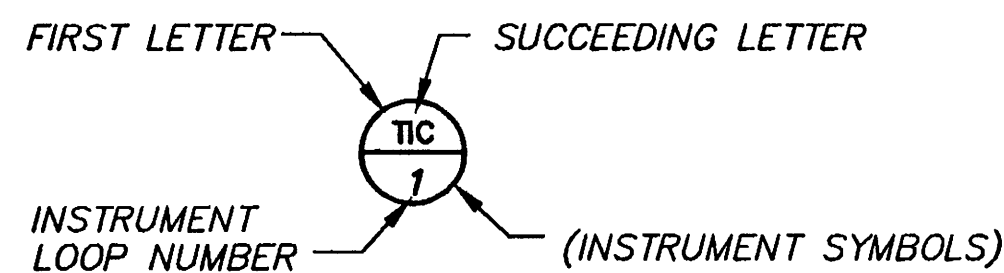
INSTRUMENT OR CONNECTION TO PROCESS (1)	
ELECTRIC SYMBOL	
ELECTROMAGNETIC OR SONIC SIGNAL (2) (GUIDED)	
ELECTROMAGNETIC OR SONIC SIGNAL (2) (NOT GUIDED)	
INTERNAL SYSTEM LINK (SOFTWARE OR DATA LINK)	
MECHANICAL LINK	
HYDRAULIC SIGNAL	

- THE FOLLOWING ABBREVIATIONS ARE USED TO DENOTE THE TYPES OF POWER SUPPLIES. THEY MAY ALSO BE USED TO DENOTE PURGE FLUID SUPPLIES.

ES - ELECTRIC SUPPLY
- ELECTROMAGNETIC PHENOMENA INCLUDE HEAT, RADIO WAVES, NUCLEAR RADIATION, AND LIGHT.

TAG NUMBERS

TYPICAL:
FORMAT TIC-X - INSTRUMENT IDENTIFICATION OR TAG NUMBER
TIC - FUNCTIONAL IDENTIFICATION
T - FIRST-LETTER
IC - SUCCEEDING-LETTER(S)
X - LOOP FILTER NUMBER



EXPANDED:
FORMAT TIC-X-Y - TAG NUMBER
X - LOOP FILTER NUMBER
Y - DEVICE SUFFIX

GENERAL ABBREVIATIONS

PLC - PROGRAMMABLE LOGIC CONTROLLER.

PROCESS PIPING ABBREVIATIONS

BWA	BACKWASH AIR
BWS	BACKWASH SUPPLY
FE	FILTER EFFLUENT

EFFLUENT FILTERS
INSTRUMENTATION
LEGEND AND ABBREVIATIONS
NOT TO SCALE

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1 SHEET 1 OF 3
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