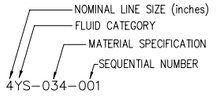
PIPING SYMBOLS

- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- FIGURE 8 BLIND (OPEN POSITION)
- SPADE BLIND
- SPACER
- WELD CAP
- THREADED CAP
- THREADED PLUG
- BLIND FLANGE
- "Y" STRAINER
- "T" STRAINER
- HOSE FITTING
- FLEXIBLE HOSE
- EXPANSION JOINT (OR FLEXIBLE JOINT)
- OPEN DRAIN
- CLOSED DRAIN
- CONE STRAINER (T) — T : DENOTES TEMPORARY; B : DENOTES BASKET
- FLAT STRAINER
- BATH TUB STRAINER
- TRAP
- FLAME ARRESTOR
- SAFETY SHOWER
- EYE WASH
- SIGHT FLOW INDICATOR
- EJECTOR
- VENT WITH PROTECTIVE CAP

PIPING LETTER NOTATIONS

MO	MANUAL OVERIDE
LO	LOCK OPEN
LC	LOCK CLOSED
CO	CLEAN OUT
NO	NORMALLY OPEN OR
NC	NORMALLY CLOSED OR
QD	QUICK DISCONNECT
SO	STEAM OUT
SC	SAMPLE CONNECTION
TSO	TIGHT SHUT OFF
U/G	UNDERGROUND
WCV	WAFER CHECK VALVE

LINE NUMBER NOMENCLATURE



(TYPICAL LINE NUMBER)

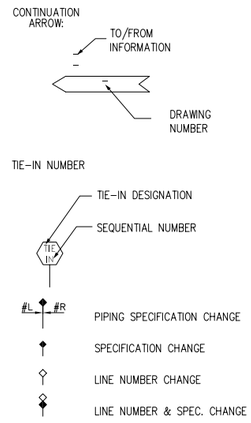
FLUID CATEGORY LIST

AC	COMPRESSED AIR
AI	INSTRUMENT AIR
DS	DRAIN/SUMP
RF	FLOCCULANT
RR	RETARDANT
VA	VACUUM
WF	FRESH WATER
WR	RECYCLE WATER
WG	SEAL WATER
YF	FILTRATE
YS	SLURRY

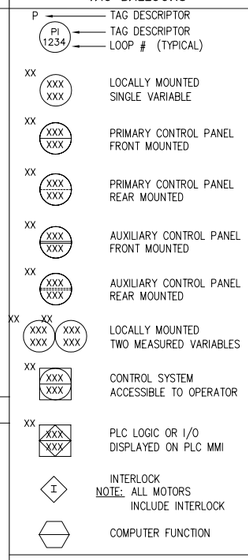
MATERIAL SPECIFICATION LIST

SPEC. NO.	MATERIAL	CLASS
034	C.S. (VICTAULIC)	125
035	HDPE	150
036	C.S. (VICTAULIC)	150
037	C.S.	125
038	C.S.	600
080	C.S. (VICTAULIC)	600

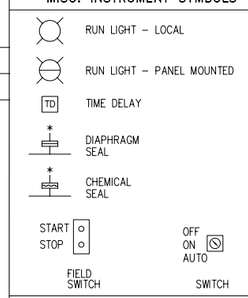
MISCELLANEOUS



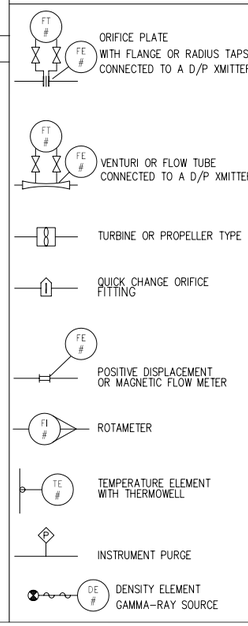
TAG BALLOONS



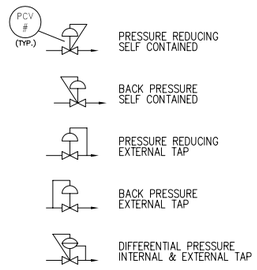
MISC. INSTRUMENT SYMBOLS



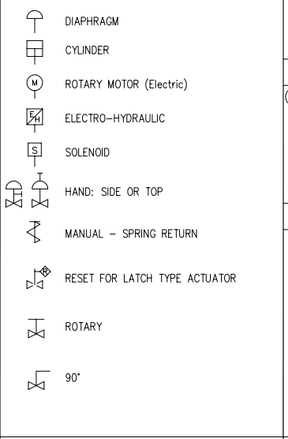
IN–LINE INSTRUMENTS



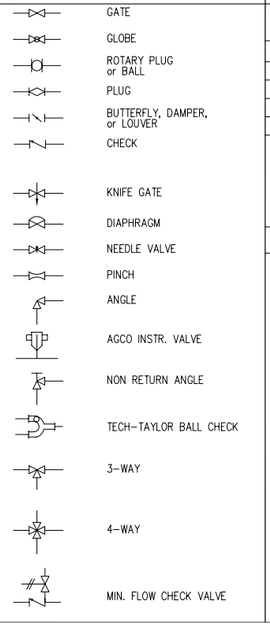
SELF ACTUATED REGULATORS



VALVE ACTUATORS



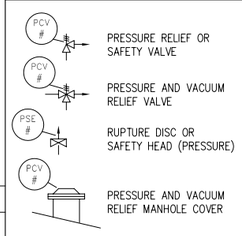
VALVES



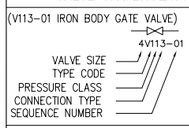
CONTROL VALVE LETTER NOTATIONS

FO	FAIL OPEN
FC	FAIL CLOSED
FL	FAIL IN LAST POSITION

RELIEF DEVICES



VALVE NOMENCLATURE



TYPE CODE

1	GATE
2	GLOBE
3	CHECK
4	BALL
5	DIAPHRAGM/PINCH
6	PLUG
7	NEEDLE
8	RELIEF
9	BUTTERFLY
0	SAMPLE, CURB STOP, AIR RELEASE, FIRE HYDRANT VALVE

PRESSURE CLASS

	ANSI	SWP	WOG
1	125	125	125
2	150	150	150, 175, 200, 275
3		200, 250	
4	300, 400	300, 400	720, 960, 1000
5	600	600	1440
6	900	900	2610

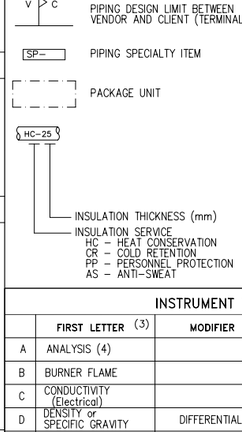
PIPE CONNECTION TYPE

1	SCREWED
2	LUG
3	FLANGED
4	WAFER
5	SOCKET WELD
6	BUTT WELD
7	MECHANICAL JOINT
8	SOLDER
9	–
0	OTHER CONNECTIONS

LINES

- PRIMARY FLOW
- SECONDARY FLOW
- FUTURE
- BYPASS
- TEMPORARY
- PNEUMATIC SIGNAL
- INSTRUMENT AIR SUPPLY
- ELECTROMAGNETIC OR UNGUIDED SONIC SIGNAL
- ELECTRIC SIGNAL
- CAPILLARY TUBING (filled system)
- HYDRAULIC SIGNAL
- ELECTROMAGNETIC GAMMA–RAY OR GUIDED SONIC SIGNAL (w/o wire or tubing)
- SOFTWARE SIGNAL
- FLANGE JOINT OR CONNECTION

MISCELLANEOUS PIPING SYMBOLS



INSTRUMENT TERMINOLOGY

	FIRST LETTER (3)	MODIFIER	SUCCEEDING LETTERS (2)
A	ANALYSIS (4)		USER'S CHOICE
B	BURNER FLAME		USER'S CHOICE (1)
C	CONDUCTIVITY (Electrical)		CONTROL (10)
D	DENSITY or SPECIFIC GRAVITY	DIFFERENTIAL	
E	VOLTAGE (EMF) (12)		PRIMARY ELEMENT
F	FLOW RATE	RATIO (Fraction) (3)	
G	GAGING (Dimensional)		GLASS (7)
H	HAND (Manually initiated)		HIGH (11)
I	CURRENT (Electrical)		INDICATE (8)
J	POWER	SCAN (6)	
K	USER'S CHOICE (1) (TIME)		CONTROL STATION
L	LEVEL		LOW (11)
M	MOISTURE or HUMIDITY		MIDDLE or INTERMEDIATE (11)
N	USER'S CHOICE (1) (VIBRATION)		USER'S CHOICE (1)
O	USER'S CHOICE (1)		ORIFICE (Restriction)
P	PRESSURE or VACUUM		POINT (Test Conn.)
Q	QUANTITY or EVENT	INTEGRATE or TOTALIZE (3)	
R	RADIOACTIVITY		RECORD
S	SPEED or FREQUENCY	SAFETY (6)	SWITCH (10)
T	TEMPERATURE		TRANSMIT
U	MULTIVARIABLE (5)		MULTI–FUNCTION (9)
V	VISCOSITY		VALVE, DAMPER or LOUVER
W	WEIGHT or FORCE		WELL
X	UNCLASSIFIED		CALCULATION (13)
Y	USER'S CHOICE (1)		RELAY or TRANSDUCER
Z	POSITION		DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT

NOTE: Numbers in parenthesis refer to General Notes.

GENERAL NOTES

1. A USER'S CHOICE LETTER IS INTENDED TO COVER UNLISTED MEANINGS THAT WILL BE USED REPETITIVELY IN A PARTICULAR PROJECT. IF USED, THE LETTER MAY HAVE ONE MEANING AS A FIRST–LETTER AND ANOTHER MEANING AS A SUCCEEDING – LETTER. THE MEANINGS NEED BE DEFINED ONLY ONCE IN A LEGEND, OR OTHERWISE, FOR THAT PROJECT.
2. THE GRAMMATICAL FORM OF THE SUCCEEDING–LETTER MEANINGS MAY BE MODIFIED AS REQUIRED.
3. ANY FIRST–LETTER, IF USED IN COMBINATION WITH MODIFYING LETTERS D (DIFFERENTIAL), F (RATIO), OR Q (INTEGRATE OR TOTALIZE), OR ANY COMBINATION OF THEM, SHALL BE CONSTRUED TO REPRESENT A SEPARATE MEASURED VARIABLE, AND THE COMBINATION SHALL BE TREATED AS A FIRST–LETTER ENTITY.
4. FIRST–LETTER A FOR ANALYSIS COVERS ALL ANALYSIS THAT ARE NOT LISTED IN TABLE AND ARE NOT COVERED BY A USER'S CHOICE LETTER. THE TYPE OF ANALYSIS IN EACH INSTANCE WILL BE DEFINED OUTSIDE A TAGGING BALLOON.
5. USE OF FIRST–LETTER U FOR MULTIVARIABLE IN LIEU OF A COMBINATION OF FIRST–LETTERS IS OPTIONAL.
6. THE TERM SAFETY SHALL APPLY ONLY TO EMERGENCY PROTECTIVE PRIMARY ELEMENTS AND EMERGENCY PROTECTIVE FINAL CONTROL ELEMENTS.
7. PASSIVE FUNCTION APPLIED TO INSTRUMENTS THAT PROVIDES A LOCAL VIEW OF THE PROCESS.
8. THE TERM 'INDICATE' APPLIES ONLY TO THE READOUT OF THE ACTUAL MEASUREMENT.
9. USE OF SUCCEEDING–LETTER U FOR MULTIFUNCTIONAL INSTEAD OF A COMBINATION OF OTHER FUNCTIONAL LETTERS IS OPTIONAL.
10. A DEVICE THAT CONNECTS, DISCONNECTS, OR TRANSFERS ONE OR MORE CIRCUITS MAY BE EITHER A SWITCH, A RELAY, AN ON–OFF CONTROLLER, OR A CONTROL VALVE, DEPENDING ON THE APPLICATION.
11. USE OF MODIFYING TERMS HIGH, LOW AND MIDDLE OR INTERMEDIATE SHALL CORRESPOND TO VALUES OF THE MEASURED VARIABLE, NOT OF THE SIGNAL, UNLESS OTHERWISE NOTED.
12. THE LETTER 'E' WHERE MODIFIED BY THE LETTERS 'BV' AND 'V' ARE TERMED TO DEFINE SPECIAL USAGE OF THE LETTER E AND ARE TO BE TAKEN AS A COMPLETED DEFINITION. THESE CANNOT MEAN ANYTHING ELSE IE. EBV – EMERGENCY BLOCK VALVE EVV – EMERGENCY VENT VALVE EV – SOLENOID VALVE
13. A VARIABLE BEING USED FOR LOGGING PURPOSES ONLY.

No.	DATE	BY	DESCRIPTION	CHKD.

REVISIONS

DWG. No. | TITLE

REFERENCE DRAWINGS

- ☐ PRELIMINARY – NOT FOR CONSTRUCTION
- ☐ APPROVED FOR CONSTRUCTION
- ☐ SUPERSEDES ALL PREVIOUS ISSUES

BY _____ DATE _____

DESIGNED	DRAWN R.J.A
CHECKED	DATE
DESIGN / DRAFTING	SCALE NTS
PROJECT MANAGER	SPECIFICATION No.
PROJECT TECHNICIAN	

E&I ENGINEERING LTD. Fredericton, NB

AREA NAME

P&ID SYMBOLS MINING

JOB No. | CONSULTANT DWG. No.

DWG. No. EI–STD–S–001 REV A