INFILTRATION TRENCH

DESIGN & INSTALLATION

SITING

Drainage Area

Small to medium drainage areas; 500 – 1000 SF.

Space

Can fit in underutilized or marginalized areas of a site.

Topography

Infiltration trench bottom should be level, but the slope of the surface may vary.

Soils

Permeable soils are best suited for French drains.

Setbacks

From septic systems, 5' less than 2' depth, 10' greater than 2' depth. Min 5' from Building Foundations, Min. 25' from "404" wetlands.

DESIGN INFORMATION

DESCRIPTION

Infiltration trenches are excavated trenches filled with granular material. The voids between the aggregate materials provide the volume for temporary storage of runoff that gradually infiltrates into the surrounding soil. Dry Wells are very similar to Infiltration Trenches but are configured as a stone-filled pit rather than a trench (see DRYWELL fact sheet).

ENHANCES GROUNDWATER RECHARGE.

1. Can filter out sediment and other pollutants.
2. Underground solution for small or remedial spaces.

DESIGN CONSIDERATIONS

1. Long linear applications help prevent groundwater mounding by reducing the rate of potential infiltration and make infiltration trenches ideal for application beneath curbs, gutters, sidewalks and parking area perimeters.
2. The surface of the trench may be covered in grass having a surface inlet, or with porous material such as stone or gravel.
3. 36" maximum depth.

SIZING CALCULATIONS

1. Calculate Tributary area in Square Feet.
2. Divide tributary area by 100, then multiply by 15 to get volume requirement in cubic ft.
3. Calculate the volume of your proposed infiltration trench L x W x H x .4; see worksheet
   B for volume calculations.
4. The total storage volume shall exceed the minimum required water quality volume.
5. If you are taking advantage of open space credits and storm water control measure credits, see worksheet A for confirmation of volume requirement.

Photo credit: Sustainable drainage systems

Photo credit: Atalier Cap Paysage Urbanisme

OPERATION & MAINTENANCE

(TO BE CONDUCTED POST-CONSTRUCTION & ANNUALLY)

Clogging

Remove debris and inspect for sediment buildup and structural damage. Ensure the trench is dewatering between storms and not bypassing facility.

Cleaning

Remove sediment adjacent to or near trench. Repair any erosion in aggregate or grassed areas.

Remedial Measures

If trench has not drained within 48 hours after storm, drain via pumping. Excavate around well perimeter to expose clean soil (~2 inches). Replace and reline filter fabric. Clean or replace aggregate and any perforated piping.

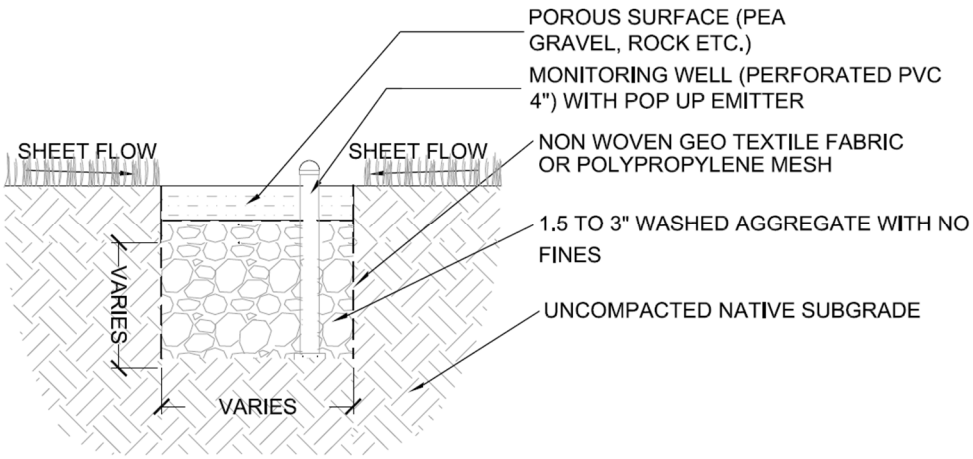
Vertical Separation

-Min. 12” separation from bottom of trench to seasonal high-water table.

INSTALLATION

MATERIALS

1. Stake out the project and mark utilities. Confirm the flow of water into the Infiltration Trench, checking the areas that will contribute runoff to the practice. The best method is direct observation during a rain event, combined with an accurate survey with spot elevations.
2. Excavate the trench at least 18 inches wide. Use only light weight (i.e., walk-behind) machinery and hand tools, or work from the side of the trench. Do NOT compact subgrade.
3. Line the side of the Trench with non-woven geotextile or polypropylene mesh.
4. Install observation well with the footplate at the bottom of the trench. A Min. of 1 observation well should be provided.
5. Install washed aggregate or other approved substrate within 2-4 inches of ground surface.
6. Add Porous surface; Install a 2-4-inch layer of pea gravel. It is also acceptable to top the
   stone layer with soil and sod as an alternative. Do not compact the top layer.
7. Use a bypass device such as a pop-up emitter, which directs any overflow away from home. Recommend 1 pop up emitter per every 50 linear feet.



Typical Infiltration Trench Cross Section

Not to Scale