VALVE SYMBOLS ACTUATOR SYMBOLS PID STANDARDS 1. DRAWINGS UTILIZE CITY OF WINNIPEG STANDARDS FOR BORDER AND TITLE BLOCK. ALL PRESSURE RELIEF OR SAFETY DRAWINGS ARE PRODUCED ON AUTOCAD (LATEST REV., R2000 OR LATER) CHECK NORMALLY OPEN VALVE 2. ALL UNITS ARE IN METRIC. EXCEPT AS NOTED OTHERWISE. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS (mm). NORMALLY CLOSED VALVE STOP CHECK DIAPHRAGM OPERATED PRESSURE REGULATOR, SELF CONTAINED 3. DRAWING CONTENT GENERALLY CONFORMS WITH TO ISA-5.1 STANDARD. AN EXCEPTION → VACUUM RELIEF REGARDING EQUIPMENT TAGGING HAS BEEN MADE TO ALLOW BETTER CONFORMITY IN NAMING. GATE WITH HAND CONTROL AIR ASSISTED CHECK 4. PID'S INDICATE MAJOR PROCESS PIPING AND EQUIPMENT AND ASSOCIATED LOCAL INSTRUMENTATION, DCS AND OTHER PROCESS I/O. DIAPHRAGM OPERATED WITH POSITIONER 5. EQUIPMENT INCLUDING VESSELS, DRUMS, EXCHANGERS, HEATERS, PUMPS, COMPRESSORS, ETC. BUTTERFLY SPRING OPERATED CHECK BACK PRESSURE REGULATOR, SELF CONTAINED SOLENOID ACTIVATED
OF CONTROL
OF ARE ARRANGED IN SEQUENCE WITH PRINCIPLE FUNCTIONS AND FLOWS. ROTARY OR BALL 6. ALL MAJOR EQUIPMENT INCLUDING PUMPS, COMPRESSORS, TANKS, ETC. ARE LABELED AS TO COCK VALVE FUNCTION WITH DESIGN SIZES AND RATINGS. DIAPHRAGM OPERATED WITH POSITIONER, FAIL CLOSE GLOBE 7. ALL PROCESS LINES ARE LABELED ACCORDING TO FUNCTION AND SIZE UTILIZING SYSTEM CODES DEFINED HEREIN. QUICK CONNECT AIR HOSE COUPLING IN-LINE SAFETY THREE WAY SOLENOID ACTIVATED

(DIRECTLY IN THE PROCESS/ON INSTRUMENT
N.C. AIR LINE TO DIAPHRAGM OR CYLINDER VALVE) 8. EACH SYSTEM INTERCONNECTION POINT BETWEEN DRAWINGS IS LABELED WITH A SOURCE PRESSURE REGULATOR, DIAPHRAGM OPERATED WITH POSITIONER, SELF CONTAINED WITH HAND ADJUSTMENT DRAWING NUMBER OR DESTINATION DRAWING NUMBER. ARROWS ON PROCESS PIPING INDICATE **PROCESS** DIRECTION OF FLOW BETWEEN DRAWINGS. FAIL OPEN TWO VALVE MANIFOLD THREE WAY DIAPHRAGM OPERATED INSTRUMENT BACK PRESSURE REGULATOR, SELF CONTAINED FOUR WAY **PROCESS** WITH HAND ADJUSTMENT CYLINDER OPERATED \bowtie (SINGLE/DUAL) **CONNECTING ARROWS** THREE VALVE MANIFOLD DIAPHRAGM OPERATED GATE SYMBOLS TWO WAY, FAIL CLOSE PRESSURE REGULATOR, EXTERNAL TAP **INSTRUMEN** 1-0100M-G-A0001 PROCESS / SIGNAL CONTINUATION ON INDICATED DRAWING CYLINDER OPERATED WITH POSITIONER DIAPHRAGM OPERATED FLAP GATE VALVE WITH HAND ADJUSTMENT FAIL CLOSED 2—X $\sum A \rightarrow C$ SIGNAL CONTINUATION ON SAME DRAWING DOUBLE ACTING CYLINDER BACK PRESSURE REGULATOR, EXTERNAL TAP SLIDE GATE (N.C.) MOTOR OPERATED **ACCESSORY DEVICE SYMBOLS** INSTRUMENT LINE SYMBOLS IMPERIAL PIPE SIZE CHART **INSTRUMENT SYMBOLS** (METRIC EQUIVALENT) PILOT LIGHT (FIELD) INSTRUMENT SUPPLY OR CONNECTION DISCRETE INSTRUMENTS FIELD MOUNTED FILTER TO PROCESS ORIFICE PLATE HEAT EXCHANGER IN MM — PNEUMATIC SIGNAL 1/8 = 314 = 350FLANGE **EXPANSION JOINT** R = RED G = GREEN A = AMBER PILOT LIGHT (CONTROL ROOM) 1/4 = 616 = 400DISCRETE INSTRUMENTS
PRIMARY LOCATION (CONTROL ROOM)
FRONT PANEL MOUNTED ————— ELECTRIC SIGNAL PIPE REDUCER 3/8 = 1018 = 450VENTURI TUBE COOLING COIL 1/2 = 1220 = 500• L L L HYDRAULIC SIGNAL DAMPER 3/4 = 2022 = 550SINGLE PORT PILOT LIGHT (FIELD PANEL) DISCRETE INSTRUMENTS PITOT TUBE 1 = 2524 = 600PRIMARY LOCATION (CONTROL ROOM) XXXX CAPILLARY TUBE MECHANICAL COOLING $1 \ 1/4 = 32$ 26 = 650PUMP REAR PANEL MOUNTED (EVAPORATOR) 28 = 700 $1 \ 1/2 = 38$ ELECTROMAGNETIC OR SONIC 2 = 5030 = 750DISCRETE INSTRUMENTS AUXILIARY LOCATION (NORMALLY ACCESSIBLE) FRONT PANEL MOUNTED SIGNAL GUIDED INTERLOCK 2 1/2 = 6532 = 800 $\sim\sim\sim\sim$ ELECTROMAGNETIC OR SONIC BLOWER / FAN MIX TEE HEATING COIL 34 = 8503 = 75SIGNAL UNGUIDED 3 1/2 = 9036 = 900——★——★— ELECTRIC BINARY (ON/OFF) SIGNAL (OPTIONAL) RESET DISCRETE INSTRUMENTS AUXILIARY LOCATION (NORMALLY ACCESSIBLE) REAL PANEL MOUNTED 4 = 10038 = 950VARIABLE AREA FLOW INDICATOR (ROTAMETER) $4 \frac{1}{2} = 112$ 40 = 1000— XX XX XX — PNEUMATIC BINARY SIGNAL (OPTIONAL) ELECTRIC HEATING COIL 42 = 10505 = 125KEYED INTERLOCK VORTEX FLOW METER 6 = 15044 = 1100AI = ANALOG INPUT AO = ANALOG OUTPUT DI = DIGITAL INPUT DO = DIGITAL OUTPUT 46 = 1150— DATA / SERIAL LINK (OPTIONAL) 7 = 175DATA ACCESSIBLE TO OPERATOR 8 = 20048 = 1200STRAINER DUPLEX STRAINER CONDENSOR 9 = 22550 = 125052 = 130010 = 250PLC FUNCTION

AUXILIARY LOCATION

DATA NOT ACCESSIBLE TO OPERATOR

AI = ANALOG INPUT

AO = ANALOG OUTPUT

DI = DIGITAL INPUT 11 = 27554 = 1350DRAIN MIXER 12 = 300DO = DIGITAL OUTPUT CIRCUIT BREAKER PLC FUNCTION
PRIMARY LOCATION
DATA NOT ACCESSIBLE TO OPERATOR

AI = ANALOG INPUT
AO = ANALOG OUTPUT
DI = DIGITAL INPUT
DO = DIGITAL OUTPUT FLOW NOZZLE UNION PROCESS LINE DESIGNATION AIR INTAKE / RELEASE FUSED DISCONNECT TEMPERATURE ELEMENT AI = ANALOG INPUT AO = ANALOG OUTPUT DI = DIGITAL INPUT DO = DIGITAL OUTPUT SI = SERIAL INPUT SO = SERIAL OUTPUT WITH THERMOWELL STOP LOGS PROCESS LINE **FUNCTION** LINE CODE AXIAL PROPELLER PUMP - LINE SIZE AIR VENT SCREWED CAP **W** HEAT TRACING BLIND FLANGE \vdash FLAME ARRESTER PRESSURE ARRESTER ENGINEER'S SEAL FIELD BOOK #: SNC+LAVALIN 200-1600 Nasa Avenus ELEV. SNC • LAVALIN
Engineers & Constructors

SAV-1600 Nee Aver

Whitpog, Montabe
Canada RSJ 347 THE CITY OF WINNIPEG POSTED TO LBIS WATER AND WASTE DEPARTMENT DESIGNED CHECKED NORTH END WATER POLLUTION CONTROL CENTRE APPROVED PRELIMINARY PROCESS AND INSTRUMENT DIAGRAMS 03 REVISED BY EARTHTECH 05/01/21 DL released for LEGEND AND DETAILS HOR. SCALE NTS 04/11/25 CJR 02 ISSUED FOR REVIEW CONSTRUCTION VERTICAL 01 ISSUED FOR REVIEW 04/10/14 CJR CITY DRAWING NUMBER CJR DATE **2004 01 23** DATE 00 I ISSUED FOR REVIEW 04/06/01 NO. REVISIONS BY | FILENAME: 1-0100A-D-A0001-001-03D.dwg