SECTION II

Basic Components:

Recirculation Tank: Total recirculation tankage shall be sized to equal a volume of a minimum of 0.5-1.5 days raw wastewater flow. For larger projects several smaller tanks may be used to feed sections (zones) of the RSF.

Sand Filter Zone: A zone is a section of the RSF that has it's own duplex pump system, manifolds, laterals and sequencing valve. The zone will be timed dosed independently of other zones. Each zone will have several manifolds that will automatically be dosed on a rotational basis via a hydraulic sequencing valve. The number of zones required and the zone size will vary depending on GPD and the recirculation rate with many standard options available. RSF's with multiple zones typically have equal sized zones.

Pumps: Each RSF zone shall have a duplex alternating pump system. Pumps are effluent rated submersible turbines each housed in a prefabricated patented laminar flow collar (LFC). Pumps shall have individual breakers and Hand-Off-Auto (H-O-A) switches. Cycle counters and ETM's are optional

Force Main: The force main from each duplex pump system shall be typical 2.0" dia. SCH40 PVC pipe feeding the sequencing valve. The force mains from each pump shall each have a check valve, disconnect (SCH80 PVC) and a gate valve prior to teeing together to form a single feed line. Force main material and size may change per the engineer's specifications.

Sequencing Valve: The hydraulically operated sequencing valve shall automatically rotate one outlet port every dose. Each outlet port feeds a manifold. The sequencing valve shall be located in a 30" dia. PVC riser. The valve shall be positioned to drain after each dose. Each valve shall have 3, 4 or 5 outlet ports.

Manifold Supplies: Typically 1.5" dia. SCH40 PVC pipe. Each manifold supply shall originate from an outlet port on the sequencing valve and feed one manifold.

Manifolds: Manifolds are typically 1.25" SCH40. Each manifold shall evenly distribute effluent to 3, 4 or 5 distribution laterals. Manifolds within a zone are dosed individually. Manifolds are dosed when the rest timer has timed out and the there is enough effluent in the recirculation tank. After a manifold is dosed the next manifold must wait for the pump rest timer to time out again prior to being dosed.

Laterals: Distribution laterals are typically 1.0" dia. Sch. 40 PVC with 1/8" dia. orifices spaced 2.0' on center. Lateral spacing is typically 2.0' on center. Lateral length varies but is standard 48'.

Under Drains: Typical 4" slotted class 125 PVC perforated under drainpipe. Slope is 0-0.1 %.

Optional Motorized BRV: This optional electric valve provides for 100% recirculation to continually polish the effluent during periods of low flow. If the "Off" level float switch is the only float activated the Motorized BRV will automatically turn to divert all effluent collected from the under drains back to the recirculation tank. When the tank level returns to normal conditions the valve will automatically turn to divert water to the distribution box. The inlet port and both outlet ports are 4.0" SCH40 female slip connection. The valve operates on 115 volt and is housed in a 24" dia. PVC riser. Optional heater is available.

Distribution Box: Collected effluent shall flow by gravity to the distribution box (ratio box). The d-box may be a prefabricated high-density polyethylene with one inlet port and typical 4 or 5 outlet ports depending on the desired recirculation ratio. Flow rates on certain projects may necessitate the need for a prefab concrete or cast in place d-box. The d-box shall evenly distribute the effluent through several ports with a specific number of ports returning to the recirculation tank and the remaining port to final discharge.

