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. It 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 2 factors:

- The amount of impervious area being directed to the proposed infiltration pit
- The infiltration rate of the soils where the infiltration pit will be placed

How is the soils infiltration rate determined?

On-site analysis of the soil is needed to test the feasibility of infiltration and to obtain soil infiltration rate for properly sizing the infiltration pit. Please follow the link below for instruction on how to conduct the soil infiltration test. Please complete this Simple Infiltration Test Worksheet.

If you follow the guidance on the checklist above and find infiltration is not feasible, please refer to Stormwater Infeasibility and Best Management Practices (BMPs) Worksheet.

Where can an infiltration pit be located?

Several things affect placement of an infiltration pit – locate your infiltration pit in accordance with the following:

- 10 feet or more from property lines
- 10 feet or more from another infiltration BMP
- 5 feet or more from structures without a basement
- 10 feet or more from structures with a basement
- 30 feet or more from an on-site septic system, when an I-pit is uphill from the septic system
- 10 feet or more from an on-site septic system, when an I-pit is to the side or downhill from a septic system.
- 100 feet or more from open water features and designated landslide hazards
- 50 feet or more from the top of any slope over 15%
- 200 feet or more* from the 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 or report is required if the infiltration pit is to be built on a slope between 15-20%.

Other Considerations:

1. 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
2. Other constraints may apply, the full list can be found on Kitsap County Stormwater Design Manual (KCSDM) Vol II chapter 5.

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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:

- 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 drainpipe 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 observation well required?

An observation well is recommended as it can be used for checking water levels, sediment accumulation, pumping out the sediment for maintenance purposes.

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What does an infiltration pit/trench look like?

See the detail below which shows the layout of the constructed infiltration pit/trench. For complete design criteria, please refer to KCSDM Vol II chapter 5

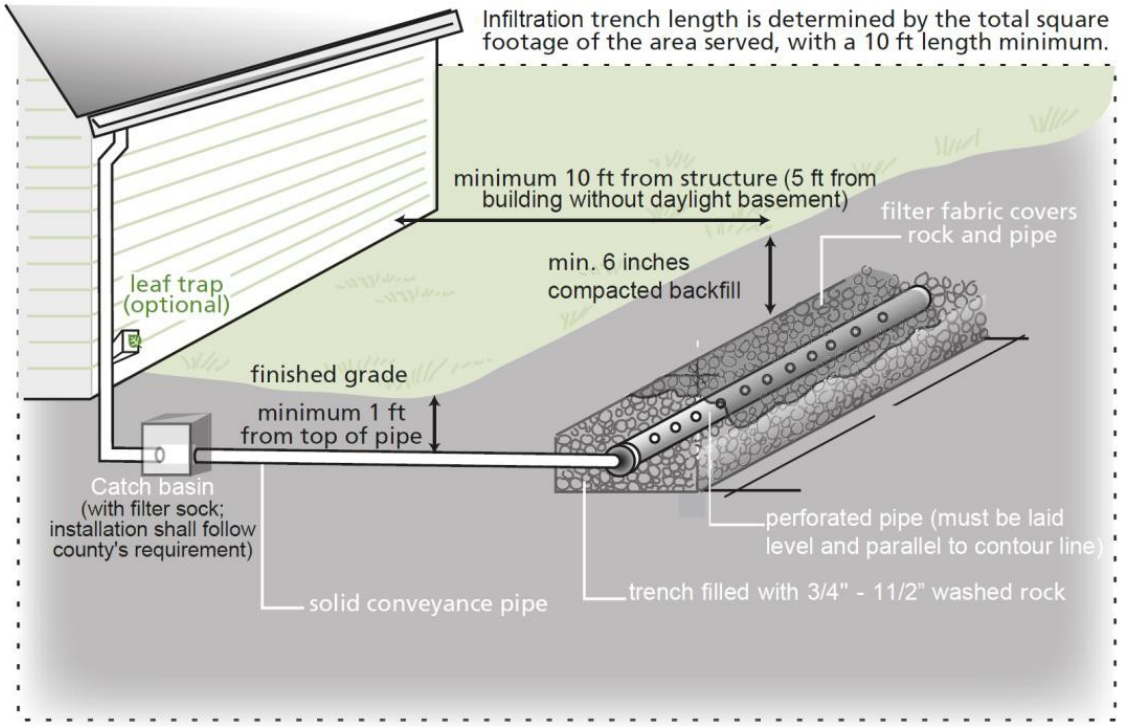
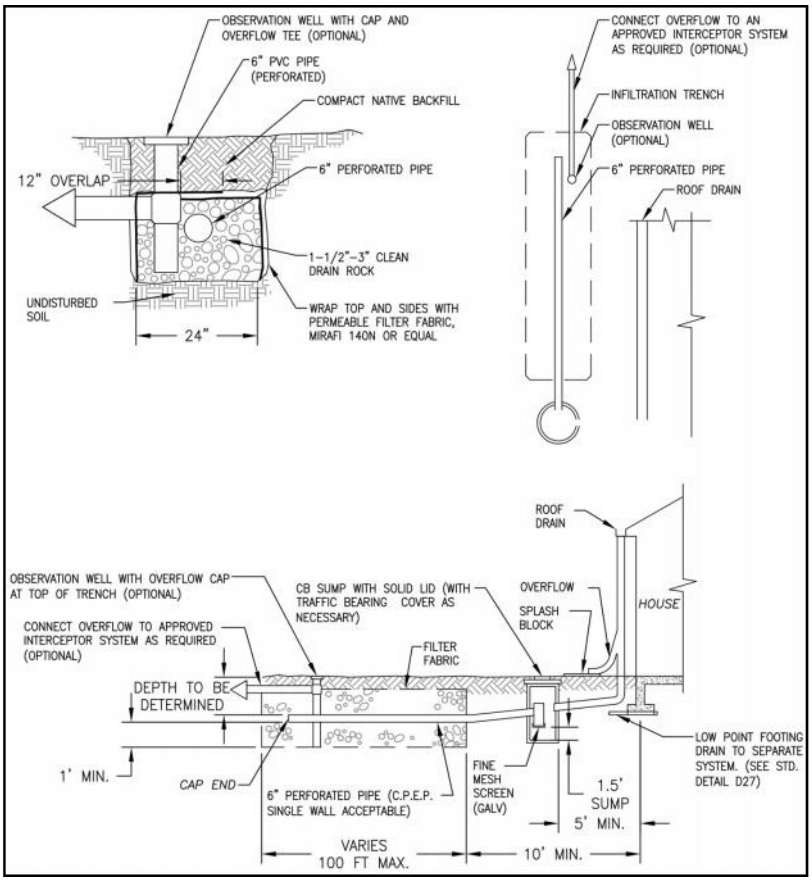


Figure 1 Illustration of a typical infiltration trench. Modified from "how to manage stormwater" by City of Portland Environmental Services

Figure 2 Example of an infiltration pit/Ipit

Figure 3 Closeup view of the catch basin.



Source and credits: Clark County, Community Development, modified from Stormwater Manual from Department of Ecology (2014 SWMMWW)

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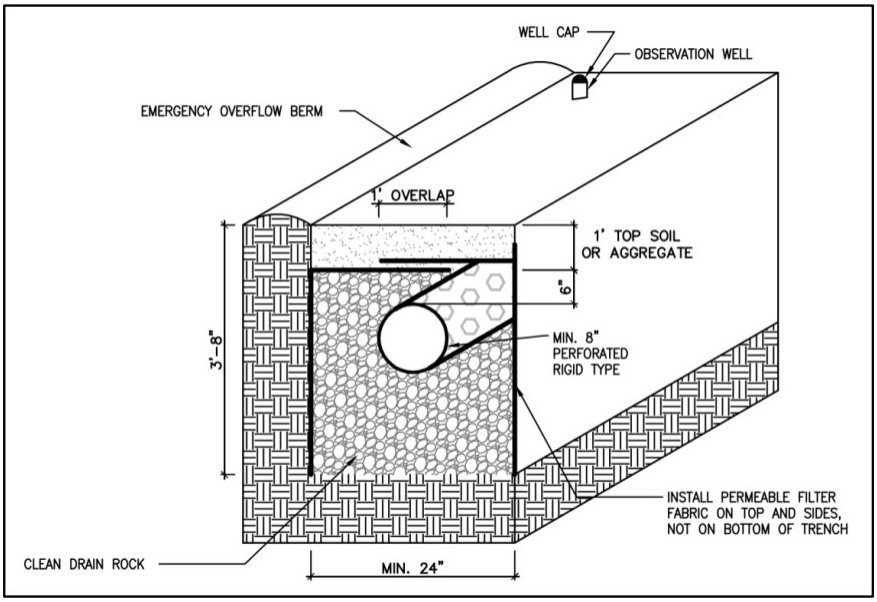

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