

*Average Sewage Flow.* 400 gal/dwelling or 100 gpd/capita. See Table 3-14 for other unit flows.

*Screening and Comminutor.* Recommended, bar screen minimum.

*Aeration Tanks.* At least two to treat flows greater than 40,000 gpd, 24- to 36-hour detention period at average daily flow, not including recirculation, and 1000 ft<sup>3</sup> per 7½ to 15 lb of BOD, whichever is greater. Raw sewage goes directly to aeration tank, primary tank is omitted. Provide 18 in. freeboard.

*Air Requirements.* 3 cfm/ft of length of aeration tank, or 2000 to 4000 ft<sup>3</sup>/lb of BOD entering the tank daily, whichever is larger. Additional air is required if air is needed for air-lift pumping of return sludge from settling tank.

*Settling Tanks.* At least two to treat flows greater than 40,000 gpd; 4-hour detention period based on average daily sewage flow, not including recirculation. For tanks with hopper bottoms, upper third of depth of hopper may be considered as effective settling capacity.

*Rate of Recirculation.* At least 1:1 return activated sludge based on average daily flow.

*Measurement of Sewage Flow.* By V-notch weir or other appropriate device. Recording devices required for larger installations.

*Sludge Holding Tanks.* Provide 8 ft<sup>3</sup>/capita. Sludge holding tanks should be required for all plants. A minimum of 1000 gal capacity per 15,000 gal design flow and 20- to 40-day retention. Tanks should be aerated.

Daily operation control is essential. Air blowers must be operated continuously and sludge returned. Clogging of the air lift for return sludge is a common cause of difficulty. Grease that accumulates on the surface of settling tanks should be skimmed off and disposed of separately, not to the aeration tank. Aeration tubes or orifices require periodic cleaning. Dissolved oxygen level in the aeration tank and the mixed liquor suspended solids concentration must be watched. Odors should be minimal. A 90 to 97 percent BOD and suspended solids removal and good nitrification of ammonia nitrogen can be expected with proper control.

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