GENERAL INSTRUMENT OR FUNCTION SYMBOLS

	PRIMARY LOCATION (b) NORMALLY ACCESSIBLE TO OPERATOR	FIELD MOUNT	AUXILIARY LOCATION (b) NORMALLY ACCESSIBLE TO OPERATOR
DISCRETE INSTRUMENTS	XXX(a)		
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

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

(XXX) 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

FY INSTRUMENT PANEL MOUNTED WITH COMPUTING OR CONVERTING FUNCTION

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

1 INTERLOCK

I/O SYMBOLS

ANALOG INPUT
I/O LABEL
ANALOG OUTPUT
DISCRETE INPUT
DISCRETE OUTPUT

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

PUMP/BLOWER
VENT TO ATMOSPHERE
DRAIN
HORN
ROTAMETER
UNION
ELECTRIC MOTOR ACTUATOR
LEVEL SWITCH
VENTURI
MOTOR
HYDRALIC ACTUATOR

VALVE SYMBOLS

BUTTERFLY VALVE
BALL VALVE
CHECK VALVE
GATE VALVE OR GENERAL VALVE

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)	—o—o—
MECHANICAL LINK	—•—•—
HYDRAULIC SIGNAL	⫞⫞

1. 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

2. 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

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SAMUEL LELAND SIMMONS
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PROFESSIONAL ENGINEER
7/13/00

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REVISIONS			
NO.	BY	DATE	REMARKS

DES BJL/PBB
DWN JLC
CKD

ROANOKE VIRGINIA, CHARTERED 1882

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

EFFLUENT FILTERS
INSTRUMENTATION LEGEND AND ABBREVIATIONS
NOT TO SCALE

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I SHEET 1 OF 3
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