KitsapCounty
Community Development

Residential Dispersion Trench

A dispersion trench is a stormwater facility designed to receive stormwater runoff from roof downspout drains and other impervious surfaces to disperse it evenly through vegetated areas on your project site. It requires a large area of vegetated ground cover to meet flow-path requirements and may be infeasible on small parcels in dense urban settings.

Where can a dispersion trench be located?

Dispersion Best Management Practices (BMPs) have minimum requirements for a dispersion area and vegetated flow path, which should be taken into consideration when planning the location of your dispersion trench.

- The dispersion flow path is not typically permitted within landslide hazard areas (Title 19 KCC), on or above slopes greater than 20%, or above erosion hazard areas. Geotechnical evaluation and approval will be required to disperse in these areas.
- The dispersion trench must be oriented parallel to topographic contours, in such a way to provide for positive drainage.
- Dispersion trenches are not allowed in settings where the dispersed flows may cause erosion or flooding problems, either on-site or on adjacent properties.
- Setbacks:
    - 5’ from a building foundation
    - 5’ from property lines (however, the flow path must remain entirely on site.)
    - For sites with septic systems, the point of discharge to the dispersion device shall be:
        - 10’ downslope from the septic drain field and reserve areas
        - 30’ upslope from the septic drain field and reserve areas

What are the dimensions of a typical dispersion trench?

- Width: Minimum 28” wide (1 foot on either side of pipe)
- Depth: Minimum 22” deep (minimum 6” below pipe, and minimum 1 foot above pipe)
- Length: The length is determined by the amount of impervious area being directed to it. The trench must be 10 feet long for every 700 square feet of roof area. For example, a 2,100 square foot roof will require a dispersion trench of 30 feet long.
- Maximum length for a dispersion trench is 50 feet long. Large structures may use more than one trench to drain different sections of roof area.

For reference, click on the following links to see Figure V-4.4: Typical downspout dispersion trench detail, and Figure V-4.5: Standard dispersion trench with notched grade board detail.

What is a catch basin (CB) and what type can I use?

A catch basin is a drainage structure **that collects stormwater runoff and directs** it into a storm system. It is a part of the dispersion trench system installed near the trench to direct runoff to the dispersion pipe.

It acts as a sediment trap**, capturing and retaining silt and debris in** stormwater runoff to prevent clogging of the dispersion pipe.

CB types to use for your residential project include:

- A black manufactured ADS catch basin, with a minimum diameter of 24".
- A fiberglass septic tank riser with a welded bottom.
- A concrete Type 1 or Type 30 catch basin

What type of pipe is used in the dispersion trench?

Perforated Polyvinyl Chloride (PVC) pipe 4-6" diameter. The pipe must have a sealant between pipe joints and structures.

What Type of Rock is Used in the Dispersion Trench?

Clean *washed* rock, 1 ½"- 1 ¾" in diameter. Filter Fabric is also needed to line the bottom and sides of the dispersion trench. Refer to standard dispersion trench details, linked above.

How Deep in the Rock Must the Drain Lines Be Placed?

The perforated PVC pipe should be located a minimum of 6" above the bottom of the trench and a minimum of 12" below the top of the trench.

Is a Notched Grade Board Required?

Yes. When properly installed level, the 2x12 V-notched grade board allows the dispersion trench to discharge in an even flow path, preventing release at a concentrated discharge point. Both the trench and flow spreader must be installed level.

Example Dispersion Trench Installation

Trench shall be installed parallel to contour line

Catch basin (Type 1 or type 30, fiberglass septic tank riser, black manufactured ADS CB)

2” by 12” notch boards (flow spreader) must be level

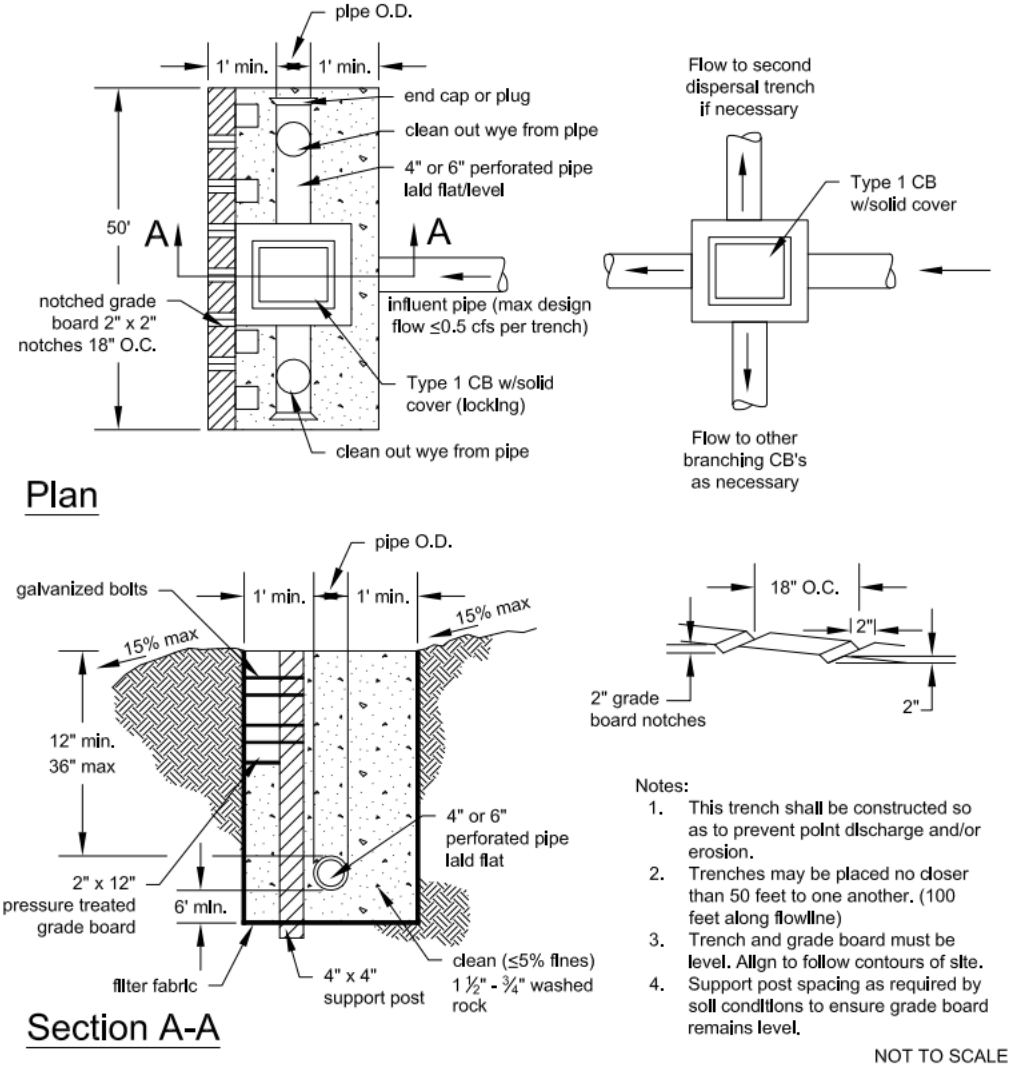
Return boards in the end. Installation of a cleanout is recommended

Close-Up View of the Catch Basin

Filter sock (“fishing net” filter for silt/sediment prevention

Outlet pipe (connect to perforated pipe)

Standard Dispersion Trench with Notched Grade Board



For additional questions, contact Community Development, Development Engineering at 360.337.5777 or email help@kitsap1.com.

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