

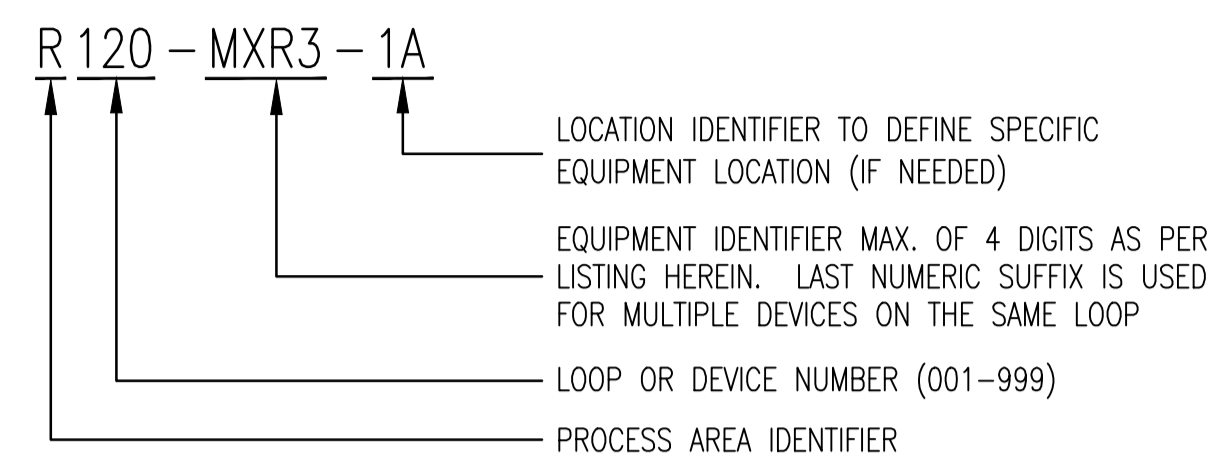
| PROCESS AREA IDENTIFIERS | |
|--------------------------|---|
| IDENTIFIER | DEFINITION |
| M | ADMINISTRATION BUILDING & SEPTAGE FACILITY |
| G | PUMP & SCREEN BUILDING, GRIT BUILDING, STANDBY GENERATOR BUILDING |
| P | PRIMARY CLARIFIERS |
| R | OXYGEN REACTORS |
| S | SECONDARY CLARIFIERS |
| B | SERVICE BUILDING, BOILERS, CHEMICAL STORAGE BUILDING |
| U | UV DISINFECTION |

| INSTRUMENT SIGNAL IDENTIFIERS | | |
|-------------------------------|---|------------------------------|
| IDENTIFIER | DEFINITION | SIGNAL TYPE |
| AA | ANALYSIS ALARM (1ST STAGE) | DIGITAL INPUT |
| AF | ANALYSIS (SAMPLER) FAIL | DIGITAL INPUT |
| AH | ANALYSIS HIGH ALARM (1ST OR 2ND STAGE) | DIGITAL INPUT |
| AM | ANALYSIS (SAMPLER) ON/OFF STATUS | DIGITAL INPUT |
| AN | ANALYSIS (SAMPLER) START | DIGITAL OUTPUT |
| AT | ANALYSIS TRANSMIT (APPLIED TO ALL TYPES OF ANALYTICAL MEASUREMENTS) | ANALOG INPUT |
| AU | ANALYSIS MULTIFUNCTION (USED FOR COMMON ANALYTICAL POINT) | DIGITAL INPUT |
| BF | BURNER FLAME FAILURE | DIGITAL INPUT |
| BL | BOILER LOW FIRE | DIGITAL INPUT |
| BH | BOILER HIGH FIRE | DIGITAL INPUT |
| BM | BURNER FLAME STATUS ON | DIGITAL INPUT |
| BS | BOILER SAFETY (BOILER FIRE ENABLED) | DIGITAL INPUT |
| DT | DENSITY TRANSMIT | ANALOG INPUT |
| ET | VOLTAGE TRANSMIT | ANALOG INPUT |
| FL | FLOW RATE LOW | DIGITAL INPUT |
| FT | FLOW TRANSMIT | ANALOG INPUT |
| GA | GAS ALARM | DIGITAL INPUT |
| HM | MANUAL STATUS ON | DIGITAL INPUT |
| LH | LEVEL HIGH | DIGITAL INPUT |
| LL | LEVEL LOW | DIGITAL INPUT |
| LT | LEVEL TRANSMIT | ANALOG INPUT |
| MF | MOTOR FAILURE | DIGITAL READOUT |
| MM | MOTOR ON/OFF STATUS | DIGITAL INPUT |
| MN | MOTOR START | DIGITAL OUTPUT |
| MO | MOTOR STOP | DIGITAL OUTPUT |
| MX | MOTOR UNCLASSIFIED (X = RESET) | DIGITAL OUTPUT |
| NA | HUMIDITY ALARM | DIGITAL INPUT |
| PA | PRESSURE ALARM (1ST STAGE) | DIGITAL INPUT |
| PH | PRESSURE HIGH ALARM (1ST OR 2ND STAGE) | DIGITAL INPUT |
| PL | PRESSURE LOW | DIGITAL INPUT |
| PT | PRESSURE TRANSMIT | ANALOG INPUT |
| QA | COMMON ALARM (OR TROUBLE) | DIGITAL INPUT |
| QF | COMMON FAIL ALARM | DIGITAL INPUT |
| SB | SPEED DECREASE | MODULATING OUTPUT |
| SD | SPEED INCREASE | MODULATING OUTPUT |
| SM | SPEED CONTROLLER STATUS | DIGITAL INPUT |
| ST | SPEED TRANSMIT | ANALOG INPUT |
| TH | TEMPERATURE HIGH | DIGITAL INPUT |
| TT | TEMPERATURE TRANSMIT | ANALOG INPUT |
| UA | MULTIFUNCTION ALARM (MULTIPLE SYSTEM ALARM-ALTERNATE SYMBOL = QA) | DIGITAL INPUT |
| VB | VALVE CLOSE (OR DECREASE) | DIGITAL OR MODULATING OUTPUT |
| VD | VALVE OPEN (OR INCREASE) | DIGITAL OR MODULATING OUTPUT |
| XA | UNCLASSIFIED ALARM (X = FIRE) | DIGITAL INPUT |
| XT | UNCLASSIFIED TRANSMIT (X = POWER FACTOR) | ANALOG INPUT |
| YK | COMPUTER/LOCAL STATION | DIGITAL INPUT |
| YM | COMPUTER OPERATIONAL | DIGITAL INPUT |
| YS | COMPUTER SWITCH STATUS | DIGITAL INPUT |
| YX | COMPUTER UNCLASSIFIED (STATUS ON) | DIGITAL INPUT |
| ZB | POSITION CLOSED (LIMIT SWITCH) | ANALOG INPUT |
| ZD | POSITION OPEN (LIMIT SWITCH) | DIGITAL INPUT |
| ZL | POSITION LOW (BELT TENSION) | DIGITAL INPUT |
| ZT | POSITION TRANSMIT | ANALOG INPUT |

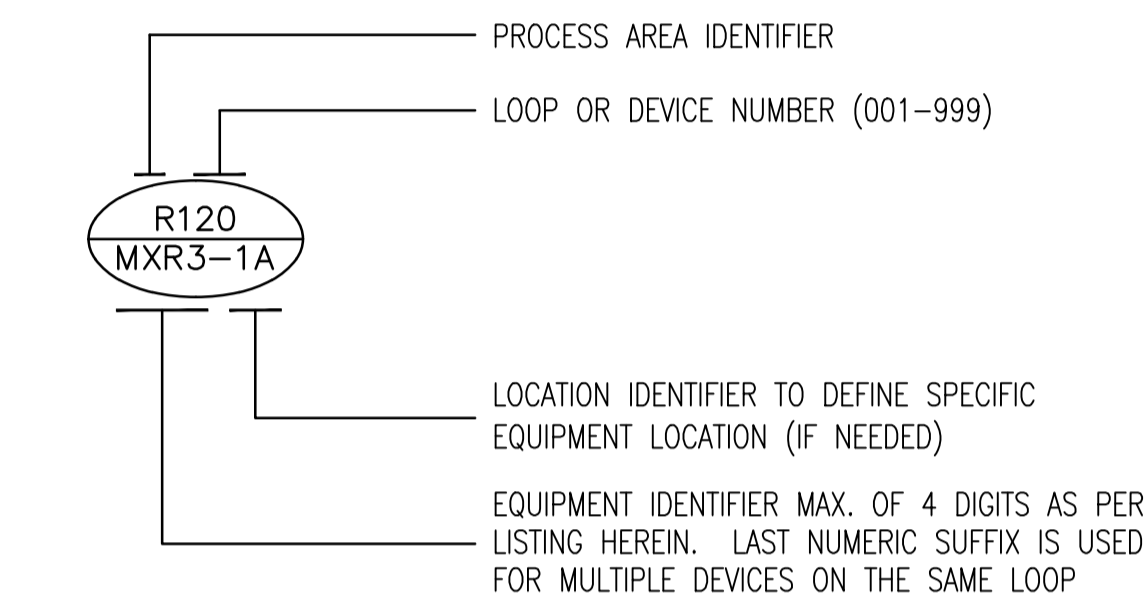
| EQUIPMENT IDENTIFIERS | |
|-----------------------|-------------------------------------|
| IDENTIFIER | DEFINITION |
| AB | AIR BLOWER |
| AC | AIR COMPRESSOR |
| ACU | AIR CONDITIONING UNIT |
| AD | AIR DRYER |
| AF | AERATION FAN (EXISTING OR NEW) |
| AHU | AIR HANDLING UNIT |
| AP | ANALYSIS/SAMPLE PUMP |
| BF | BOILER FAN (EXISTING OR NEW) |
| BP | BOILER PUMP (EXISTING OR NEW) |
| CAP | CAKE PUMP |
| CC | COOLING COIL |
| CM | CLARIFIER MECHANISM |
| CMP | COMPRESSOR |
| CON | CONVEYOR |
| CP | CIRCULATING PUMP |
| CR | CRANE OR HOIST |
| CU | CONDENSING UNIT |
| DC | DRAG CONVEYOR |
| EF | EXHAUST FAN |
| EXH | HEATER EXCHANGER |
| F OR FN | FAN |
| FE | FILTER |
| FG | FLAP GATE |
| GB | GRIT BLOWER |
| GP | GLYCOL PUMP |
| HC | HEAT COIL |
| HRC | HEAT RECOVERY COIL |
| HWP | HOT WATER PUMP |
| LOP | LUBE OIL PUMP |
| MAU | MAKE-UP AIR UNIT |
| MXR | MIXER MOTOR |
| P | PUMP |
| PB | PURGE BLOWER |
| R | COMPRESSOR (REFRIGERANT) |
| RAP | RAS PUMP |
| SC | SLUDGE COLLECTOR (TRAVELING BRIDGE) |
| SCA | SLUDGE CAKE AUGER |
| SE | SAMPLER ELEMENT |
| SFP | SLUDGE FEED PUMP |
| SG | SLUICE GATE |
| SL | STOP LOG |
| SMP | SUMP PUMP |
| SP | SCUM PUMP |
| STP | SLUDGE TRANSFER PUMP |
| SWP | SWASH PLATE |
| TD | TRUCK DOOR |
| UPS | UNINTERRUPTIBLE POWER SUPPLY |
| UH | UNIT HEATER |
| UV | ULTRAVIOLET LAMP ASSEMBLY |
| VFD | VARIABLE FREQUENCY DRIVE |
| VP | VACUUM PUMP |
| WAP | WAS PUMP |
| WP | WELL PUMP |
| W | WEIR |
| WG | WEIR GATE |

EQUIPMENT IDENTIFICATION

THE EQUIPMENT IDENTIFICATION MAY BE IN EITHER TEXT OR EQUIPMENT TAG FORMAT.



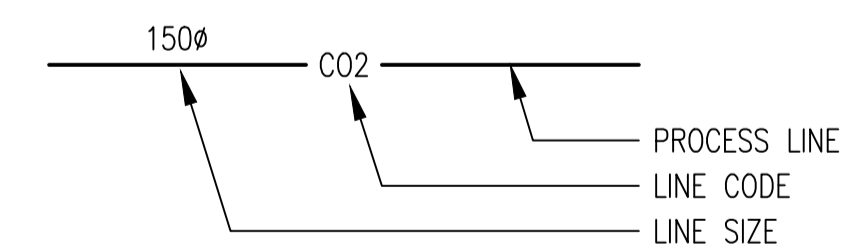
OR



IMPERIAL PIPE SIZE CHART (METRIC EQUIVALENT)

| IN | MM | IN | MM |
|-------|-------|-------|--------|
| 1/8 | = 3 | 1/4 | = 350 |
| 1/4 | = 6 | 3/8 | = 400 |
| 3/8 | = 10 | 1/2 | = 450 |
| 1/2 | = 12 | 3/4 | = 500 |
| 3/4 | = 20 | 1 | = 550 |
| 1 | = 25 | 1 1/4 | = 600 |
| 1 1/4 | = 32 | 1 1/2 | = 650 |
| 1 1/2 | = 38 | 2 | = 700 |
| 2 | = 50 | 2 1/2 | = 750 |
| 2 1/2 | = 65 | 3 | = 800 |
| 3 | = 75 | 3 1/2 | = 850 |
| 3 1/2 | = 90 | 4 | = 900 |
| 4 | = 100 | 4 1/2 | = 950 |
| 4 1/2 | = 112 | 5 | = 1000 |
| 5 | = 125 | 5 1/2 | = 1050 |
| 5 1/2 | = 140 | 6 | = 1100 |
| 6 | = 150 | 6 1/2 | = 1150 |
| 6 1/2 | = 175 | 7 | = 1200 |
| 7 | = 200 | 7 1/2 | = 1250 |
| 7 1/2 | = 225 | 8 | = 1300 |
| 8 | = 250 | 8 1/2 | = 1350 |
| 8 1/2 | = 275 | 9 | = 300 |
| 9 | = 300 | | |

PROCESS LINE DESIGNATION



| PROCESS LINE CODES | |
|--------------------|----------------------------------|
| IDENTIFIER | DEFINITION |
| AC | ALTERNATING CURRENT (ELECTRICAL) |
| ALP | LOW PRESSURE AIR |
| CA | COMPRESSED AIR |
| CDW | COLD DOMESTIC WATER |
| CE | CENTRATE |
| CG | CALIBRATION GAS |
| CHWR | CHILLED WATER RETURN |
| CHWS | CHILLED WATER SUPPLY |
| CL | CHLORINE |
| CLR | COMPRESSED LIQUEFIED REFRIGERANT |
| CO2 | CARBON DIOXIDE |
| CON | CONDENSATE |
| CS | SLUDGE CAKE |
| CWR | COOLING WATER RETURN |
| CWS | COOLING WATER SUPPLY |
| DGH | HIGH PRESSURE DIGESTER GAS |
| DL | DECANT LIQUOR |
| DP | DRY POLYMER |
| EDR | EVAPORATED REFRIGERANT |
| ES | ELECTRICAL SUPPLY |
| FE | FINAL EFFLUENT |
| FW | FLUSHING WATER |
| GE | GRIT EFFLUENT |
| GR | GLYCOL RETURN |
| GS | GLYCOL SUPPLY |
| HCO | HYDRAULIC OIL |
| HDW | HOT DOMESTIC WATER |
| HFW | HOT FLUSHING WATER |
| HWR | HOT WATER RETURN |
| HWS | HOT WATER SUPPLY |
| HYD | HYDROGEN |
| IAS | INSTRUMENT AIR SUPPLY |
| LCP | LIQUID CONCENTRATED POLYMER |
| LGO | LUBRICATING OIL |
| LPS | LOW PRESSURE STEAM |
| ML | MIXED LIQUOR |
| MP | MIXED POLYMER |
| N2 | NITROGEN |
| NLG | NATURAL GAS |
| O2 | OXYGEN |
| PD | PROCESS DRAIN |
| PE | PRIMARY EFFLUENT |
| PO | PROCESS OVERFLOW |
| PS | PRIMARY SLUDGE |
| PV | PROCESS VENT |
| PW | POTABLE WATER |
| RAS | RETURN ACTIVATED SLUDGE |
| RW | RECIRCULATED WATER |
| RS | RAW SEWAGE |
| SE | SECONDARY EFFLUENT |
| SEA | SERVICE AIR |
| SC | SCUM |
| SW | SEAL WATER |
| TS | THIN SLUDGE |
| VMA | VACUUM AIR |
| VTA | VENT TO ATMOSPHERE |
| W | WATER |
| WA | WASTE AIR |
| WAS | WASTE ACTIVATED SLUDGE |



| NO. | REVISIONS | DATE | DESIGN | CHECK |
|-----|---|------------|--------|-------|
| 01 | ORIGINAL DRAWING NUMBER WAS 1-0102A-D-A0001-003 | 2010/03/03 | - | SW |
| 00 | ISSUED FOR CITY USE | 2007/02/26 | - | EFB |

| | |
|---|-------------------------------|
| SNC-LAVALIN INC. 148 Nature Park Way Winnipeg, MB, Canada R3P 0X7 204-786-8080 | |
| DESIGNED BY: EMR | CHECKED BY: EFB |
| DRAWN BY: DS | APPROVED BY: CJR |
| SCALE: NTS | RELEASED FOR CONSTRUCTION BY: |
| DATE: 2004/01/23 | DATE: |
| CONSULTANT NO.: 112577-0112-49DD-0102 | |

ENGINEER'S SEAL

FOR REFERENCE ONLY

| | | | |
|--|-------|------|------|
| THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT | | | |
| SOUTH END WATER POLLUTION CONTROL CENTRE | | | |
| PROCESS AND INSTRUMENT DIAGRAM LEGEND AND DETAILS | | | |
| CITY DRAWING NUMBER | SHEET | REV. | SIZE |
| 1-0102A-A0001 | 003 | 01 | A1 |