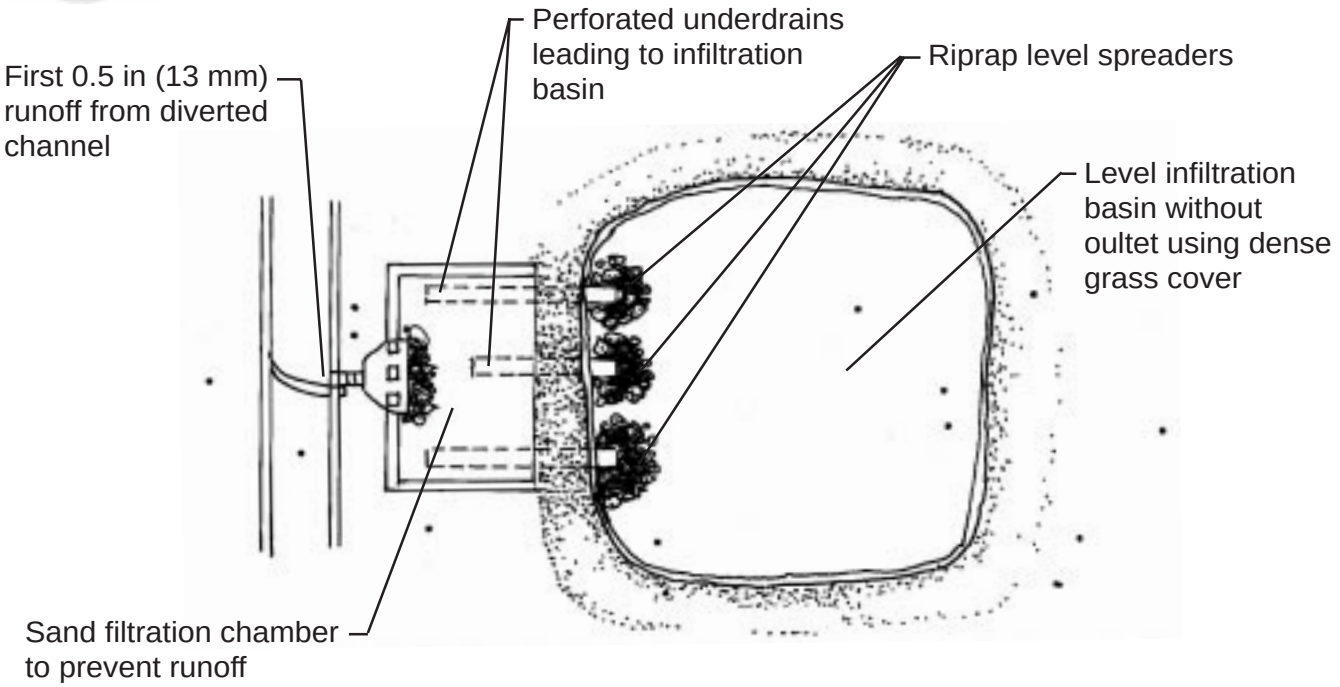
PRIMARY USE: An off-line design to remove soluble and fine particulate pollutants in urban runoff where downstream stormwater detention is problematic due to soil limitations.
ADDITIONAL USES: Also highly suitable for situations producing high hydrocarbon or sediment loads.

OFF-LINE INFILTRATION BASIN

What is it? As an off-line BMP this basin diverts and exfiltrates first flush runoff volume from a surface channel or storm sewer. This system combines an off-line sand filter and infiltration basin for treating first flush runoff volume. A weir is located across a manmade or natural channel to divert runoff into an off-line sand filter. After percolation through the sand filter, runoff is collected by underdrains which lead to a vegetated and level infiltration basin.

Purpose

Off-line infiltration basins are especially useful in developments where exfiltration cannot occur by means of a downstream stormwater detention facility due to soil constraints. This BMP is especially appropriate for sites draining land uses producing high hydrocarbon or sediment loads.



Off-line Infiltration Basin
Section View

Limitations

Sand filters require regular maintenance. Succesive storms may exceed storage/infiltraion capacity; so, spillway design is critical.

Materials

Materials commonly associated with similar BMPs, including riprap, turf, and spillway, piping and related plumbing fixtures suitable for construction of the barrel/riser; impermeable engineering fabric.

Installation

Minimum volume should be sufficient to contain first 1/2 in (13 mm) of expected runoff from a storm. A protective spillway should route overflow to acceptable drainage.

Source: Controlling Urban Runoff, Metropolitan Washington

OFF-LINE INFILTRATION BASIN

Additional Considerations and Drawings:

Off-Line Infiltration Basin Uses

Off-line infiltration basins address problems commonly associated with simple detention ponds by:

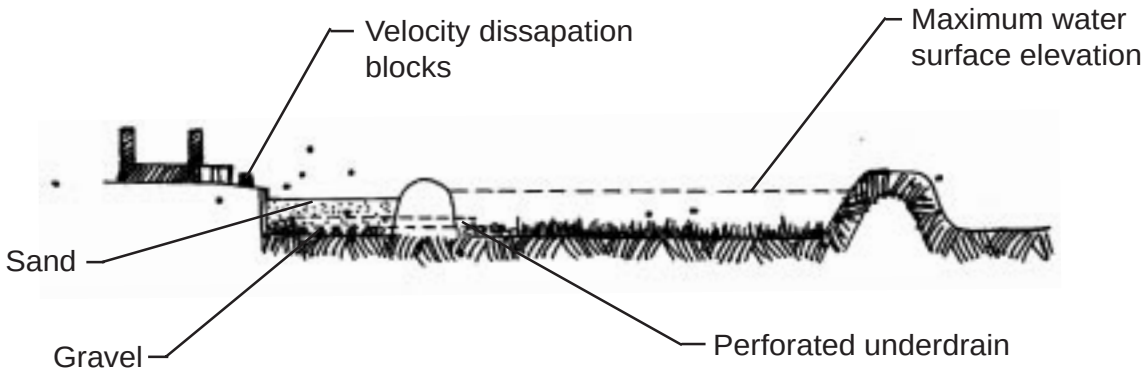
1. Trapping coarse grained sediment prior to its entering the basin, and thereby precluding clogging of soil pores on basin floors,

2. Routing design stormflows through the basin without eroding or scouring the basin floor,

3. Rapidly routing any existing base flow through the basin to preclude ponding,

4. Evenly distributing runoff over the basin floor to maximize exfiltration, and

5. Providing back-up drainage should failure occur with the basin's infiltration capacity.



Off-line Infiltration Basin
Section View