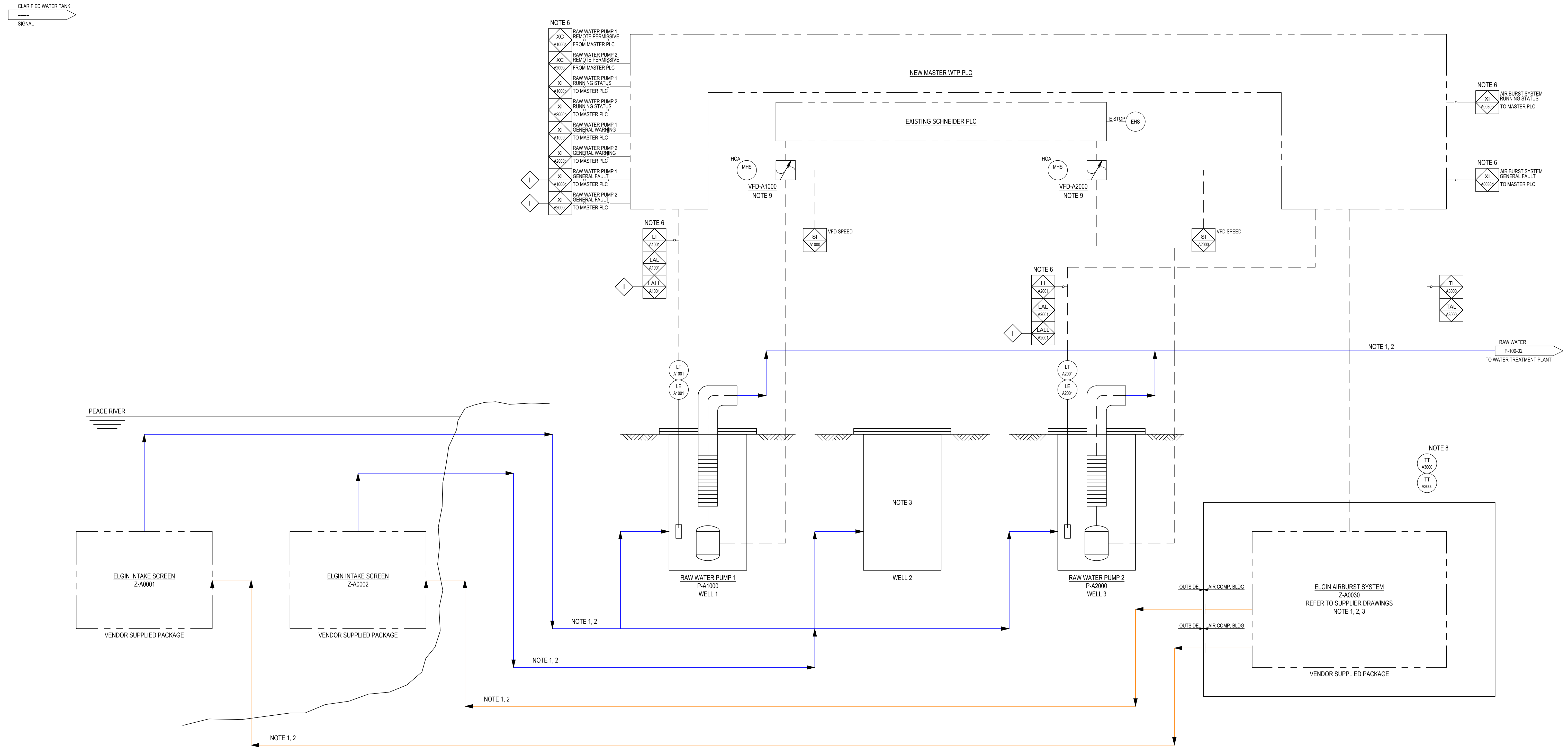


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 DATE: 2026-02-25 16:56 FILE: X:\3112701802 District of Hudson's Hope WTP DD - Clarifier Supply Coord\07\_DRAWINGS\01 - Sheets\8\8\3112701802-P-100-SERIES.dwg



- LEGEND:**
- RAW WATER
  - CLARIFIED/FILTERED WATER
  - POTABLE WATER
  - WASTEWATER
  - SLUDGE TRANSFER
  - CHEMICAL ADDITION
  - BACKWASH
  - AIR
  - DRAIN
  - EXISTING

- NOTES:**
1. REFER TO CIVIL DRAWINGS PER PROJECT 3111-27018-02 FOR ALL CIVIL WORKS RELATED TO OUTDOOR BURIED WATER MAINS, VALVES, RAW WATER INTAKES, AND THE AIR COMPRESSOR. NOT ALL DETAILS ARE SHOWN ON THIS P&ID.
  2. REFER TO ELECTRICAL DRAWINGS PER PROJECT 3111-27018-02 FOR ALL ELECTRICAL WORKS RELATED TO THE WATER INTAKES AND AIR COMPRESSORS. NOT ALL DETAILS ARE SHOWN ON THIS P&ID.
  3. INTAKE WELL 2 TO BE LEFT SPARE.
  4. REFER TO VENDOR PACKAGE / DRAWINGS.
  5. MASTER PLC REFERS TO EXISTING WTP SCHNEIDER PLC.
  6. INSTRUMENTATION WIRED TO THE WTP MASTER PLC DIRECTLY AND TO BE DISPLAYED ON THE PLANT HMI.
  7. REFER TO DRAWINGS P102, P103, P104, P105, P106, P107 AND P108 FOR PIPING DESIGNATION BETWEEN SCH80 PVC AND STAINLESS STEEL PIPE.
  8. INTAKE COMPRESSOR BUILDING TEMPERATURE.
  9. EXISTING VFDS.

Rev	Date	Description	Drawn	Design	App'd
1	2026-02-27	ISSUED FOR QUOTATION	GP	CS	MD
0	2025-12-18	ISSUED FOR PERMITTING	JD	CS	MD

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ORIGINAL DWG SIZE: ANSI D (22" x 34")

**McElhanney**

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Tel. 250 787 0356

**PERMIT TO PRACTICE**  
McElhanney Ltd.  
PERMIT NUMBER: 1003299  
Engineers and Geoscientists of BC

**PROFESSIONAL ENGINEER**  
M.P.J. DEBAGNE  
#29825  
2026-03-02  
Approved Sealed

**DISTRICT OF HUDSON'S HOPE**  
9904 DUDLEY DRIVE, HUDSON'S HOPE, BC, V0C 1V0

**WATER TREATMENT PLANT  
UPGRADES - PACKAGE 3  
RAW WATER INTAKE SYSTEM  
P&ID**

Drawing No. **P-100**

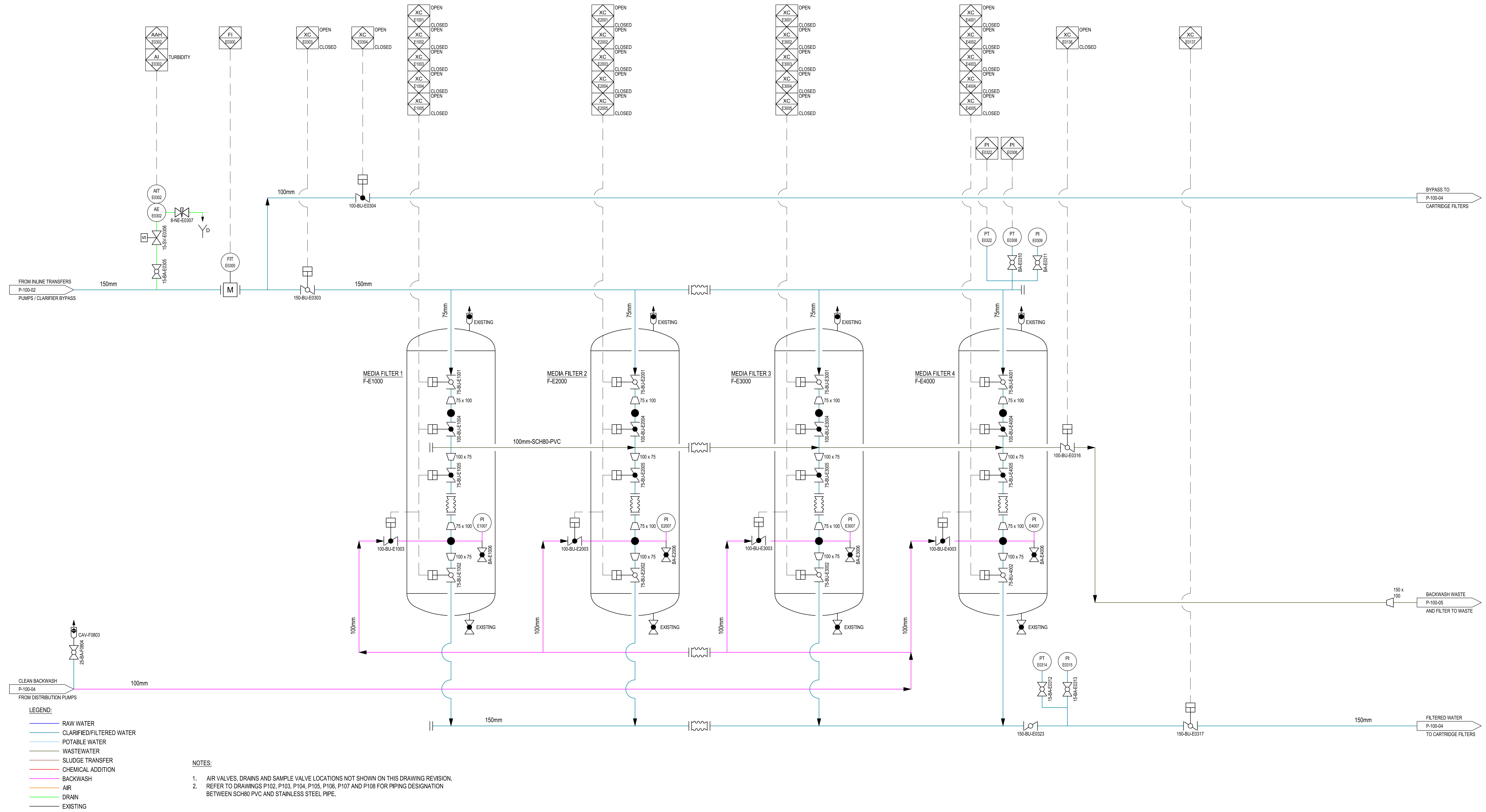
Sheet **01 OF 07**

Project Number **3111-27018-02** Rev. **1**

DESTROY ALL PRINTS BEARING PREVIOUS REVISION



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- LEGEND:**
- RAW WATER
  - CLARIFIED/FILTERED WATER
  - POTABLE WATER
  - WASTEWATER
  - SLUDGE TRANSFER
  - CHEMICAL ADDITION
  - BACKWASH
  - AIR
  - DRAIN
  - EXISTING

- NOTES:**
1. AIR VALVES, DRAINS AND SAMPLE VALVE LOCATIONS NOT SHOWN ON THIS DRAWING REVISION.
  2. REFER TO DRAWINGS P102, P103, P104, P105, P106, P107 AND P108 FOR PIPING DESIGNATION BETWEEN SCH80 PVC AND STAINLESS STEEL PIPE.

Rev	Date	Description	Drawn	Design	App'd
1	2026-02-27	ISSUED FOR QUOTATION	GP	CS	MD
0	2025-12-18	ISSUED FOR PERMITTING	JD	CS	MD

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Tel. 250 787 0356

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Engineers and Geoscientists of BC

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**DISTRICT OF HUDSON'S HOPE**  
9904 DUDLEY DRIVE, HUDSON'S HOPE, BC, V0C 1V0

**WATER TREATMENT PLANT  
UPGRADES - PACKAGE 3  
MEDIA FILTERS  
P&ID**

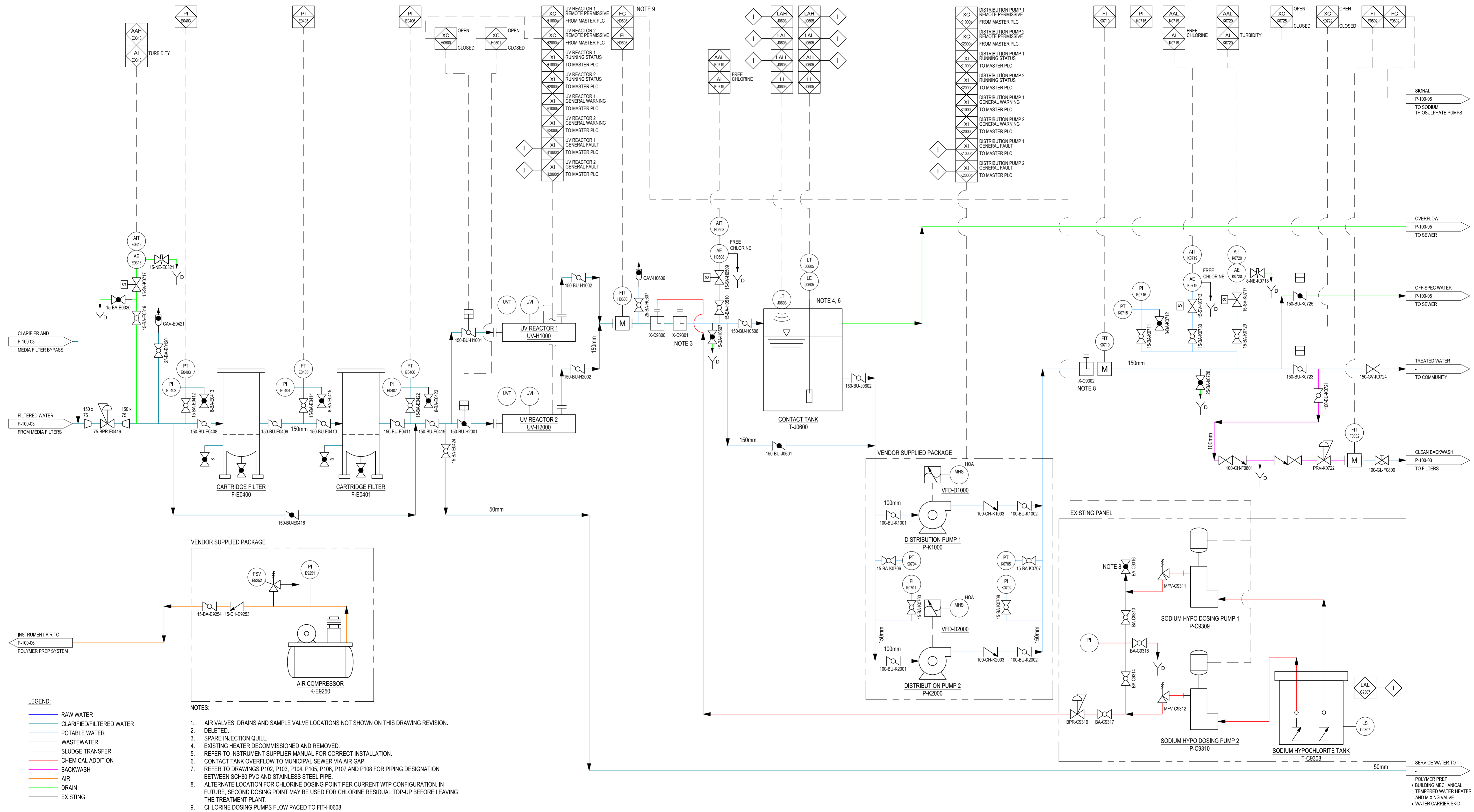
Drawing No. **P-100**

Sheet **03 OF 07**

Project Number **3111-27018-02** Rev. **1**

DESTROY ALL PRINTS BEARING PREVIOUS REVISION

DATE: 2026-02-27, 10:49 FILE: X:\3111\Projects\3111270-1802-District of Hudsons Hope WTP DD - Clarifier Supply Coord\07\_DRAWINGS\01\_Sheets\B\03111270-1802-F-10a-SERIES.dwg McElhanney ANS1 D - 2025-01-10



- LEGEND:**
- RAW WATER
  - CLARIFIED/FILTERED WATER
  - POTABLE WATER
  - WASTEWATER
  - SLUDGE TRANSFER
  - CHEMICAL ADDITION
  - BACKWASH
  - AIR
  - DRAIN
  - EXISTING
- NOTES:**
1. AIR VALVES, DRAINS AND SAMPLE VALVE LOCATIONS NOT SHOWN ON THIS DRAWING REVISION.
  2. DELETED.
  3. SPARE INJECTION QUILL.
  4. EXISTING HEATER DECOMMISSIONED AND REMOVED.
  5. REFER TO INSTRUMENT SUPPLIER MANUAL FOR CORRECT INSTALLATION.
  6. CONTACT TANK OVERFLOW TO MUNICIPAL SEWER VIA AIR GAP.
  7. REFER TO DRAWINGS P102, P103, P104, P105, P106, P107 AND P108 FOR PIPING DESIGNATION BETWEEN SCH80 PVC AND STAINLESS STEEL PIPE.
  8. ALTERNATE LOCATION FOR CHLORINE DOSING POINT PER CURRENT WTP CONFIGURATION. IN FUTURE, SECOND DOSING POINT MAY BE USED FOR CHLORINE RESIDUAL TOP-UP BEFORE LEAVING THE TREATMENT PLANT.
  9. CHLORINE DOSING PUMPS FLOW PACED TO FIT-H0608

Rev	Date	Description	Drawn	Design	App'd
1	2026-02-27	ISSUED FOR QUOTATION	GP	CS	MD
0	2025-12-18	ISSUED FOR PERMITTING	JD	CS	MD

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McElhanney Ltd.

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PROFESSIONAL  
REGISTERED  
M.P. J. DESAGNE  
#28825  
BRITISH  
COLUMBIA  
ENGINEER

2026-03-02  
Approved Sealed

**DISTRICT OF HUDSON'S HOPE**  
9904 DUDLEY DRIVE, HUDSON'S HOPE, BC, V0C 1V0

**WATER TREATMENT PLANT**  
UPGRADES - PACKAGE 3  
CARTRIDGE FILTRATION AND CHLORINE CONTACT  
P&ID

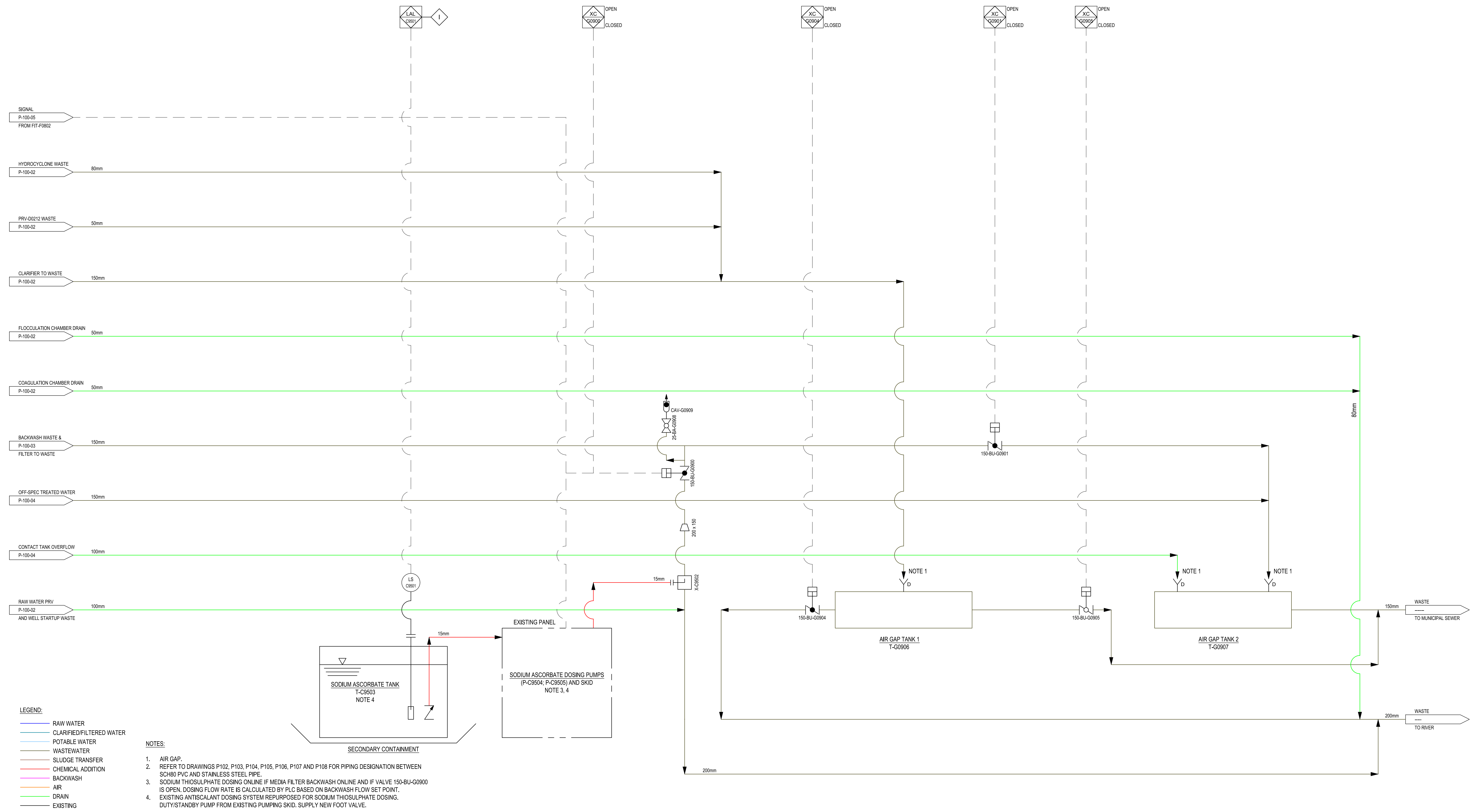
Drawing No. **P-100**

Sheet **04 OF 07**

Project Number **3111-27018-02** Rev. **1**

DESTROY ALL PRINTS BEARING PREVIOUS REVISION

McElhanney ANS D - 2025-01-10  
 DATE: 2025-02-25, 16:56 FILE: X:\3111\Projects\31112701802 District of Hudsons Hope WTP DD - Clarifier Supply Coord\07\_DRAWINGS\01\_Sheets\8\8\31112701802 P-100-SERIES.dwg



- LEGEND:**
- RAW WATER
  - CLARIFIED/FILTERED WATER
  - POTABLE WATER
  - WASTEWATER
  - SLUDGE TRANSFER
  - CHEMICAL ADDITION
  - BACKWASH
  - AIR
  - DRAIN
  - EXISTING

- NOTES:**
1. AIR GAP.
  2. REFER TO DRAWINGS P102, P103, P104, P105, P106, P107 AND P108 FOR PIPING DESIGNATION BETWEEN SCH80 PVC AND STAINLESS STEEL PIPE.
  3. SODIUM THIOSULPHATE DOSING ONLINE IF MEDIA FILTER BACKWASH ONLINE AND IF VALVE 150-BU-G9900 IS OPEN. DOSING FLOW RATE IS CALCULATED BY PLC BASED ON BACKWASH FLOW SET POINT.
  4. EXISTING ANTISCALANT DOSING SYSTEM REPURPOSED FOR SODIUM THIOSULPHATE DOSING. DUTY/STANDBY PUMP FROM EXISTING PUMPING SKID. SUPPLY NEW FOOT VALVE.

Rev	Date	Description	Drawn	Design	App'd
1	2026-02-27	ISSUED FOR QUOTATION	GP	CS	MD
0	2025-12-18	ISSUED FOR PERMITTING	JD	CS	MD

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**PROFESSIONAL ENGINEER**

M.P.J. DEGAJNE  
#29825  
2028-03-02  
Approved Sealed

**DISTRICT OF HUDSON'S HOPE**  
9904 DUDLEY DRIVE, HUDSON'S HOPE, BC, V0C 1V0

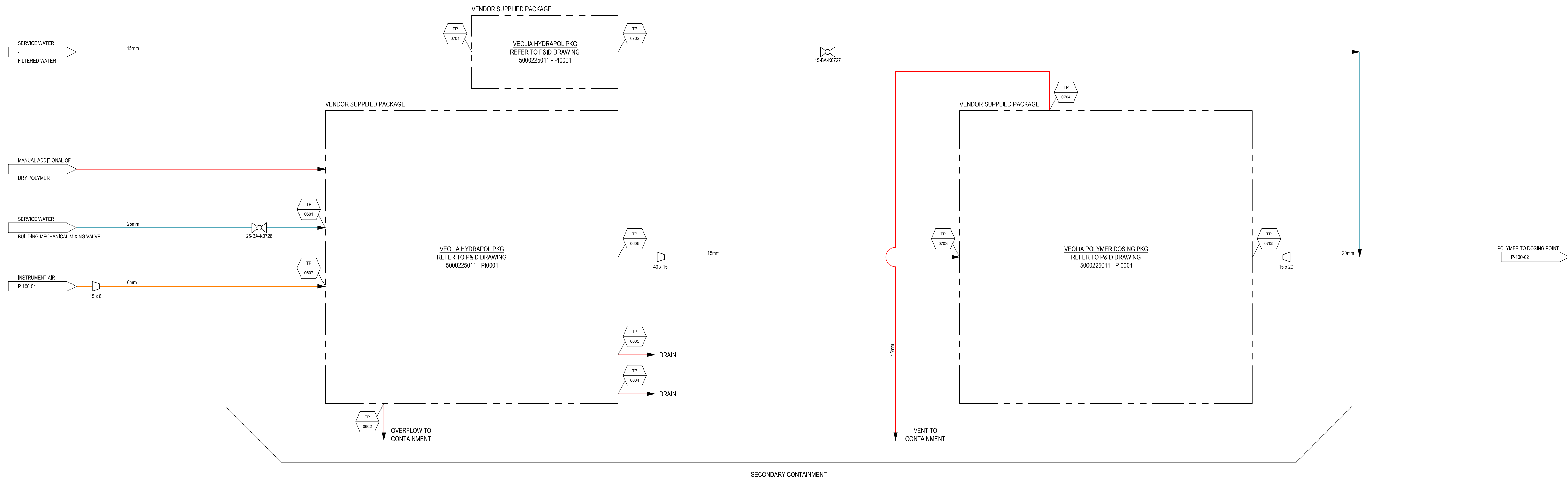
**WATER TREATMENT PLANT UPGRADES - PACKAGE 3 WASTE WATER HANDLING P&ID**

Drawing No. **P-100**

Sheet **05 OF 07**

Project Number **3111-27018-02** Rev. **1**

DESTROY ALL PRINTS BEARING PREVIOUS REVISION



**LEGEND:**

- RAW WATER
- CLARIFIED/FILTERED WATER
- POTABLE WATER
- WASTEWATER
- SLUDGE TRANSFER
- CHEMICAL ADDITION
- BACKWASH
- AIR
- DRAIN
- EXISTING

- NOTES:**
- POLYMER DRAIN TIE-POINTS NOT SHOWN. PLUMB TEMPORARY HOSE FOR HYDRAPOL SYSTEM DRAINING OR DRAIN TO CONTAINMENT.

Rev	Date	Description	Drawn	Design	App'd
1	2026-02-27	ISSUED FOR QUOTATION	GP	CS	MD
0	2025-12-18	ISSUED FOR PERMITTING	JD	CS	MD

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ORIGINAL DWG SIZE: ANSI D (22" x 34")

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 Fort St. John BC V1J 6M2  
 Tel. 250 787 0356

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 PERMIT NUMBER: 1003299  
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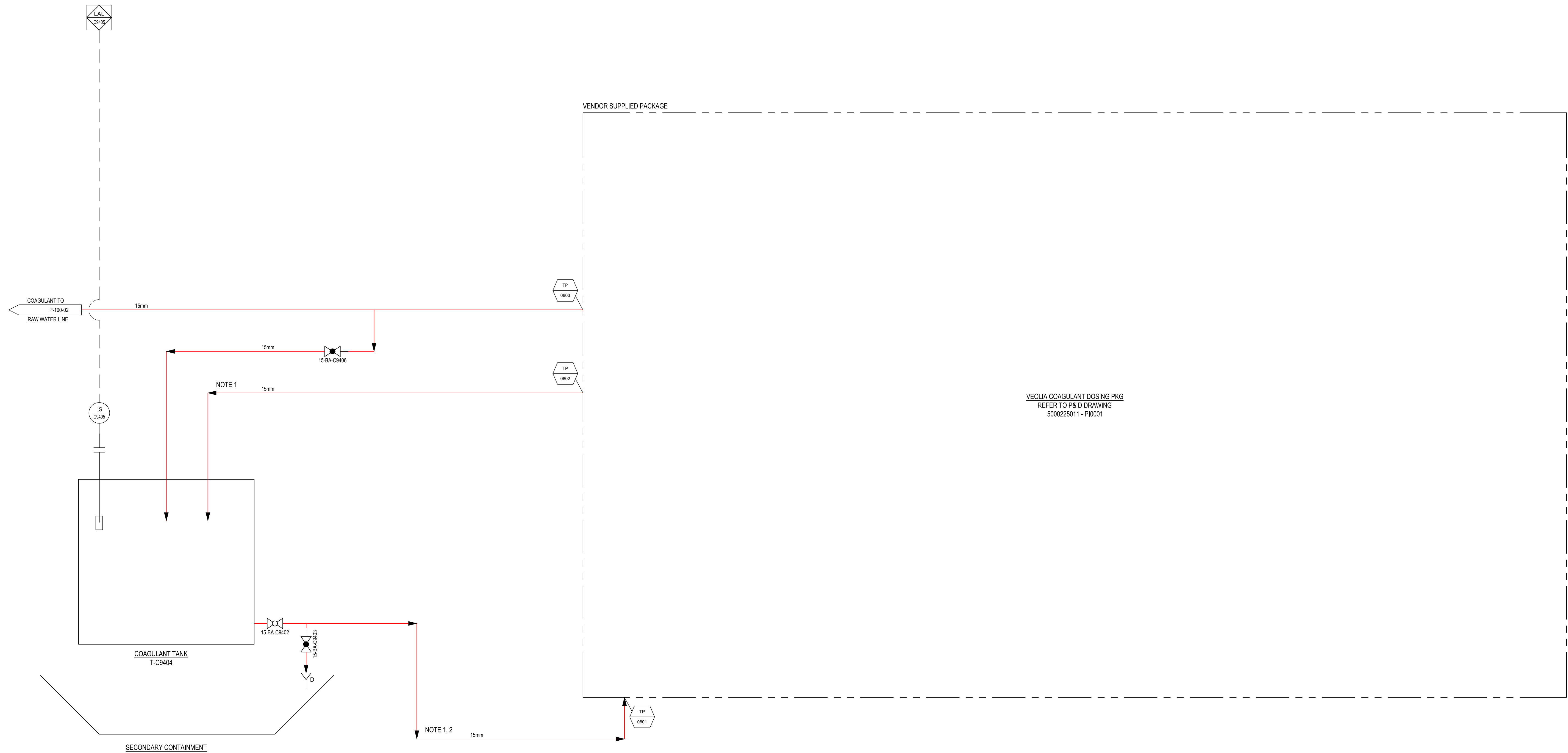
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**DISTRICT OF HUDSON'S HOPE**  
 9904 DUDLEY DRIVE, HUDSON'S HOPE, BC, V0C 1V0

**WATER TREATMENT PLANT  
 UPGRADES - PACKAGE 3  
 POLYMER DOSING  
 P&ID**

Drawing No.	<b>P-100</b>	
Sheet	06 OF 07	Rev.
Project Number	3111-27018-02	1

McElhanney ANS D - 2025-01-10  
 FILE: X:\3111\Projects\31112701802 - District of Hudson's Hope WTP DD - Clarifier Supply\Coord\07\_DRAWINGS\01 - Sheets\8\8\DS1112701802-P-100-SERIES.dwg  
 DATE: 2026-02-25 16:56



- LEGEND:**
- RAW WATER
  - CLARIFIED/FILTERED WATER
  - POTABLE WATER
  - WASTEWATER
  - SLUDGE TRANSFER
  - CHEMICAL ADDITION
  - BACKWASH
  - AIR
  - DRAIN
  - EXISTING

- NOTES:**
1. INSTALL USING EITHER 1/2" PE TUBING OR SCH80 PVC PIPE.
  2. ASSUMES THAT COAGULANT TANK IS WITHIN CLOSE PROXIMITY TO THE DOSING SKID.

Rev	Date	Description	Drawn	Design	App'd
1	2026-02-27	ISSUED FOR QUOTATION	GP	CS	MD
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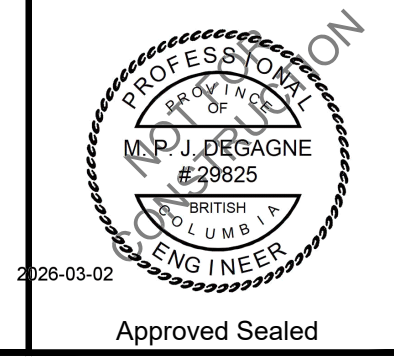
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 Engineers and Geoscientists of BC



**DISTRICT OF HUDSON'S HOPE**  
 9904 DUDLEY DRIVE, HUDSON'S HOPE, BC, V0C 1V0

**WATER TREATMENT PLANT  
 UPGRADES - PACKAGE 3  
 COAGULANT DOSING  
 P&ID**

Drawing No.	<b>P-100</b>	
Sheet	07 OF 07	
Project Number	3111-27018-02	Rev. 1

DESTROY ALL PRINTS BEARING PREVIOUS REVISION

GENERAL ABBREVIATIONS

Table with 2 columns: Abbreviation and Description. Includes entries like A - AMPS, AC - ASBESTOS CEMENT, ACK - ACKNOWLEDGE, AF - AFTER FILTER, etc.

Table with 2 columns: Abbreviation and Description. Includes entries like FW - FILTERED WATER, GF - GROUND FAULT PROTECTION, GS - GAS SUPPLY, HA - HAND/AUTO, etc.

PLC - PROGRAMMABLE LOGIC CONTROLLER

Table with 2 columns: Abbreviation and Description. Includes entries like PLT - PLATE, PO - PUMP OUT, PP - PERSONNEL PROTECTION/PLOT PLAN, etc.

VALVE IDENTIFICATION SYSTEM

Table with 2 columns: Digit and Description. Includes entries like 1. SIZE, 2. VALVE TYPE, 3. RATING, etc.

EQUIPMENT IDENTIFICATION SYSTEM

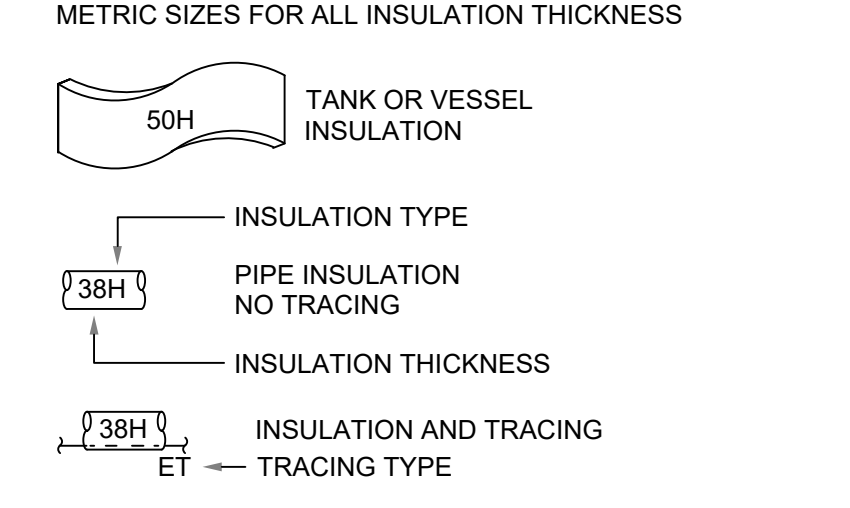
Table with 2 columns: Equipment Tag Example and Description. Includes entries like AG - AGITATOR (DYNAMIC), AH - AIR HANDLING UNIT, etc.

PIPING CLASS SPECIFICATION

Table with 3 columns: Class, Rating, Service. Lists various pipe classes like DI1, A, A1, A2, AL, etc.

ADDITIONAL PIPE CLASSES MAY BE ISSUED FOR PARTICULAR PROJECTS. USERS SHALL ENSURE THAT THE CURRENT PIPE CLASS SHEETS ARE IN THEIR POSSESSION FOR USE.

INSULATION THICKNESS AND TRACING DETAILS



INSULATION TYPE

- A - ACOUSTICAL
C - COLD
F - FIRE PROOF/FREEZE PROTECTION
H - HEAT CONSERVATION (MINERAL WOOL OR FIBERGLASS)
HC - HEAT CONSERVATION (CALCIUM SILICATE)
PP - PERSONNEL PROTECTION
ET - ELECTRICAL - SELF REGULATING
GT - GLYCOL TRACING
HT - HOT OIL
ST - STEAM
SJ - STEAM JACKET

COMMODITY

Table with 2 columns: Commodity Code and Description. Includes entries like IA - INSTRUMENT AIR, UA - UTILITY AIR, BFW - BOILER FEED WATER, etc.

PROJECT SPECIFIC IDENTIFICATION

Table with 2 columns: Area Codes and Description. Includes entries like A - GENERAL / ALL, B - RAW WATER PUMPING, C - CHEMICAL DOSING, etc.

VALVES ARE ONLY DESIGNATED WITH THE SIZE, VALVE TYPE, AREA CODE, AND SEQUENTIAL NUMBER.

SEQUENTIAL NUMBERING

Table with 2 columns: Sequential Number and Description. Lists numbers from 0001 to 9500 and their corresponding equipment/system descriptions.

ALL PIPE SIZES IN MM.

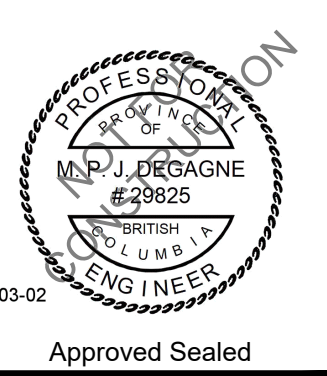
Table with 4 columns: Rev, Date, Description, and Status. Shows revision history for the drawing.

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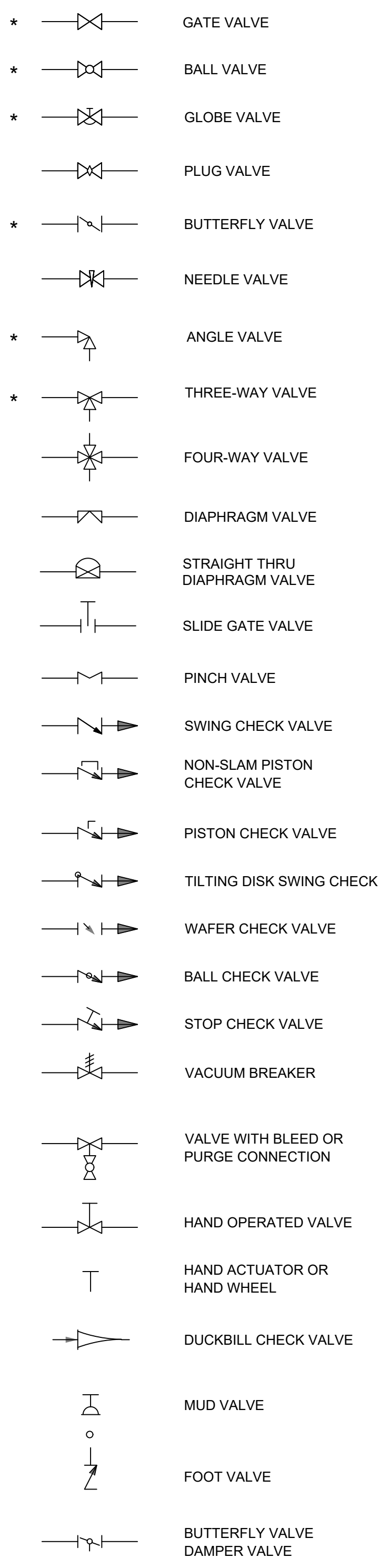


DISTRICT OF HUDSON'S HOPE 9904 DUDLEY DRIVE, HUDSON'S HOPE, BC, V0C 1V0 WATER TREATMENT PLANT UPGRADES - PACKAGE 3 PROCESS DESIGNATION SYMBOLOGY

Drawing No. P-000 Sheet 01 OF 06 Project Number 3111-27018-02 Rev. 1

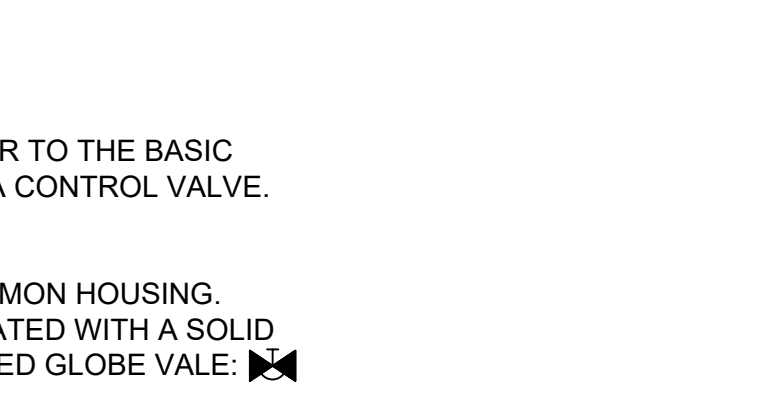
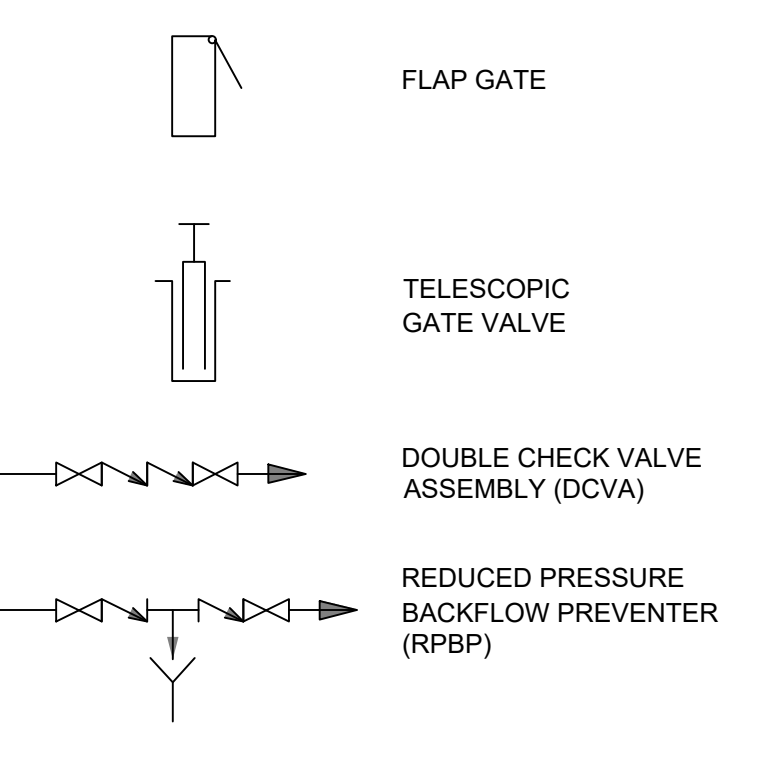
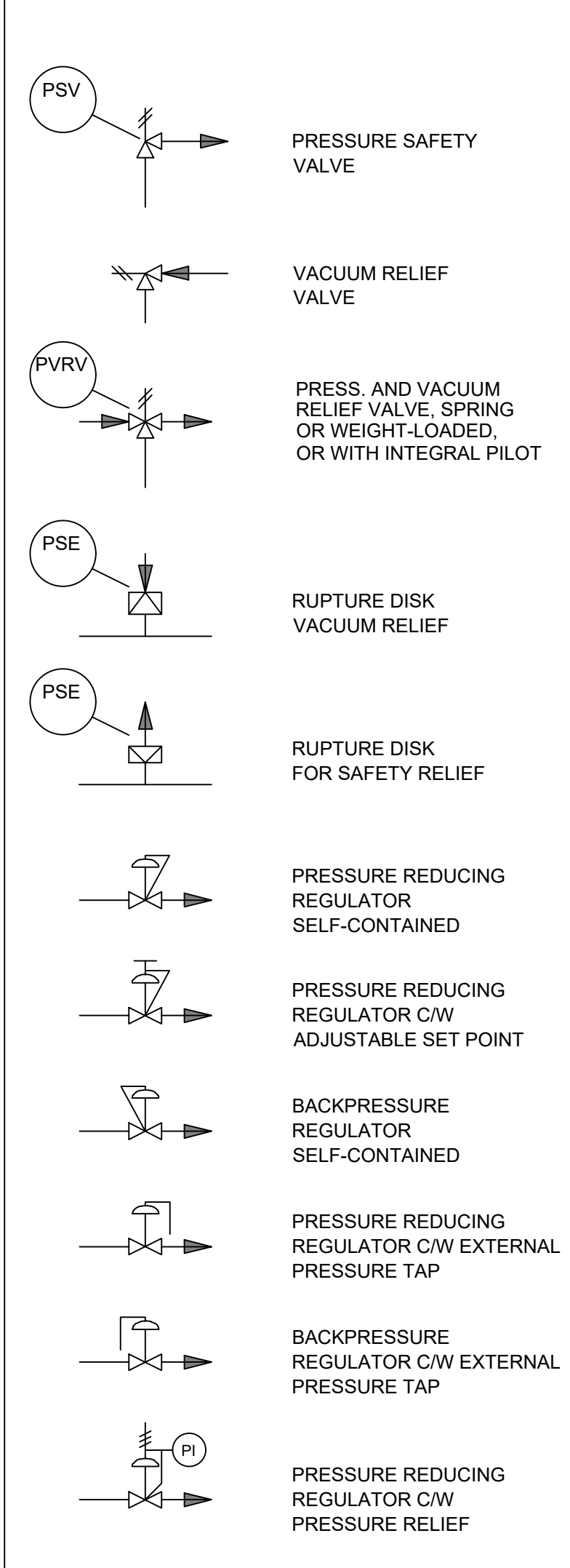
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**VALVES**

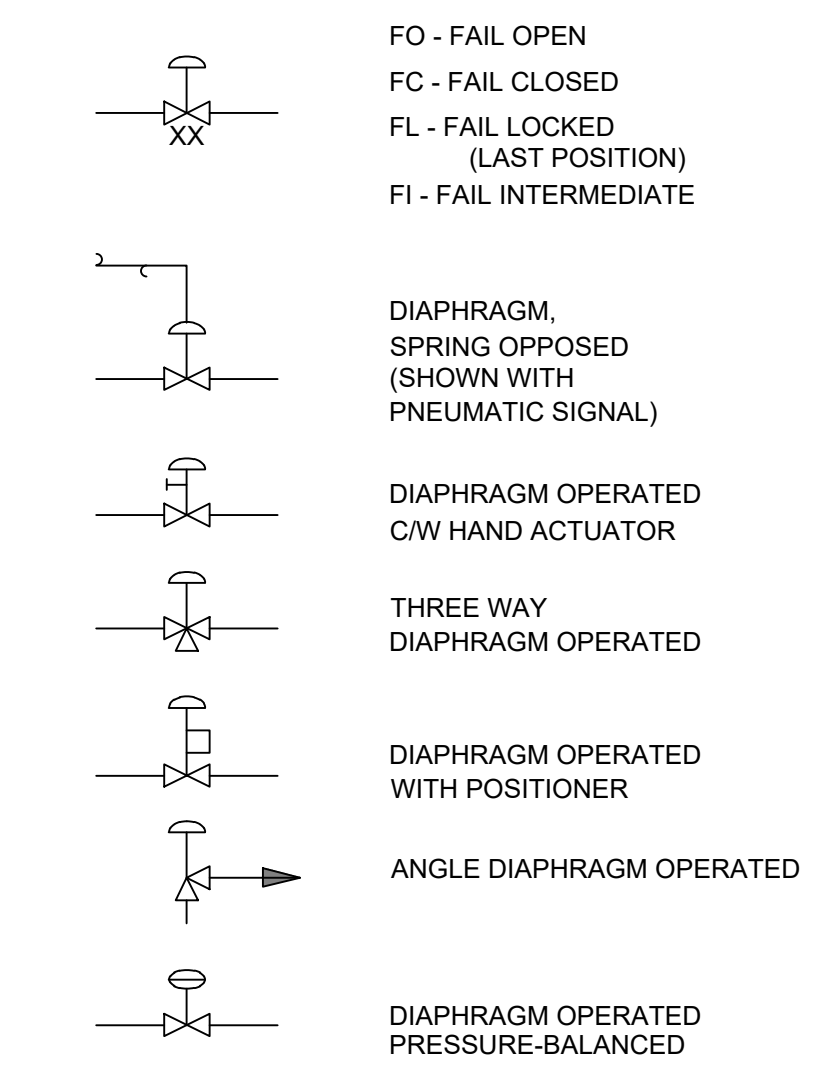
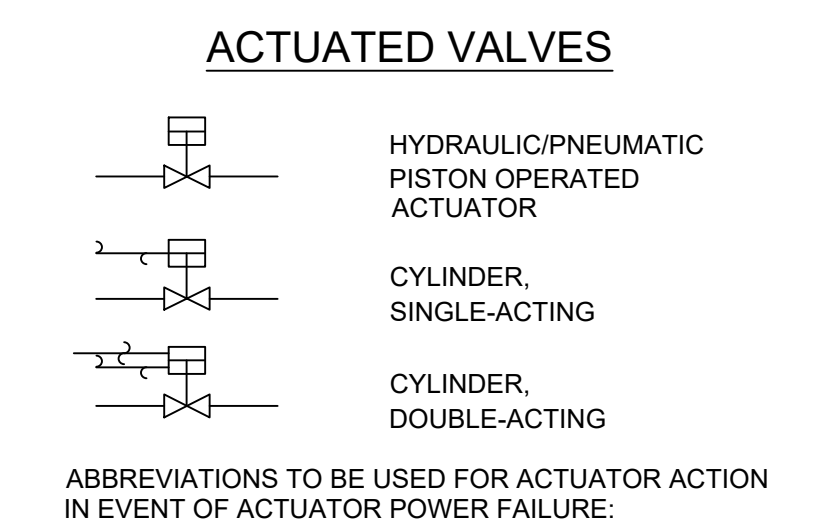
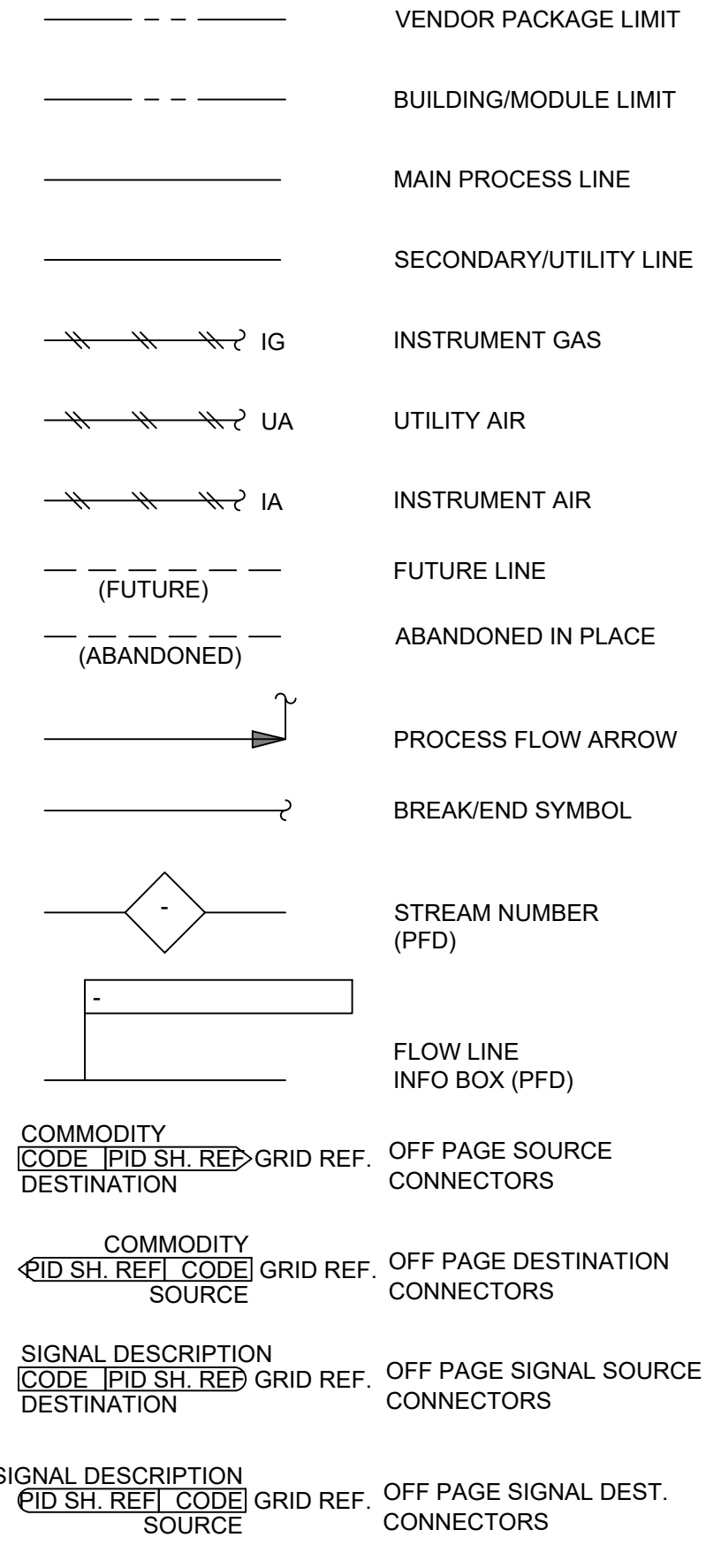


- NOTES:**
- \* INDICATES THAT BY ADDING ACTUATOR TO THE BASIC VALVE SYMBOL, THE VALVE BECOMES A CONTROL VALVE.
  - FLANGED VALVE.
  - NON-FLANGED VALVE.
  - IT IS NOT MANDATORY TO SHOW A COMMON HOUSING.
  - NORMALLY CLOSED VALVES ARE INDICATED WITH A SOLID FILL. FOR EXAMPLE: A NORMALLY CLOSED GLOBE VALVE:

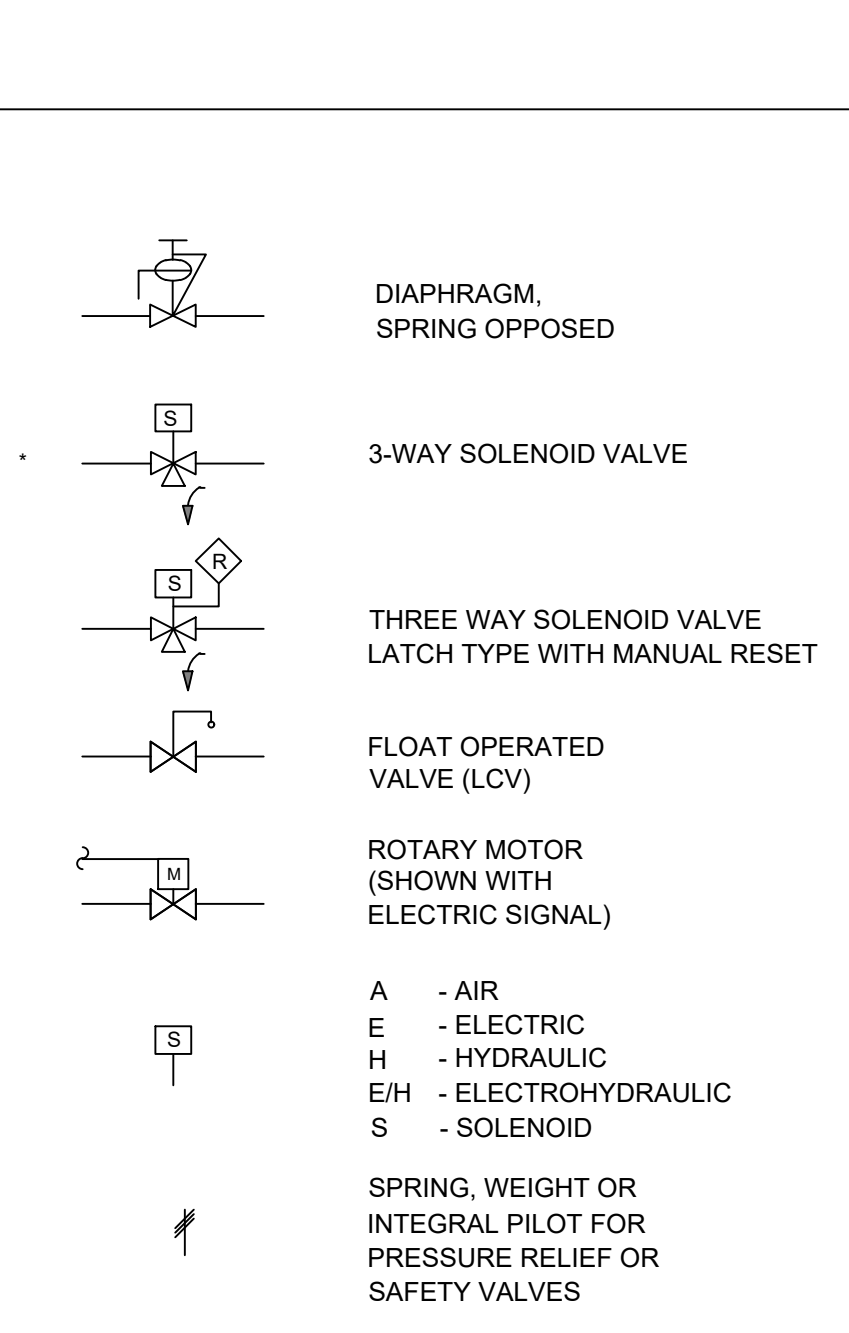
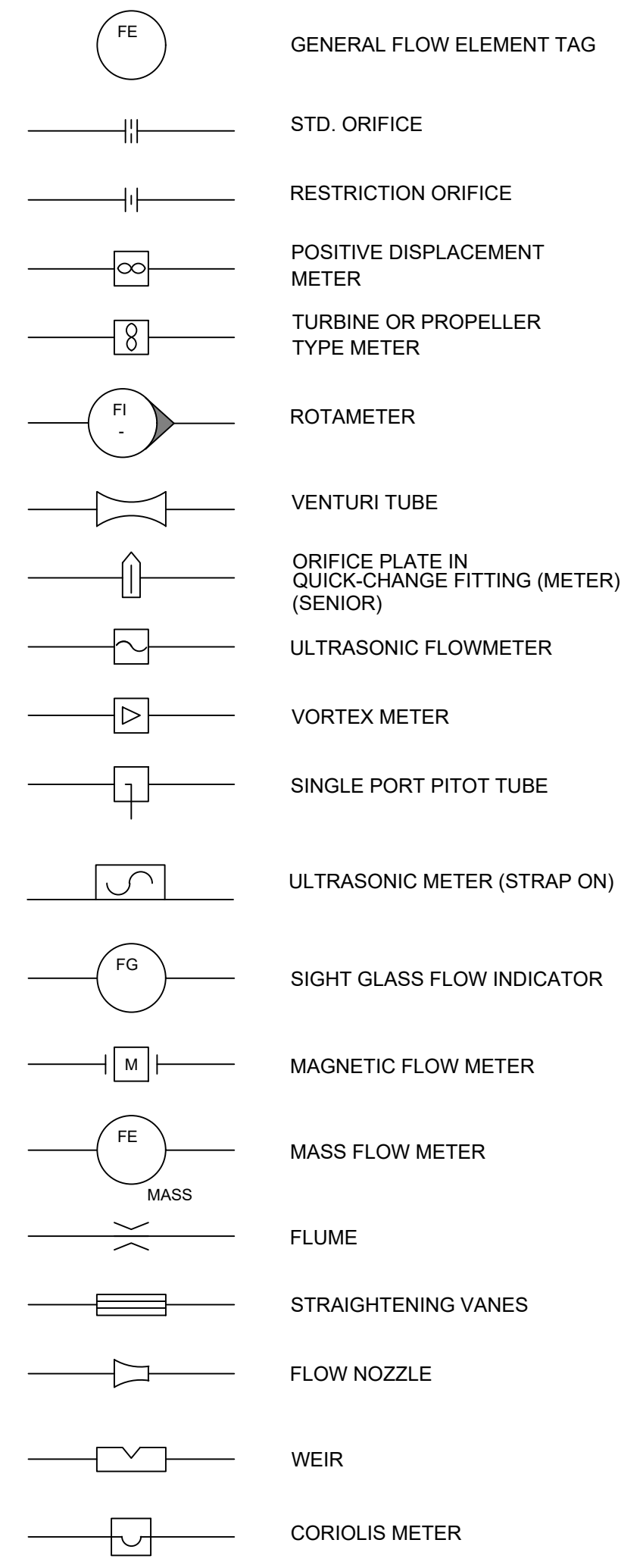
**REGULATORS & RELIEF VALVES**



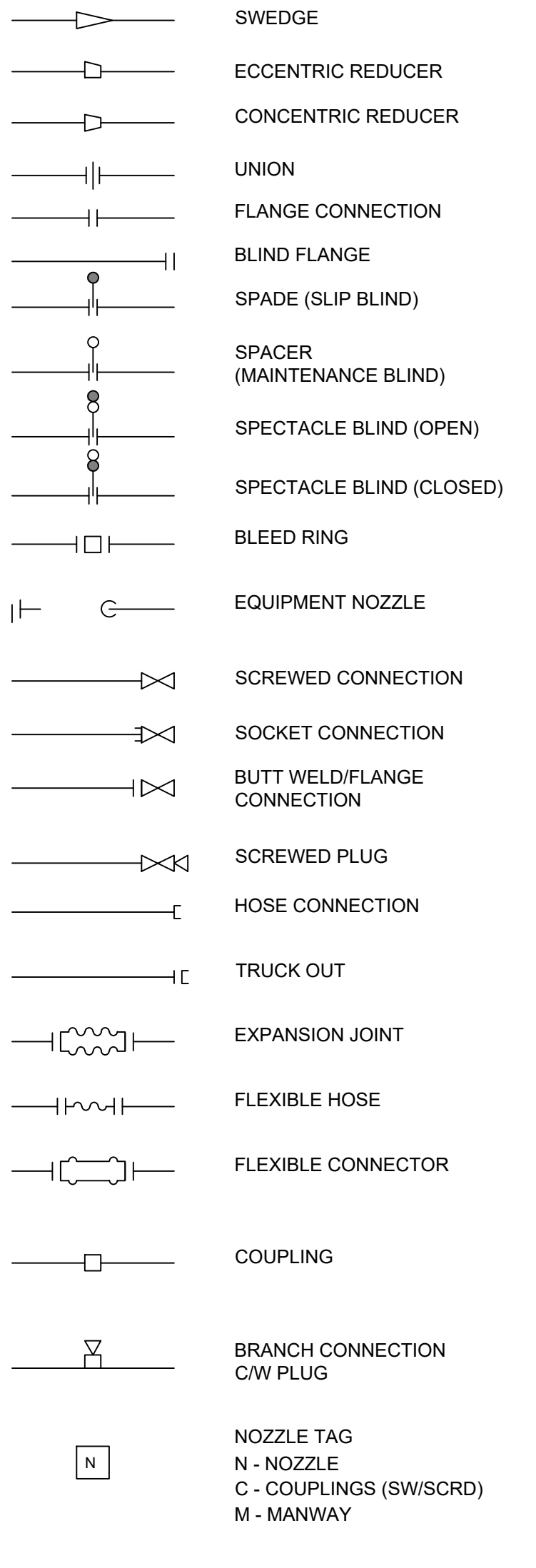
**LINES**



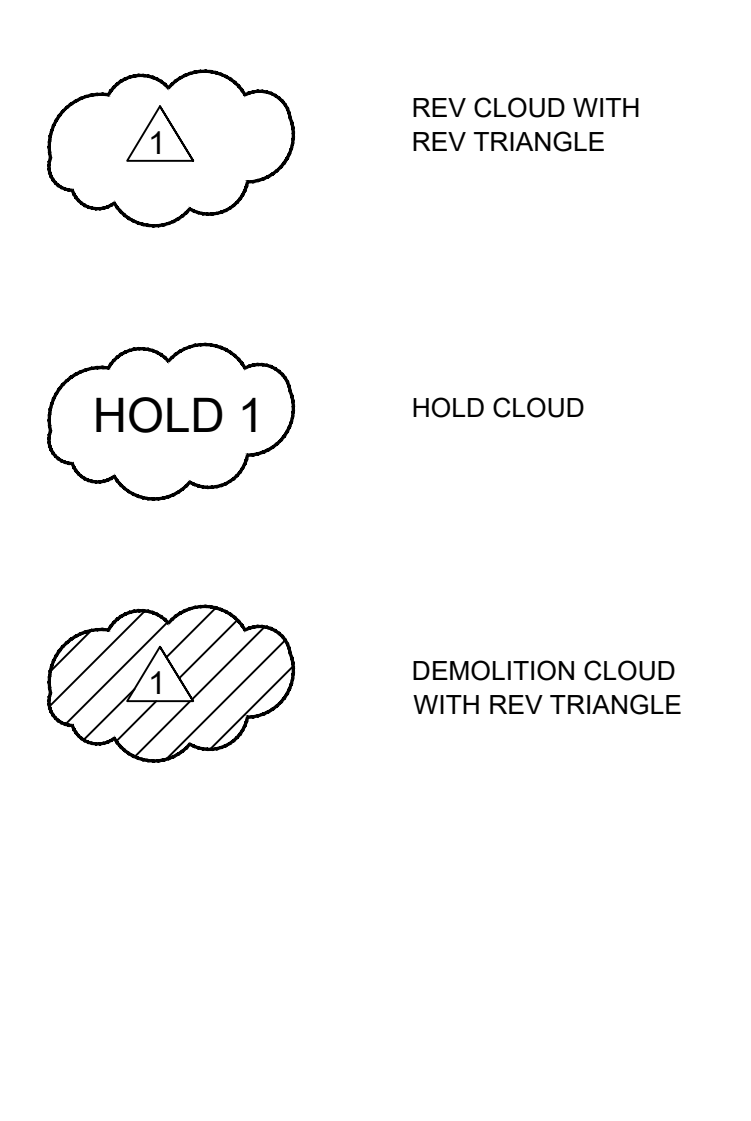
**FLOW ELEMENTS**



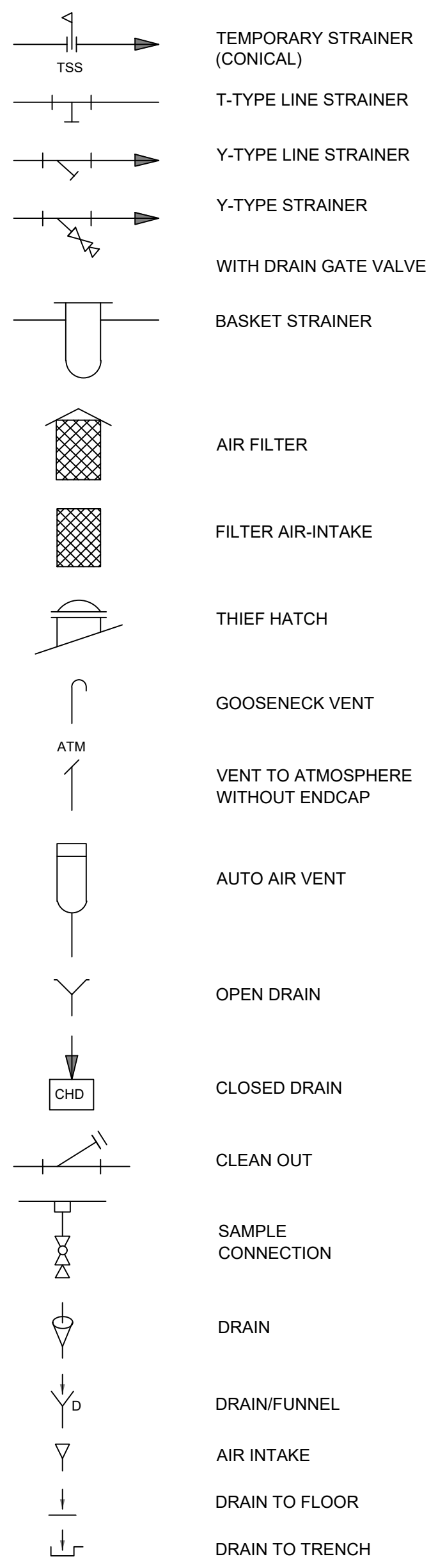
**FITTINGS & JOINTS**



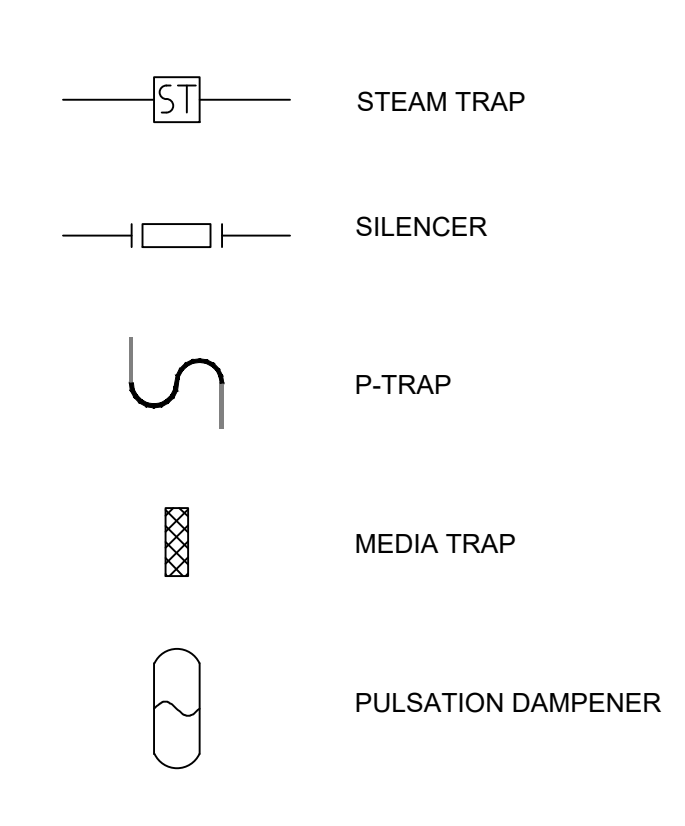
**CLOUDS**



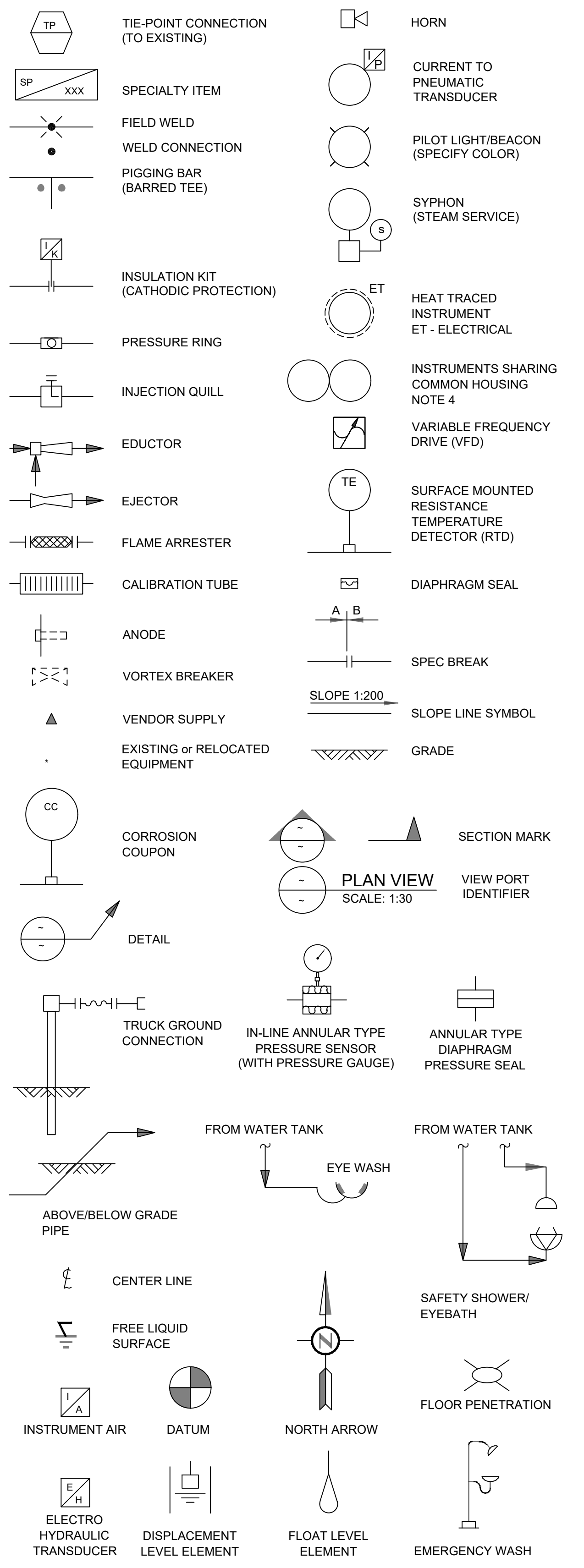
**FILTERS, VENTS & DRAINS**



**TRAPS, SILENCERS & DAMPENERS**



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ORIGINAL DWG SIZE: ANSI D (22" x 34")

**McElhanney**

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Tel. 250 787 0356

**PERMIT TO PRACTICE**  
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PERMIT NUMBER: 1003299  
Engineers and Geoscientists of BC

**DISTRICT OF HUDSON'S HOPE**  
9904 DUDLEY DRIVE, HUDSON'S HOPE, BC, V0C 1V0

**WATER TREATMENT PLANT UPGRADES - PACKAGE 3**  
**PROCESS DESIGNATION SYMBOLOGY**

Drawing No. **P-000**

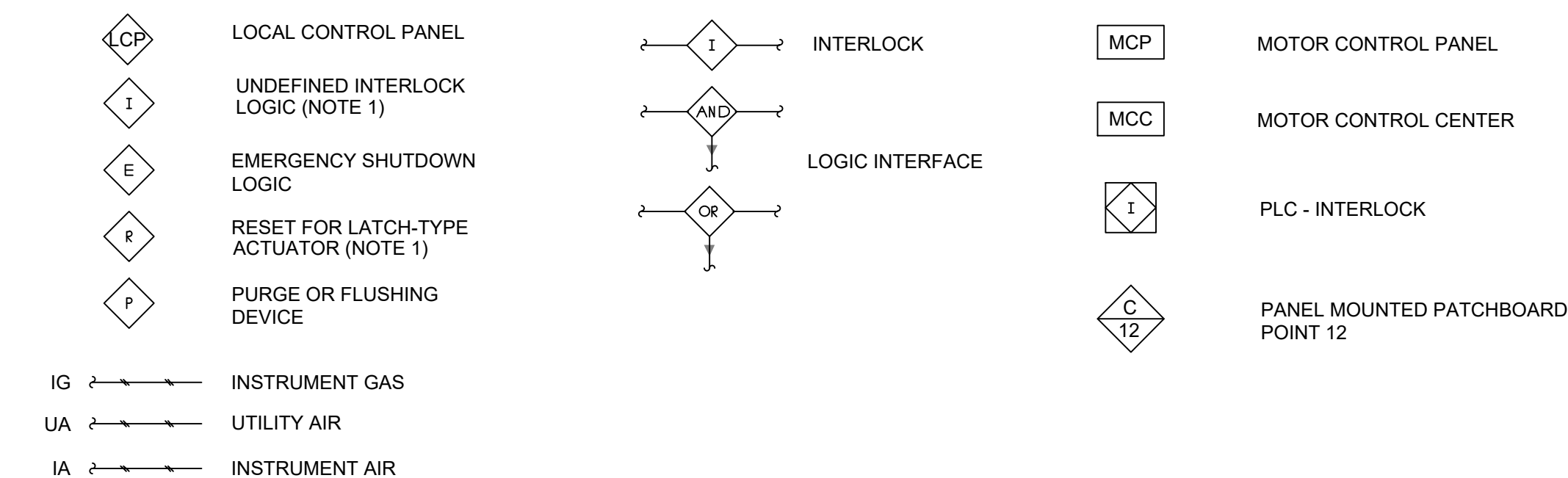
Sheet **02 OF 06**

Project Number **3111-27018-02** Rev. **1**

DESTROY ALL PRINTS BEARING PREVIOUS REVISIONS

GENERAL INSTRUMENT OR FUNCTION SYMBOLS

	FIELD MOUNTED	PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR (PANEL)	PRIMARY LOCATION NORMALLY INACCESSIBLE TO OPERATOR (BEHIND PANEL)	AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR (PANEL)	AUXILIARY LOCATION NORMALLY INACCESSIBLE TO OPERATOR (BEHIND PANEL)
DISCRETE INSTRUMENTS					
SHARED DISPLAY SHARED CONTROL, DCS					
PROGRAMMABLE LOGIC CONTROL (PLC)					
VENDOR OR 3RD PARTY PLC					
SAFETY SYSTEM (SIS)					



TYPICAL LETTER COMBINATIONS

FIRST LETTERS	INITIATING OR MEASURED VARIABLE	NOTE COLUMN SEE BELOW	CONTROLLERS				READOUT DEVICES			SWITCHES AND ALARM DEVICES*			TRANSMITTERS			SOLENOIDS, RELAYS, COMPUTING DEVICES	PRIMARY ELEMENT	TEST POINT	WELL OR PROBE	VIEWING DEVICE, GLASS	SAFETY DEVICE	FINAL ELEMENT
			RECORDING	INDICATING	BLIND	SELF-ACTUATED CONTROL VALVES	RECORDING	INDICATING	HIGH**	LOW	COMB	RECORDING	INDICATING	BLIND								
A	ANALYSIS	(1)	ARC	AIC	AC		AR	AI	ASH	ASL	ASHL	ART	AIT	AT	AY	AE	AP	AW	BG		AV	
B	BURNER/COMBUSTION		BRC	BIC	BC		BR	BI	BSH	BSL	BSHL	BRT	BIT	BT	BY	BE		BW	BG		BZ	
C	USER'S CHOICE																					
D	USER'S CHOICE																					
E	VOLTAGE		ERC	EIC	EC		ER	EI	ESH	ESL	ESHL	ERT	EIT	ET	EY	EE					EZ	
F	FLOW RATE		FRC	FIC	FC	FCV, FICV	FR	FI	FSH	FSL	FSHL	FRT	FIT	FT	FY	FE	FP		FG		FV	
FF	FLOW RATIO	(5)	FFRC	FFIC	FFC		FFR	FFI	FFSH	FFSL						FE					FFV	
FQ	FLOW QUANTITY	(5)	FQRC	FQIC			FQR	FQI	FQSH	FQSL			FQIT	FQT	FQY	FQE					FQV	
G	USER'S CHOICE	(2)																				
H	HAND			HIC	HC						HS										HV	
I	CURRENT		IRC	IIC			IR	II	ISH	ISL	ISHL	IRT	IIT	IT	IY	IE					IZ	
J	POWER		JRC	JIC			JR	JI	JSH	JSL	JSHL	JRT	JIT	JT	JY	JE					JV	
K	TIME		KRC	KIC	KC	KCV	KR	KI	KSH	KSL	KSHL	KRT	KIT	KT	KY	KE					KV	
L	LEVEL		LRC	LIC	LC	LCV	LR	LI	LSH	LSL	LSHL	LRT	LIT	LT	LY	LE		LW	LG		LV	
M	MOTOR CONTROL	(7)																			MS	
N	USER'S CHOICE	(2)																				
O	USER'S CHOICE	(2)																				
P	PRESSURE, VACUUM		PRC	PIC	PC	PCV	PR	PI	PSH	PSL	PSHL	PRT	PIT	PT	PY	PE	PP		PG	PSV, PSE	PV	
PD	PRESSURE, DIFFERENTIAL	(5)	PDRC	PDIC	PDC	PDCV	PDR	PDI	PDSH	PDSL		PDRT	PDIT	PDT	PDY	PE	PP		PDG		PDV	
Q	QUANTITY		QRC	QIC			QR	QI	QSH	QSL	QSHL	QRT	QIT	QT	QY	QE					QZ	
R	RADIATION		RRC	RIC	RC		RR	RI	RSH	RSL	RSHL	RRT	RIT	RT	RY	RE		RW			RZ	
S	SPEED, FREQUENCY		SRC	SIC	SC	SCV	SR	SI	SSH	SSL	SSLH	SRT	SIT	ST	SY	SE					SV	
T	TEMPERATURE		TRC	TIC	TC	TCV	TR	TI	TSH	TSL	TSHL	TRT	TIT	TT	TY	TE	TP	TW	TG	TSE	TV	
TD	TEMPERATURE, DIFFERENTIAL		TDRC	TDIC	TDC	TDCV	TDR	TDI	TDSH	TDSL		TDRT	TDIT	TDT	TDY	TE	TP	TW			TDV	
U	MULTIVARIABLE						UR	UI							UY						UV	
V	VIBRATION, MACHINERY ANALYSIS						VR	VI	VSH	VSL	VSHL	VRT	VIT	VT	VY	VE					VZ	
W	WEIGHT FORCE		WRC	WIC	WC	WCV	WR	WI	WSH	WSL	WSHL	WRT	WIT	WT	WY	WE					WZ	
WD	WEIGHT FORCE, DIFFERENTIAL		WDRC	WDIC	WDC	WDCV	WDR	WDI	WDSH	WDSL		WDRT	WDIT	WDT	WDY	WE					WDZ	
X	SAFETY (BLOCK VALVE)	(4)																		XY	XV	
Y	EVENT STATE PRESENCE	(3)		YIC	YC		YR	YI	YSH	YSL				YT	YY	YE					YZ	
Z	POSITION, DIMENSION		ZRC	ZIC	ZC	ZCV	ZR	ZI	ZSO	ZCS		ZRT	ZIT	ZT	ZY	ZE					ZV	
ZD	GAUGING, DEVIATION	(5)	ZDRC	ZDIC	ZDC	ZDCV	ZDR	ZDI	ZDSH	ZDSL		ZDRT	ZDIT	ZDT	ZDY	ZDE					ZDV	

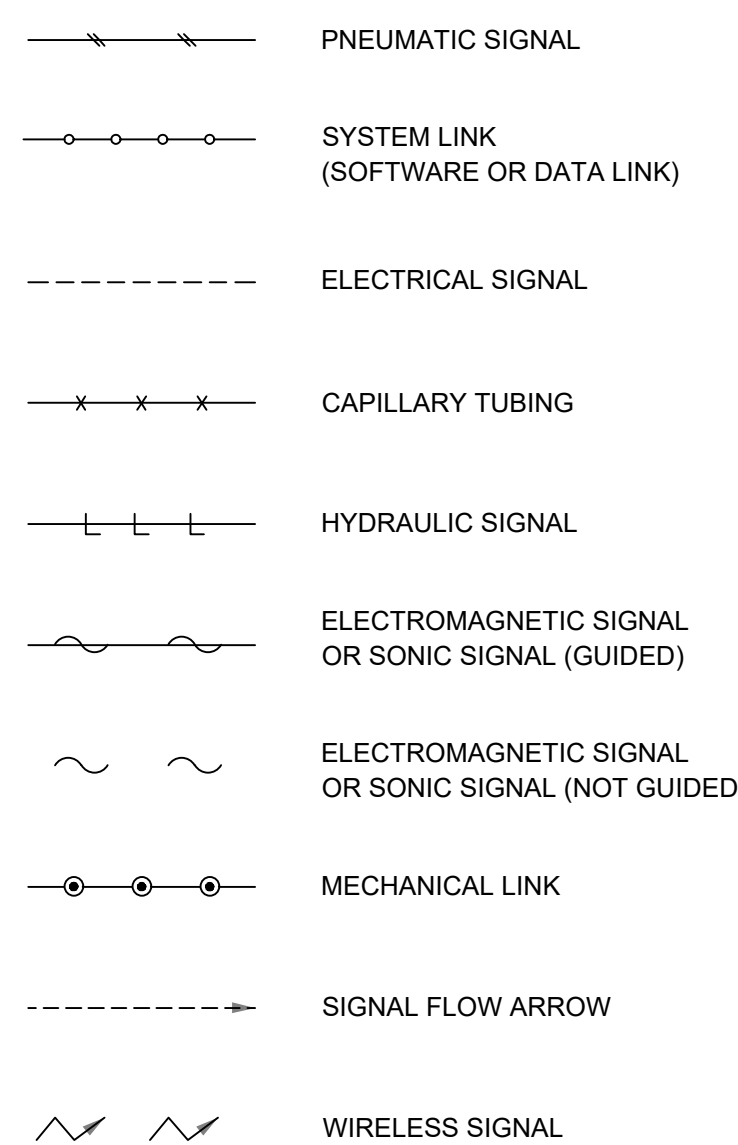
NOTE: THIS TABLE IS NOT ALL-INCLUSIVE  
 \* 'A', ALARM, THE ANNUNCIATING DEVICE, MAY BE USED IN THE SAME FASHION AS 'S'. SWITCH, THE ACTUATING DEVICE.  
 \*\* THE LETTERS H AND L MAY BE OMITTED IN THE UNDEFINED CASE.

OTHER POSSIBLE COMBINATIONS:  
 FO - RESTRICTION ORIFICE  
 FRK, HIK - CONTROL STATIONS  
 FX - ACCESSORIES  
 TJR - SCANNING RECORDER  
 LL - LOW LOW  
 LLH - PILOT LIGHT

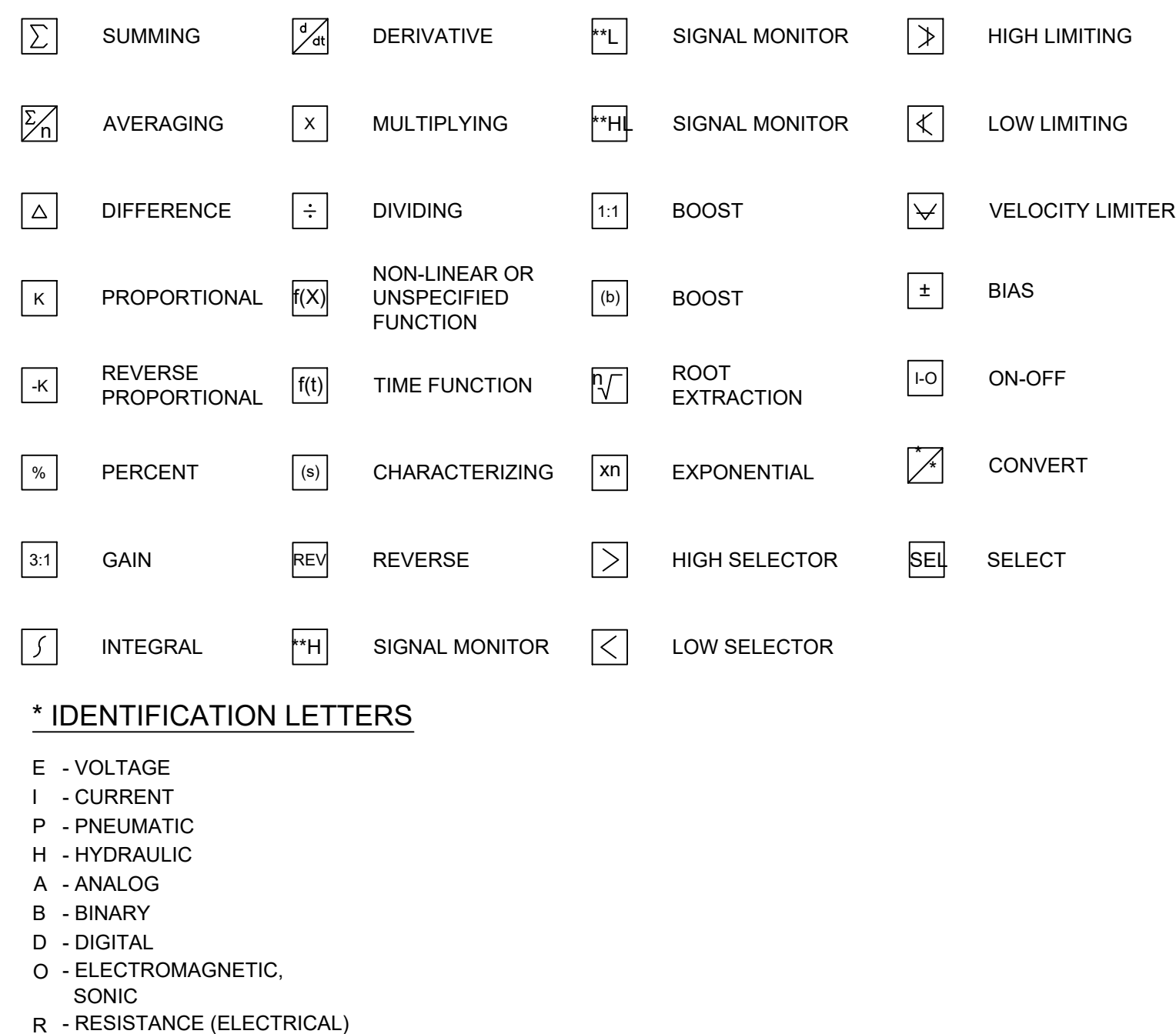
FFIC - RATIO  
 KQI - RUNNING TIME INDICATOR  
 QQI - INDICATING COUNTER  
 WKIC - RATE-OF-WEIGHT-LOSS CONTROLLER  
 HH - HIGH HIGH  
 HMS - HAND MOMENTARY SWITCH

- NOTES:
- FIRST LETTER 'A' (ANALYSIS) COVERS ALL ANALYZERS. THE TYPE OF ANALYZER WILL BE DESCRIBED OUTSIDE THE INSTRUMENT BALLOON.
  - FUNCTIONS OF TRANSDUCERS, RELAYS, FUNCTION BLOCKS ETC. ARE SHOWN OUTSIDE THE INSTRUMENT BALLOON.
  - FIRST LETTER 'Y' IS INTENDED FOR USE WHEN CONTROL OR MONITORING RESPONSES ARE EVENT DRIVEN AS OPPOSED TO TIME OR TIME SCHEDULE DRIVEN. 'Y' IN THIS POSITION CAN ALSO SIGNIFY PRESENCE OR STATE.
  - USAGE: 'X' - EMERGENCY AND/OR SHUTDOWN. IF BOTH FUNCTIONS (EMERGENCY AND SHUTDOWN) ARE PRESENT, AND A NEED TO DIFFERENTIATE EXISTS, THEN THE APPROPRIATE WORD IS TO BE ADDED OUTSIDE THE INSTRUMENT BALLOON.
  - ANY FIRST LETTER IF USED IN COMBINATION WITH MODIFYING LETTERS 'D' (DIFFERENTIAL), 'F' (RATIO), 'K' (TIME RATE OF CHANGE), 'Q' (ITERATE OR TOTALIZE), OR ANY COMBINATION IS TREATED AS A FIRST LETTER ENTITY. THUS, INSTRUMENT TDI AND TI INDICATE TWO DIFFERENT VARIABLES, NAMELY DIFFERENTIAL TEMPERATURE AND TEMPERATURE. MODIFYING LETTERS ARE USED WHEN APPLICABLE.
  - PRESSURE RELIEF VALVES, PRESSURE SAFETY VALVES, RUPTURE DISCS AND PRESSURE/VACUUM RELIEF VALVES ARE SHOWN AS PRV, PSV, PSE AND PVRV RESPECTIVELY.
  - THE USE OF 'USERS CHOICE' INITIATING OR MEASURED VARIABLE ARE PROJECT SPECIFIC.

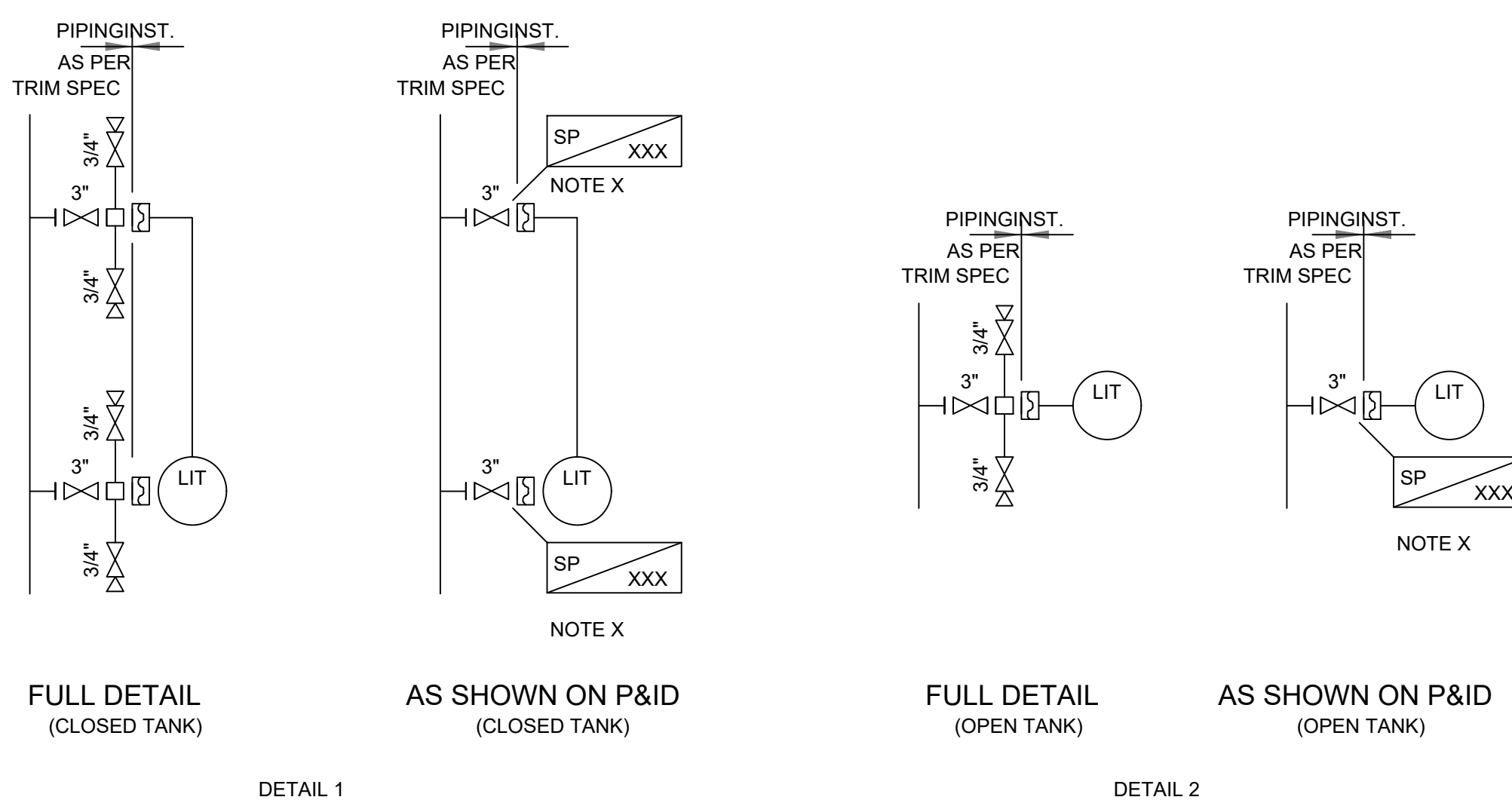
INSTRUMENT SIGNAL LINES



FUNCTION IDENTIFICATION



BLEED RING DETAIL



A NOTE WILL ACCOMPANY THE SP ITEM TO REFER TO FULL DETAIL ON THE LEAD SHEET STD-PID-0003.

- MOTOR CONTROL SIGNALS:  
 S/S - START/STOP (MAINTAINED)  
 ST - START  
 SP - STOP  
 RS - RUN STATUS  
 FS - FAULT STATUS  
 S/D - SHUTDOWN  
 SI - SPEED INDICATION  
 SY - SPEED CONTROL  
 GF - GROUND FAULT PROTECTION
- CONTROL STATION:  
 ESD - EMERGENCY SHUTDOWN  
 HA - HAND/AUTO  
 HOA - HAND/OFF/AUTO  
 LSR - LOCAL/STOP/REMOTE  
 MA - MANUAL/AUTO  
 OA - OFF/AUTO  
 JA - JOG/AUTO  
 JOA - JOG/OFF/AUTO

Rev	Date	Description	Drawn	Design	App'd
1	2026-02-27	ISSUED FOR QUOTATION	GP	CS	MD
0	2025-12-18	ISSUED FOR PERMITTING	GP	CS	MD

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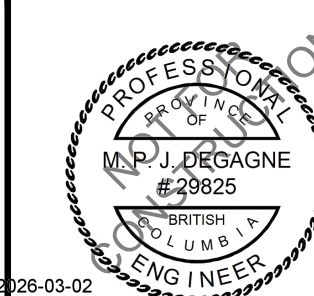
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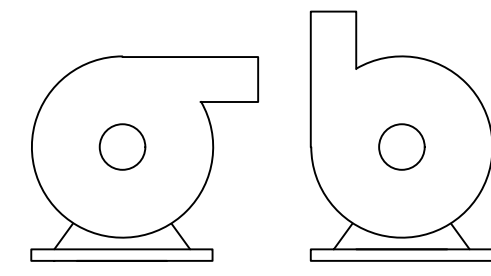
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 PERMIT NUMBER: 1003299  
 Engineers and Geoscientists of BC



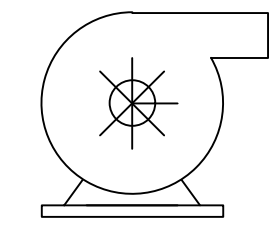
DISTRICT OF HUDSON'S HOPE  
 9904 DUDLEY DRIVE, HUDSON'S HOPE, BC, V0C 1V0  
**WATER TREATMENT PLANT  
 UPGRADES - PACKAGE 3  
 PROCESS  
 INSTRUMENTATION SYMBOLOLOGY**

Drawing No. **P-000**  
 Sheet **03 OF 06**  
 Project Number **3111-27018-02** Rev. **1**

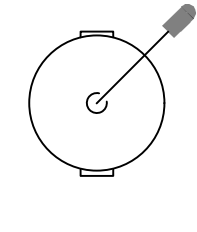
**PUMPS**



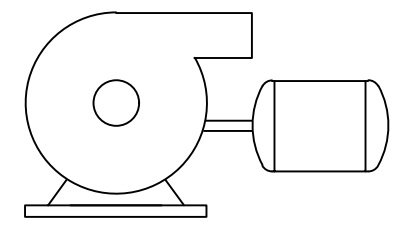
CENTRIFUGAL PUMP GENERAL (PFD ONLY)



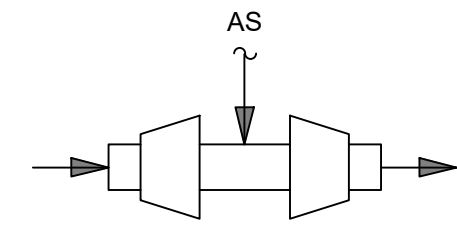
GEAR OR VANE PUMP



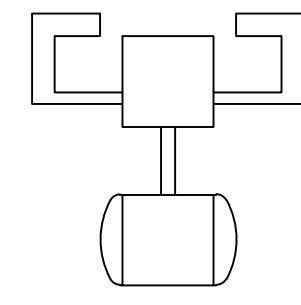
HAND OPERATED PUMP



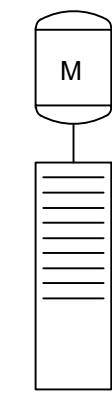
CENTRIFUGAL PUMP MOTOR DRIVEN



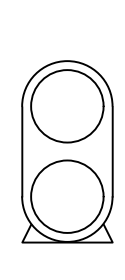
AIR OPERATED DIAPHRAGM PUMP



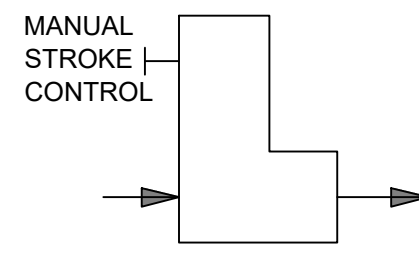
PUMP RECIPROCATING PROPORTIONING



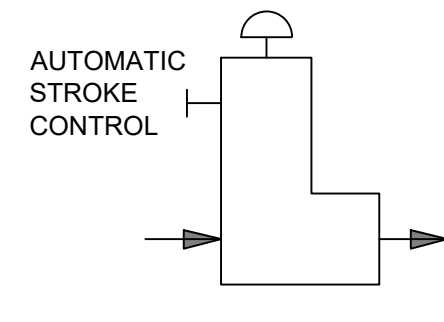
VERTICAL SUBMERSIBLE PUMP



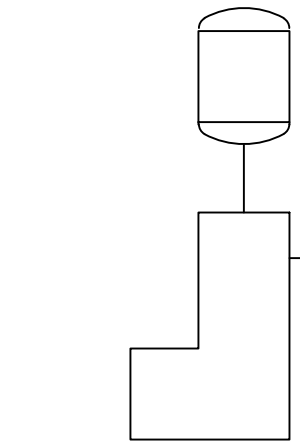
ROTARY PUMP MOTOR DRIVEN



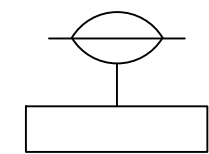
MANUAL PROPORTIONING PUMP



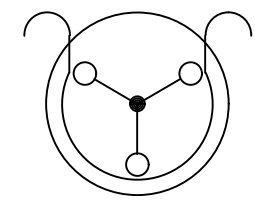
AUTOMATIC PROPORTIONING PUMP



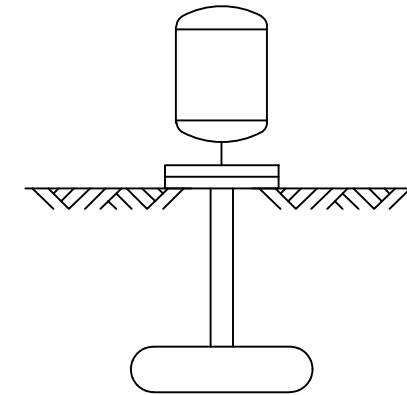
DIAPHRAGM METERING PUMP



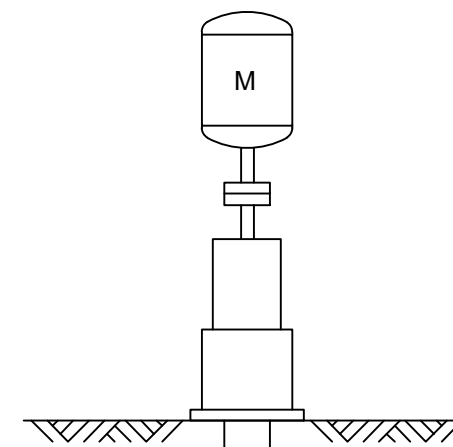
DIAPHRAGM PUMP



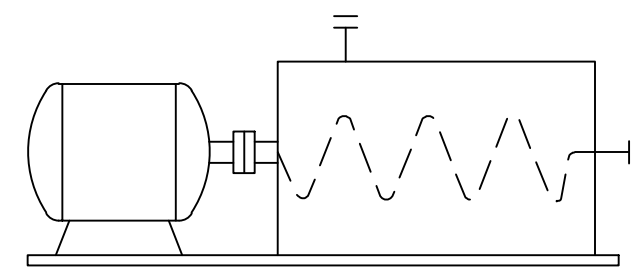
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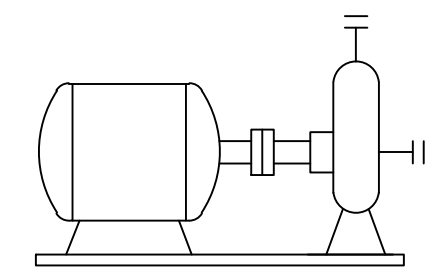
VERTICAL SUMP PUMP



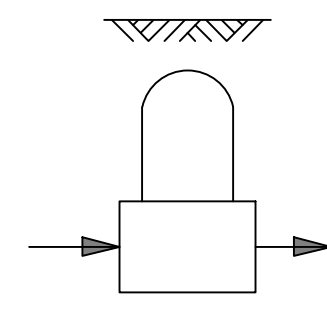
VERTICAL TURBINE PUMP



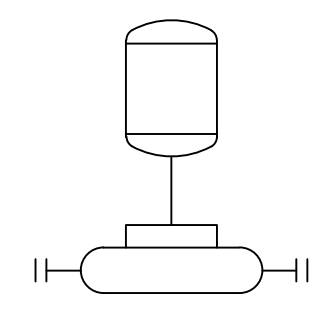
PROGRESSIVE CAVITY OR SCREW PUMP MOTOR DRIVEN



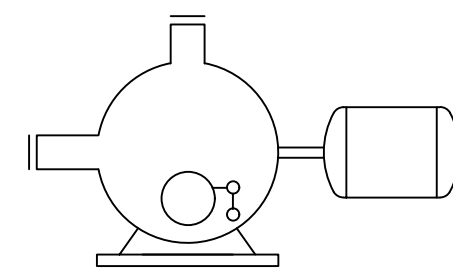
SINGLE STAGE CENTRIFUGAL PUMP



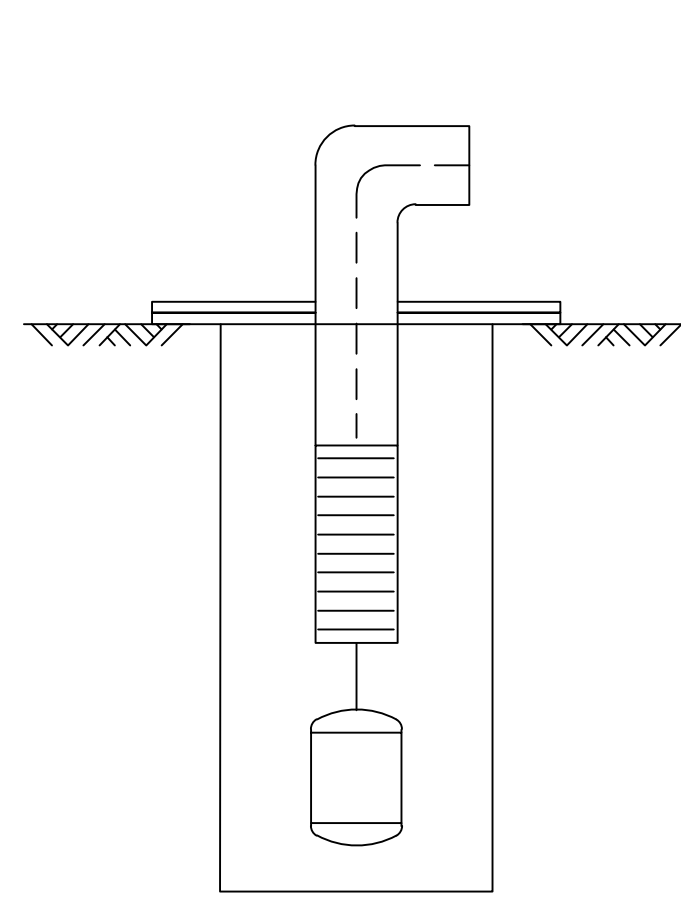
SUBMERSIBLE PUMP MOTOR DRIVEN



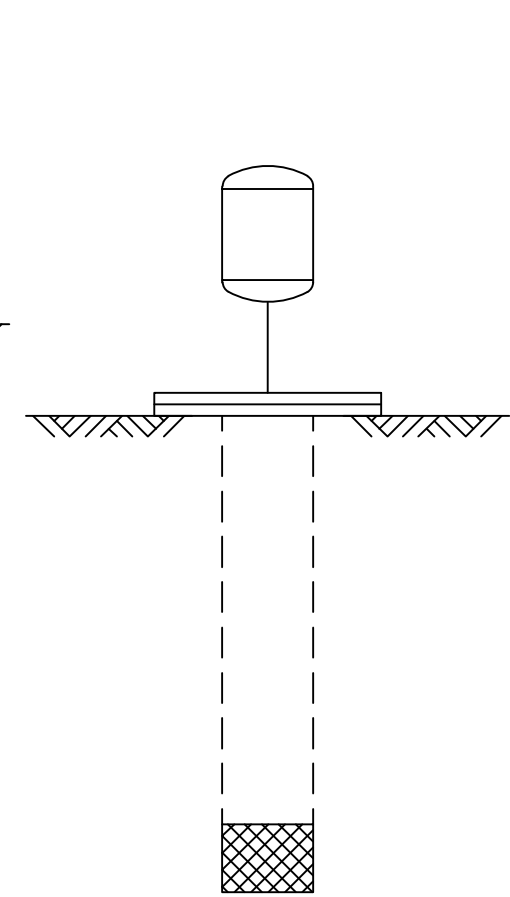
CENTRIFUGAL INLINE PUMP



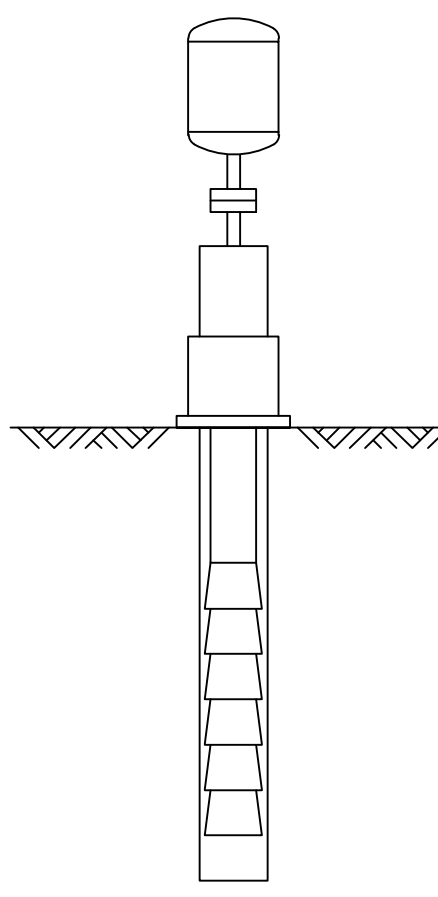
MULTIPHASE PUMP MOTOR DRIVEN



DEEP WELL SUBMERSIBLE PUMP MOTOR DRIVEN

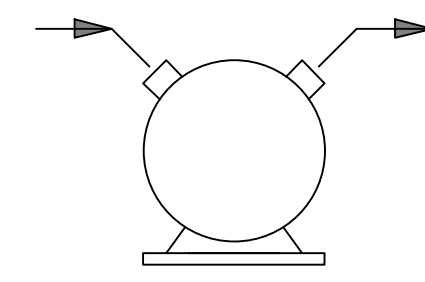


WELL PUMP MOTOR DRIVEN

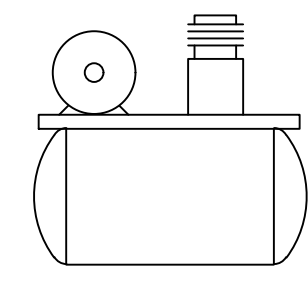


CANNED PUMP MOTOR DRIVEN

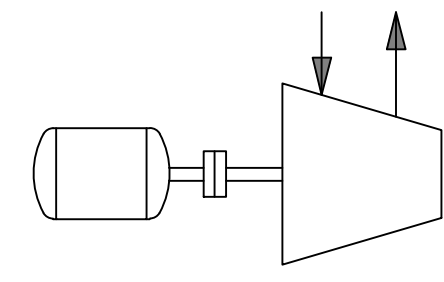
**COMPRESSORS**



COMPRESSOR RECIPROCATING

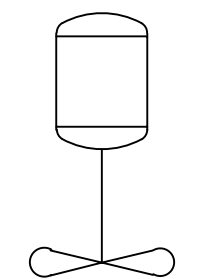


INSTRUMENT AIR COMPRESSOR C/W VOLUME BOTTLE

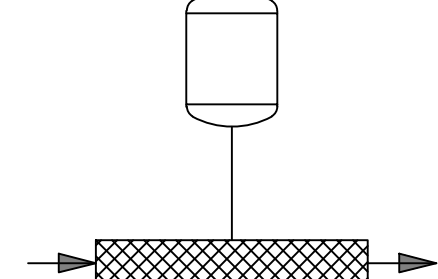


CENTRIFUGAL OR AXIAL COMPRESSOR MOTOR DRIVEN

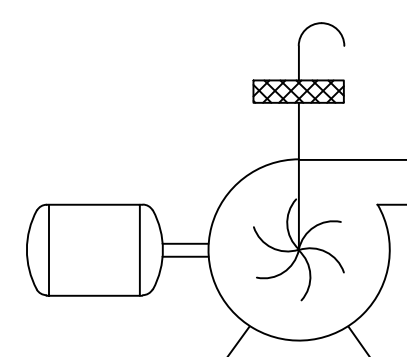
**MIXERS, BLOWERS**



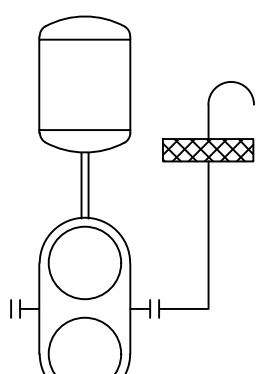
AGITATOR MIXER



MECHANICAL INLINE MIXER



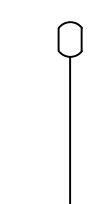
CENTRIFUGAL BLOWER MOTOR DRIVEN



POSITIVE DISPLACEMENT BLOWER

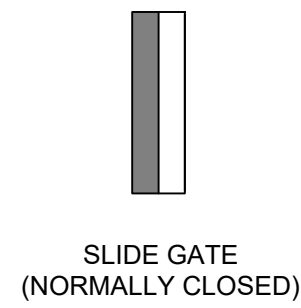


INLINE STATIC MIXER

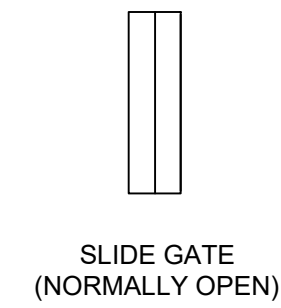


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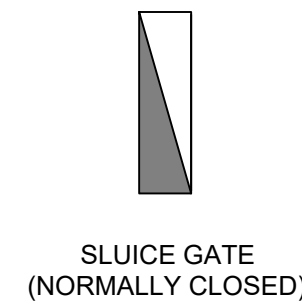
**MISCELLANEOUS**



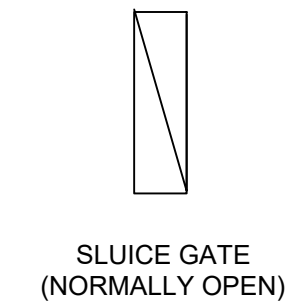
SLIDE GATE (NORMALLY CLOSED)



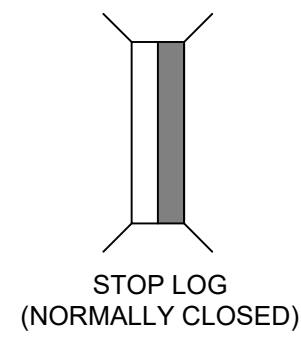
SLIDE GATE (NORMALLY OPEN)



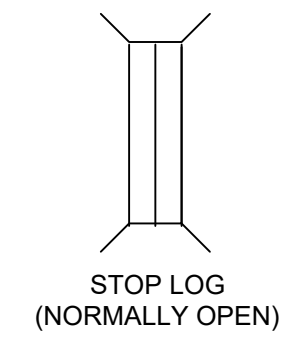
SLUICE GATE (NORMALLY CLOSED)



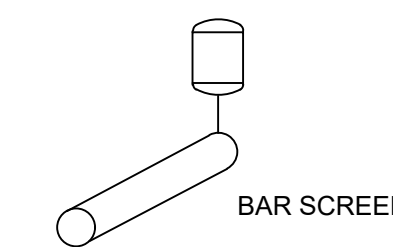
SLUICE GATE (NORMALLY OPEN)



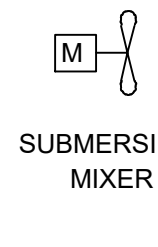
STOP LOG (NORMALLY CLOSED)



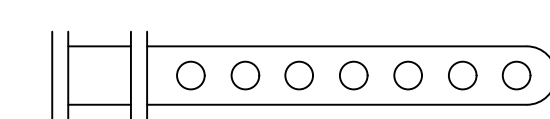
STOP LOG (NORMALLY OPEN)



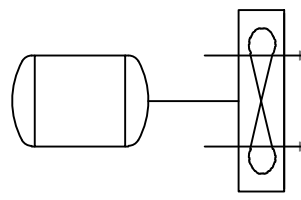
BAR SCREEN



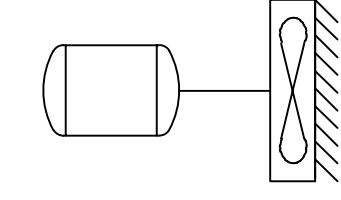
SUBMERSIBLE MIXER



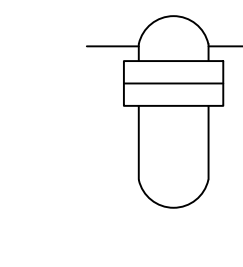
OUTFALL DIFFUSER



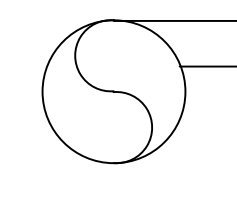
EXHAUST FAN



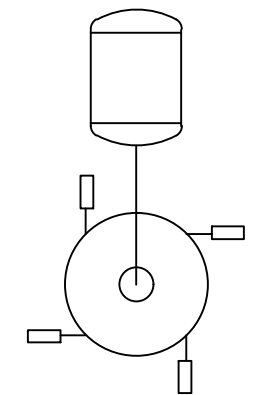
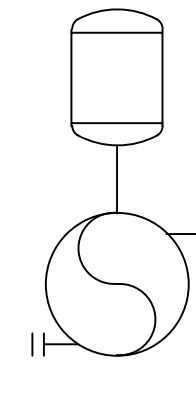
HEATER



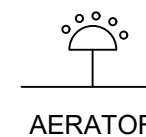
PIPELINE FILTER



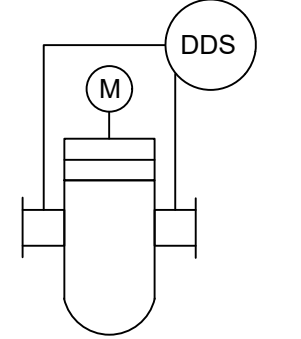
GRINDER



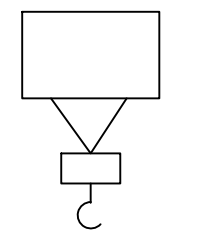
MICROTUBINE



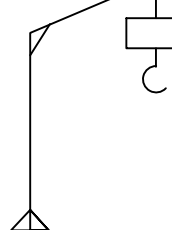
AERATOR



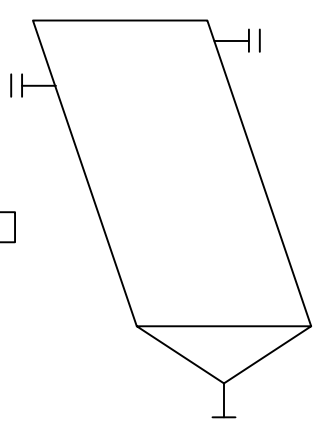
SELF CLEANING FILTER



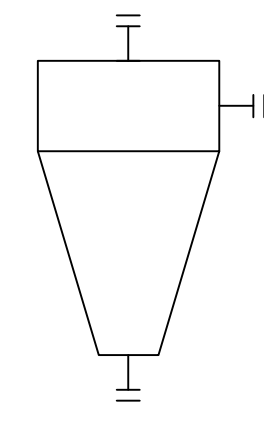
CRANE/HOIST



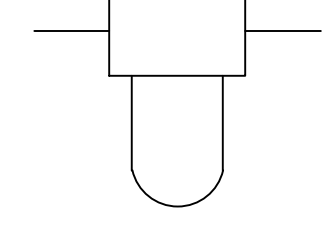
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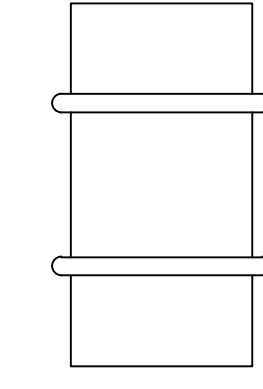
LAMELLA CLARIFIER



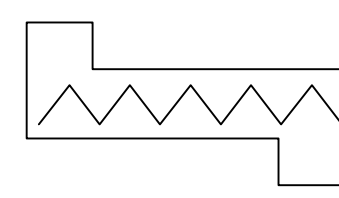
CYCLONE



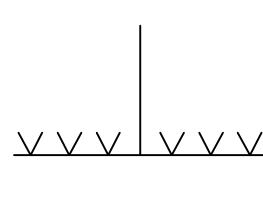
LIQUID SEPARATOR



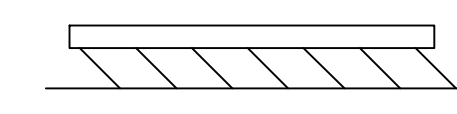
BARREL



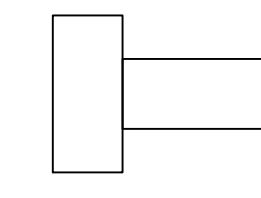
INLINE SLUDGE SCREEN



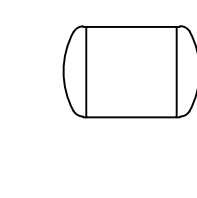
DIFFUSER HEADER



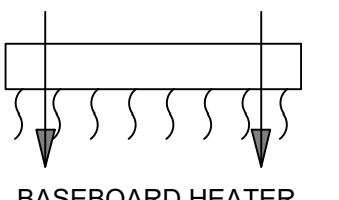
UV CHANNEL REACTOR



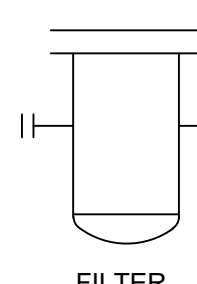
UV INLINE REACTOR



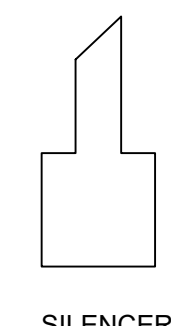
ELECTRIC MOTOR



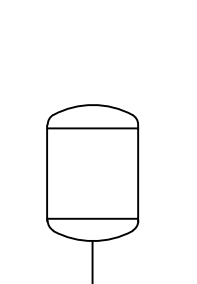
BASEBOARD HEATER



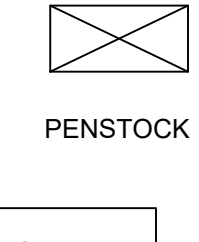
FILTER



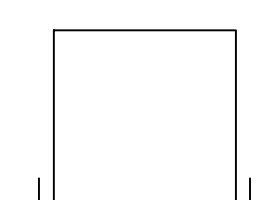
SILENCER



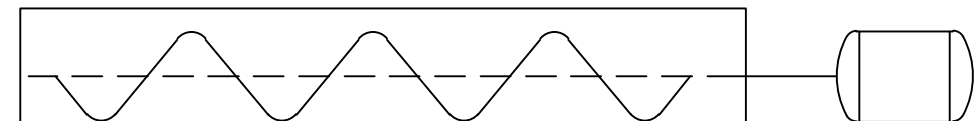
HOPPER



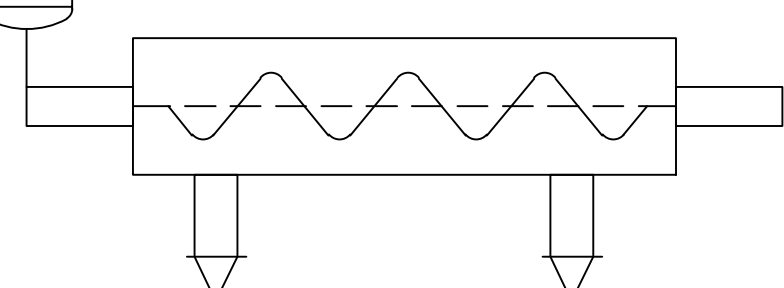
PENSTOCK



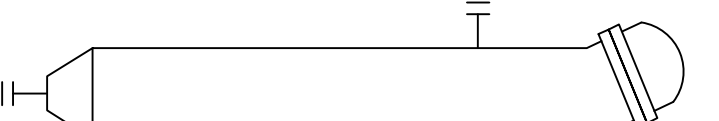
TOTE WITH SECONDARY TREATMENT



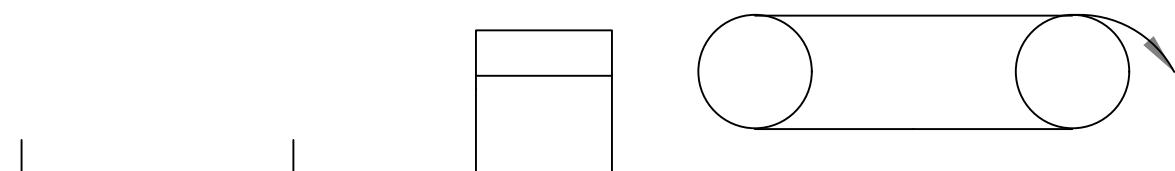
SCREW CONVEYOR



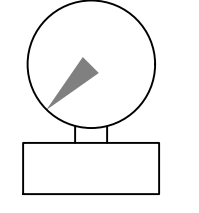
CENTRIFUGE



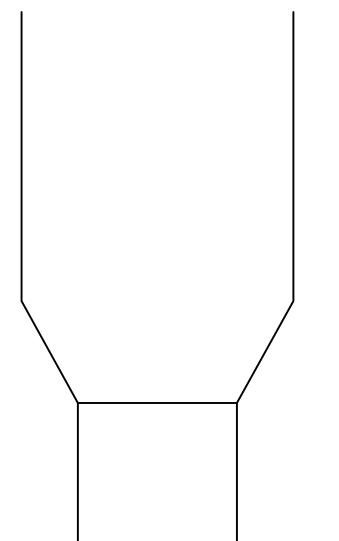
PIG OR INSPECTION TOOL RECEIVER/SENDER



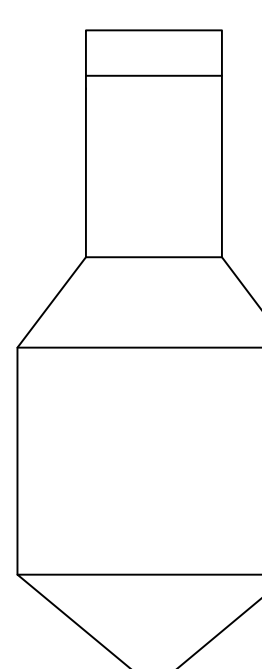
CONVEYOR



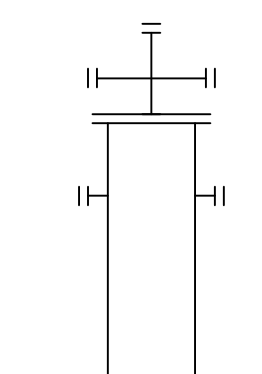
SCALE



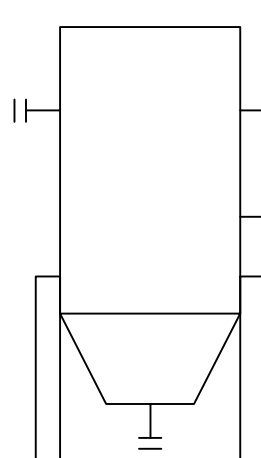
HOPPER BIN



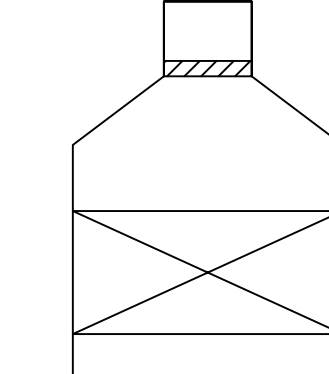
EVAPORATOR



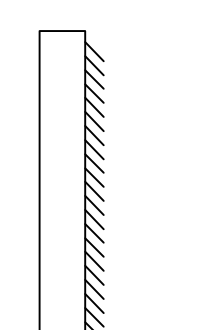
WELLHEAD



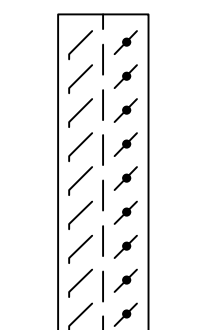
SPLITTER BOX



BIOTRICKLING FILTER



SUPPLY AIR GRILLS



RELIEF GRAVITY DAMPERS

Rev	Date	Description	Drawn	Design	App'd
1	2026-02-27	ISSUED FOR QUOTATION	GP	CS	MD
0	2025-12-18	ISSUED FOR PERMITTING	GP	CS	MD

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ORIGINAL DWG SIZE: ANSI D (22" x 34")

**McElhanney**

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Fort St. John BC V1J 6M2  
Tel. 250 787 0356

PERMIT TO PRACTICE  
McElhanney Ltd.

PERMIT NUMBER: 1003299  
Engineers and Geoscientists of BC

PROFESSIONAL ENGINEER  
M.P.J. DEGAJNE  
#29825  
2026-03-02  
Approved Sealed

DISTRICT OF HUDSON'S HOPE  
9904 DUDLEY DRIVE, HUDSON'S HOPE, BC, V0C 1V0

**WATER TREATMENT PLANT  
UPGRADES - PACKAGE 3  
PROCESS  
EQUIPMENT SYMBOLOLOGY**

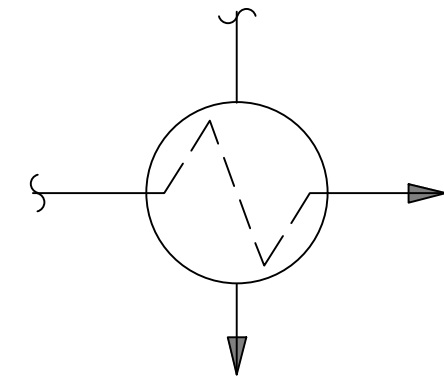
Drawing No. **P-000**

Sheet **04 OF 06**

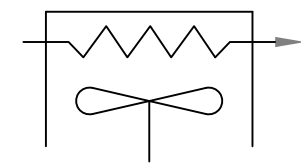
Project Number **3111-27018-02** Rev. **1**

DESTROY ALL PRINTS BEARING PREVIOUS REVISION

**EXCHANGERS**



SHELL AND TUBE EXCHANGER  
(PFD ONLY)



AIR-COOLED HEAT EXCHANGER

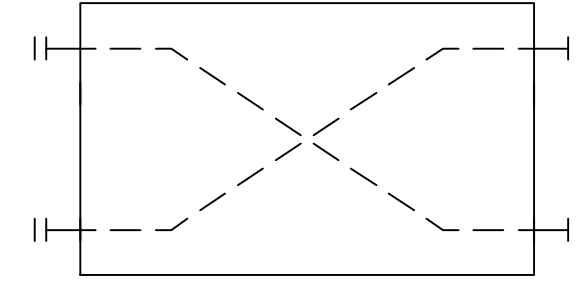
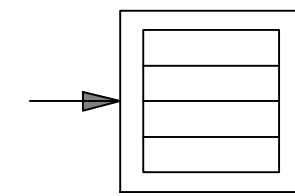
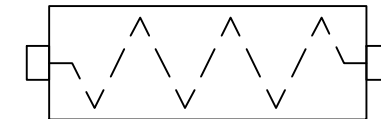


PLATE HEAT EXCHANGER

**HEATERS, COOLERS**

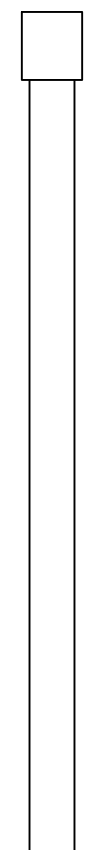


CATADYNE HEATER

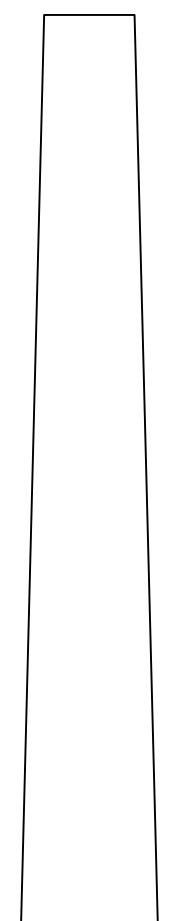


ELECTRIC HEATER

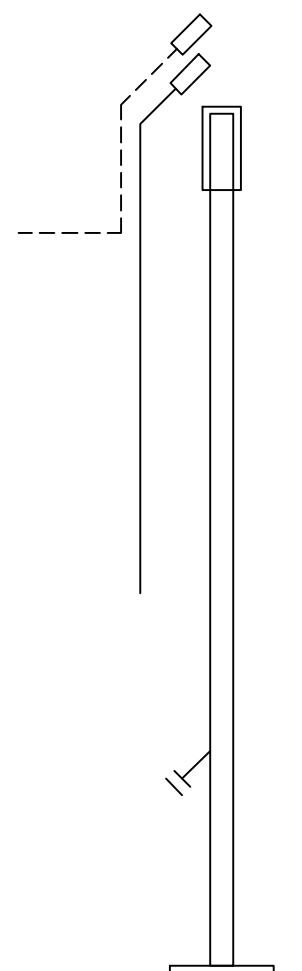
**STACKS**



VENT STACK

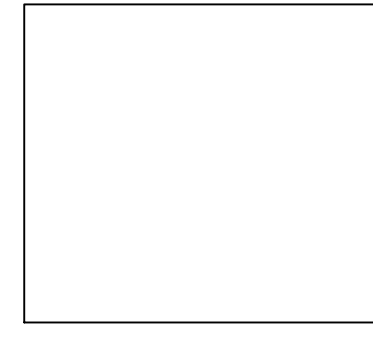


INCINERATOR/VENT STACK



FLARE STACK

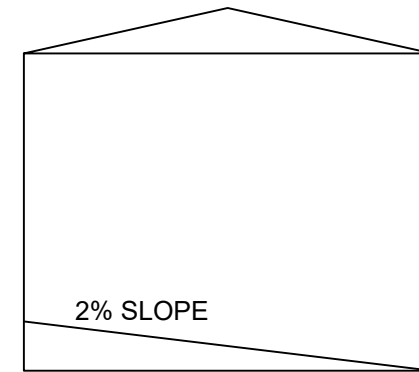
**STORAGE TANKS**



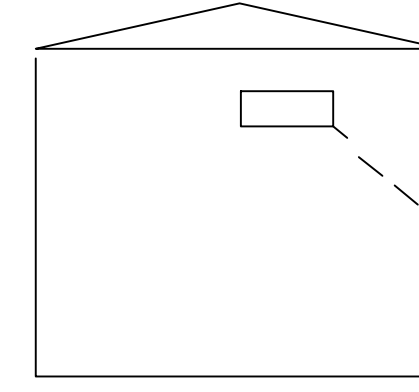
OPEN STORAGE TANK



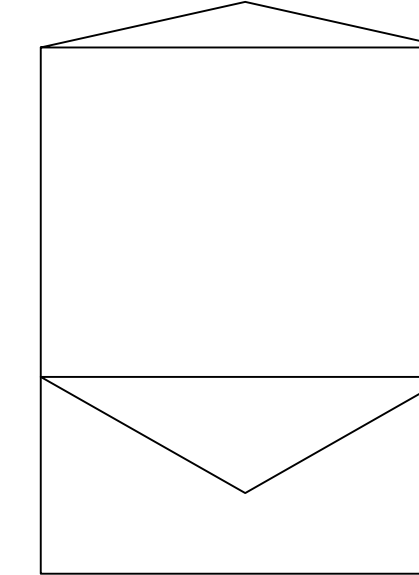
MANWAY



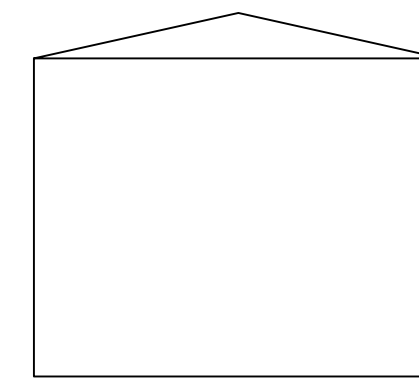
FIXED ROOF STORAGE TANK  
WITH SLOPED BOTTOM



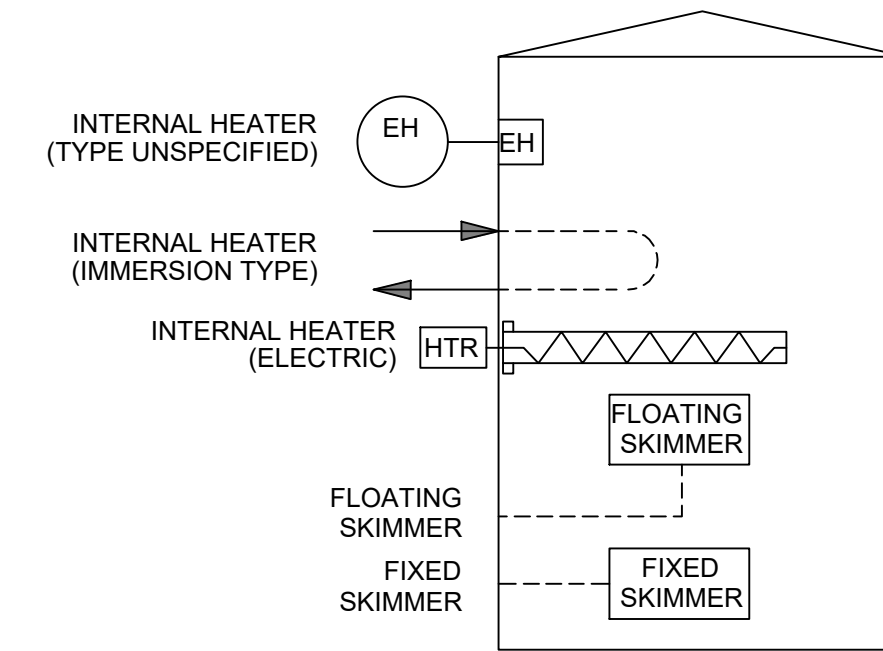
SKIM OIL TANK



CONE BOTTOM TANK

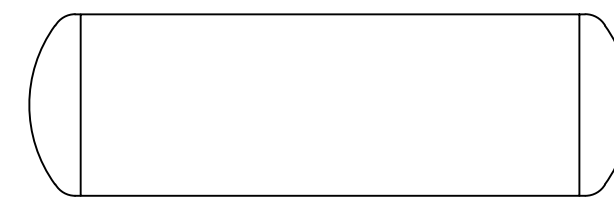


FIXED ROOF STORAGE TANK

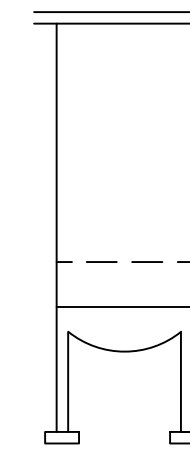


TANK INTERNAL OPTIONS

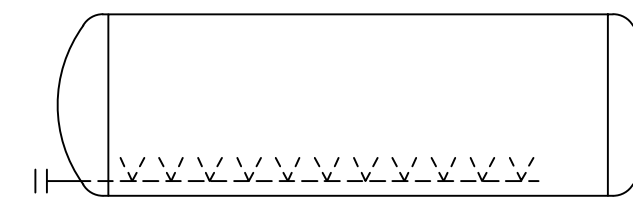
**VESSELS**



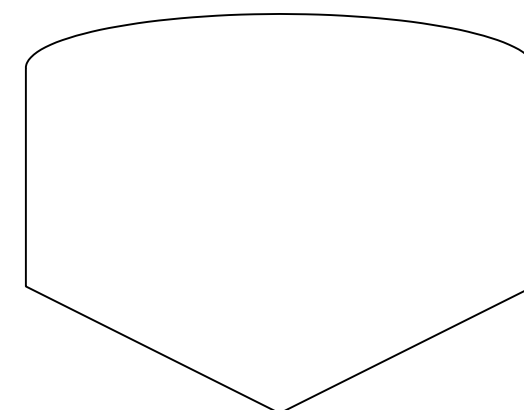
HORIZONTAL PRESSURE VESSEL



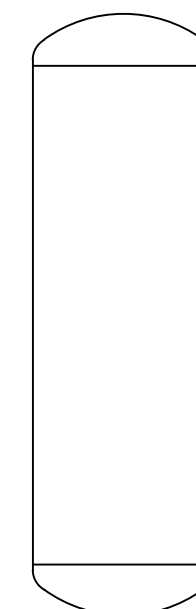
CARTRIDGE FILTER VESSEL



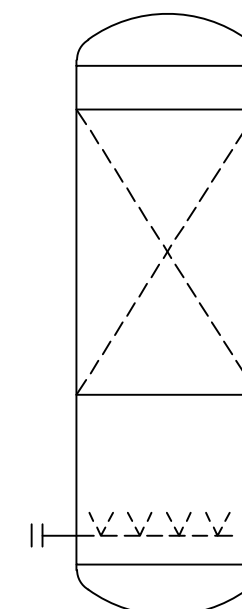
HORIZONTAL GAS STRIPPER



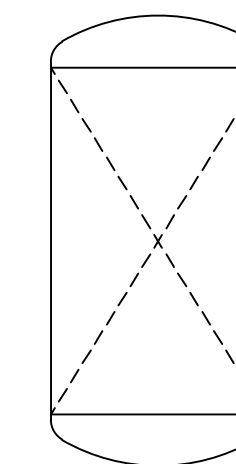
HOT LIME SOFTENER



VERTICAL PRESSURE VESSEL



VERTICAL GAS STRIPPER



FILTER VESSEL

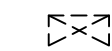
**VESSEL INTERNAL:**



VANE PACK



MESH PAD



VORTEX BREAKER

(NOTE: INTERNALS TO BE NOTED BY PROCESS ENGINEER.)

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0 1:1,000 50

ORIGINAL DWG SIZE: ANSI D (22" x 34")

**McElhanney**

8808 Northern Lights Drive,  
Fort St. John BC V1J 6M2  
Tel. 250 787 0356

PERMIT TO PRACTICE  
McElhanney Ltd.

PERMIT NUMBER: 1003299  
Engineers and Geoscientists of BC

2026-03-02  
Approved Sealed

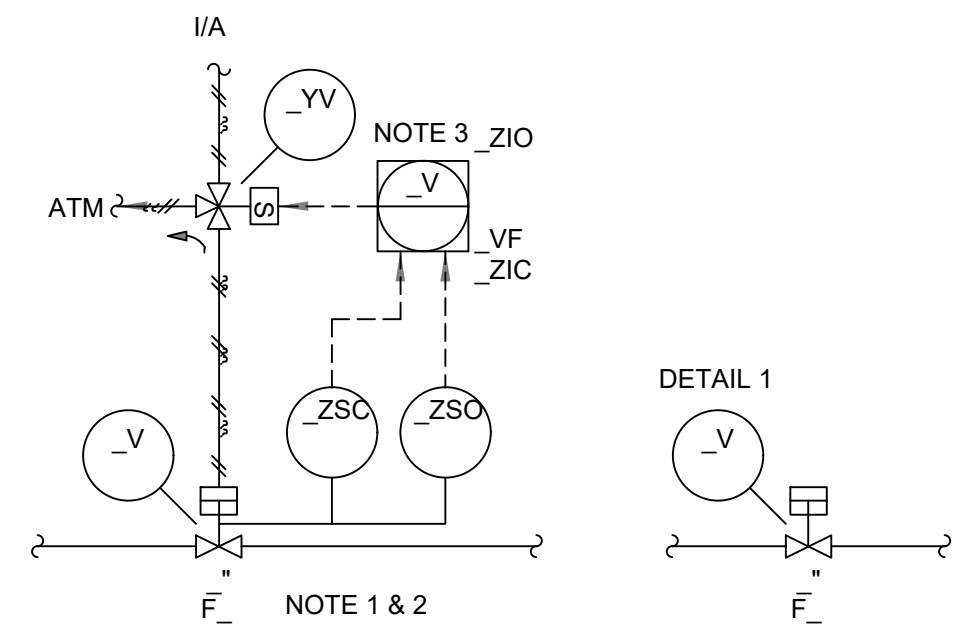
DISTRICT OF HUDSON'S HOPE  
9904 DUDLEY DRIVE, HUDSON'S HOPE, BC, V0C 1V0

**WATER TREATMENT PLANT  
UPGRADES - PACKAGE 3  
PROCESS  
EQUIPMENT SYMBOLOLOGY**

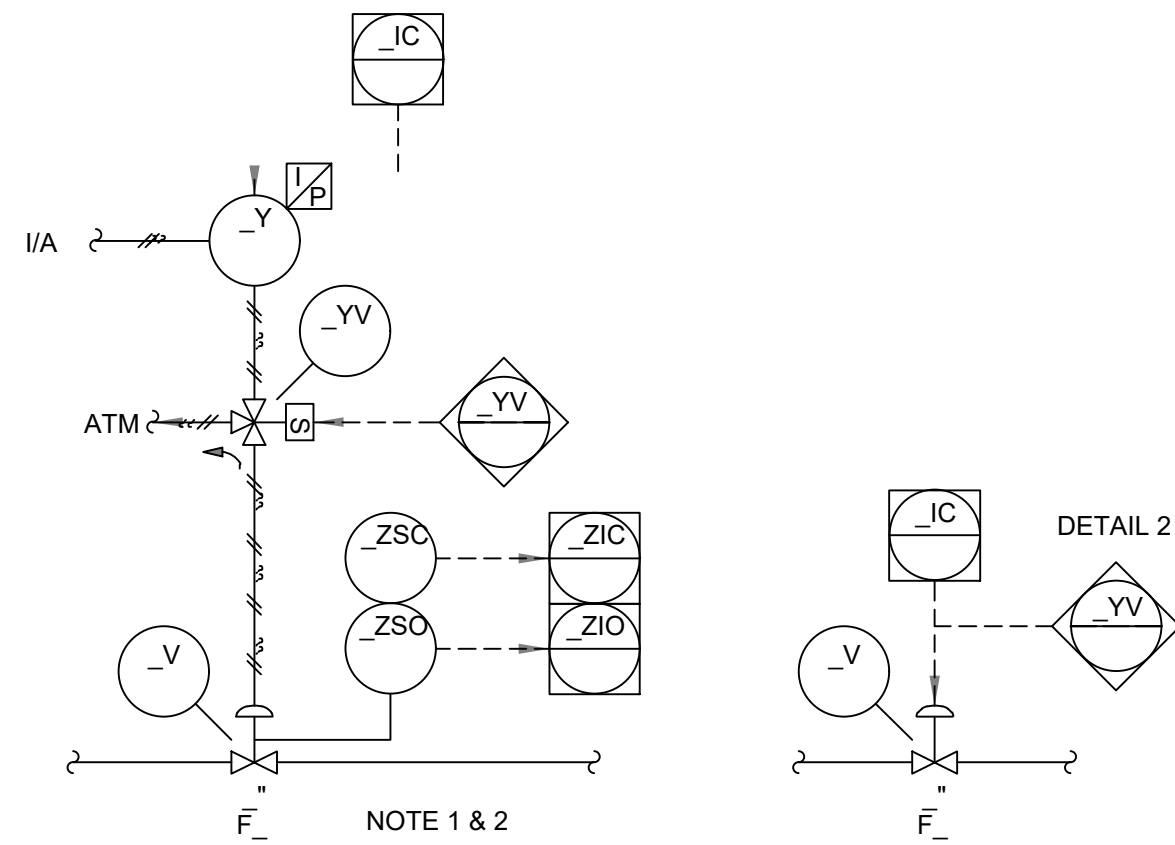
Drawing No. **P-000**

Sheet **05 OF 06**

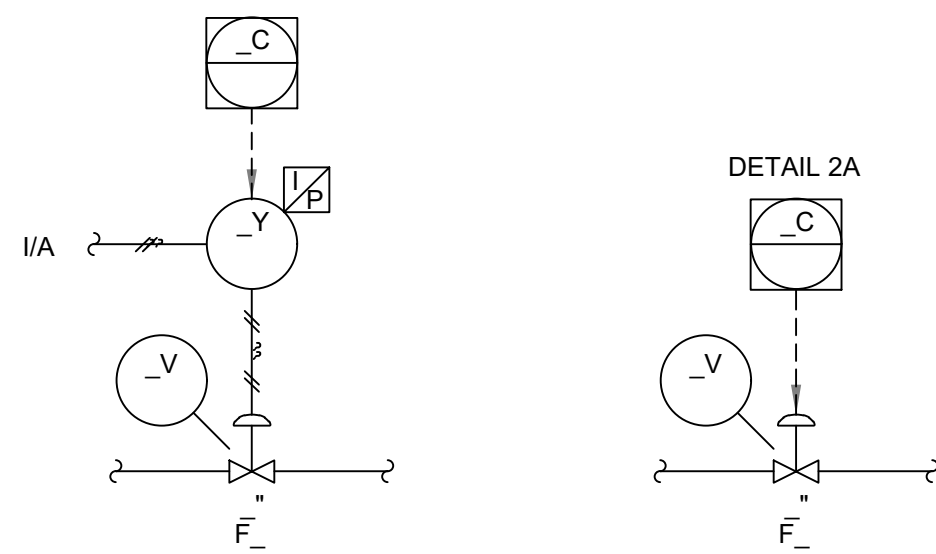
Project Number **3111-27018-02** Rev. **1**



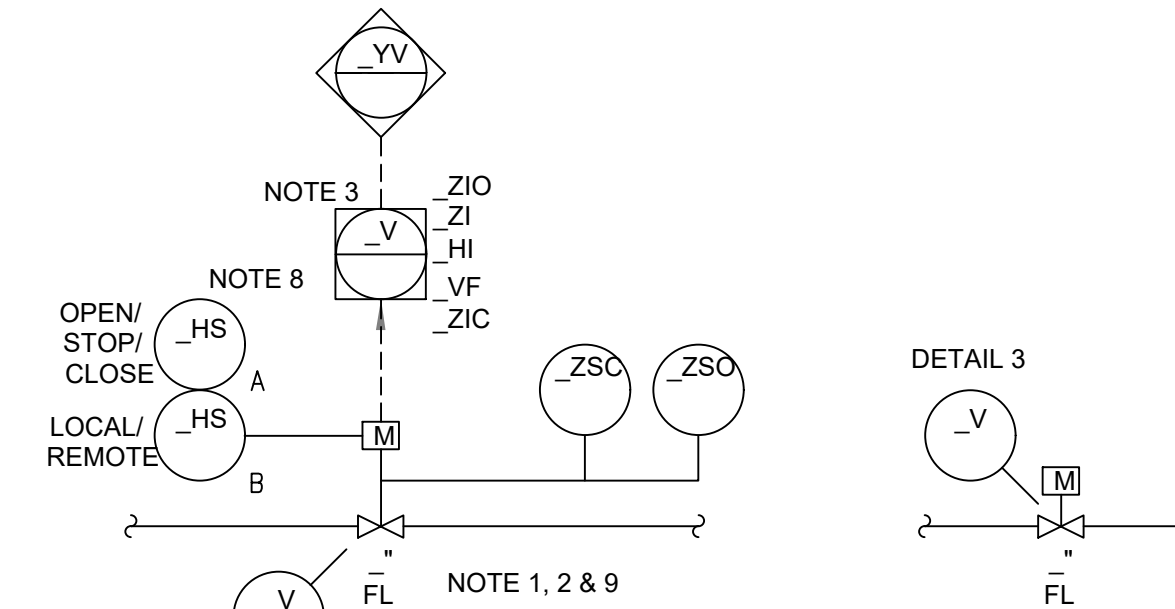
FULL DETAIL AS SHOWN ON P&ID  
**DETAIL 1**  
TYPICAL SWITCHING VALVE



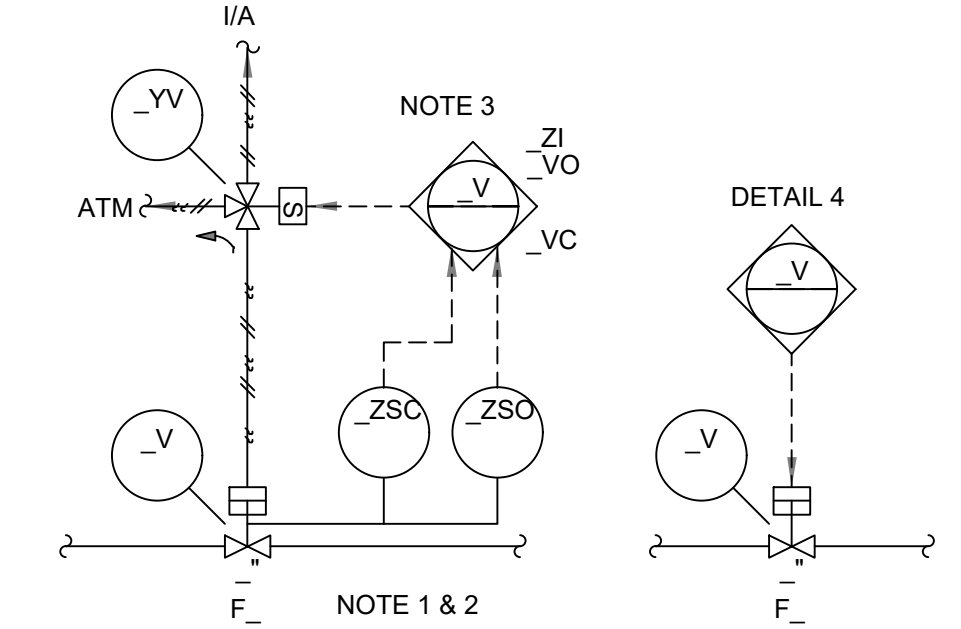
FULL DETAIL AS SHOWN ON P&ID  
**DETAIL 2**  
TYPICAL CONTROL VALVE WITH SAFETY (SHUTDOWN) OVERRIDE



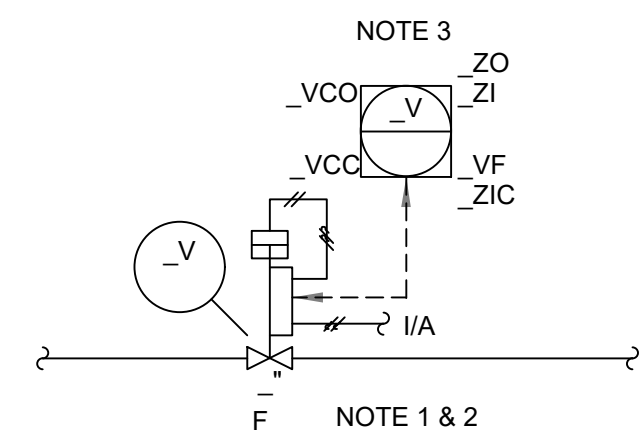
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**DETAIL 2A**  
TYPICAL CONTROL VALVE



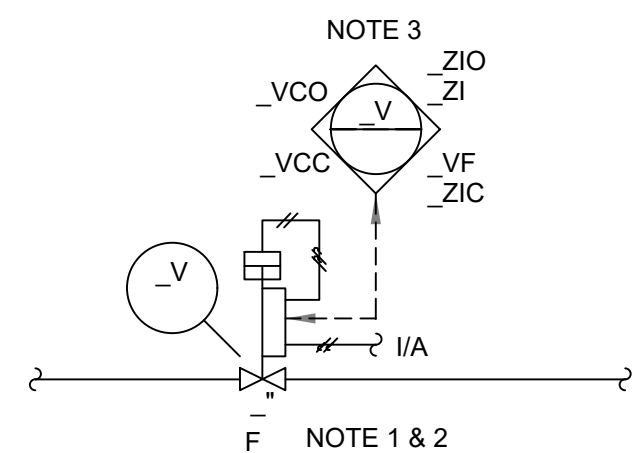
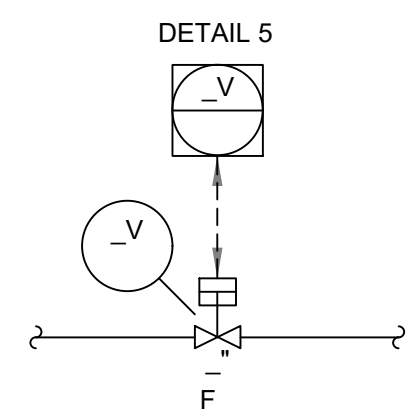
FULL DETAIL AS SHOWN ON P&ID  
**DETAIL 3**  
TYPICAL MOTOR OPERATED VALVE  
FL = FAIL LAST



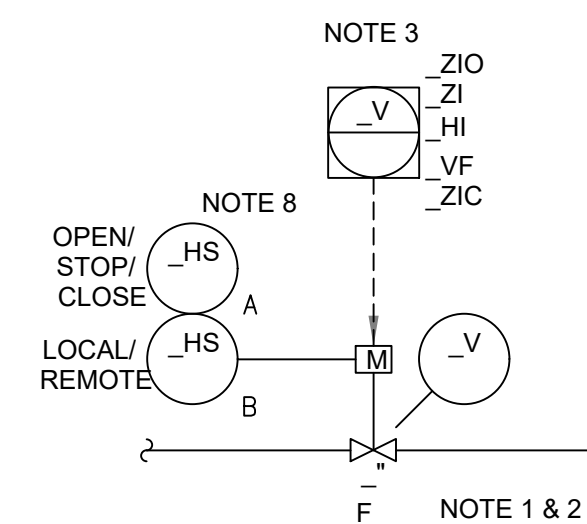
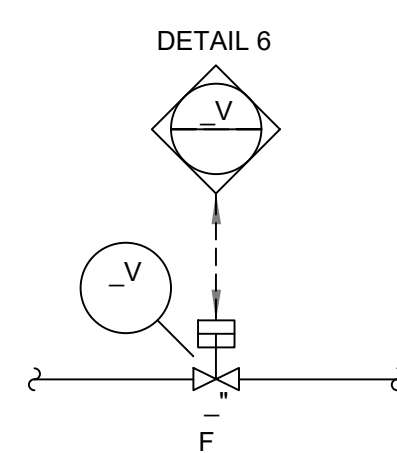
FULL DETAIL AS SHOWN ON P&ID  
**DETAIL 4**  
ESD OR ON/OFF VALVE HARD WIRED TO SAFETY SYSTEM



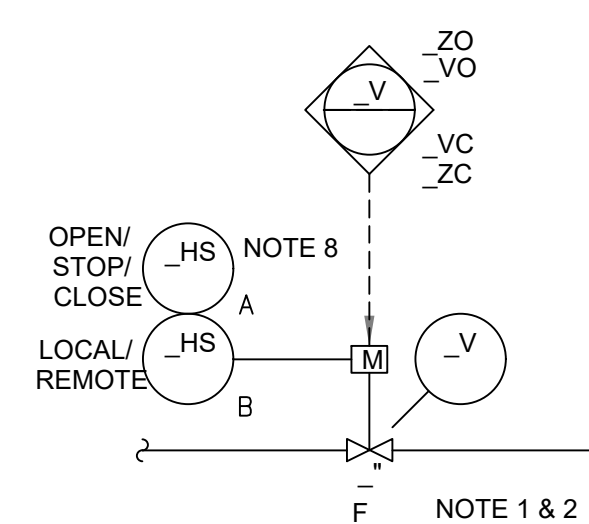
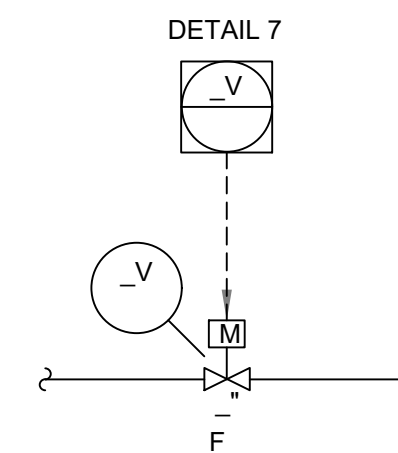
FULL DETAIL AS SHOWN ON P&ID  
**DETAIL 5**  
TYPICAL FOUNDATION FIELDBUS ON/OFF VALVE CONNECTED TO BPCS



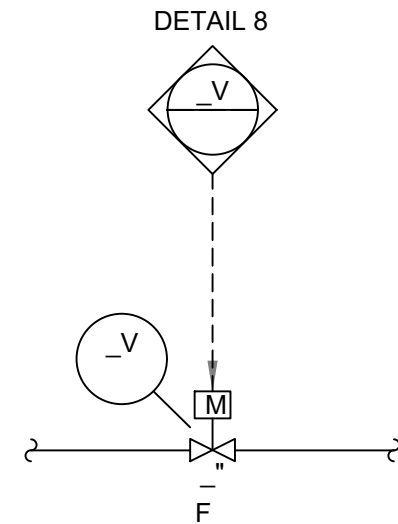
FULL DETAIL AS SHOWN ON P&ID  
**DETAIL 6**  
TYPICAL FOUNDATION FIELDBUS ON/OFF VALVE CONNECTED TO SAFETY SYSTEM



FULL DETAIL AS SHOWN ON P&ID  
**DETAIL 7**  
TYPICAL FOUNDATION FIELDBUS MOTOR OPERATED VALVE CONNECTED TO BPCS



FULL DETAIL AS SHOWN ON P&ID  
**DETAIL 8**  
TYPICAL FOUNDATION FIELDBUS MOTOR OPERATED VALVE CONNECTED TO SAFETY SYSTEM



- NOTES:**
- REFER TO P&ID FOR ACTUAL VALVE BODY, ACTUATOR TYPE AND FAIL POSITION.
  - \_V FIRST DIGIT REFERS TO SERVICE. I.E. FLOW, TEMPERATURE, PRESSURE, ETC.
  - DIGITAL COMPOSITE SOFT POINT WILL HAVE THE SAME TAG AS VALVE.
  - ESD RESETS WILL BE PROVIDED FOR VALVES OR GROUPS OF VALVES.
  - POSITION SWITCH CONFIRMS FAIL POSITION. I.E. ZSC ON FO VALVE, ZSO ON FO VALVE.
  - VALVE POSITION INDICATION BASED ON POSITION SWITCHES.
  - DETAIL ON P&ID SPECIFYING WHICH VALVE CONTROL ARRANGEMENT TO BE USED.
  - HS WILL NOT BE TAGGED IF INTEGRAL TO ACTUATOR.
  - ALL MOV'S TYPICALLY FAIL LAST, UNLESS SPECIFIED FAIL POSITION. BATTERY PACK IS REQUIRED.
  - DEPICTIONS SHOWN ARE FOR GUIDANCE. SOME PROJECTS MAY REQUIRE DIFFERENT ARRANGEMENTS, THESE SHOULD BE REFLECTED ON THE P&ID.

- LEGEND:**
- NOTE 2
  - \_YV= SOLENOID (DO)/SHUTDOWN
  - \_ZSO= OPEN POSITION SWITCH (DI)
  - \_ZSC= CLOSED POSITION SWITCH (DI)
  - \_ZIO= OPEN INDICATION (SOFT)
  - \_ZIC= CLOSE INDICATION (SOFT)
  - \_ZI= VALVE POSITION (SOFT) NOTE 6
  - \_VCO= OPEN COMMAND (SOFT)
  - \_VCC= CLOSED COMMAND (SOFT)
  - \_VO= OPEN COMMAND (DO)
  - \_VC= CLOSE COMMAND (DO)
  - \_HI= LOCAL/REMOTE (SOFT)
  - \_VF= FAULT (SOFT)
  - \_Y= I/P TRANSDUCER (AO)

Rev	Date	Description	Drawn	Design	App'd
1	2026-02-27	ISSUED FOR QUOTATION	GP	CS	MD
0	2025-12-18	ISSUED FOR PERMITTING	GP	CS	MD

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PERMIT NUMBER: 1003299  
Engineers and Geoscientists of BC

**PROFESSIONAL ENGINEER**

M.P.J. DEGAJNE  
#29825  
BRITISH COLUMBIA  
ENGINEER

2026-03-02  
Approved Sealed

**DISTRICT OF HUDSON'S HOPE**  
9904 DUDLEY DRIVE, HUDSON'S HOPE, BC, V0C 1V0

**WATER TREATMENT PLANT UPGRADES - PACKAGE 3**

**PROCESS INSTRUMENTATION SYMBOLOLOGY**

Drawing No. **P-000**

Sheet **06 OF 06**

Project Number **3111-27018-02**

Rev. **1**