SECTION 11261 - METERING PUMPS

City of San Diego, CWP Guidelines

PART 1 -- GENERAL

1.1 WORK OF THIS SECTION

A. The WORK of this Section includes providing chemical metering pumps with drives, motors, valves, supports, controls and accessories.

1.2 RELATED SECTIONS

A. The WORK of the following Sections applies to the WORK of this Section. Other Sections of the Specifications, not referenced below, shall also apply to the extent required for proper performance of this WORK.

[1. Section 11204 Progressive Cavity Pumps]
2. Section 11260 Chemical Feeding Equipment, General

PART 2 – PRODUCTS

2.1 GENERAL

A. **General:** Pumps shall be of corrosion-resistant construction; diaphragm and seals shall be fabricated of material recommended by the manufacturer for the chemicals indicated at maximum temperature of 125 degrees F; pumps shall include pump base, drive, diaphragm, check valves, back-pressure valve, internal relief valve, pulsation dampener, coupling guard and electric motor.

2.2 CONSTRUCTION

A. **Type and Range:** Pumps shall be of hydraulically actuated diaphragm type designed for metering with an adjustable stroke (dosage) control range of 10:1 with accuracy of 1.0 percent of the full-scale range. Pumps designed for variable speed drives shall have a speed range of 10:1 and with the stroke control, shall provide a total feeding range of 100:1 minimum.

B. **Materials:** Wetted parts of metering pumps shall be recommended and selected by the manufacturer to ensure optimum, corrosion-free, and erosion-free operation for the chemicals indicated. Where polymer service is indicated, products shall be suitable for feeding cationic, nonionic, or anionic polymer solutions with a maximum viscosity of 10,000 centipoise.

2.3 CONTROL

A. The dosage of metering pumps shall be set at each metering pump control station. The [length of stroke] [and] [drive speed] of metering pumps [shall vary automatically in response to a 4-20 mA flow signal input from the [influent] [effluent] meter] [shall be adjusted manually] in order to maintain pre-set dosage.

2.4 SCHEDULE OF METERING PUMPS

A. Except as otherwise indicated, metering pumps shall comply with the following:

I.D. No.	Chemical	Feed Range (gph)	Min Head (psi)	Min Motor (hp)	Type of Drive
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

2.5 PUMP ACCESSORIES

A. **Mounting and Connections:** Except as otherwise indicated, all metering pumps shall be mounted on concrete pedestals approximately 2 feet in height and shall include corrosion-resistant pulsation dampeners, sample valves, pressure gauges with diaphragm seals, shut-off valves, check valves, relief valves, valved and graduated calibration reservoir installed in pump suction, [flush connections with check and solenoid valves designed to remain open long enough after each pump shutdown to flush out the line]. [Dilution lines shall be connected by means of PVC injectors.] Pipe connections to feeders shall be supported on floor-mounted, galvanized, structural steel frames designed to avoid any stress on the feeder or on the piping system.

[B. **Flow Monitoring:** Metering pumps for coagulant control systems shall include properly sized magnetic flow meters in the discharge line to monitor the flow and prevent the pump from running dry. Meters shall be compatible with the chemicals indicated. Flow signals from the meters shall be transmitted to the motor control board and shall include a low flow warning light and alarm complying with Section 13300.]

26 MANUFACTURERS

A. Products shall be manufactured by one of the following (or equal):

1. B.I.F.
2. Milton Roy
2. Wallace and Tiernan (Pennwalt)

PART 3 -- EXECUTION

3.1 INSTALLATION

A. Metering pumps shall be installed in accordance with Section 11260.

** END OF SECTION **