PUMPS

- VERTICAL TURBINE PUMP (CLOSED SHAFT / OPEN SHAFT)
- CENTRIFUGAL MULTISTAGE PUMP
- RECIPROCATING PUMP
- VACUUM PUMP
- ROTARY PUMP
- PERISTALTIC PUMP
- METERING PUMP
- DUPLEX METERING PUMP
- AIR OPERATED DIAPHRAGM PUMP
- SCREW PUMP
- SUBMERSIBLE EFFLUENT PUMP
- SUMP PUMP
- SUBMERSIBLE TURBINE PUMP
- SUBMERSIBLE MULTISTAGE PUMP
- JET MIXER EJECTOR/EDUCTOR
- DRUM PUMP

COMPRESSORS

- CENTRIFUGAL COMPRESSOR
- ROTARY LOBE OR CLAW COMPRESSOR
- RECIPROCATING AIR COMPRESSOR
- SCREW AIR COMPRESSOR
- REFRIGERATED AIR DRYER
- DESICCANT DRYER

BLOWERS

- CENTRIFUGAL FAN OR BLOWER
- POSITIVE DISPLACEMENT BLOWER
- FAN

VALVES

- GATE (GAV)
- GLOBE (GLV)
- BUTTERFLY (BUV)
- BALL (BAV)
- PLUG (PLV)
- NEEDLE (NEV)
- CHECK (CHV)
- DIAPHRAGM (DIV)
- BLOCK AND BLEED (BBV)
- FLAP GATE (WFG)
- MUD (MUV)
- BLOCK (BV)
- SLIDE GATE (SGV)
- SLUICE GATE (SLV)
- PINCH (PV)
- KNIFE GATE (KGV)
- ROTARY (ROV)
- POST INDICATOR (PIV)
- UNKNOWN (UNV)
- FLOAT OPERATED
- SOLENOID
- SOLENOID 3-WAY
- SOLENOID 4-WAY
- NORMALLY OPEN (NO)
- NORMALLY CLOSED (NC)
- LOCK OPEN (LO)
- LOCK CLOSED (LC)
- CAR SEAL OPEN (CSO)
- CAR SEAL CLOSED (CSC)

ELECTRIC CONTROL VALVE ACTUATORS

- MOTORIZED VALVE
- MOTORIZED VALVE (FAIL OPEN)
- MOTORIZED VALVE (FAIL CLOSED)
- MOTORIZED VALVE (FAIL LAST)

HYDRAULIC CONTROL VALVE ACTUATORS

- DIAPHRAGM ACTUATED VALVE
- FLOW CONTROL VALVE
- DIAPHRAGM ACTUATED PRESSURE CONTROL VALVE (FLAG IN DIRECTION OF CONTROLLED PRESSURE)
- DIRECT ACTING PRESSURE CONTROL VALVE (FLAG IN DIRECTION OF CONTROLLED PRESSURE)
- DIAPHRAGM ACTUATED DIAPHRAGM VALVE C/W SOLENOID AND MICRO SWITCH

PNEUMATIC CONTROL VALVE ACTUATORS

- CYLINDER OPERATED CONTROL VALVE
- SINGLE ACTING ACTUATOR (AIR TO CLOSE)
- DOUBLE ACTING ACTUATOR
- SOLENOID ON ACTUATOR
- POSITIONER AND CYLINDER (AIR TO CLOSE) SINGLE ACTING
- POSITIONER AND CYLINDER (AIR TO OPEN) SINGLE ACTING
- POSITIONER AND CYLINDER (AIR TO AIR) DOUBLE ACTING
- ELECTRO-HYDRAULIC CONTROL VALVE
- THERMOSTATICALLY CONTROLLED VALVE

RELIEF VALVES

- AIR VACUUM (ANTI-SIPHON) (AV)
- AIR RELEASE/VACUUM (CAV)
- AIR RELEASE (ARV)
- RUPTURE DISC
- DIRECT ACTING SAFETY RELIEF VALVE (ANGLE BODY)
- DIRECT ACTING SAFETY RELIEF VALVE (GLOBE BODY)
- OPEN DRAIN TO SEWER OR FLOOR DRAIN
- MUSHROOM VENT
- GOOSENECK VENT (PIPE)

MF/UF/RO

- FOUR PORT HOUSING
- TWO PORT HOUSING
- END PORT HOUSING
- MEMBRANE MODULE

HEATING

- HEAT EXCHANGER
- TANK HEATER
- IN-LINE HEATER
- PLATE AND FRAME HEAT EXCHANGER
- DESUPERHEATER
- RADIATOR

MIXING DEVICES

- VERTICAL MIXER
- INLINE MIXER
- STATIC MIXER
- TANK MIXER
- FLOCCULATOR MIXER

FILTERS

- STRAINER "Y" TYPE
- STRAINER BASKET TYPE
- STRAINER BASKET TYPE (DUPLEX)
- FIXED SCREEN
- TRAVELING WATER SCREEN
- LINE FILTER
- PRE-FILTER
- PRE-FILTER C/W REGULATOR
- COMBINATION LINE FILTER C/W REGULATOR AND LUBRICATOR
- CENTRIFUGE

LINE IDENTIFICATION

- PRIMARY FLOW LINE
- SECONDARY FLOW LINE
- FUTURE LINE
- EXISTING LINE
- CHANNEL
- CONNECTING LINES
- CROSS OVER LINES (BREAK ALL VERTICAL LINES)
- DIRECTION OF FLOW
- DIRECTION OF SLOPE (2% SLOPE)
- INSULATION COLD OR PERSONAL PROTECTION
- INSULATION TRACE - ELECTRIC
- INSULATION TRACE - STEAM OR GLYCOL
- LINE SPECIFICATION CHANGE (A1 B1)
- SPECTACLE BLIND (SB)
- LINE CONNECTION TO ANOTHER DRAWING (DWG NO.)
- LINE CONNECTION FROM ANOTHER DRAWING (DWG NO.)

FLOW ELEMENTS

- FLUME
- WEIR
- TURBINE OR PROPELLER TYPE PRIMARY ELEMENT
- ROTAMETER TYPE FLOW INDICATOR (FI)
- PITOT TUBE OR PITOT VENTURI TUBE
- ORIFICE PLATE TYPE FLOW INDICATOR RO - RESTRICTION ORIFICE
- FLOW SIGHT GLASS (FI)
- FLOW STRAIGHTENING VANES
- VENTURI TUBE
- POSITIVE DISPLACEMENT TYPE FLOW TOTALIZING INDICATOR
- VORTEX SENSOR
- MAGNETIC FLOW METER (M)
- ULTRASONIC FLOW METER (U)
- TURBINE FLOW METER
- BACK FLOW PREVENTER

ROTATING EQUIPMENT

- COMMINUTOR
- BARMINUTOR
- BELT CONVEYOR
- SCREW CONVEYOR
- NATURAL GAS ENGINE (NG)
- DIESEL ENGINE (D)
- VARIABLE SPEED GEAR BOX (MECHANICAL)
- GEAR DRIVE

SYMBOLS

- ELECTRIC MOTOR (M)
- PNEUMATIC MOTOR (P)
- SOLENOID (S)
- I/P CONVERTOR
- SPECIALTY ITEM (SP/XX)

VESSELS/TANKS

- PRESSURE TANK
- HOPPER TANK
- DOME TANK
- OPEN TANK
- CLOSED TANK
- WASH DOWN BOWL

MISCELLANEOUS

- FIRE EXTINGUISHER
- DIAPHRAGM SEAL/GAUGE GUARD
- PULSATION DAMPENER
- SPRAY NOZZLE
- COARSE BUBBLE DIFFUSER
- FINE BUBBLE DIFFUSER
- LAUNDER DIFFUSER/COLLECTOR
- CALIBRATION COLUMN
- SACRIFICIAL ANODE
- ULTRAVIOLET REACTOR
- SILENCER (MUFFLER)
- IMPACTOR
- LEVEL SWITCH
- ULTRASONIC OR RADAR LEVEL INSTRUMENT
- INJECTION QUILL (CHEMICAL INJECTION NOZZLE)
- HOSE CONNECTION (BIBB)
- SAFETY SHOWER
- CAMLOCK CONNECTION
- EYE WASH
- SAMPLE POINT (SP)
- DRAIN POINT (DP)
- MANUAL VENT/PURGE POINT (VP)
- PIG LAUNCHER
- PIG RECEIVER

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 P0.1

Winnipeg

THE CITY OF WINNIPEG

WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

BURROWS OUTFALL GATE CHAMBER UPGRADES

EQUIPMENT LEGEND

CITY DRAWING NUMBER 1-03000-P0001-001 — SHEET 8 OF 20

BID OPPORTUNITY: 913-2019

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