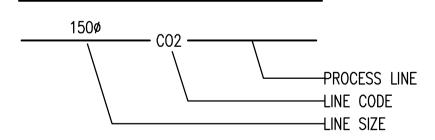
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DENTIFIER	QUIPMENT IDENTIFIERS  DEFINITION
AB	+
AB AC	AIR BLOWER AIR COMPRESSOR
ACU	AIR CONDITIONING UNIT
AD	AIR DRYER
AEF	AXIAL EXHAUST FAN
AF AHU	AERATION FAN (EXISTING OR NEW)  AIR HANDLING UNIT
AP AP	ANALYSIS/SAMPLE PUMP
BD	BACK DRIVE
BF	BOILER FAN (EXISTING OR NEW)
BFP	BACKFLOW PREVENTER
BP	BOILER PUMP (EXISTING OR NEW)
CA	CAKE AGITATOR
CAP	CAKE PUMP
CC CE	COOLING COIL CENTRIFUGE
CFP	CHEMICAL FEED PUMP
СМ	CLARIFIER MECHANISM
CMP	COMPRESSOR
CON	CONVEYOR
CP	CIRCULATING PUMP
CR	CRANE OR HOIST
CU DC	CONDENSING UNIT DRAG CONVEYOR
DF	DIGESTER FAN (EXISTING OR NEW)
DP	DIGESTER PUMP (EXISTING OR NEW)
DR	DIGESTER COMPRESSOR (EXISTING OR NEW)
DU	DIGESTER UNIT HEATER (EXISTING OR NEW)
DWP	DEWATERING PUMP
EF 	EXHAUST FAN
ET EW	EXPANSION TANK
EW EXH	EYEWASH HEATER EXCHANGER
F OR FN	FAN
FE FE	FILTER
FG	FLAP GATE
FIL	FILTER STRAINER
GB	GRIT BLOWER
GP	GLYCOL PUMP
HC	HEATING COIL
HRC HRV	HEAT RECOVERY COIL HEAT RECOVERY VENTILATOR
HWP	HOT WATER PUMP
HWT	HOT WATER TANK
М	MOTOR
MAU	MAKE-UP AIR UNIT
MXR	MIXER MOTOR
P	PUMP
PB PF	PURGE BLOWER PRIMARY FAN (EXISTING OR NEW)
PM	PRIMARY MOTOR
POD	POLYMER BLOWER
POF	POLYMER FEED PUMP
POM	POLYMER MIXER
PP	PRIMARY PUMP (EXISTING OR NEW)
PR	PRIMARY AIR COMPRESSOR
PSF PU	POLYMER SCREW FEEDER PRIMARY UNIT HEATER (EXISTING OR NEW)
R PU	COMPRESSOR (REFRIGERANT)
RAP	RAS PUMP
RH	RADIANT HEATER
S	SAMPLER
SF	SCREW FEEDER
SC	SLUDGE COLLECTOR (TRAVELING BRIDGE)
SCA SE	SLUDGE CAKE AUGER
SE SFP	SAMPLER ELEMENT SLUDGE FEED PUMP
SG	SLUICE GATE
SL	STOP LOG
SLP	PRIMARY SLUDGE PUMP
SMP	SUMP PUMP
SP	SCUM PUMP
SST	SLUDGE STORAGE TANK
ST	STRAINER DUMP
STP UPS	SLUDGE TRANSFER PUMP UNINTERRUPTIBLE POWER SUPPLY
UH	UNIT HEATER
VFD	VARIABLE FREQUENCY DRIVE
VP	VACUUM PUMP
WAP	WAS PUMP
WD	WELL PUMP
WP W	WEIR

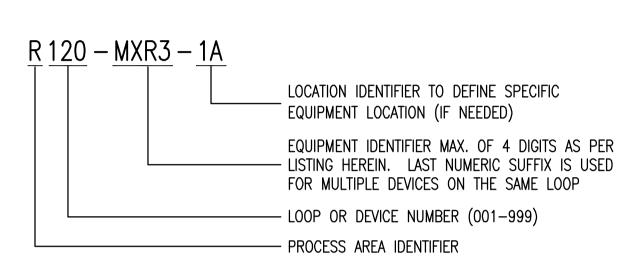
	INSTRUMENT SIGNAL	IDENTIFIERS
IDENTIFIER	DEFINITION	SIGNAL TYPE
AA	ANALYSIS ALARM (1ST STAGE)	DIGITAL INPUT
AF	ANALYSIS (SAMPLER) FAIL	DIGITAL INPUT
AH	ANALYSIS HIGH ALARM (1ST OR 2ND STAGE)	DIGITAL INPUT
AM	ANALYSIS (SAMPLER) ON/OFF STATUS	DIGITAL INPUT
AN	ANALYSIS (SAMPLER) START	DIGITAL OUTPUT
AT	ANALYSIS TRANSMIT (APPLIED TO ALL TYPES	ANALOG INPUT
	OF ANALYTICAL MEASUREMENTS)	
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
ВМ	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
НМ	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
ММ	MOTOR ON/OFF STATUS	DIGITAL INPUT
MN	MOTOR START	DIGITAL OUTPUT
МО	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
Π	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
	. 555	

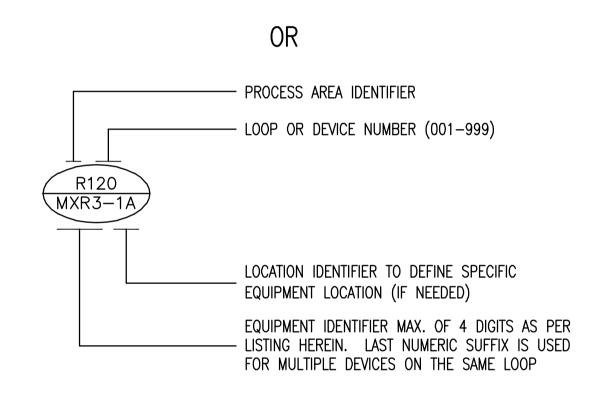
## PROCESS LINE DESIGNATION



PROCESS AREA IDENTIFIERS				
IDENTIFIER	DEFINITION			
В	BOILERS			
С	CENTRATE NITROGEN REMOVAL			
D	DIGESTERS			
G	PRE-AERATION AND GRIT REMOVAL			
Н	H SLUDGE GAS			
М	M MAIN BUILDING			
Р	PRIMARY CLARIFIERS			
R	OXYGEN REACTORS			
S	SECONDARY CLARIFIERS			
T	T WAS SLUDGE THICKENING			
U	U UV DISINFECTION			
W	W SLUDGE DEWATERING			
X	LEACHATE BUILDING			
Y	HAULED WASTEWATER BUILDING			

## **EQUIPMENT IDENTIFICATION**





## IMPERIAL PIPE SIZE CHART (METRIC EQUIVALENT)

IN MM	IN MM	IN	ММ
1/8 = 3	6 = 150	30 =	
1/4 = 6	7 = 175	32 =	800
3/8 = 10	8 = 200	34 =	850
1/2 = 12	9 = 225	36 =	900
3/4 = 20	10 = 250	38 =	950
1 = 25	11 = 275	40 =	1000
$1 \ 1/4 = 32$	12 = 300	42 =	1050
$1 \ 1/2 = 38$	14 = 350	44 =	1100
2 = 50	16 = 400	46 =	1150
2 1/2 = 65	18 = 450	48 =	1200
3 = 75	20 = 500	50 =	1250
3 1/2 = 90	22 = 550	52 =	1300
4 = 100	24 = 600	54 =	1350
4 1/2 = 112	26 = 650		
5 = 125	28 = 700		

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		
C02	CARBON DIOXIDE		
CON	CONDENSATE		
CS	SLUDGE CAKE		
CWR	COOLING WATER RETURN		
CWS	COOLING WATER SUPPLY		
DGH	HIGH PRESSURE DIGESTER GAS		
DL	DECANT LIQUOR		
DS	DIGESTERD SLUDGE		
EDR	EVAPORATED REFRIGERANT		
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 LE	LIQUID CONCENTRATED POLYMER		
LGO	LEACHATE LUBRICATING OIL		
LPS	LOW PRESSURE STEAM		
ML	MIXED LIQUOR		
MP	MIXED POLYMER		
N2	NITROGEN		
NLG	NATURAL GAS		
02	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		
SD	SUMP DISCHARGE		
SW	SEAL WATER		
	THIN SLUDGE		
TS			
TS VMA	VACUUM AIR		
	VACUUM AIR VENT TO ATMOSPHERE		
VMA			
VMA VTA	VENT TO ATMOSPHERE		

PROCESS LINE CODES

METRIC						
WHOLE NUMBERS INDICATE MILLIMETRES DECIMALIZED NUMBERS INDICATE METRES						



LOCATION APPROVED UNDERGROUND STRUCTURES		B.M. ELEV.			96	Stante	Stantec Consulting Ltd.		
SUPV. U/G STRUCTURES DATE					Stantec	T-1 204 40	ley Street, Winnip 89–5900 Fax 20	oeg, Manitoba 14-453-9012	
NOTE:					DESIGNED BY	B.S.J.	CHECKED BY	S.T.	]
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					DRAWN BY	D.K.G.	APPROVED BY	S.K.B.	]
THAT THE GIVEN LOCATIONS ARE EXACT.  CONFIRMATION OF EXISTENCE AND EXACT  LOCATION OF ALL SERVICES MUST BE	2.	ISSUED FOR TENDER	12.11.01	D.K.G.		_	RELEASED FOR CONSTRUCTION:		
OBTAINED FROM THE INDIVIDUAL UTILITIES		ISSUED FOR 60% REVIEW	12.07.25	D.K.G	VERTICAL:				BID
BEFORE PROCEEDING WITH CONSTRUCTION.	NO.	REVISIONS	DATE	BY	DATE 2012.0	1.23	DATE		

		9 A	Stante	c Consult	ting Ltd.	ENGINEER'S SEAL	
		Stantec		ey Street, Winni <sub>l</sub> 39-5900 Fax 20		ORIGINAL	
		DESIGNED BY	B.S.J.	CHECKED BY	S.T.	SEALED BY B.S. JANZ	
		DRAWN BY	D.K.G.	APPROVED BY	S.K.B.	P. ENG.	
11.01	D.K.G.	HOR. SCALE: VERTICAL:	-	RELEASED FOR CONSTRUCTION:		12/10/31 BID OPPORTUNITY NO.	
07.25	D.K.G	VERTICAL.				BID OPPORTUNITY NO.	
ATE	BY	DATE 2012.01.23		DATE			

NEER'S SEAL ORIGINAL

SEALED BY B.S. JANZ P. ENG.

Winnipeg

THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE REHABILITATION OF DIGESTER No., II, SLUDGE HOLDING TANKS No. 5 AND No. 7

PROCESS & INSTRUMENTATION DIAGRAM LEGEND AND DETAILS-3 I-0101D-A0081-003 29 20

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