IDENTIFICATION LETTERS

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	INPUT/OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		AUTO
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	COMMUNICATION			CONTROL	CLOSE
D	USER'S CHOICE	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			FAULT
G	USER'S CHOICE		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	SECURITY		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY OR EVENT	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		RUN/REMOTE
S	SPEED, FREQUENCY	SAFETY		SWITCH/STATUS	STOP
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X-AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y-AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z-AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

INSTRUMENT/DEVICE IDENTIFICATION EXAMPLES (aaa)

aaa

AIT	ANALYZER INDICATOR TRANSMITTER
FCV	FLOW CONTROL VALVE
FIT	FLOW INDICATOR TRANSMITTER
LIT	LEVEL INDICATOR TRANSMITTER
PCV	PRESSURE CONTROL VALVE
PIT	PRESSURE INDICATOR TRANSMITTER
PI	PRESSURE INDICATOR (PRESSURE GAGE)
TSH	TEMPERATURE SWITCH HIGH (HEAT DETECTOR)
TSL	TEMPERATURE SWITCH LOW (HEAT DETECTOR)
ZSC	POSITION SWITCH CLOSE (DOOR CONTACT)

VALVE FUNCTION EXAMPLES (aaa)

aaa

ZY or ZC	POSITION COMPUTE/CONVERT (CONTROL) - AO
ZT or ZI	POSITION TRANSMIT (FEEDBACK) - AI
ZCO or YSO	POSITION CONTROL OPEN - DO
ZCC or YSC	POSITION CONTROL CLOSE - DO
ZSO	POSITION STATUS OPEN - DI
ZSC	POSITION STATUS CLOSE - DI

MOTOR FUNCTION EXAMPLES (aaa)

aaa

HSA or HA	HAND STATUS AUTO (AUTO SIGNAL FROM THE HAND-OFF-AUTO SWITCH) - DI
MCR or YS	MOTOR CONTROL RUN (START) - DO
MSR or YC	MOTOR STATUS RUN - DI
MSF or YA	MOTOR STATUS FAULT (OVERLOAD) - DI
SY or SC	SPEED COMPUTE/CONVERT (CONTROL) - AO
ST or SI	SPEED TRANSMIT (FEEDBACK) - AI
TSH or YA	TEMPERATURE STATUS HIGH (THERMISTOR) - DI
LSH or YA	LEVEL STATUS HIGH (LEAKAGE IN SUBMERSIBLE PUMP SEAL) - DI

EQUIPMENT TAG

LOCALLY MOUNTED INSTRUMENT

PANEL MOUNTED INSTRUMENT

BACK OF PANEL MOUNTED INSTRUMENT

PRESSURE CONTROL VALVE LEGEND (xx)

PCV xx

PRESSURE CONTROL VALVE

SU	SUSTAINING
RD	REDUCING
RL	RELIEVING
SA	SURGE ANTICIPATING
VR	VACUUM RELIEF

ANALYZING ELEMENT/ALARM LEGEND (yy)

AE xx — AIT yy — AIT yy — AIT yy
PROCESS ANALYZER

CL2	CHLORINE
TURB	TURBIDITY
pH	pH
DO	DISSOLVED OXYGEN
CON	CONDUCTIVITY
TEMP	TEMPERATURE
PC	PARTICLE COUNT

BUILDING ANALYZING ELEMENT/ALARM LEGEND

ASy zz

BUILDING ANALYZER

y:

H	HIGH
L	LOW
F	FAULT

zz:

SMK	SMOKE
H_2S	H_2S
CH_4	METHANE
CO	CARBON MONOXIDE

FUNCTION BLOCK

aaa qq / Y XX
SINGLE SIGNAL

HMI

aaa XX
aaa XX
aaa XX
aaa qq / Y XX
MULTIPLE SIGNAL

XX:

AI	ANALOG INPUT
AO	ANALOG OUTPUT
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT

Y:

H	HART
D	DEVICE NET
C	CONTROL NET
M	MODBUS
P	PROFIBUS
E	ETHERNET

qq PLC IDENTIFIER

INTERLOCK

I / X / $
x - INTERLOCK NUMBER (IF APPLICABLE)
$ - INTERLOCK SYSTEM (IE; PLC, DCS, MCC, VFD, ETC.)

I / x / $
x - PACKAGE CONTROL INTERFACE
$ - CONTROL SYSTEM TYPE

F
FIRE SYSTEM

S
SECURITY MONITORING SYSTEM

POWER SUPPLY AND PURGE FLUIDS LEGEND

AS	AIR SUPPLY	HS	HYDRAULIC SUPPLY
IS	INSTRUMENT AIR SUPPLY	NS	NITROGEN SUPPLY
PS	PLANT AIR SUPPLY	SS	STEAM SUPPLY
ES	ELECTRICAL SUPPLY	WS	WATER SUPPLY
GS	GAS SUPPLY		

SIGNAL TYPES

PNEUMATIC SIGNAL

ELECTRICAL SIGNAL

HYDRAULIC SIGNAL

CAPILLARY TUBING (FILLED SYSTEM)

ELECTRO MAGNETIC OR SONIC SIGNAL (GUIDED)

~ ~ ~ ELECTRO MAGNETIC OR SONIC SIGNAL (NOT GUIDED)

INTERNAL SYSTEM LINK (SOFTWARE OR DATA LINK)

MECHANICAL LINK

FUNCTION SYMBOLS

XY XY

K	PROPORTIONAL	A/D	ANALOG TO DIGITAL
√	SQUARE ROOT EXTRACTOR	I/P	CURRENT TO PNEUMATIC CONVERTER
>	HIGH SELECTOR	P/I	PNEUMATIC TO CURRENT TRANSDUCER
<	LOW SELECTOR	E/P	VOLT TO PNEUMATIC TRANSDUCER
÷	DIVIDE	E/I	VOLT TO CURRENT TRANSDUCER
X	MULTIPLY	MV/I	MILLIVOLT TO CURRENT TRANSDUCER
Σ	SUMMATION	I/I	CURRENT TO CURRENT TRANSDUCER
Δ	DIFFERENCE	f(x)	NON-LINEAR OR UNSPECIFIED FUNCTION
±	BIAS	f(t)	FUNCTION OF TIME
X^n	EXPONENTIAL	REV	REVERSE
≯	HIGH LIMITING	A/M	AUTO MANUAL
∫	INTEGRAL	AVG	AVERAGE
d/dt	DERIVATIVE		

NOTES:

1. ALL ELEVATION ARE IN METERS UNLESS NOTED OTHERWISE. ALL DIMENSIONS AND PIPE SIZES ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
2. ALL ITEMS SHOWN IN BOLD INDICATE WORK TO BE DONE. ALL ITEMS SHOWN IN LIGHT INDICATED EXISTING CONDITIONS.

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

ENGINEERS GEOSCIENTISTS MANITOBA
Certificate of Authorization
MPE ENGINEERING
No. 5643

WARNING

IF POWER EQUIPMENT OR EXPLOSIVES ARE TO BE USED FOR EXCAVATION ON THIS PROJECT THE CONTRACTOR MUST:

1) NOTIFY THE GAS COMPANY OF THE PROPOSED LOCATION OF EXCAVATION.

2) TAKE PRECAUTION TO AVOID DAMAGE TO GAS COMPANY INSTALLATIONS.

SEE PROVINCIAL REGULATION 210/72 FOR DETAILS

LOCATION APPROVED
UNDERGROUND STRUCTURES

SUPV. U/G STRUCTURES COMMITTEE — DATE

NOTE:

LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

B.M.
ELEV.

NO.	REVISIONS	DATE	BY
1	ISSUED FOR TENDER	2019-09-10	M.J.B.

MPE Engineering Ltd.

DESIGNED BY	P.N.B.	CHECKED BY	XX
DRAWN BY	C.W.H.	APPROVED BY	XX
SCALE: HORIZONTAL VERTICAL		RELEASED FOR CONSTRUCTION	
DATE	2019-9-11	DATE	

PLOT DATE: 2019 09 16

ORIGINAL SEALED BY MARK J. BAKER 2019-09-16

CONSULTANT DRAWING NUMBER
P0.3

BID OPPORTUNITY: 913-2019

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

BURROWS OUTFALL GATE CHAMBER UPGRADES
INSTRUMENTATION LEGEND

CITY DRAWING NUMBER 1-03000-A0001-001
SHEET 10 OF 20

FILE PATH: N:\84\00 City of Winnipeg\002 - Burrows Outfall Gate Chamberts Upgrades\Autodesk\ACAD\
FILE NAME: P0.1 - P0.3.LEGENDS.dwg