INSTRUMENT IDENTIFICATION TABLE FIRST-LETTER SUCCEEDING-LETTERS MEASURED OR READOUT OR OUTPUT INITIATING VARIABLE **FUNCTION** PASSIVE FUNCTION ANALYSIS (1) ALARM BURNER, COMBUSTION CONDUCTIVITY CONTROL DENSITY VOLTAGE SENSOR (PRIMARY ELEMENT) FLOW RATE GLASS, VIEWING DEVICE HAND CURRENT (ELECTRICAL) INDICATE POWER TIME, TIME SCHEDULE CONTROL STATION LIGHT LEVEL MOISTURE OPERATING OR ON/OFF ORIFICE, RESTRICTION PRESSURE, VACUUM POINT (TEST) CONNECTION QUANTITY RECORD RADIATION SPEED, FREQUENCY SWITCH TEMPERATURE TRANSMIT MULTIVARIABLE MULTIFUNCTION MULTIFUNCTION VALVE DAMPER, LOUVER VIBRATION, MECHANICAL ANALYSIS (1) WEIGHT, FORCE UNCLASSIFIED UNCLASSIFIED UNCLASSIFIED EVENT, STATE OR PRESENCE (2) RELAY, COMPUTE, CONVERT (POSITION, DIMENSION DRIVER, ACTUATOR UNCLASSIFIED FINAL CONTROL ELEMENT

INSTRUMENT IDENTIFICATION

NOTES:

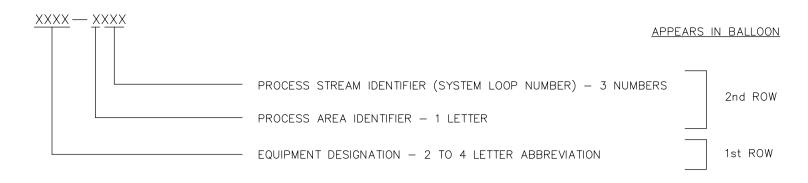
- 1. IT IS EXPECTED THAT THE TYPE OF ANALYSIS BE DEFINED OUTSIDE THE TAGGING BUBBLE.

 2. FIRST LETTER Y IS INTENDED FOR USE WHEN CONTROL OR MONITORING RESPONCES ARE EVENT DRIVEN AS OPPOSED TO TIME OR TIME—SCHEDULE DRIVEN. THE LETTER Y, IN THIS POSITION, CAN ALSO SIGNIFY PRESENCE OR STATE.
- 3. IT IS EXPECTED THAT THE FUNCTIONS ASSOCIATED WITH THE USE OF SUCCEEDING LETTER Y WILL BE DEFINED OUTSIDE THE TAGGING BUBBLE. THIS DEFINITION NEED NOT BE MADE WHEN THE FUNCTION IS SELF—EVIDENT, AS FOR A SOLINOID VALVE IN A FLUID SIGNAL LINE.

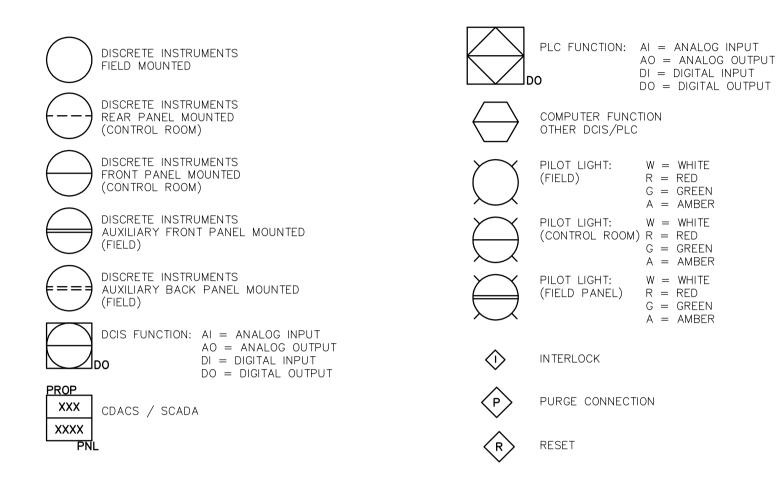
	COMMON INSTRUMENT	/ DEVICE	IDENTIFIERS
ISA IDENTIFIER	INITIATING VARIABLE AND FUNCTION	ISA IDENTIFIER	INITIATING VARIABLE AND FUNCTION
AS	ANALYSIS SWITCH	PI	PRESSURE INDICATOR
АТ	ANALYSIS TRANSMITTER	PS	PRESSURE SWITCH
CS	CONDUCTIVITY SWITCH	PT	PRESSURE TRANSMITTER
СТ	CONDUCTIVITY TRANSMITTER	SC	SPEED CONTROLLER
DS	DENSITY SWITCH	SI	SPEED INDICATOR
ET	VOLTAGE TRANSMITTER	ST	SPEED TRANSMITTER
FC	FLOW CONTROLLER	TC	TEMPERATURE CONTROLLER
FI	FLOW INDICATOR	TE	TEMPERATURE ELEMENT
FS	FLOW SWITCH	TI	TEMPERATURE INDICATOR
FT	FLOW TRANSMITTER	TS	TEMPERATURE SWITCH
FY	FLOW RELAY	TT	TEMPERATURE TRANSMITTER
FZ	FLOW DRIVE	TY	TEMPERATURE RELAY
HS	HAND SWITCH	UR	MULTIVARIABLE RECORDER
IT	CURRENT TRANSMITTER	VT	VIBRATION TRANSMITTER
JT	POWER TRANSMITTER	XX	UNCLASSIFIED
KC	TIME CONTROLLER	YC	STATE CONTROL
KI	ELAPSED TIME INDICATOR	YN	STATE ON
LI	LEVEL INDICATOR	YY	EVENT RELAY
LS	LEVEL SWITCH	YS	EVENT SWITCH
LT	LEVEL TRANSMITTER	ZS	POSITION SWITCH
LY	LEVEL RELAY	ZT	POSITION TRANSMITTER
PC	PRESSURE CONTROLLER	ZZ	POSITION DRIVE

EQUIPMENT IDENTIFICATION

IDENTIFICATION



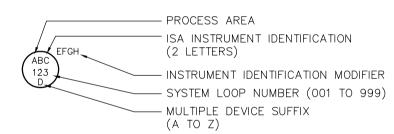
INSTRUMENT SYMBOLS



MISCELLANEOUS



INSTRUMENT DESIGNATION NUMBER



POSITION FORMATS

1. <u>PR</u>	OCESS AREA IDENTIFIER	4. PROCESS STE	REAM IDENTIFIER (SYSTEM LOOP NUMBER) - 3 DIGITS
Α	ADMINISTRATION	001 TO 059	FREEZE THAW LAGOONS ULTRAVIOLET LIGHT DISINFECTION
В	WATER TREATMENT PLANT MAIN BUILDING	060 TO 079 000 TO 999	INLET WORKS & RW PUMPING
С	CHEMICAL FEED	000 TO 999	FLOCULATION AND DAF
D	DISINFECTION	000 TO 999	OZONE
F	FILTRATION	000 TO 999	FILTRATION
Н	PLANT UTILITIES	000 TO 999	DISINFECTION
1	INLET WORKS & RW PUMPING		PLANT UTILITIES
L	FREEZE THAW LAGOONS	0 TO 99	AIR PRESSURE
М	GENERAL PLANT SERVICES/ MISCELLANEOUS	100 TO 199 200 TO 299	ELECTRICAL DISTRIBUTION BUILDING SAFETY AND SECURITY
0	OZONE	300 TO 399	SUMPS
P	FLOCULATION AND DAF	400 TO 499	FLOOD
R	RESIDUALS HANDLING	500 TO 599	FLUSH WATER
S	BULK CHEMICAL STORAGE	600 TO 699	GAS (NATURAL)
Τ	TREATED WATER & STORAGE	700 TO 749	RESIDUALS HANDLING
U	ULTRAVIOLET LIGHT DISINFECTION	750 TO 799	TREATED WATER STORAGE & PUMPING
Υ	YARD PIPING		CHEMICAL FEED
		O TO 99	CHLORINE
2. IN:	STRUMENT OR DEVICE IDENTIFICATION - 2 LETTERS	100 TO 199	AMMONIA
	REFER TO TABLE AT LEFT	200 TO 299	FLUORIDE
	REFER TO TABLE AT LEFT		MISCELLANEOUS/ GENERAL PLANT SERVICES
		001 TO 99	GENERAL
3. <u>EC</u>	<u> QUIPMENT DESIGNATION</u> — 2—4 LETTERS	100 TO 199 200 TO 299	ROADWORKS LANDSCAPE
— F	REFER TO LIST AT RIGHT		YARD LIGHTING
		400 TO 499	SITE COMMUNICATION
NOTE	:		
	_		
	NQUE PROCESS STREAM IDENTIFIER SHALL BE ASSIGNED TO TIFIER SHALL THEN BE USED FOR THE PROCESS LINE AND A		·

INSTRUMENT IDENTIFICATION MODIFIER

LSH

LEVEL SWITCH HIGH

CONDUCTIVITY ALARM HIGH

ABBREVIATIONS

DO	DISSOLVED OXYGEN	LSL	LEVEL SWITCH LOW
D/P	DIFFERENTIAL PRESSURE	MCC	MOTOR CONTROL CENTRE
FAH	FLOW ALARM HIGH	PAH	PRESSURE ALARM HIGH
FAL	FLOW ALARM LOW	PAL	PRESSURE ALARM LOW
FSH	FLOW SWITCH HIGH	рН	рН
FSL	FLOW SWITCH LOW	PSH	PRESSURE SWITCH HIGH
H/A	HAND / AUTO	PSL	PRESSURE SWITCH LOW
HOA	HAND / OFF / AUTO	RTD	RESISTIVE TEMPERATURE DEVICE
IAH	CURRENT ALARM HIGH	S/S	START / STOP
LAH	LEVEL ALARM HIGH	SEL	SELECTOR
LAL	LEVEL ALARM LOW	SOL	SOLENOID
LCP	LOCAL CONTROL PANEL	T/C	THERMOCOUPLE
LJB	LOCAL JUNCTION BOX	TAH	TEMPERATURE ALARM HIGH
L/L	LEAD / LAG	TAL	TEMPERATURE ALARM LOW
LOS	LOCK-OFF-STOP	TSH	TEMPERATURE SWITCH HIGH
L/R	LOCAL / REMOTE	TSL	TEMPERATURE SWITCH LOW
		WDG	WINDING

PROCESS LINE CODES

COMMODITY

HYDRAULIC OIL

AA	AQUA AMMONIA	HFS	HYDROFLUOSILICIC ACID
AGA	ATOMIZING AIR	HP	HYDROGEN PEROXIDE
AS	AIR SCOUR	HWR	HOT WATER RETURN
ВСТ	BOILER CHEMICAL TREATMENT	HWS	HOT WATER SUPPLY
BOL	BOILER BLOWDOWN	ITA	INSTRUMENT AIR
BFL	BOILER FEED WATER	LDC	LIQUID CAUSTIC
BLN	BLOWDOWN	LDS	LAND DRAINAGE SEWER
BW	BACKWASH SUPPLY WATER	LEF	LIME FEED
BWW	BACKWASH WASTE WATER	LGO	LUBRICATING OIL
CA	COMPRESSED AIR	LOX	LIQUID OXYGEN
CCW	CIRCULATING COOLING WATER	NLG	NATURAL GAS
CL2	CHLORINE	OF	OVERFLOW
CLG	CHLORINE GAS	OIO	OZONE-IN-OXYGEN
CLS	CHLORINE SOLUTION	OOG	OZONE OFF GAS
CO2	CARBON DIOXIDE	OW	OZONATED WATER
CRW	CLARIFIER DISCHARGE WATER	PEA	POLYELECTROLYITE ANIONIC
CS	CAUSTIC SODA	PEC	POLYELECTROLYITE CATIONIC
CWR	CHILLED WATER RETURN	PEF	PHOSPHATE FEED
CWS	CHILLED WATER SUPPLY	PEN	POLYELECTROLYITE NONIONIC
DDW	DEMINERALIZED WATER	PTW	PRE-TREATMENT WATER
DEA	DILUTE ACID	PW	POTABLE WATER
DEC	DILUTE CAUSTIC	PWD	PROCESS WASTE DRAIN
DHF	DOMESTIC HOT WATER SUPPLY	RDR	RECIRCULATED WATER
DHR	DOMESTIC HOT WATER RECIRC	RFH	REFRIGERANT HOT GAS BYPASS
DF	DAF FLOAT	RFL	REFRIGERANT LIQUID
DFR	DIESEL FUEL RETURN	RFS	REFRIGERANT SUCTION
DFS	DIESEL FUEL SUPPLY	RW	RAW WATER
DRA	DRAINAGE (FLOORS)	SAM	SAMPLE
DRN	DRAINS, CLEAN DRAINS	SAN	SANITARY
DSW	DISTILLED WATER	SCA	SULPHURIC ACID
EE	ENGINE EXHAUST	SDR	DAF RECYCLE
FC	FERRIC CHLORIDE	SEA	SERVICE AIR
FDW	FILTERED WATER	SLO	SEAL OIL
FPW	FIRE PROTECTION WATER	SLU	SLUDGE
FTW	FILTER-TO-WASTE	SN	SUPERNATANT
FW	FILTERED WATER	STM	STORMWATER DRAINAGE
G	GAS	SW	SEAL WATER
GLR	GLYCOL RETURN	TW	TREATED WATER
GLS	GLYCOL SUPPLY	VA	VACUUM LABORATORY
GOX	GASEOUS OXYGEN	VTA	VENT AIR
GSW	GENERAL SERVICE WATER	WEW	WASTEWATER

ABBREVIATIONS

MISCELLANEOUS

ACK	ACKNOWLEDGE	NO	NORMALLY OPEN
ALM	ALARM	O/A	OUTSIDE AIR
A/M	AUTO/MANUAL	0/C	OPEN/CLOSED
A/S	AIR SUPPLY	ODE	OPPOSITE DRIVE END
CURR	CURRENT	PF	POWER FACTOR
DEC	DECREASE	PO	PUMP OUT
DE	DRIVE END	PSD	PLANT SHUTDOWN
E/A	EXHAUST AIR	PV	PROCESS VARIABLE
E/S	ELECTRICAL SUPPLY	PWR	POWER
ESD	EMERGENCY SHUTDOWN	RSP	REMOTE SET POINT
FCL	FAIL CLOSE	RST	RESET
FOP	FAIL OPEN	SP	SAMPLE POINT or SET POINT
F/R	FORWARD or REVERSE		(Depending on Application)
HI	HIGH	STN	STATION
HP	HORSE POWER	SPD	SPEED
HVAC	HEATING/VENTILATION/AIR CONDITIONING	STDBY	STANDBY
IA	INSTRUMENT AIR	STP	STOP
INC	INCREASE	STR	START
INJ	INJECTOR	STS	STATUS
LO	LOW	TST	TEST
LOS	LOCAL/OFF/STOP	TYP	TYPICAL
L/R	LOCAL/REMOTE	U	ULTRA-VIOLET LIGHT
MLD	MEGALITERS PER DAY	VAC	VACUUM
NC	NORMALLY CLOSED	VIB	VIBRATION
NLL	NORMALLY LIQUID LEVEL	W/S	WATER SUPPLY
NNF	NORMALLY NO FLOW	WDG	WINDING

EQUIPMENT DESIGNATIONS

	<u>EQUIPMENT DESIC</u>	<u>SNATION</u>	<u>1S</u>
A.D.\/	AID DELEACE VALVE	DD	DDIMARY AIR COMPRESSOR
ARV	AIR RELEASE VALVE	PR	PRIMARY AIR COMPRESSOR
AB	AIR BLOWER	PRV	PRESSURE REGULATING / REDUCING VALVE
ACU	AIR CONDITIONING UNIT	PSF	POLYMER SCREW FEEDER
AD	AIR DRYER	PSV	PRESSURE / VACUUM RELIEF VALVE
AHU	AIR HANDLING UNIT	PU	PRIMARY UNIT HEATER
ATS	AUTOMATIC TRANSFER SWITCH	PV	PRESSURE VESSEL
BAT	BATTERY	R	COMPRESSOR (REFIGERANT)
BB	BASEBOARD HEATER	RV	RELIEF VALVE / RUPTURE DISC
BFP	BACK FLOW PREVENTER	S	SOLENOID ACTUATOR
BLR	BOILER	SCRB	SCRUBBER
CC	COOLING COIL	SE	SAMPLER ELEMENT
CCTV	CCTV	SF	SUPPLY FAN
CDR	CONDENSER	SP	SAMPLE PUMP
CE	CENTRIFUGE	SG	SLUICE GATE
CFR	CHEMICAL FEEDER (POLYMER, CHLORINATOR, ETC.)	SLR	SILENCER
CHLR	CHILLER	SMP	SUMP PUMP
CHR	BATTERY CHARGER	STR	STRAINER (POWER ASSISTED)
CMP	COMPRESSOR	SUB	SUBSTATION
CON	CONVEYOR	SWGR	SWITCHGEAR
CP	CONTROL PANEL	SWP	SWASH PLATE
CPU	COMPUTER	Т	TRAP
CRN	CRANE OR HOIST	TK	TANK (NON-PRESSURIZED)
CTS	CATHODIC TEST STATION	UH	UNIT HEATER (NON-ELECTRIC)
E	ENGINE	UPS	UNINTERRUPTIBLE POWER SUPPLY
EF	EXHAUST FAN	UVR	ULTRA-VIOLET LIGHT REACTOR
EPR	EVAPORATOR	VC	CHECK VALVE (POWER ASSISTED)
ETNK	EXPANSION TANK	VFD	VARIABLE FREQUENCY DRIVE
HEX	HEATER EXCHANGER	VSD	VARIABLE SPEED DRIVE
F	FAN	VLV	VALVE
FF	FORCE FLOW HEATER	WH	WATER HEATER
FAP	FIRE ALARM ANNUNICATOR PANEL	WP	WELL PUMP
FLC	FLOCCULATOR	XFMR	TRANSFORMER
GEN	GENERATOR	86	EQUIPMENT LOCKOUT RELAY
GP	GLYCOL PUMP		
НС	HEAT COIL		
HRC	HEAT RECOVERY COIL		
HTR	ELECTRIC HEATER (RESISTANCE)		
HWP	HOT WATER PUMP		
IP	CURRENT TO PRESSURE TRANSDUCER		
LOP	LUBE OIL PUMP		
M	MOTOR		
MAU	MAKE-UP AIR UNIT		
MCC	MOTOR CONTROL CENTRE		
MET	ELECTRICAL METER		
MP	METERING PUMP		
MXR	MIXER		
PP	PROCESS PUMP		
PB	PURGE BLOWER		
DDV	DIMP DISCHAPCE VALVE		

FOR INFORMATION ONLY - NOT IN CONTRACT

B.M ELE			€ CH	12M HILL	EarthTech A Tyco International Ltd. Company	ENGINEER'S SEAL	THE CITY OF WINNIPEG
				Son Cooper	UMA		Winnipeg WATER AND WASTE DEPARTMENT ENGINEERING DIVISION
			DESIGNED BY	BLM	CHECKED BY		WATER TREATMENT PLANT
			DRAWN BY	JBC	APPROVED BY		SHEET OF
			HOR. SCALE: VERTICAL SCA		RELEASED FOR CONSTRUCTION BY:	CONCULTANT DRAWING NO.	INSTRUMENTATION IDENTIFICATION CITY DRAWING NUMBER
00	ISSUED FOR TENDER (N.I.C.) 05/04/17	JBC	, verkino, ke oo,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		CONSULTANT DRAWING NO.	O. PIPING AND INSTRUMENTATION DIAGRAM
NO.	REVISIONS DATE	BY	DATE		DATE	WM-1001	

POM

PDV PUMP DISCHARGE VALVE
PF PRIMARY FAN

PRIMARY MOTOR
POLYMER BLOWER
POLYMER FEED PUMP

POLYMER MIXER

PROGRAMMABLE LOGIC CONTROLLER