BROCHURE # 53
RESIDENTIAL INFILTRATION PIT/TRENCH

What is an infiltration pit?

An infiltration pit/trench is a stormwater facility much like a gravity septic system, that mitigates stormwater flows from rooftop runoff by providing a reservoir that allows for water storage and infiltration into the native soils located beneath the pit.

What size infiltration pit do I need?

DCD employees will size the infiltration pit required for your residential building based on information provided to them by the applicant. Sizing of your I-pit is determined by 3 factors:

- The amount of impervious area being directed to the proposed infiltration pit.
- The recorded rainfall totals for the area your project will be built in.
- The infiltration rate of the soils where the infiltration pit will be placed.

How is the soils infiltration rate determined?

An analysis of the soil where the infiltration pit is proposed is needed in order to properly size the infiltration pit. A soil sample must be obtained from the immediate area in which the infiltration pit will be located, taken at a depth between 3.5 and 4 feet below the ground surface.

The soil sample must be taken to a soil testing lab and analyzed to determine the percent of soil retained by a #200 sieve. This test identifies the soil gradation, the amount of course (gravel and sand), and fine (clay and silt) material in the soil. The percent of fines is used to determine the soils infiltration rate.

Where can an infiltration pit be located?

There are several things that affect placement of an infiltration pit, as follows:

- 10’ setback from property lines, foundations, or sensitive areas.
- 30’ setback if located uphill of an on-site septic system.
- 10’setback if located to the side, or downhill of an on-site septic system.
- 200’ setback* from top of a 30% or greater slope. *This setback may be reduced if supported by a geotechnical analysis and report.
- Infiltration pits may not be located on slopes steeper than 20%. A geotechnical analysis and report is required if the infiltration pit is to be built on a slope between 15% and 20%.
- There must be a minimum of 12” of separation between the bottom of the infiltration pit/trench and both hardpan and the seasonal high water table

Can it be located under a driveway?

Yes, if the driveway is paved with either concrete or asphalt.

What type of Catch Basin (CB) can I use?

- If the CB will not be in a location subject to vehicular loading one of the following may be used as a CB:
  - A black manufactured ADS CB. *ADS pipe with a poured concrete bottom will not be allowed.
  - A fiberglass septic tank riser with a welded bottom, minimum 24” diameter.
  - A concrete CB (Type 30, Type 1, or Type 2).
- If the CB will be in a location subject to vehicular loading (in or adjacent to a driveway), you have one option:
  - A concrete CB (Type 30, Type 1, or Type 2).

How deep is the infiltration pit?

Infiltration pits sized by DCD have a standard depth of 18” inches of rock. Other depths may be used when designed by an engineer.

What shape must the trench be?

Infiltration pits sized by DCD must meet the calculated square footage. They may be any shape that meets the square footage requirement, as long the following criteria are met:

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- Infiltration trenches must be oriented parallel to topographic contours, with a level bottom.
- The maximum length of the trench must not exceed 100’.
- If multiple trenches will be used the minimum spacing between centerlines is 6’.

What type of pipe needs to be used in the infiltration pit?

Perforated Polyvinyl Chloride (PVC) pipe, a minimum of 4” in diameter must be used.

At what depth within the drain rock should the drain pipe be placed?

The perforated PVC pipe should be located a minimum of 6” above the bottom of the trench and a minimum of 6” below the top of the rock.

What type of rock needs to be used in the infiltration pit/trench?

The rock required to be used in the infiltration pit/trench is round washed rock, ¾”- 1 ½” in diameter.

Is an inspection port required?

An inspection port is not required, but is recommended as it can function as an emergency overlow in case the infiltration pit is unable to mitigate all flows during a heavy or prolonged rain event rain event.

What does an infiltration pit/trench look like?

See the detail below which shows the layout of the constructed infiltration pit/trench.