SECTION -SWIMMING POOL WATER CHEMISTRY CONTROL

1.01 SUMMARY

A. A **CHEMICAL AUTOMATION SYSTEM** shall be supplied for continuous monitoring of water chemistry and for automatic control of the free available chlorine and pH levels in the swimming pool or spa.

B. The system shall be a **CHEMTROL® 255 DIGITAL CONTROLLER** of current design and production model manufactured by **SANTA BARBARA CONTROL SYSTEMS** of Santa Barbara, California or a technically equal system certified by the specifying agent as capable of providing equal performance for all operating functions.

C. Exceptions to the specifications shall be described in detail together with a list of ten (10) similar operating systems of same model and manufacture, with the name, address and telephone number of operating personnel.

1.02 SPECIFICATIONS

A. CHEMISTRY CONTROLLER

1. The controller shall be microprocessor based and shall feature separate digital readouts for PPM and pH. All instrumentation shall be enclosed in a watertight non-metallic cabinet with a clear window cover. All operating controls, calibration adjustments and safety alarm settings shall be accessible from the front panel.

2. The control system shall automatically activate the appropriate chemical feeders in order to maintain the parts per million (PPM) of the Free Available Chlorine level within +/- 0.1 ppm units and the pH within +/- 0.1 of the setpoints selected by the operator. Setpoint selection shall be by direct input on scales calibrated in PPM and in pH units.

3. The control system shall include the following feed modes: off, manual, automatic and proportional. The feed rate in the proportional zone shall be adjustable by the changing the bandwidth of the zone from 1% to 100% of the setpoint value.

4. The face panel shall feature two LED digital readouts for PPM of Chlorine and for pH units. Calibration of the PPM and pH display shall be adjustable from the front panel, using a standard chemical test kit for pH and free available chlorine.

5. A solid state PPM SENSOR with a selective membrane shall monitor and display the Free Chlorine concentration in water in PPM and shall be used to control the chlorine feed device. The sensor readings must be accurate to 0.01 PPM and be compatible with CYA in excess of 20 PPM. PPM values derived from ORP sensor readings shall not be acceptable. The PPM sensor shall not require the use of chemical reagents and/or of a special flow cell for water flow and pressure regulation.

6. Audible, visual and remote alarms shall be activated by high/ low pH or sanitizer conditions and by the overfeed safety timers. All alarm settings shall be adjustable from the front panel. An interlock jumper shall prevent sanitizer feeding if the pH is below 7.0 or above 8.0.

7. All electronics shall be mounted on a single enclosed, plug-in PC board and shall be coated with a corrosion-proof coating. The sanitizer and pH sensors shall be potentiometric. The parts per million sensor shall be solid state with a selective membrane for free available chlorine (PPM). The pH sensor shall be a sealed combination glass electrode.

B. OPTIONS

1. OPTION FCA: The PPM and pH sensors shall be mounted in a see-through flow cell with a clear cover, pre-assembled with a water spigot and two (2) ball valves.

C. WARRANTY

1. The controller electronics shall be covered by a standard manufacturer warranty of five (5) years. Special extensions of more limited warranties shall not be considered acceptable. All sensors will be covered by a standard one (1) year warranty. Other parts shall be covered by their own manufacturer's warranty.

2. The manufacturer shall supply a complete instruction, operating and maintenance manual.