A1 SIZE – 594mm x 841mm

VALVE SYMBOLS

- GENERIC/GATE VALVE
- BUTTERFLY
- BALL
- GLOBE
- NEEDLE
- ANGLE VALVE
- THREE WAY VALVE
- FOUR WAY VALVE (ARROWS INDICATE FAILURE OR UNACTUATED FLOW PATH)
- CHECK
- STOP CHECK
- AIR ASSISTED CHECK
- SPRING OPERATED CHECK
- COCK VALVE
- QUICK CONNECT AIR HOSE COUPLING
- PLUG VALVE
- AUTOMATIC FLOW CONTROL VALVE
- MUD VALVE
- DIAPHRAGM VALVE
- ECCENTRIC PLUG VALVE
- PINCH VALVE
- BALANCING VALVE
- ECCENTRIC ROTARY DISC VALVE
- KNIFE GATE
- GENERIC DAMPER/LOUVRE
- PARALLEL BLADE DAMPER/LOUVRE
- OPPOSED BLADE DAMPER/LOUVRE
- BACKDRAFT DAMPER

GATE SYMBOLS

- SLIDE GATE
- STOP LOG
- WEIR GATE
- SLUICE GATE
- BUTTERFLY GATE
- FLAP GATE

INSTRUMENT SYMBOLS

- DISCRETE INSTRUMENTS FIELD MOUNTED
- DISCRETE INSTRUMENTS PRIMARY LOCATION (CONTROL ROOM) FRONT PANEL MOUNTED
- DISCRETE INSTRUMENTS PRIMARY LOCATION (CONTROL ROOM) REAR PANEL MOUNTED
- DISCRETE INSTRUMENTS SECONDARY LOCATION (NORMALLY ACCESSIBLE) FRONT PANEL MOUNTED
- DISCRETE INSTRUMENTS SECONDARY LOCATION (NORMALLY ACCESSIBLE) REAR PANEL MOUNTED
- PRIMARY CONTROL SYSTEM FUNCTION
- SECONDARY OR SAFETY CONTROL SYSTEM FUNCTION PRIMARY LOCATION DATA ACCESSIBLE TO OPERATOR
- SECONDARY OR SAFETY CONTROL SYSTEM FUNCTION AUXILIARY LOCATION DATA NOT ACCESSIBLE TO OPERATOR
- SECONDARY OR SAFETY CONTROL SYSTEM FUNCTION AUXILIARY LOCATION DATA NOT ACCESSIBLE TO OPERATOR
- OTHER COMPUTER FUNCTION
- SUBCOMPONENT OR DISCRETE INSTRUMENTS FIELD MOUNTED NO LOOP IDENTIFIER
- PILOT LIGHT (FIELD)
- PILOT LIGHT (CONTROL ROOM)
- PILOT LIGHT (FIELD PANEL)
- PILOT LIGHT (FIELD PANEL, REAR MOUNTED)

W = WHITE
R = RED
G = GREEN
A = AMBER
B = BLUE
Y = YELLOW

- FC — HH, H, L, LL — PROCESS VARIABLE ALARMS
- I — INTERLOCK
- R — RESET
- AI — ANALOG INPUT
- DI — DIGITAL INPUT
- AO — ANALOG OUTPUT
- DO — DIGITAL OUTPUT

CONNECTING ARROWS

- TO/FROM 1-0102-PPID-T101 — PROCESS/SIGNAL CONTINUATION ON INDICATED DRAWING
- A — A — SIGNAL CONTINUATION ON SAME DRAWING

ACTUATOR SYMBOLS

- BALANCED DIAPHRAGM
- DIAPHRAGM OPERATED
- DIAPHRAGM OPERATED WITH POSITIONER
- DIAPHRAGM OPERATED WITH POSITIONER, FAIL CLOSE
- DIAPHRAGM OPERATED WITH POSITIONER, FAIL OPEN
- DIAPHRAGM OPERATED WITH HAND ADJUSTMENT, FAIL CLOSE
- PRESSURE REGULATOR, SELF CONTAINED
- BACK PRESSURE REGULATOR, SELF CONTAINED
- PRESSURE REGULATOR, EXTERNAL TAP
- BACK PRESSURE REGULATOR, EXTERNAL TAP
- S — SOLENOID
- M — MOTOR OPERATED
- HAND OPERATED
- CYLINDER OPERATED
- CYLINDER OPERATED WITH POSITIONER

INSTRUMENT LINE SYMBOLS

- INSTRUMENT SUPPLY OR CONNECTION TO PROCESS
- EXISTING INFRASTRUCTURE
- PNEUMATIC SIGNAL
- ELECTRIC SIGNAL
- HYDRAULIC SIGNAL
- CAPILLARY TUBE
- ELECTROMAGNETIC OR SONIC SIGNAL GUIDED
- ELECTROMAGNETIC OR SONIC SIGNAL UNGUIDED
- DATA / SERIAL LINK (OPTIONAL)

COMMUNICATIONS CODES

TYPE	DEFINITION
MB-E	MODBUS OVER ETHERNET
MB-RS	MODBUS OVER RS-485
PB-DP	PROFIBUS DP
PB-PA	PROFIBUS PA

- PRESSURE RELIEF OR SAFETY
- VACUUM RELIEF
- TEMPERATURE SAFETY VALVE
- FLOAT LEVEL VALVE

ACCESSORY DEVICE SYMBOLS

- ORIFICE PLATE
- FLANGE
- PIPE REDUCER
- THERMAL DISPERSION FLOW METER
- M — MAGNETIC FLOW METER
- E/P — VOLTAGE / PNEUMATIC RELAY
- E/I — VOLTAGE / CURRENT RELAY
- LOW LIMIT
- DRAIN
- UNION
- SPECTACLE BLIND
- TE — TEMPERATURE ELEMENT WITH THERMOWELL
- SCREWED CAP
- HOSE CONNECTION
- BLIND FLANGE
- FLEXIBLE HOSE
- EJECTOR / EDUCTOR
- IFAS MEDIA
- CORIOLIS FLOW METER
- FILTER
- EXPANSION JOINT
- VENTURI TUBE
- SINGLE PORT PITOT TUBE
- AVERAGING PITOT TUBE
- MIX TEE
- VARIABLE AREA FLOW INDICATOR (ROTAMETER)
- VORTEX FLOW METER
- DUPLEX STRAINER
- FLOW NOZZLE
- AIR INTAKE / RELEASE
- DIAPHRAGM SEAL
- AIR VENT
- AUTO AIR VENT
- PIPE INSULATION
- CALIBRATION COLUMN
- RADIANT HEATER
- C/C — COOLING COIL
- D/X — DIRECT EXPANSION (EVAPORATOR)
- H/C — HEATING COIL
- E/C — ELECTRIC HEATING COIL
- R/C — REHEAT COIL
- CONDENSOR
- T — TRAP
- S — S-TRAP PRESSURE RELIEF
- MIXER
- IN-LINE MIXER
- HYPERBOLIC MIXER
- ELECTRIC HEATER
- F — FLAME ARRESTER
- PRESSURE ARRESTER
- FLEX PIPE
- HOSE REEL
- STRAINER
- AIR FILTER
- SEWER VALVE
- HVAC DUAL DUCT TERMINAL UNIT
- EXHAUST FAN
- AXIAL FAN
- RUPTURE DISC FOR PRESSURE RELIEF
- RUPTURE DISC FOR VACUUM RELIEF
- INFRARED HEATER
- ELECTRIC MOTOR
- CENTRIFUGAL PUMP
- ROTARY DISPLACEMENT PUMP
- PROGRESSIVE CAVITY PUMP
- PERISTALTIC PUMP
- SUBMERSIBLE PUMP
- DIAPHRAGM PUMP
- METERING PUMP
- PISTON PUMP
- CENTRIFUGAL COMPRESSOR

GENERAL NOTE:

1. THIS IS A STANDARD LEGEND SHEET. THEREFORE, NOT ALL OF THE INFORMATION SHOWN MAY BE USED ON THIS PROJECT.

NOTES:

1. THIS DRAWING WAS CREATED UNDER THE IDENTIFICATION STANDARD PROJECT AS A SAMPLE DRAWING. REFERENCE THE ACTUAL P&ID DRAWINGS FOR THE SEWPCC FACILITY.
2. ITEMS SHOWN AS EXISTING ARE BASED ON AVAILABLE DOCUMENTATION AND MAY NOT ACTUALLY BE REPRESENTATIVE OF THE EXISTING INFRASTRUCTURE. THE DESIGN ENGINEER IS ONLY RESPONSIBLE FOR INFRASTRUCTURE THAT IS SHOWN AS A NEW INSTALLATION. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING THE STATE OF THE EXISTING INFRASTRUCTURE THAT MAY HAVE AN IMPACT ON THE INSTALLATION OF NEW EQUIPMENT.

APEGM Certificate of Authorization SNC-Lavalin Inc. No. 4489

NO.	REVISIONS	DATE	DESIGN	CHECK
00	ISSUED FOR CONSTRUCTION – 976-2016	2017/04/05	G.G.	J.C.

CH2MHILL. SNC·LAVALIN KGS GROUP

DESIGNED BY: G. GERMAN	CHECKED BY: M. MONTGOMERY
DRAWN BY: G. GERMAN	APPROVED BY: H.T. FREIHAMMER
SCALE: NTS	ISSUED FOR CONSTRUCTION BY: J. SHUMKA
DATE: 2017/04/05	DATE: 2017/04/05
CONSULTANT NO.: 474248	

ENGINEER'S SEAL: PROVINCE OF MANITOBA — April 5, 2017 — F. J. ABSI Member 36875 — REGISTERED PROFESSIONAL ENGINEER

THE CITY OF WINNIPEG — WATER AND WASTE DEPARTMENT

INSTRUMENTATION & CONTROLS
SEWPCC UPGRADING/EXPANSION PROJECT
PROCESS AND INSTRUMENTATION
LEGEND AND GENERAL NOTES (1)

CITY DRAWING NUMBER	SHEET	REV.	SIZE
1-0102-PPID-A001	001	00	A1

PLOT DATE: 2017\03\30 FILE NAME: 1-0102-PPID-A001-001.dgn

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