

Basin Construction New basins may be of earthen, concrete, or steel construction; earthen basins are generally the least expensive. Depending on local conditions, the interior side slopes may vary between 3:1 and 2:1. A section through a typical earthen basin is shown on Fig. 5-12. In most installations, a liner is required to prevent groundwater contamination. Basin depths will vary depending on land availability, groundwater level, and topography. If a liner is used in areas of high groundwater, the effects of hydraulic uplift on the liner must be considered. The freeboard required depends on the surface area of the basin and local wind conditions. If a floating aerator is used to provide mixing and prevent septicity and odor formation, a minimum operating level is needed to protect the aerator. Typically, the minimum water depth can vary from 1.5 to 2 m (5 to 6 ft). With floating aerators, a concrete pad should be provided below the aerators to minimize erosion. To prevent wind-induced erosion in the upper portions of the basin, it may be necessary to protect the slopes with riprap, soil cement, or a partial concrete layer. Fencing should also be provided to prevent public access to the basins.

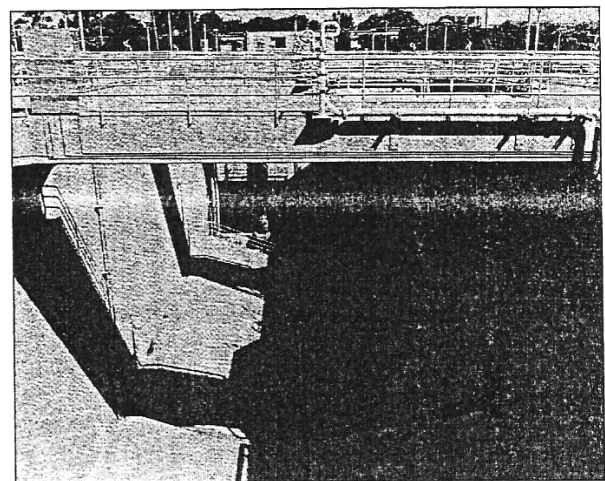
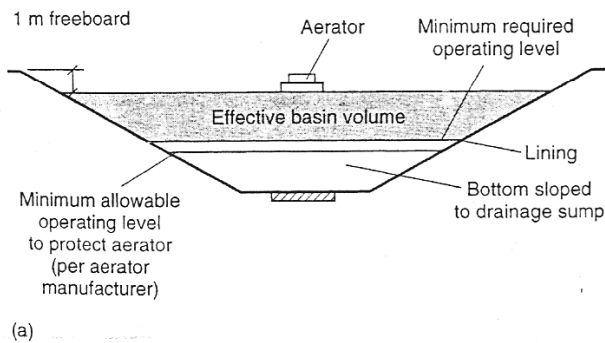


Figure 5-12

Typical open type flow equalization basins:
 (a) typical section through a lined earthen basin,
 (b) shallow concrete basin, and
 (c) deep concrete basin.