PATH/FILENAME: M:\PROJECTS\WATER\60153682\0001\CADD\DWG\RECORD DRAWINGS\N_I001.DWG
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ARCH D - 5-Jan-16

INSTRUMENT TYPE IDENTIFICATION LETTERS

THIS TABLE APPLIES ONLY TO THE FUNCTIONAL IDENTIFICATION OF INSTRUMENTS

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS				
B	BURNER FLAME				
C	CONDUCTIVITY (ELECTRICAL)			CONTROL	
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL OR DIGITAL			
E	VOLTAGE (EMF)		PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G	GAGING (DIMENSIONAL)		GLASS		
H	HAND (MANUALLY INITIATED)				HIGH
I	CURRENT (ELECTRICAL)		INDICATE OR INPUT		
J	POWER	SCAN			
K	TIME OR TIME SCHEDULE			CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOISTURE OR HUMIDITY				MIDDLE OR INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE (RESTRICTION)		
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)		
Q	QUANTITY OR EVENT	INTEGRATE OR TOTALIZE			
R	RADIOACTIVITY		RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION			VALVE, DAMPER OR LOUVER	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED		UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE, OR PRESENCE			RELAY OR COMPUTE	
Z	POSITION			DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

MISCELLANEOUS ABBREVIATIONS

I/P   CURRENT TO PNEUMATIC CONVERTER
E/I   VOLTAGE TO CURRENT CONVERTER
∑   ADD OR TOTALIZE
√   SQUARE ROOT
X   MULTIPLY
÷   DIVIDE
>   HIGH SELECT
<   LOW SELECT
MV   MEASURED VARIABLE
S.P.   SET POINT
PLC   PROGRAMMABLE LOGIC CONTROLLER
f(x)   CHARACTERISTIC
P   PROPORTIONAL CONTROL MODE
D   DERIVATIVE
∫   INTEGRAL CONTROL MODE

GBT   GRAVITY BELT THICKENER
DO   DISSOLVED OXYGEN
H2S   HYDROGEN SULFIDE
O2   OXYGEN
pH   HYDROGEN ION CONCENTRATION
LP   LOCAL PANEL
VFD   VARIABLE FREQUENCY DRIVE
∆   DIFFERENCE
I/O   INPUT/OUTPUT
ER   ELECTRICAL ROOM
LEL   LOWER EXPLOSIVE LIMIT
DW   DEWATERING
OC   ODOR CONTROL
WW   WASTE WATER
MIL   MOTOR INDICATING LIGHT

SYMBOLS

HYDRAULIC CONTROL LINES
ELECTRIC INSTRUMENT LINES
PNEUMATIC SIGNAL
PROCESS FLOW
CAPILLARY TUBING
INTERNAL LINK SIGNAL
CONE CHECK VALVE
BALL CHECK VALVE
SWING CHECK VALVE
BUTTERFLY VALVE, DAMPER, OR LOUVER
PLUG VALVE
GATE VALVE
GLOBE VALVE
DIAPHRAGM VALVE
RESTRAINED FLEXIBLE COUPLING
FLOAT VALVE
3-WAY MIX VALVE
3-WAY DIVERTER VALVE
3-WAY SOLENOID VALVE
4-WAY MIX VALVE
4-WAY SOLENOID VALVE
ANGLE VALVE
SOLENOID VALVE
SELF-OPERATING BACK PRESSURE REGULATOR VALVE
SELF-OPERATING PRESSURE REGULATOR VALVE
PRESSURE REDUCING REGULATOR VALVE W/EXTERNAL PRESSURE TAP
PRESSURE RELIEF VALVE
VACUUM RELIEF VALVE
PRESSURE RELIEF VALVE
KNIFE GATE VALVE
PINCH VALVE
STOP LOG
SLUICE GATE
PREFABRICATED SLIDE GATE
MULTI-BLADE DAMPER

ACCUMULATOR
AERATOR
BAR SCREEN
CALIBRATION STANDPIPE
CHEMICAL SEAL
IN LINE SEAL (NOTE 2)
CONCENTRIC REDUCER
ECCENTRIC REDUCER
DUPLEX FILTER
DRAIN
FLEXIBLE HOSE
GRINDER
LOAD CELL
MIXER
VERTICAL SHAFT MIXER
PULSATION DAMPENER
QUICK DISCONNECT
RADIO, ULTRASONIC, OR ACOUSTIC SIGNAL
RUPTURE DISC (PRESSURE RELIEF)
RUPTURE DISC (VACUUM RELIEF)
STRAINER
CONE CHECK VALVE
DOUBLE DISC CHECK VALVE
FLAME ARRESTOR
BATCH METER

DIFFUSER
SEDIMENT & DRIP TRAP ASSEMBLY
HEAT EXCHANGER
BLOWER
CENTRIFUGAL PUMP
CYLINDER ACTUATOR
CENTRIFUGE AND SLUDGE CAKE PUMP
HAND OPERATOR
HYDRAULIC OPERATOR
MOTOR OPERATOR
PNEUMATIC OPERATOR
SOLENOID OPERATOR
DIAPHRAGM ACTUATOR WITH POSITIONER
DIAPHRAGM PUMP
HOSE PUMP
METERING PUMP
POSITIVE DISPLACEMENT BLOWER
PLUNGER PUMP
PROGRESSIVE CAVITY PUMP
PRESSURE PUMP
ROTARY LOBE PUMP
VARIABLE INLET VANE DAMPER
INSERTION MASS FLOW METER
STATIC MIXER
TANK VENT
UNION
WEIR
WEIR GATE
ACOUSTIC OR DOPPLER INLINE FLOWMETER
ROTAMETER
PARSHALL FLUME
ORIFICE PLATE
MAGNETIC FLOWMETER
INSERT FLOW ELEMENT (VENTURI)
FLOW ELEMENT (VENTURI)
FLOW RATE CONTROLLER
TERMINAL STRIP IN LOCAL PANEL FOR INTERFACE WITH COMPUTER/MUX
"V" NOTCH WEIR
"V" NOTCH WEIR

GENERAL NOTES

1. WHEN "0" IS USED AS SUCCEEDING LETTER, IT MEANS THAT THE ANALOG INPUT SIGNAL NEEDS TO BE DISPLAYED, RECORDED, TOTALIZED (FOR FLOW) AND BE SET WITH HIGH-, HIGH-HIGH, LOW-, LOW-LOW LIMITS.

2. INSTRUMENT SUFFIX:
   NUMERIC SUFFIXES IDENTIFY INSTRUMENTS WITH DIFFERENT FUNCTIONS WITH THE SAME FUNCTION (E.G., TWO L/R SWITCHES FOR DIFFERENT MOTORS IN THE SAME PANEL: HS-103-1A, HS-103-2A)

   ALPHABETIC SUFFIXES IDENTIFY MULTIPLE OCCURRENCES OF INSTRUMENTS WITH THE SAME FUNCTION (E.G., A 0/S/C SWITCH) ARE PRECEDED BY - (E.G., HS-102-1, AND HS-102-2)

   (E.G., A L/R AND A 0/S/C SWITCH) ARE PRECEDED BY - (E.G., HS-102-1A AND HS-102-2A)

INSTRUMENT SYMBOLS

(SEE LEGEND TABLE)

INSTRUMENT TYPE
LOOP IDENTIFICATION NUMBER (SEE NOTE)
MODIFIER OR HAND SWITCH POSITION SYMBOL
INSTRUMENT LOCATION
SUPPLIER (IF OTHER THEN INSTRUMENT SUPPLIER)

CONFIGURABLE FUNCTION, CRT DISPLAY OF ALARMS & STATUS
CONFIGURABLE FUNCTION, CRT DISPLAY OF CONTROL & INDICATION
CONFIGURABLE FUNCTION, NOT DISPLAYED ON CRT
FRONT PANEL MOUNTED
PANEL MOUNTED
REAR PANEL MOUNTED
FIELD MOUNTED
FIELD INDICATION
INTERLOCK
SURGE PROTECTOR - SEE SPECIFICATION
REQUIRES 120 VAC POWER SUPPLY

PLC OR DCS INPUT/OUTPUT SYMBOLS

FACILITY PREFIX
SPECIFIC LOOP NUMBER
DUPLICATE LOOP IDENTIFICATION SYMBOL
REFERENCE LOOP NUMBER
REFERENCE FACILITY
REFERENCE FACILITY IS THE SAME AS THE FACILITY PREFIX

ANALOG OUTPUT — I/O NUMBER
ANALOG INPUT — I/O NUMBER
DISCRETE INPUT — I/O NUMBER
DISCRETE OUTPUT

HAND SWITCH POSITION SYMBOLS

(UNLABELLED SWITCHES ARE TO BE ON-OFF)

A	AUTOMATIC	L	LOCAL
ALT	ALTERNATE	M	MANUAL
C	CLOSE	O	OPEN OR OFF
F	FAST OR FORWARD	R	RUN OR REMOTE
H	HAND	S/S	START/STOP
JOG	JOG	E/S	EMERGENCY STOP
SBY	STANDBY		
F/R	FORWARD/REVERSE		
L/R	LOCAL/REMOTE		
HOR	HAND-OFF-REMOTE		
HOA	HAND-OFF-AUTO		
OSC	OPEN/STOP/CLOSE		
FSR	FORWARD/STOP/REVERSE		
TSM	THRU/STOP/MIX		
OSF	OPEN/STOP/FAST		
OTC	OPEN/TRAVEL/CLOSE		

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RENOVATION OF CLEARBROOK LIFT STATION

LEGEND, ABBREVIATIONS AND GENERAL NOTES

MARK	DATE	MADE BY	CHECKED	DESCRIPTION
△1	01-2016	IPC	WCH	AS-BUILT REVISIONS PER E C PACE & CO., INC.

REVISIONS

PROJECT NO.	60153682.0001
CAD DWG FILE	N_I001
DESIGNED BY	IPC
DRAWN BY	IPC
DEPT CHECK	WCH
PROJ CHECK	DMI

DATE: JANUARY 2016   BY: IPC
DATE: JANUARY 2016
SCALE: NONE

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