FRENCH DRAIN
DESIGN & INSTALLATION

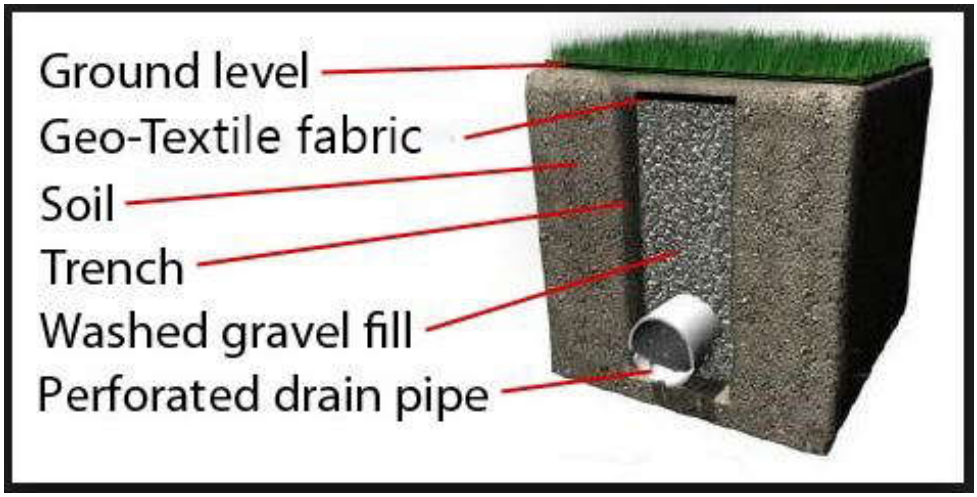


Illustration: englishrooferinnormandy.com

SITING

Drainage Area
Small to medium drainage area, 500 -1000 SF.

Space
Underground trench that can be utilized in limited space.

Topography
French drain is impractical in areas of steep slopes.

Soils
Permeable soils are best suited for French drains.

Setbacks
Min. 5' from building foundation, 10' from septic systems, Min. 25' from wetlands.

DESIGN INFORMATION

DESCRIPTION
A French drain is a trench covered in washed stone or other approved media that diverts surface runoff and groundwater away from a certain area. French drains are commonly used to capture and collect runoff and convey to another Storm water control measure (SCM).

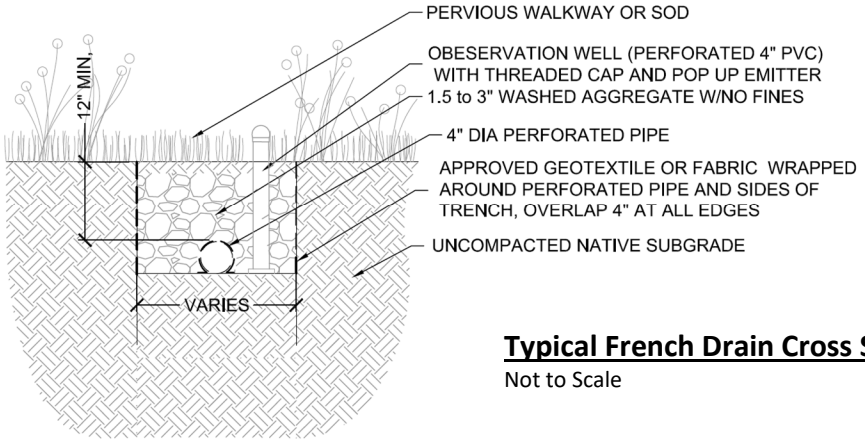
BENEFITS
1. Enhances groundwater recharge.
2. Can be used in limited space.
3. Provides for an underground solution, with usable space above.

DESIGN CONSIDERATIONS
1. Variety of lengths depending on storage volume needed.
2. Choose your location based upon whether the application will receive runoff by sheet flow or conveyance.
3. Minimum 1% longitudinal slope for conveyance to another SCM.
4. Minimum 10" width, maximum 36" in depth.
5. Fabric shall encase the gravel and be of a polypropylene mesh fabric or non-woven geotextile.
6. Aggregate shall be washed 1-1/2" -3" in size without any fines.
7. Pre-fabricated French drain substitutes will be considered when product technical specifications are provided.

SIZING CALCULATIONS
1. Calculate Tributary area in Square Feet.
2. Divide tributary area by 100, then multiply by 15 to get water quality volume requirement in cubic feet.
3. Calculate the storage volume of your proposed infiltration trench L x W x H x .4; see worksheet B.
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 & B for confirmation of volume requirement.

Vertical Separation

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



Typical French Drain Cross Section
Not to Scale

OPERATION& MAINTENANCE

(TO BE CONDUCTED POST-CONSTRUCTION & ANNUALLY)

Clogging

Over time, French drains can be compromised by tree roots, stray soil, gravel and other debris. Regardless of whether your French drain has become clogged, it’s a good idea to clean it out on an annual basis.

Cleaning

Using your garden hose, send water down the drain. If the water backs up instead of running through, you may have a clog. Unclog the drain with a pressure washer. Use a sewer snake to clean out stubborn clogs

Remedial Measures

If French Drain 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.

INSTALLATION

MATERIALS

- After calculating necessary sizing calculations, excavate a ditch that will allow at least 12” from top of the pipe to top of grade.
- If you’re installing a French drain around your foundation or pilings, take care to position the pipe below slab or finished floor level.
- Install non-woven geotextile or polypropylene mesh fabric by lining inside ditch bottom and walls.
- Install perforated pipe sloping 1” for each 10’ of length (1% slope) for SCM connection. Stand-alone SCM can be level.
- Backfill trench with clean, 1 – 1 ½ “ to 3” washed aggregate with no fines.
- Recommend one bypass device such as a pop-up emitter, which will direct overflow away from your house, every 50-linear ft.
- A minimum of 1 observation well should be provided per SCM. An observation port shall consist of a 4” diameter pipe to permit observation of internal water levels.