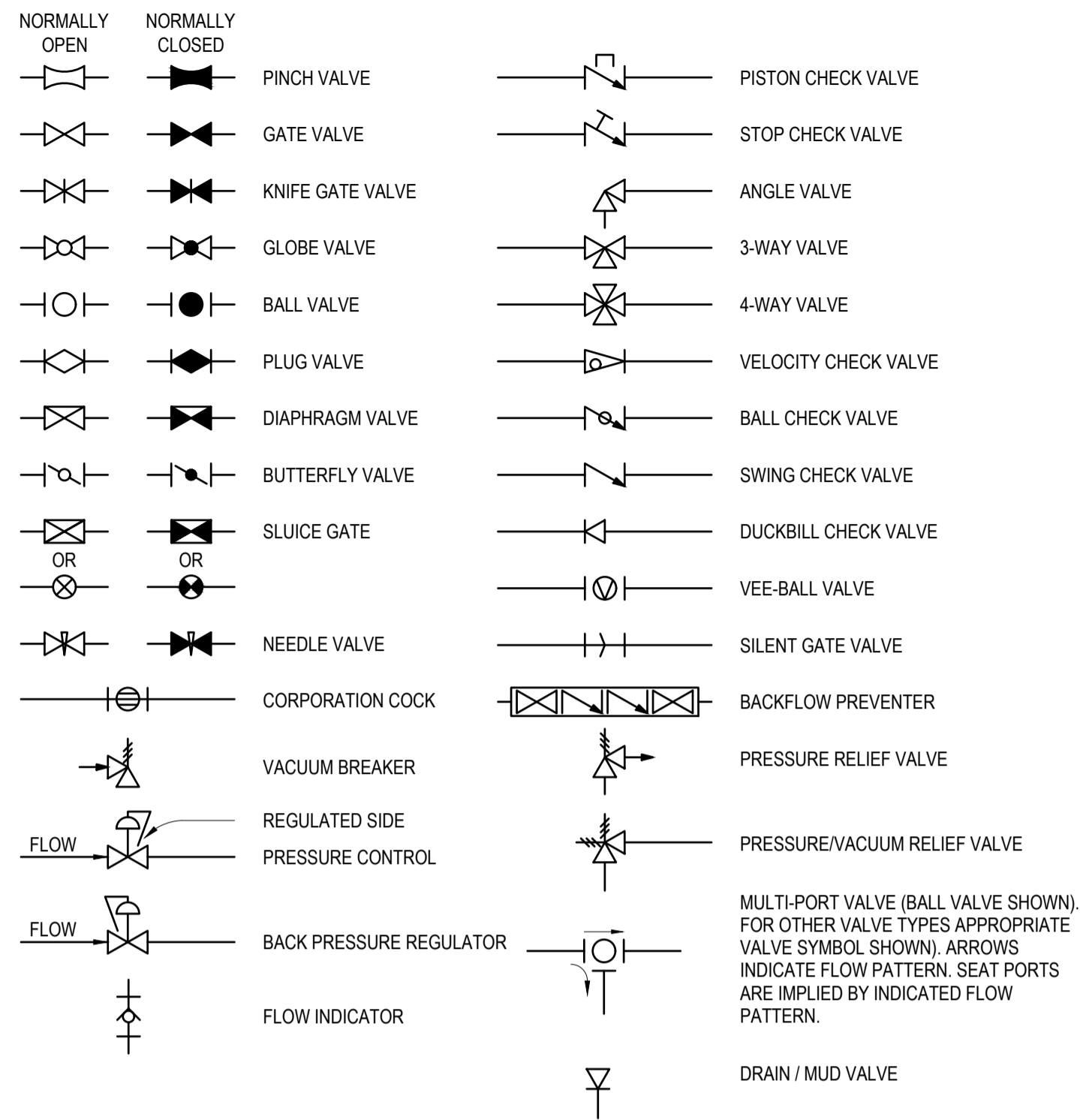
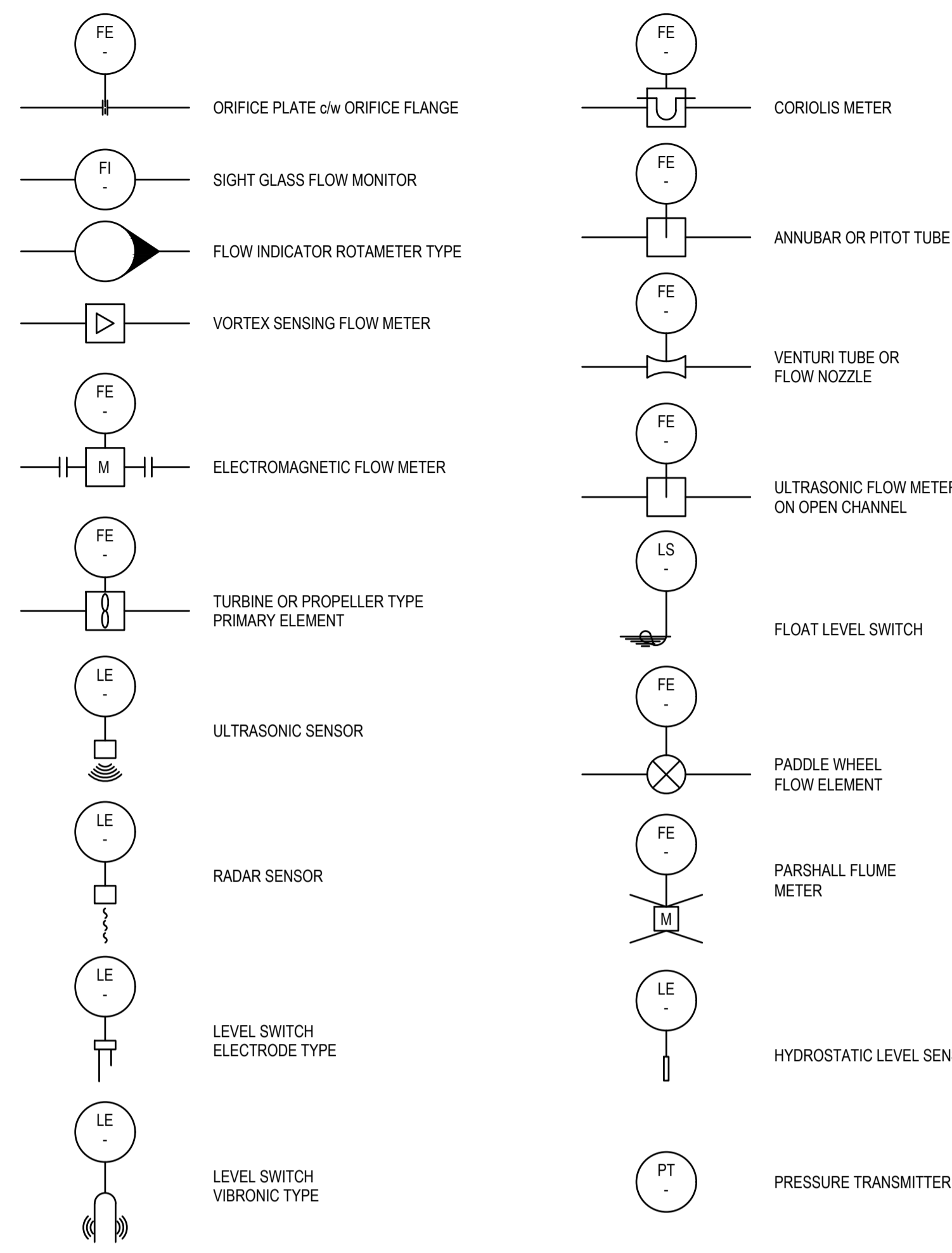




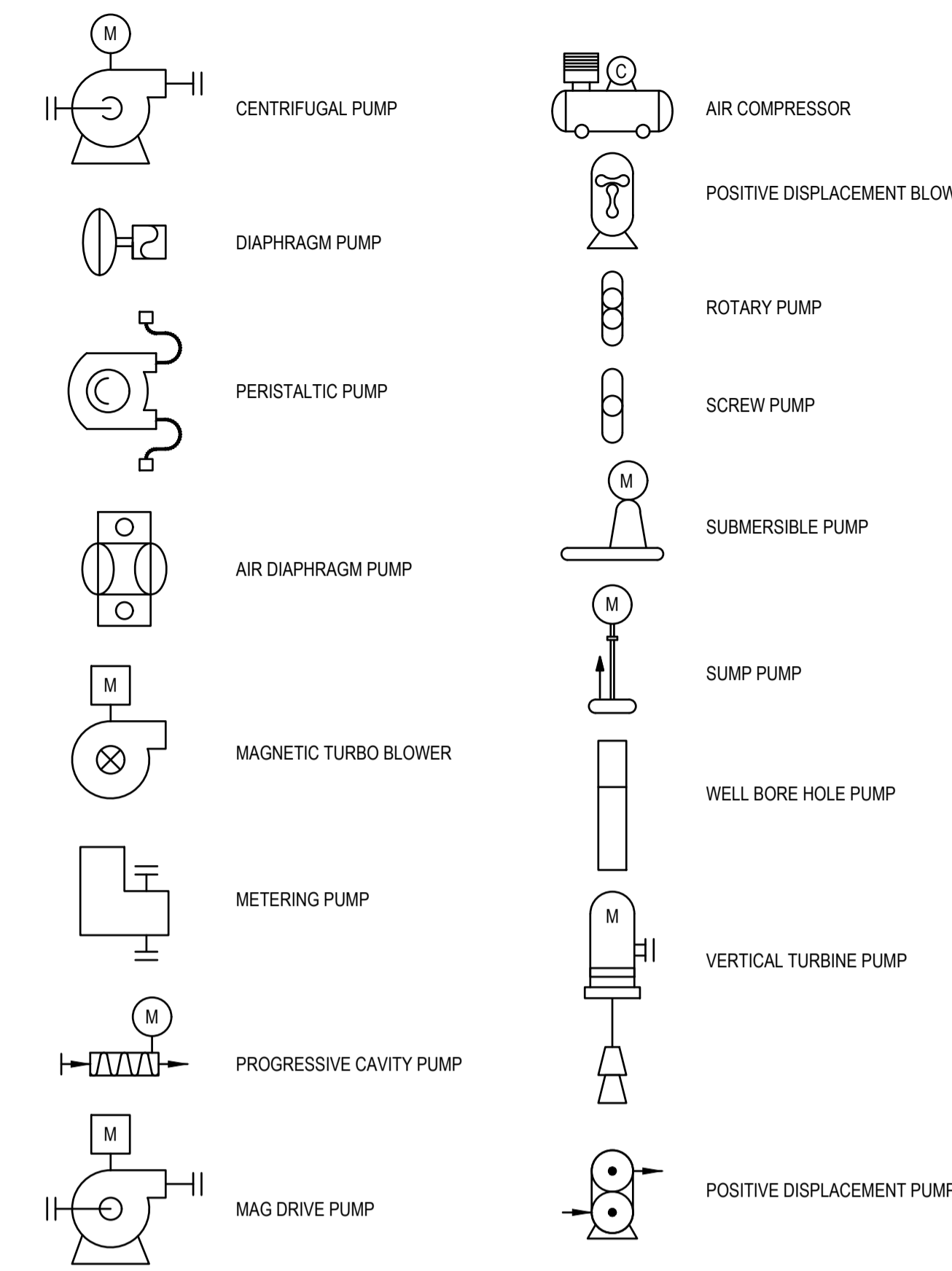
**VALVE SYMBOLS**



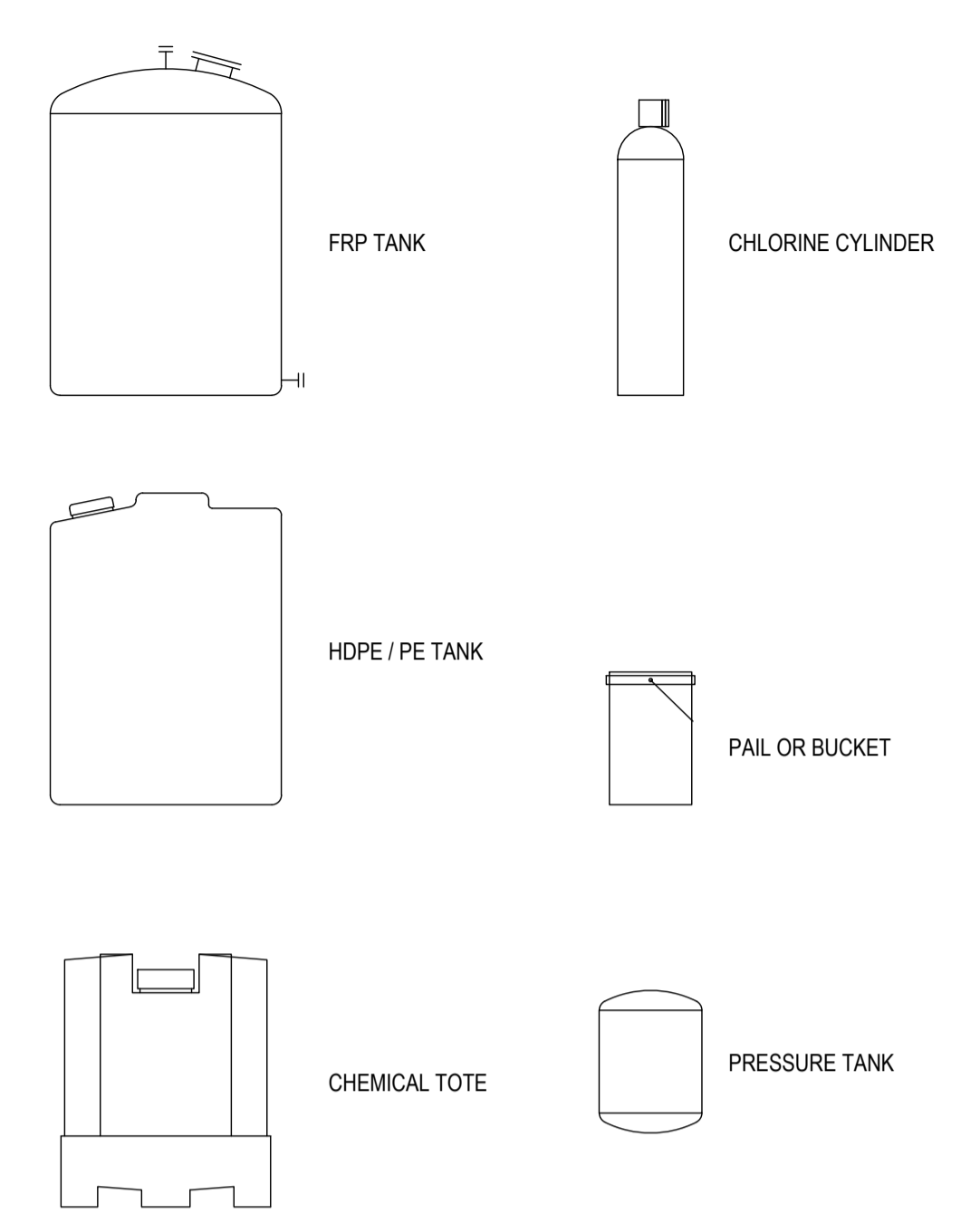
**PRIMARY ELEMENT**



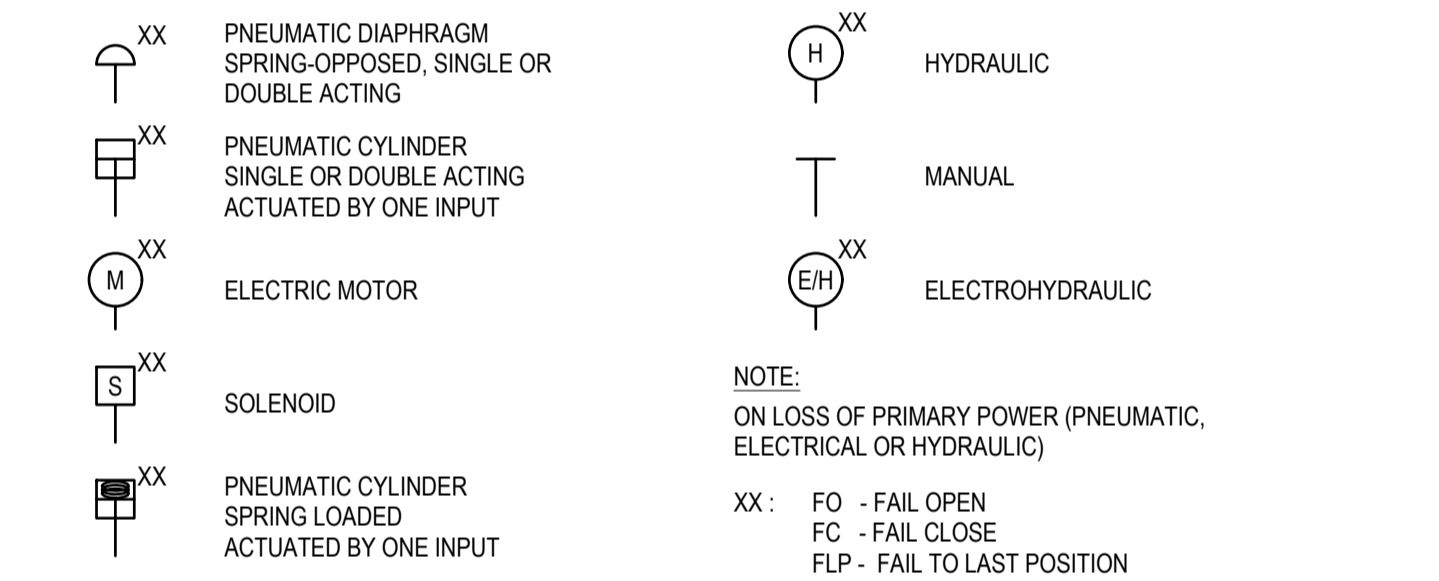
**PUMP AND COMPRESSOR SYMBOLS**



**TANKS AND STORAGE SYMBOLS**



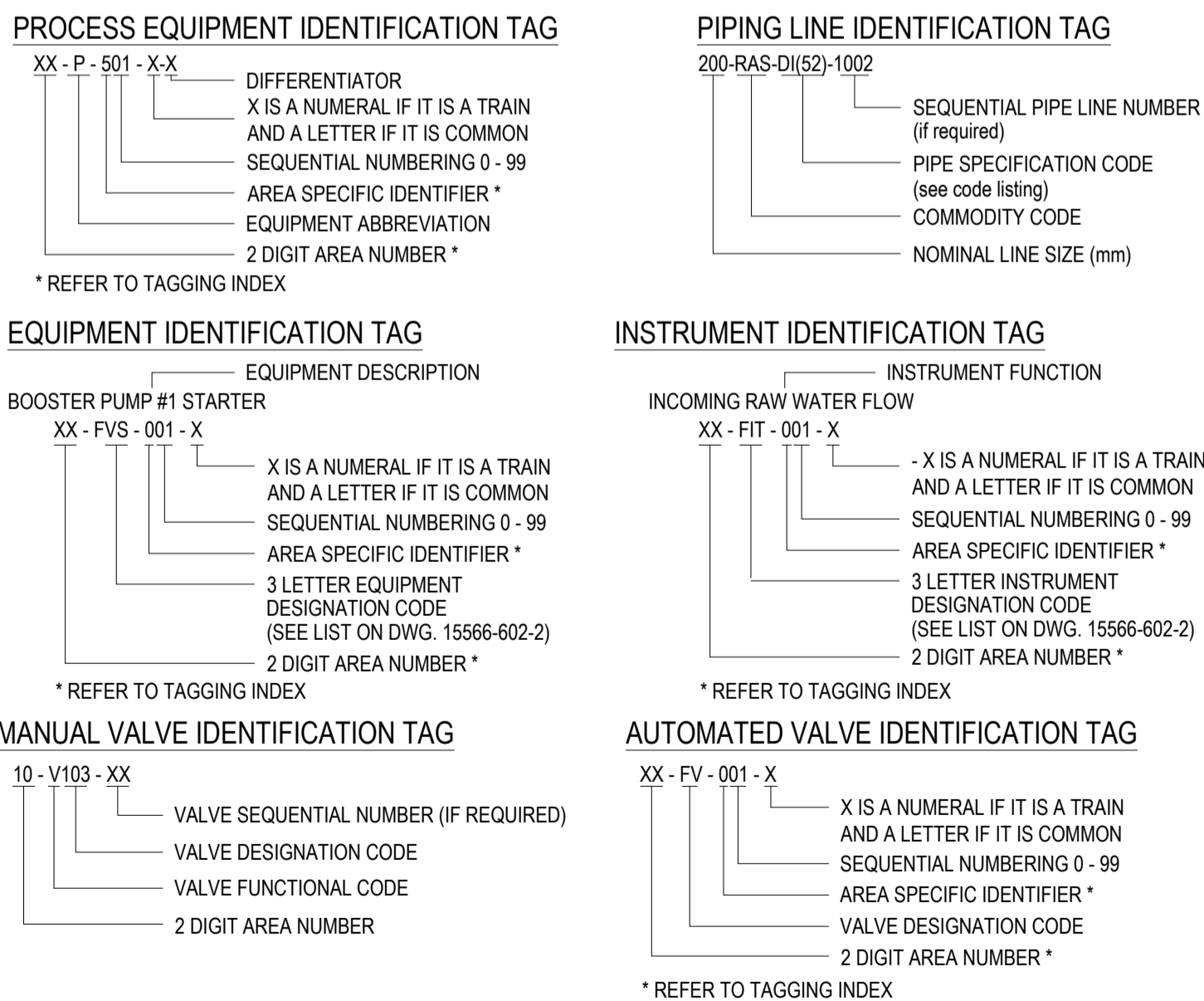
**ACTUATOR SYMBOLS**



**GATE SYMBOLS**



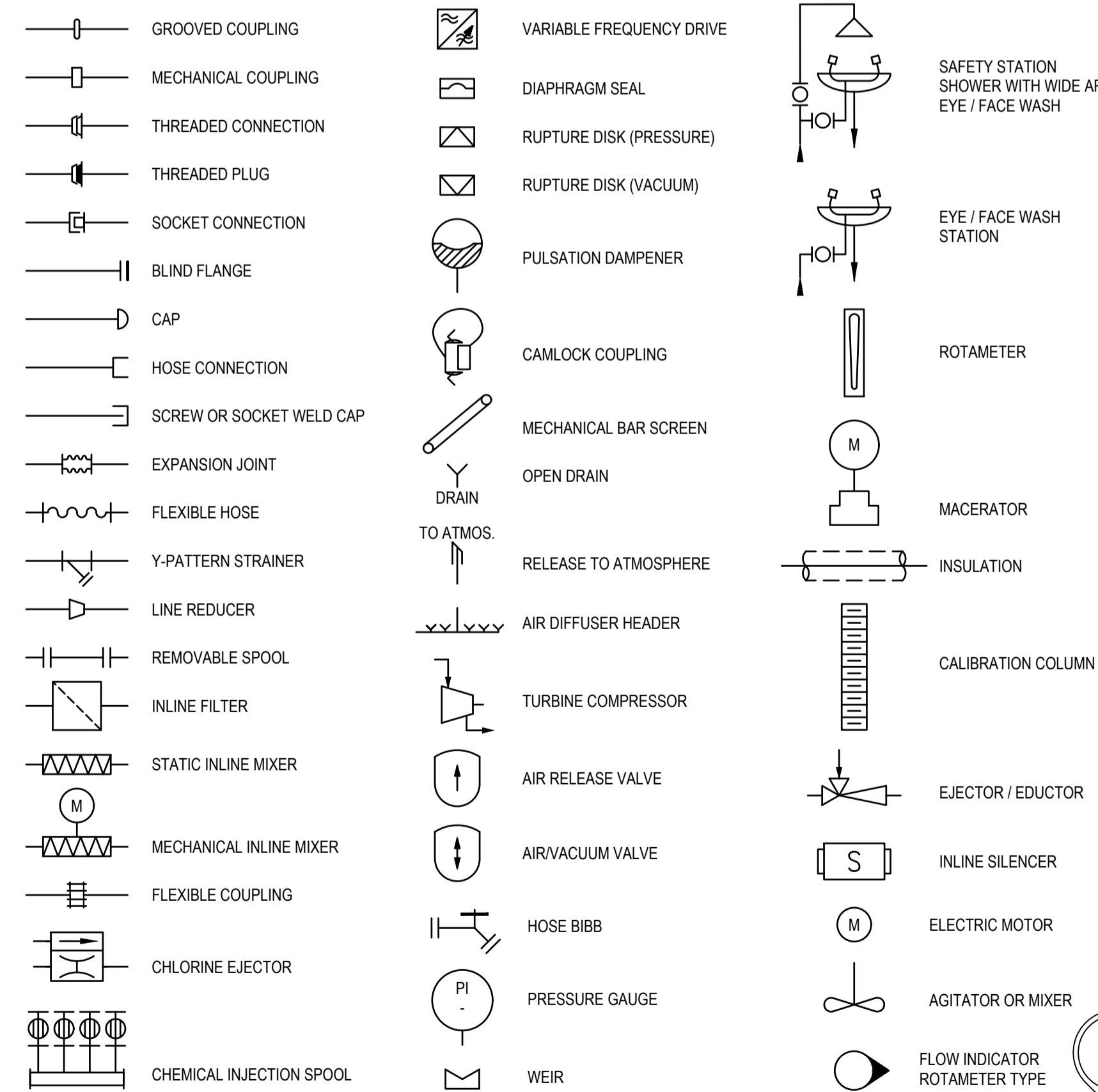
**IDENTIFICATION TAGS**



**EQUIPMENT ABBREVIATIONS**

AB	ABSORBER	HX	HEAT EXCHANGER
AC	AIR COMPRESSOR	IX	ION EXCHANGER
ACF	ACTIVATED CARBON FILTER	LS	LIME SOFTENER
AER	AERATOR	MBR	MEMBRANE BIOREACTOR
B	BLOWER	MCC	MOTOR CONTROL CENTER
BF	BAG FILTER	MD	MEMBRANE DEGASIFIER
C	CENTRIFUGE, CYCLONE	MF	MICROFILTRATION
CD	CONDENSER	MH	MEMBRANE HOUSING, PRESSURE VESSELS FOR MEMBRANES
CDM	CATALYTIC DESTRUCT MODULE	ML	MUFFLER, SILENCER
CF	CARTRIDGE FILTER	MLF	MULTIMEDIA FILTER
CH	CHILLER	MX	MIXER
CHL	CHLORINATOR	NF	NANOFILTRATION
CIP	CLEAN-IN-PLACE	OC	OXYGEN CONCENTRATOR
CL	CLARIFIER	ORP	OXIDATION REDUCTION POTENTIAL
CONV	CONVEYOR	OZ	OZONATOR
CORS	CATALYTIC OXYGEN REMOVAL SYSTEM	OZG	OZONE GENERATOR
CP	CONTROL PANEL	P	PUMP
CR	CRYSTALLIZER	PD	PULSATION DAMPENNER
CS	CHEMICAL SYSTEM	PLC	PROGRAMMABLE LOGIC CONTROLLER
CT	COOLING TOWER, CARBON TOWER	PX	PRESSURE EXCHANGER
D	DIFFUSER	RO	REVERSE OSMOSIS
DAF	DISSOLVED AIR FLOATATION	RP	ROTARY PRESS
DMF	DUAL MEDIA FILTER	RT	RESIN TRAP
DO	DISSOLVED OXYGEN	SC	SCRUBBER
DR	DRYER	SCP	SCRAPER
E	EDUCTOR	SCR	SCREEN
EAF	ENTRAPPED AIR FLOATATION	SFT	SOFTENER
ED	ELECTRODIALYSIS	SKM	SKIMMER
EDI	ELECTRODEIONIZATION	SM	STATIC MIXER, INLINE MIXER
EDR	ELECTRODIALYSIS REVERSAL	ST	STEAM TRAP
EV	EVAPORATOR	STK	MEMBRANE STACK (ED, EDR, EDI, E-CELL)
F	FILTER	STR	STRAINER
FAN	FAN	TK	TANK
FDA	FORCED DRAFT AERATOR, DEGASIFIER	TOC	TOTAL ORGANIC CARBON
FP	FILTER PRESS	TRB	TURBINE
GF	GRAVITY FILTER	UF	ULTRAFILTRATION
H	HEATER	UPS	UNINTERRUPTED POWER SUPPLY
HF	HEPA FILTER	UV	ULTRAVIOLET IRRADIATOR
HMI	HUMAN-MACHINE INTERFACE	VD	VACUUM DEGASIFIER
HPB	HYDRAULIC PRESSURE BOOSTER		

**MISCELLANEOUS SYMBOLS**



**PROGRAMMING ABBREVIATIONS**

Y1	RUNNING STATUS
YC	RUN COMMAND
YFC	FORWARD RUN COMMAND
YRC	REVERSE RUN COMMAND
YS	REMOTE (AUTO)
YS	FAULT
YA	LOSS OF RUNNING STATUS
KQI	MOTOR RUNNING TIME
FI	FLOW
LI	LEVEL
PI	PRESSURE
TI	TEMPERATURE
ZCO	VALVE OPEN COMMAND
ZCC	VALVE CLOSE COMMAND
ZSO	VALVE OPEN STATUS
ZSC	VALVE CLOSE STATUS
ZI	VALVE POSITION INDICATOR
ZC	VALVE POSITION CONTROL



**B.C. GAS SERVICES**  
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 B.C. GAS SERVICE RECORDS DEPARTMENT  
 TELEPHONE 293-8552  
 NOTE - B.C. GAS REQUIRES 10 DAYS NOTICE PRIOR TO THE COMMENCEMENT OF ANY WORK.

**BENCHMARK**  
 ALL ELEVATIONS ARE TO GEODETIC DATUM AND REFER TO METRO VANDOVER HPN MONUMENTS:  
 SECONDARY BENCHMARK: 77H4970  
 CENTRELINE OF INTERSECTION OF BROWN ROAD AND BROWNGATE ROAD  
 SECONDARY BENCHMARK DERIVED FROM HPN # \_\_\_\_\_ AND HPN # \_\_\_\_\_  
 ELEVATION: 1.793 FIELD BOOK # \_\_\_\_\_  
 CITY WORK ORDER # \_\_\_\_\_ TENDER / PROJECT # \_\_\_\_\_  
 CONTRACTOR WORK ORDER # \_\_\_\_\_ ACCOUNT # \_\_\_\_\_

**REFERENCE DRAWINGS**  
 PROPERTY ACQUISITION Aq  
 SURVEY PLAN & PROFILE PP  
 ROAD CONSTRUCTION Oc  
 STORM SEWER INSTALLATION Lc  
 WATERMAIN INSTALLATION Wc  
 ORNAMENTAL STREET LIGHTING Tc  
 TRAFFIC SIGNALS Ec  
 SANITARY SEWER INSTALLATION \_\_\_\_\_  
 OTHER \_\_\_\_\_  
 NOTE - PROVIDE LOCATION OF ALL UTILITIES / SERVICES BEFORE STARTING CONSTRUCTION.

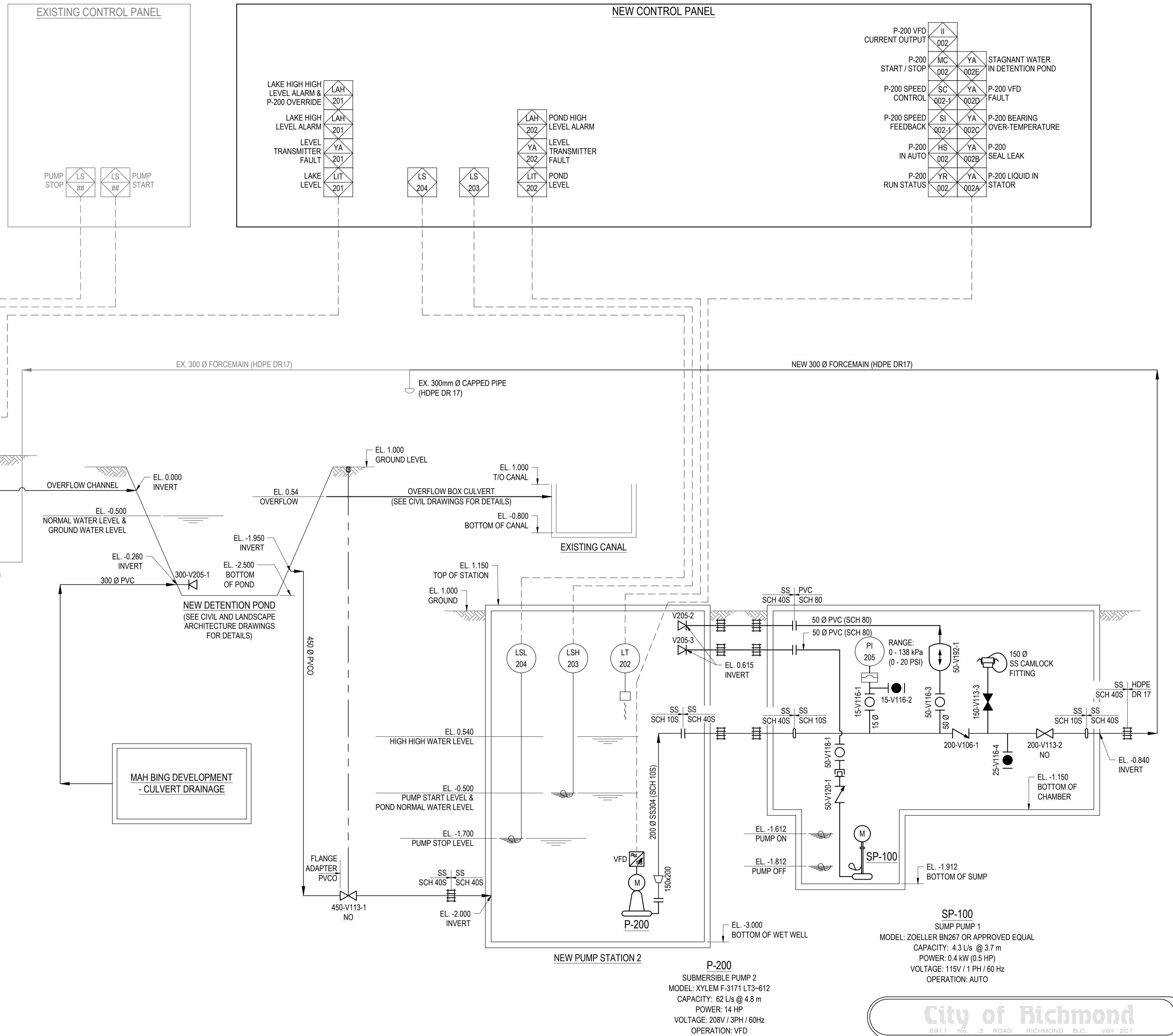
NO	DATE	BY	CHK	DESCRIPTION
H				
G				
F				
E				
D				
C	2025/02/10	AL	RT	ISSUED FOR RFP
B	2024/11/25	AL	RT	95% DETAILED DESIGN
A	2024/09/27	AL	RT	75% DETAILED DESIGN

**REVISIONS**

**TITLE: MINORU PARK DETENTION POND PUMP STATION LEGEND 2**

DESIGN:	M.PALMEGANI	DWG. NO.:	M02
DRAWN:	A.LJ	SCALE:	NO SCALE
CHECKED:	R.TOMBS	DATE:	2025/02/10
ENGINEER:	R.TOMBS	SEC. NO.:	XX-X-X
		SHT. NO.:	M02

- 1. NORMAL OPERATION:**
- 1.1. THE NEW LEVEL TRANSMITTER (LT-202) WILL MEASURE THE WATER LEVEL IN NEW PUMP STATION 2 (WHICH IS HYDRAULICALLY CONNECTED TO THE NEW DETENTION POND). WHEN THE WATER LEVEL REACHES THE "NORMAL WATER LEVEL" AS MEASURED BY LT-202, THE NEW PUMP (P-200) IS CALLED TO START. WHEN THE WATER LEVEL DROPS TO THE "PUMP OFF" ELEVATION, THE NEW PUMP (P-200) IS CALLED TO STOP.
  - 1.2. WHEN THE NEW PUMP (P-200) IS TRIGGERED TO START, P-200 SHALL OPERATE AT APPROXIMATELY 90% (51.2 HZ) SPEED TO REMAIN WITHIN THE DESIRED OPERATING RANGE DURING THE BEST CASE CONDITION (MINIMUM STATIC HEAD AND HIGH HAZEN WILLIAM COEFFICIENT), WHILE ALSO MEETING THE MINIMUM VELOCITY REQUIRED THROUGH THE EXISTING 300mm HDPE DR17 FORCEMAIN (THE LARGEST PIPE IN THE SYSTEM) DURING WORST CASE (MAXIMUM STATIC HEAD AND LOW HAZEN WILLIAM COEFFICIENT) CONDITIONS. THE TRUE OPERATIONAL SPEED WILL BE FIELD CONFIRMED DURING COMMISSIONING.
  - 1.3. IF THE NEW PUMP (P-200) HAS NOT BEEN TRIGGERED TO START IN A CERTAIN AMOUNT OF TIME (TO BE DEFINED BY CIVIL TEAM), P-200 WILL BE TRIGGERED TO AUTOMATICALLY START UNTIL THE WATER LEVEL REACHES THE "PUMP OFF" ELEVATION WHICH WILL TRIGGER THE PUMP TO STOP. A "STAGNANT WATER IN DETENTION POND ALARM" WILL BE TRIGGERED.
- 2. ABNORMAL CONDITIONS:**
- 2.1. A NEW LEVEL TRANSMITTER (LT-201) WILL BE INSTALLED AT THE EXISTING PUMP STATION 1 (THAT IS HYDRAULICALLY CONNECTED TO THE LAKE) AND WILL SEND SIGNALS TO THE NEW PUMP STATION 2.
    - 2.1.1. THE NEW LEVEL TRANSMITTER (LT-201) WILL MEASURE THE WATER LEVEL IN THE EXISTING WET WELL 1 (WHICH IS HYDRAULICALLY CONNECTED TO THE LAKE).
    - 2.1.2. IF THE LAKE WATER LEVEL RISES ABOVE THE OVERFLOW CANAL LEVEL (1.4m), A HIGH WATER LEVEL ALARM WILL BE TRIGGERED BY LT-201
    - 2.1.3. IF THE LAKE WATER LEVEL RISES ABOVE THE MAXIMUM WATER LEVEL (1.6m), LT-201 WILL OVERRIDE P-200 WITHIN THE NEW PUMP STATION 2 SO THAT IT DOES NOT START.
    - 2.1.4. IF THE DETENTION POND WATER LEVEL RISES ABOVE 0.54m (OVERFLOW INVERT), THE WATER WILL BE DIRECTED TO THE OVERFLOW CANAL.
  - 2.2. IF LT-202 FAILS, LSH-203 WILL TRIGGER THE NEW PUMP (P-200) TO START AND LSL-204 WILL TRIGGER THE NEW PUMP (P-200) TO STOP.
- 3. ALARMS:**
- 3.1. **P-200 VFD FAULT:** THE PUMP AT THE NEW STATION 2 (P-200) FAILS TO START AT THE "PUMP START" LEVEL OR IN MANUAL MODE. OVERFLOW TO CANAL IS POSSIBLE.
  - 3.2. **LEVEL TRANSMITTER (LT-201) FAILED:** NO READING FROM LT-201. WATER LEVEL IN LAKE SHOULD BE MONITORED BY OPERATORS. IF THE HIGH WATER LEVEL ALARM IS SET OFF BY THE FLOAT, OPERATORS SHOULD TAKE P-200 OFF AUTO TO PREVENT IT FROM STARTING AND CONTINUING TO FILL THE LAKE.
  - 3.3. **LEVEL TRANSMITTER (LT-202) FAILED:** NO READING FROM LT-202. PUMP START / STOP TRIGGERED BY LSH-203 AND LSL-204, RESPECTIVELY.
  - 3.4. **HIGH LAKE WATER LEVEL OVERRIDE:** WATER AT THE LAKE RISES ABOVE THE MAXIMUM LEVEL OF 1.6m. P-200 WILL NOT START UNTIL THE WATER IN THE LAKE LOWERS TO AN ACCEPTABLE LEVEL (TO BE DETERMINED BY CIVIL TEAM)
  - 3.5. **STAGNANT WATER IN DETENTION POND:** IF P-200 HAS NOT BEEN TRIGGERED TO START IN A CERTAIN AMOUNT OF TIME (WILL BE DETERMINED BY CIVIL TEAM), AND THE LAKE WATER LEVEL IS ABOVE THE MAXIMUM WATER LEVEL, THIS ALARM WILL GO OFF INDICATING THAT OPERATORS SHOULD GO MANUALLY RUN P-200 TO CIRCULATE THE WATER IN THE DETENTION POND TO PREVENT ALGAE BLOOM.
- 4. LEVEL CONTROLS:**
- 4.1. LEVEL TRANSMITTER (LT-202): CONTINUOUSLY MEASURES THE LEVEL IN NEW PUMP STATION 2 AND START / STOP THE NEW PUMP (P-200).
  - 4.2. LSL-204: WHEN LT-202 FAILS AND THIS FLOAT IS ACTIVATED, THE NEW PUMP (P-200) STOPS.
  - 4.3. LSH-203: WHEN LT-202 FAILS AND THIS FLOAT IS ACTIVATED, THE NEW PUMP (P-200) STARTS.
- 5. OPERATIONS:**
- 5.1. IF THE "STAGNANT WATER IN DETENTION POND" ALARM IS ACTIVATED AND THE LAKE IS ABOVE THE HIGH WATER LEVEL (P-200 START HAS OVERRIDDEN), MANUAL OPERATOR INTERVENTION IS REQUIRED TO CIRCULATE THE WATER BY PUMPING IT TO THE CANAL.
    - 5.1.1. TO CIRCULATE THE POND WATER TO THE CANAL, OPERATORS NEED TO MANUALLY OPEN THE BYPASS CONNECTION GATE VALVE, ATTACH A HOSE TO THE CAMLOCK CONNECTION THAT LEADS TO THE EXISTING CANAL AND MANUALLY CLOSE THE PUMP DISCHARGE GATE VALVE TO THE FORCEMAIN PRIOR TO RUNNING THE PUMPS. THE VALVES WILL NEED TO BE RETURNED TO THEIR INITIAL SETTING AFTER THE POND IS DRAINED.
    - 5.1.2. IF A BYPASS HOSE CONNECTION OF 150mm IS UTILIZED USING THE NEW PUMP (P-200), THE PUMP CAN OPERATE AT THE SAME FREQUENCY AS REGULAR OPERATIONS (90%, 51.2 HZ).
- 6. CLARIFICATIONS**
- 6.1. THERE IS ONLY ONE PUMP IN THE NEW PUMP STATION 2. IN THE EVENT OF PUMP FAILURE, THE DETENTION POND WILL OVERFLOW TO THE OVERFLOW CANAL UNTIL THE ISSUE IS RESOLVED.
    - 6.1.1. IF THE PUMP HAS FAILED AND IS NOT OPERATIONAL FOR AN EXTENDED PERIOD OF TIME, A PORTABLE PUMP MAY NEED TO BE BROUGHT IN FOR MAINTENANCE PURPOSES (TO CONTINUE TO CIRCULATE THE WATER TO THE CANAL) TO PREVENT ALGAE BLOOMS.
  - 6.2. TO AVOID EXCESSIVE NOISE AND ELECTRICAL LOAD, NO PERMANENT FORCED VENTILATION IS PROVIDED AT THE STATION. RAPID CORROSION AND ODOUR IS NOT EXPECTED AT THE STATION BECAUSE IT IS A POND SYSTEM. HOWEVER, PORTABLE FORCED VENTILATION CAPABLE OF 20 AIR CHANGES PER HOUR SHOULD BE PROVIDED IF THE STATION IS ACCESSED BY AN OPERATOR.
  - 6.3. TO ELIMINATE SYSTEM COMPLEXITIES, THERE IS NO TIE-IN TO SCADA OR REMOTE MONITORING AT THE NEW PUMP STATION.



**P-100**  
SUBMERSIBLE PUMP 1  
MODEL: XYLEM N-3153 LT3-413  
CAPACITY: 120 L/s  
POWER: 20 HP  
VOLTAGE: 208V / 3PH / 60Hz  
OPERATION: FIXED SPEED

**P-200**  
SUBMERSIBLE PUMP 2  
MODEL: XYLEM F-3171 LT3-612  
CAPACITY: 62 L/s @ 4.8 m  
POWER: 14 HP  
VOLTAGE: 208V / 3PH / 60Hz  
OPERATION: VFD

**SP-100**  
SUMP PUMP 1  
MODEL: ZOELLER BN267 OR APPROVED EQUAL  
CAPACITY: 4.3 L/s @ 3.7 m  
POWER: 0.4 kW (0.5 HP)  
VOLTAGE: 115V / 1 PH / 60 Hz  
OPERATION: AUTO

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TELEPHONE 293-8552

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**BENCHMARK**

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SECONDARY BENCHMARK: 77H4970  
CENTRELINE OF INTERSECTION OF BROWN ROAD AND BROWNGATE ROAD  
SECONDARY BENCHMARK DERIVED FROM HFN # \_\_\_\_\_ AND HFN # \_\_\_\_\_  
ELEVATION: 1.793 FIELD BOOK # \_\_\_\_\_

CITY WORK ORDER # \_\_\_\_\_ TENDER / PROJECT # \_\_\_\_\_  
CONTRACTOR WORK ORDER # \_\_\_\_\_ ACCOUNT # \_\_\_\_\_

**REFERENCE DRAWINGS**

PROPERTY ACQUISITION Aq \_\_\_\_\_  
SURVEY PLAN & PROFILE Pp \_\_\_\_\_  
ROAD CONSTRUCTION Oc \_\_\_\_\_  
STORM SEWER INSTALLATION Lc \_\_\_\_\_  
WATERMAIN INSTALLATION Wc \_\_\_\_\_  
ORNAMENTAL STREET LIGHTING Tc \_\_\_\_\_  
TRAFFIC SIGNALS Ec \_\_\_\_\_  
SANITARY SEWER INSTALLATION \_\_\_\_\_  
OTHER \_\_\_\_\_

NOTE - PROVIDE LOCATION OF ALL UTILITIES / SERVICES BEFORE STARTING CONSTRUCTION.

NO	DATE	BY	CHK	DESCRIPTION
H				
G				
F				
E				
D				
C	2025/02/10	AL	RT	ISSUED FOR RFP
B	2024/11/25	AL	RT	95% DETAILED DESIGN
A	2024/09/27	AL	RT	75% DETAILED DESIGN

**REVISIONS**

**City of Richmond**  
6911 No. 3 ROAD, RICHMOND, B.C. V6Y 2C1

**TITLE: MINORU PARK DETENTION POND PUMP STATION P-HD**

DESIGN: M.PALMEGANI  
DRAWN: A.LJ  
CHECKED: R.TOMBS  
ENGINEER: R.TOMBS

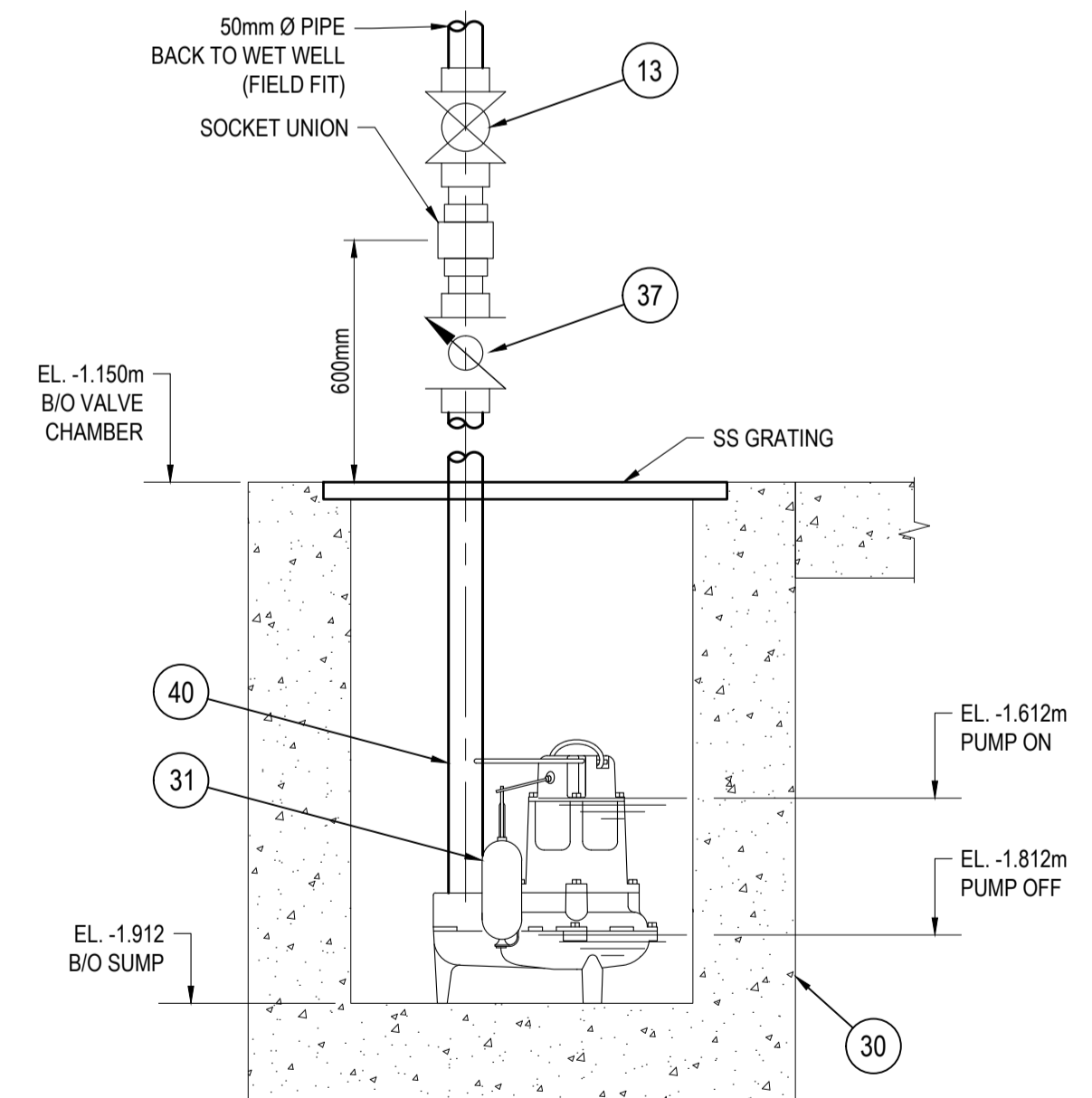
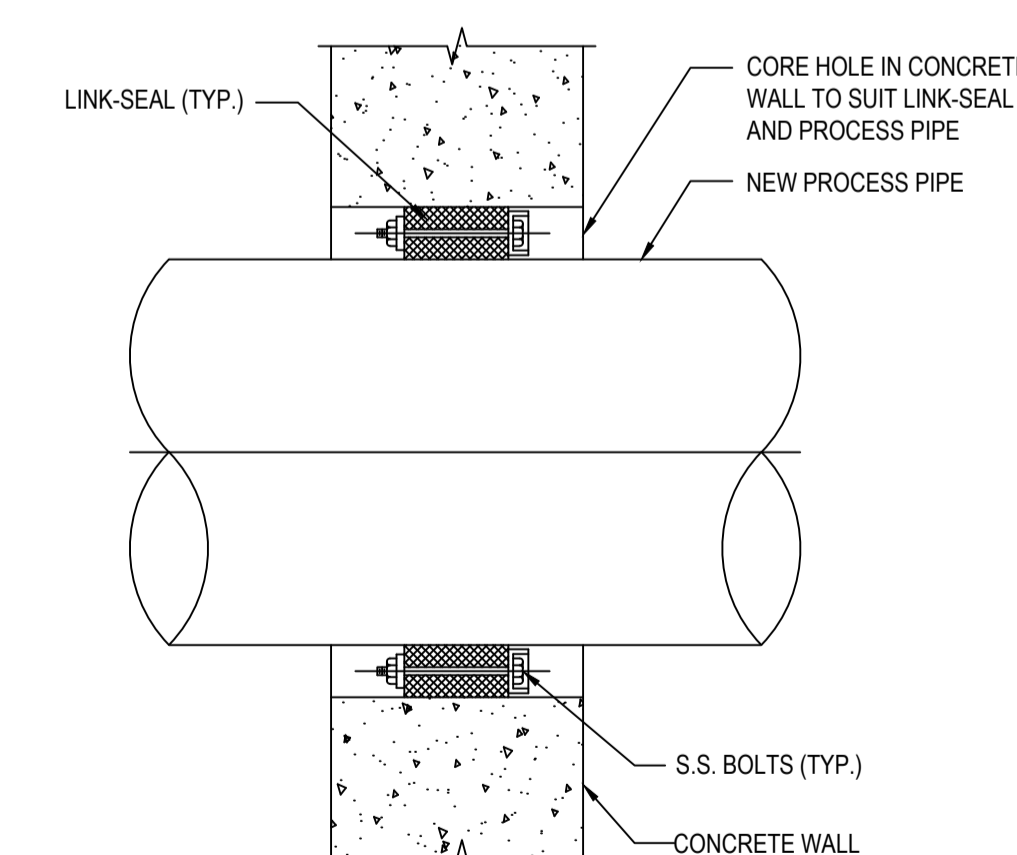
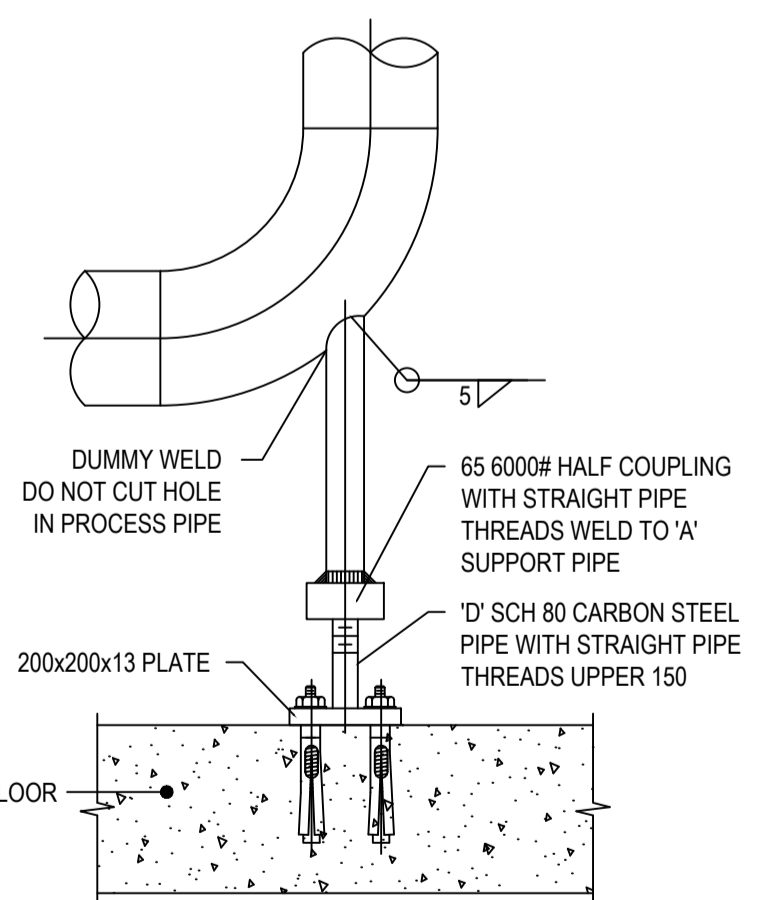
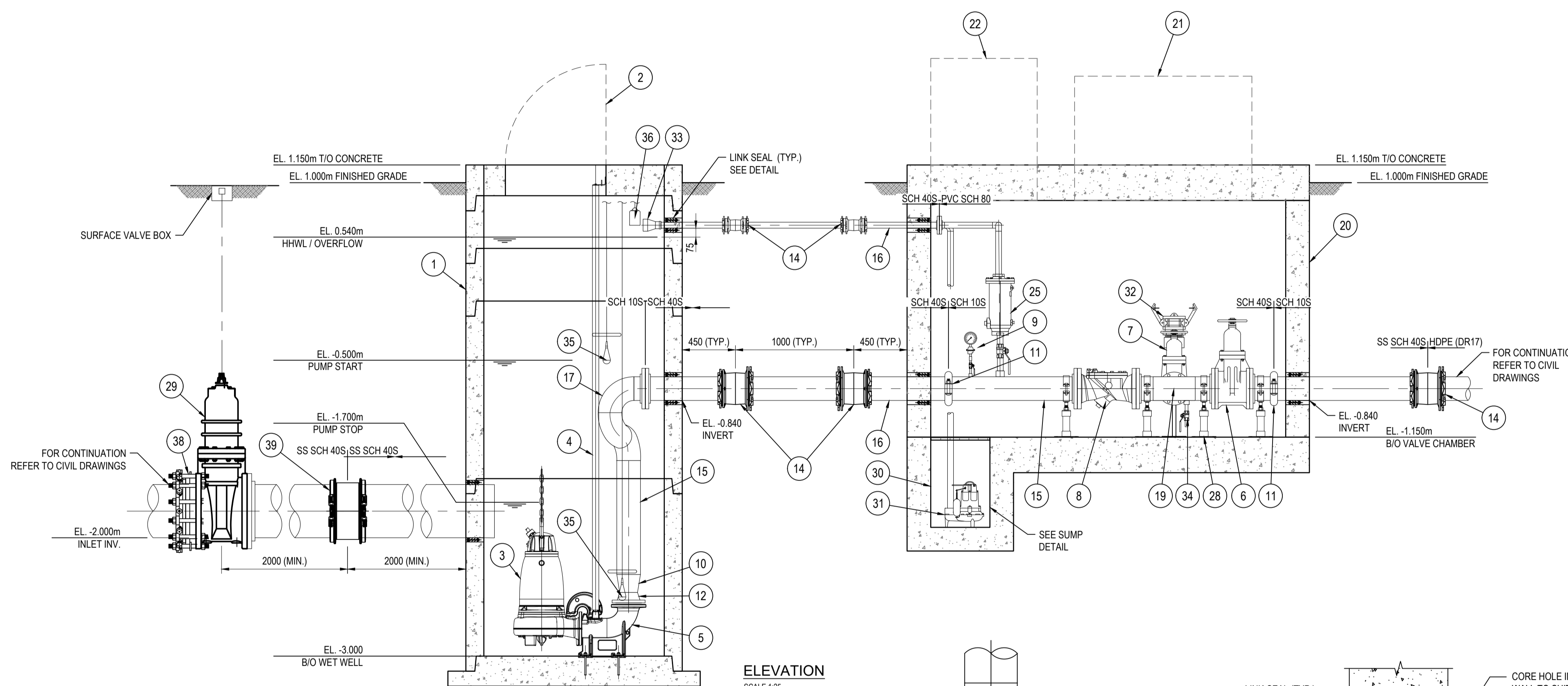
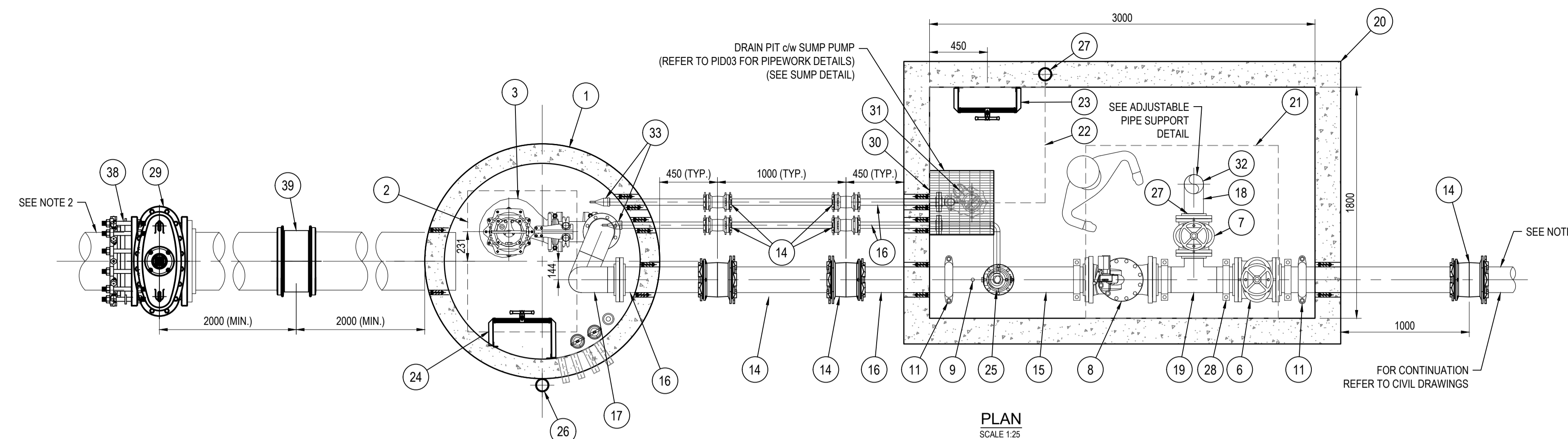
DWG. NO: M03  
SCALE: NO SCALE  
SEC. NO: XX-X-X  
SHT. NO: M03

DATE: 2025/02/10

**BILL OF MATERIAL**

(REFER TO TECHNICAL SPECIFICATIONS FOR FURTHER DETAILS AND REQUIREMENTS)

ITEM	QTY	DESCRIPTION
1	1	1524mm Ø ID PRECAST CONCRETE MANHOLE
2	1	ALUMINUM STANDARD SAFE-HATCH, 1100mm x 850mm CLEARING OPENING c/w SAFETY GRATING, RATED FOR 300 PSF
3	1	FLYGT PUMP FP 3171 LT 3-612, 208V/3P/60Hz c/w LIFTING CHAIN
4	1	FLYGT 50mm Ø (2") SS 316 GUIDE BAR ASSEMBLY c/w SS 316 UPPER GUIDE BAR HOLDER AND BRACKETS
5	1	PUMP SS DISCHARGE ELBOW, DN150, FLANGED c/w SS PUMP BASE BOLTS
6	1	GATE VALVE, 200mm DIA., c/w HANDWHEEL OPERATOR AND STAINLESS STEEL NUTS, BOLTS, AND WASHERS, SUITABLE FOR WASTEWATER APPLICATION, MUELLER - PRATT OR APPROVED EQUAL
7	1	GATE VALVE, 150mm DIA., c/w HANDWHEEL OPERATOR AND STAINLESS STEEL NUTS, BOLTS, AND WASHERS, SUITABLE FOR WASTEWATER APPLICATION, MUELLER - PRATT OR APPROVED EQUAL
8	1	SWING CHECK VALE, 200mm, C/W POSITION INDICATOR, BACKFLOW ACTUATOR, DISK ACCELERATOR AND SS NUTS AND BOLTS
9	1	PRESSURE GAUGE, 1/2" MNPT, 4.5" DIAL FACE, LIQUID FILLED, DUAL SCALE (kPa AND psi) c/w SS ISOLATION BALL VALVE AND DIAPHRAGM SEAL, PRESSURE RANGE: 0-138 kPa (0-20 psi)
10	1	CONCENTRIC REDUCER, 150x200 DIAMETER, STAINLESS STEEL SCH. 10S
11	2	FLEXIBLE GROOVED COUPLING, 200mm DIAMETER, VICTAULIC MODEL 77 OR APPROVED EQUAL
12	1	VANSTONE FLANGE, 150mm DIAMETER, CL150 STAINLESS STEEL SCH. 10S
13	1	PVC BALL VALVE, 50mm DIAMETER, TRUE UNION ENDS, ONE-PIECE BODY, SS NUT AND BOLTS
14	7	RESTRAINED COUPLING, VARIOUS SIZES, GF MJ 3007 OR APPROVED EQUAL
15	1	PIPE, 200mm DIAMETER (LENGTH TO SUIT), STAINLESS STEEL SCH. 10S
16	1	PIPE, VARIOUS SIZES (LENGTH TO SUIT), STAINLESS STEEL SCH. 40S
17	3	90° SR ELBOW, 200mm DIAMETER, STAINLESS STEEL SCH. 10S
18	1	90° LR ELBOW, 150mm DIAMETER, STAINLESS STEEL SCH. 10S
19	1	REDUCING TEE, 200mm x 200mm x 150mm, STAINLESS STEEL SCH. 10S
20	1	PREFABRICATED CONCRETE VALVE CHAMBER (3000L x 1800W x 2000H INSIDE DIMENSION) c/w SUMP
21	1	ALUMINUM DOUBLE DOOR ACCESS HATCH, 1499 x 1346 (59" x 53") CLEAR OPENING, 300 PSF LOADING, CAST IN CONCRETE, c/w SAFETY GRATING
22	1	ALUMINUM SINGLE DOOR ACCESS HATCH 914 x 914 (36" x 36") CLEAR OPENING, 300 PSF LOADING, CAST IN CONCRETE c/w SAFETY GRATING
23	1	ALUMINUM MARINE GRADE SAFETY LADDER c/w SAFETY POST IN VALVE CHAMBER, FULL LENGTH
24	1	STAINLESS STEEL 316 SAFETY LADDER c/w SAFETY POST IN WET WELL, FULL LENGTH
25	1	50mm COMBINATION AIR VALVE, APCO ASC SINGLE BODY SEWAGE COMBINATION AIR VALVE (BULLETIN 400-3) OR APPROVED EQUAL, c/w 50mm SS ISOLATION BALL VALVE, TO BE PIPED BACK TO THE WET WELL
26	1	PERSONNEL RETRIEVAL STAINLESS STEEL DAVIT SOCKET, WALL BASE MOUNTED, 3M DBI-SALA
27	1	PERSONNEL RETRIEVAL STAINLESS STEEL DAVIT SOCKET, CASTED IN CONCRETE, FLUSH MOUNTED, 3M DBI-SALA
28	5	ADJUSTABLE SADDLE CLAMP SUPPORT, STANDON MODEL C92 OR APPROVED EQUAL
29	1	450mm DIA. GATE VALE, FLANGED CL150, c/w EXTENSION STEM AND SURFACE VALVE BOX, SUITABLE FOR WASTEWATER AND BURIED APPLICATION, MUELLER OR APPROVED EQUAL
30	1	SUMP DRAIN PIT (457mm x 457mm x 762mm (LxWxH) MINIMUM, c/w STAINLESS STEEL PERSONNEL RATED GRATING/ACCESS HATCH
31	1	SEWAGE SUMP PUMP WITH VARIABLE LEVEL INTEGRAL FLOAT SWITCH, ZOELLER BN267 OR APPROVED EQUAL
32	1	SS CAM-LOCK QUICK CONNECT CONNECTION c/w CAP, 150mm
33	2	50mm DUCKBILL RUBBER CHECK VALVE, COMPRESSION CLAMP OVER PIPE CONNECTION, TIDEFLX TF-2 OR APPROVED EQUAL
34	1	25mm Ø (1") BALL VALVE, 2 PC FULL PORT, THREADED, 2000 WOG
35	2	FLOAT SWITCH c/w SS316 BRACKET, ANTI-SWAY RING AND HANGER, REFER TO ELECTRICAL SPECIFICATIONS
36	1	RADAR LEVEL SENSOR, RELIABLE WORKING WITH FOAMING, REFER TO ELECTRICAL SPECIFICATIONS
37	1	RUBBER FLAPPER PVC CHECK VALVE, 50mm DIA., TRUE UNION ENDS, SS NUTS AND BOLTS
38	1	RESTRAINED FLANGE ADAPTER, 450mm DIA., DUCTILE IRON CONSTRUCTION, SERIES 2100 BY EBAA OR APPROVED EQUAL
39	1	TOP BOLT WIDE RANGE COUPLING, 450mm DIA., MODEL 421 BY SMITH-BLAIR OR APPROVED EQUAL
40	1	PVC SCH. 80 PIPE, 50mm DIA., LENGTH TO SUIT



**NOTE:**  
 1. FOR ELECTRICAL AND INSTRUMENTATION INFORMATION & DETAILS, REFER TO ELECTRICAL DRAWINGS.  
 2. FOR ILLUSTRATIVE PURPOSES ONLY. SEE CIVIL SITE PLAN DRAWING FOR TRUE ORIENTATION.  
 3. ALL PIPES AND FITTINGS WITHIN STATION TO BE STAINLESS STEEL 304L, SCHEDULE 10. ALL BURIED PIPEWORK AND PIPEWORK THROUGH CONCRETE TO BE STAINLESS STEEL SCHEDULE 40S. PIPEWORK TO TRANSITION FROM SS SCH40S TO SS SCH10S AT THE NEAREST FLANGE, UNLESS OTHERWISE NOTED ON P&ID DRAWINGS (M03).  
 4. ALL NUTS AND BOLTS FOR PROCESS EQUIPMENT SHALL BE STAINLESS STEEL.

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 SECONDARY BENCHMARK: 77H4970  
 CENTRELINE OF INTERSECTION OF BROWN ROAD AND BROWNGATE ROAD  
 SECONDARY BENCHMARK DERIVED FROM HPN # \_\_\_\_\_ AND HPN # \_\_\_\_\_  
 ELEVATION: 1.793 FIELD BOOK # \_\_\_\_\_  
 CITY WORK ORDER # \_\_\_\_\_ TENDER / PROJECT # \_\_\_\_\_  
 CONTRACTOR WORK ORDER # \_\_\_\_\_ ACCOUNT # \_\_\_\_\_

**REFERENCE DRAWINGS**

PROPERTY ACQUISITION: Aq  
 SURVEY PLAN & PROFILE: PP  
 ROAD CONSTRUCTION: Oc  
 STORM SEWER INSTALLATION: Lc  
 WATERMAIN INSTALLATION: Wc  
 ORNAMENTAL STREET LIGHTING: Tc  
 TRAFFIC SIGNALS: Ec  
 SANITARY SEWER INSTALLATION: \_\_\_\_\_  
 OTHER: \_\_\_\_\_  
 NOTE - PROVIDE LOCATION OF ALL UTILITIES / SERVICES BEFORE STARTING CONSTRUCTION.

NO	DATE	BY	CHK	DESCRIPTION
H				
G				
F				
E				
D				
C	2025/02/10	AL	RT	ISSUED FOR RFP
B	2024/11/25	AL	RT	95% DETAILED DESIGN
A	2024/09/27	AL	RT	75% DETAILED DESIGN

**REVISIONS**



**TITLE: MINORU PARK DETENTION POND PUMP STATION LAYOUT PLAN, ELEVATION, AND DETAILS**

DESIGN: M.PALMEGANI  
 DRAWN: A.LJ  
 CHECKED: R.TOMBS  
 ENGINEER: R.TOMBS

DWG. NO: M04  
 SCALE: AS NOTED  
 SEC. NO: XX-X-X  
 DATE: 2025/02/10  
 SHT. NO: M04