

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

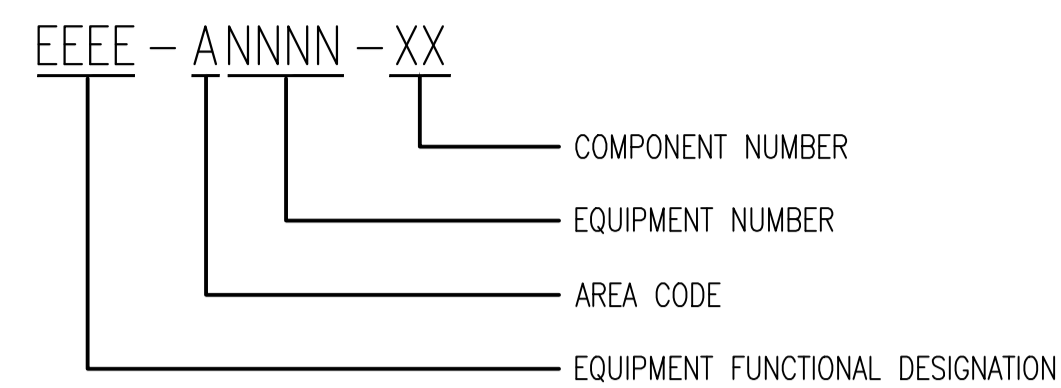
PROCESS AREA IDENTIFIERS	
IDENTIFIER	DEFINITION
A	GENERAL
B	EXISTING BOILER BUILDING
C	CENTRATE TREATMENT FACILITY
D	*EXISTING DIGESTER
D	ANAEROBIC DIGESTION FACILITY
E	ELECTRICAL BUILDING
F	FERRIC CHLORIDE RECEIVING AND STORAGE FACILITY
G	*EXISTING PRE-AERATION AND GRIT REMOVAL BUILDING
G	STANDBY POWER GENERATION FACILITY
H	HEADWORKS FACILITY
J	FERMENTATION AND PHOSPHOROUS RELEASE FACILITY
K	DISASTER GAS HANDLING FACILITY
M	ADMINISTRATION AND MAIN BUILDING
N	HAULED RAW SLUDGE RECEIVING FACILITY

PROCESS AREA IDENTIFIERS (cont'd)	
IDENTIFIER	DEFINITION
p	PRIMARY CLARIFICATION FACILITY
Q	WET WEATHER SLUDGE STORAGE FACILITY
R	*EXISTING HPO REACTORS
R	BIOLOGICAL NUTRIENT REMOVAL FACILITY
S	*EXISTING SECONDARY CLARIFIERS
S	SECONDARY CLARIFICATION FACILITY
T	PRE-DIGESTION SLUDGE TREATMENT FACILITY
U	UV DISINFECTION FACILITY
V	BIOSOLIDS PROCESSING AND LOADING FACILITY
X	HAULED WASTEWATER RECEIVING FACILITY
Y	YARD
Z	MAINTENANCE FACILITY

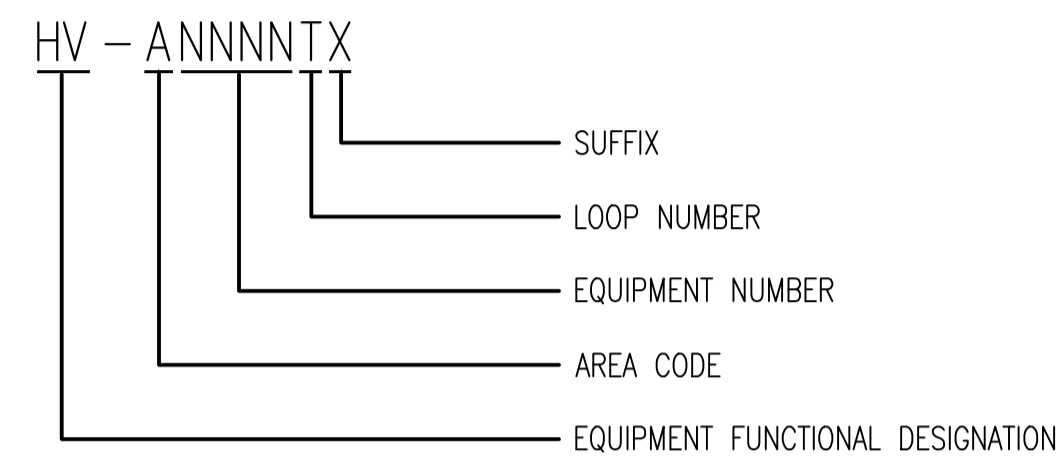
FLUID COMMODITY CODES	
IDENTIFIER	DEFINITION
AC	ALTERNATING CURRENT (ELECTRICAL)
CCW	CIRCULATING COOLING WATER
CE	CENTRATE
CL2	CHLORINE
CLR	COMPRESSED LIQUEFIED REFRIGERANT
CO2	CARBON DIOXIDE
CON	CONDENSATE
CS	COMBINED SEWER
CWR	COOLING WATER RETURN
CWS	COOLING WATER SUPPLY
DCW	DOMESTIC COLD WATER
DG	DIGESTER GAS
DGH	HIGH PRESSURE DIGESTER GAS
DHR	DOMESTIC HOT WATER RETURN
DHW	DOMESTIC HOT WATER
DL	DECANT LIQUOR
DS	DIGESTER SLUDGE
DP	DRY POLYMER
EDR	EVAPORATED REFRIGERANT
ES	ELECTROLYTE SOLUTION
FC	FERRIC CHLORIDE
FE	FINAL EFFLUENT
FSW	FLUSHING WATER
GE	GRIT EFFLUENT
GR	GLYCOL RETURN
GS	GLYCOL SUPPLY
HCO	HYDRAULIC OIL
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
H2	HYDROGEN
IAS	INSTRUMENT AIR SUPPLY
LCP	LIQUID CONCENTRATED POLYMER
LGO	LUBRICATING OIL
ML	MIXED LIQUOR
MP	MIXED POLYMER
N2	NITROGEN
NG	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	RAW WATER
RS	RAW SEWAGE
SE	SECONDARY EFFLUENT
SEA	SERVICE AIR
SC	SCUM
SHD	SODIUM HYDROXIDE
SW	SEAL WATER
TS	THIN SLUDGE
VAC	VACUUM AIR
VTA	VENT TO ATMOSPHERE
W	WATER
WAS	WASTE ACTIVATED SLUDGE

EQUIPMENT IDENTIFICATION

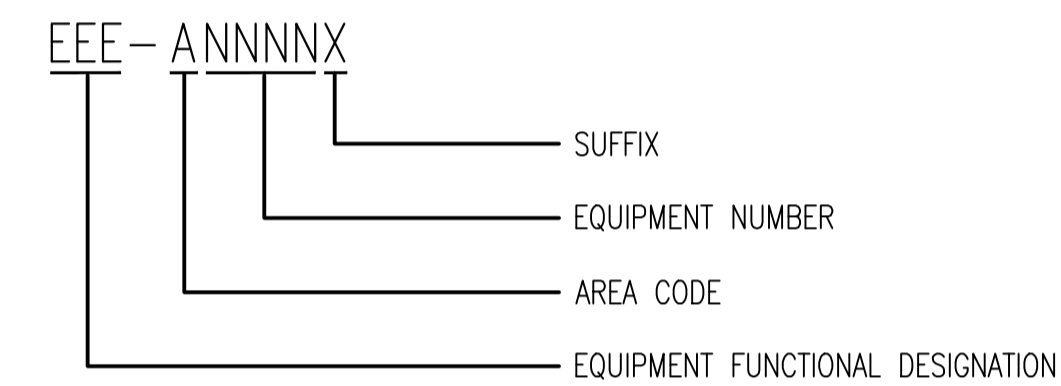
THE EQUIPMENT IDENTIFICATION MAY BE IN EITHER TEXT OR EQUIPMENT TAG FORMAT.



MANUAL VALVE IDENTIFICATION



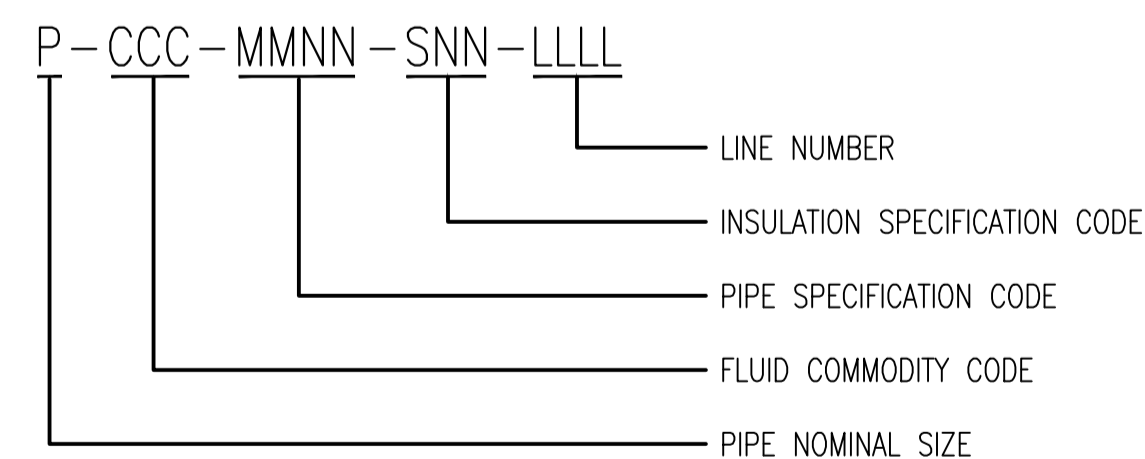
MISCELLANEOUS PIPING EQUIPMENT IDENTIFICATION



IMPERIAL PIPE SIZE CHART (METRIC EQUIVALENT)

IN	MM	IN	MM
1/8	= 3	20	= 500
1/4	= 6	22	= 550
3/8	= 10	24	= 600
1/2	= 15	26	= 650
3/4	= 20	28	= 700
1	= 25	30	= 750
1 1/4	= 32	32	= 800
1 1/2	= 40	34	= 850
2	= 50	36	= 900
2 1/2	= 65	38	= 950
3	= 80	40	= 1000
4	= 100	42	= 1050
5	= 125	44	= 1100
6	= 150	46	= 1150
8	= 200	48	= 1200
10	= 250	50	= 1250
12	= 300	52	= 1300
14	= 350	54	= 1350
16	= 400		
18	= 450		

PROCESS LINE DESIGNATION



EQUIPMENT IDENTIFIERS	
IDENTIFIER	DEFINITION
AC	AIR COMPRESSOR
ACU	AIR CONDITIONING UNIT
AD	AIR DRYER
AF	AERATION FAN (EXISTING OR NEW)
AHU	AIR HANDLING UNIT
B	AIR BLOWER
BD	BALANCE DAMPER
BF	BOILER FAN (EXISTING OR NEW)
BP	BOILER PUMP (EXISTING OR NEW)
CA	CAKE AGITATOR
CAP	CAKE PUMP
CC	COOLING COIL
CE	CENTRIFUGE
CM	CLARIFIER MECHANISM
CMP	COMPRESSOR
CNV	CONVEYOR
CP	CIRCULATING PUMP
CU	CONDENSING UNIT
DC	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
EXH	HEATER EXCHANGER
F OR FN	FAN
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
PF	PRIMARY FAN (EXISTING OR NEW)
PM	PRIMARY MOTOR
POD	POLYMER BLOWER
POF	POLYMER FED PUMP
POM	POLYMER MIXER
PP	PRIMARY PUMP (EXISTING OR NEW)
PR	PRIMARY AIR COMPRESSOR
PSF	POLYMER SCREW FEEDER
PU	PRIMARY UNIT HEATER (EXISTING OR NEW)
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
SLP	PRIMARY SLUDGE PUMP
SMP	SUMP PUMP
SP	SCUM PUMP
STP	SLUDGE TRANSFER PUMP
SWP	SWASH PLATE
TD	TRUCK DOOR
TK	TANK
UPS	UNINTERRUPTIBLE POWER SUPPLY
UV	ULTRAVIOLET LAMP ASSEMBLY
VFD	VARIABLE FREQUENCY DRIVE
WAP	WAS PUMP
WP	WELL PUMP
W	WEIR
WG	WEIR GATE



NO.	REVISIONS	DATE	DESIGN	CHECK
00	ISSUED FOR CONSTRUCTION	2026-04-02		

KGS GROUP

DESIGNED BY: N. RUSSI
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APPROVED BY: P. SILVA

SCALE: NTS
ISSUED FOR CONSTRUCTION BY: DATE:

DATE: 2026-02-27

CONSULTANT NO.: 25-0107-017_M4-03

ENGINEER'S SEAL

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

NORTH END SEWAGE TREATMENT PLANT (NEWPC)
SLUDGE CAKE PUMP UPGRADE
MECHANICAL
PROCESS AND INSTRUMENTATION DIAGRAM
LEGENDS AND DETAILS (SHEET 3 OF 3)

CITY DRAWING NUMBER: 1-0101-PAAA-W001
SHEET: 003
REV: 00
SIZE: A1