be less than the buffer width.

3. For sites with septic systems, infiltration systems must be downgradient of the drainfield unless the site topography clearly prohibits subsurface flows from intersecting the drainfield.

Design Criteria

Infiltration Trenches

Figure V-4.1: Typical Downspout Infiltration Trench shows a typical downspout infiltration trench system, and Figure V-4.2: Alternative Downspout Infiltration Trench System for Coarse Sand and Gravel presents an alternative infiltration trench system for sites with coarse sand and cobble soils. These systems are designed as specified below.

1. The following minimum lengths (linear feet) per 1,000 square feet of roof area based on soil type may be used for sizing downspout infiltration trenches:
    - Coarse sands and cobbles: 20 LF
    - Medium sand: 30 LF
    - Fine sand, loamy sand: 75 LF
    - Sandy loam: 125 LF
    - Loam: 190 LF
2. Silt and clay type soils have a saturated hydraulic conductivity that is too small for adequate infiltration and are infeasible for downspout infiltration trenches.
3. The maximum length of the trench shall not exceed 100 feet from the inlet sump.
4. The minimum spacing between trench centerlines shall be 6 feet.
5. Filter fabric shall be placed over the drain rock as shown on Figure V-4.1: Typical Downspout Infiltration Trench prior to backfilling.
6. Infiltration trenches may be placed in fill material if:
    - the fill is placed and compacted under the direct supervision of a geotechnical engineer or professional civil engineer with geotechnical expertise, and
    - the measured infiltration rate is at least 8 inches per hour.

    Trench length in fill must be 60 linear feet per 1,000 square feet of roof area. Infiltration rates can be tested using the methods described in V-5.4 Determining the Design Infiltration Rate of the Native Soils.
7. Infiltration trenches should not be built on slopes steeper than 25% (4:1). A geotechnical analysis and report may be required on slopes over 15%, or if the proposed trench is located within 200 feet of the top of a slope steeper than 40%, or in a landslide hazard area.
8. Infiltration trenches may be located under pavement if a small yard drain or catch basin with grate cover is placed at the end of the trench pipe such that overflow would occur out of the

catch basin at an elevation at least one foot below that of the pavement, and in a location which can accommodate the overflow without creating a significant adverse impact to down-hill properties or drainage systems. This is intended to prevent saturation of the pavement in the event of system failure.

Figure V-4.1: Typical Downspout Infiltration Trench

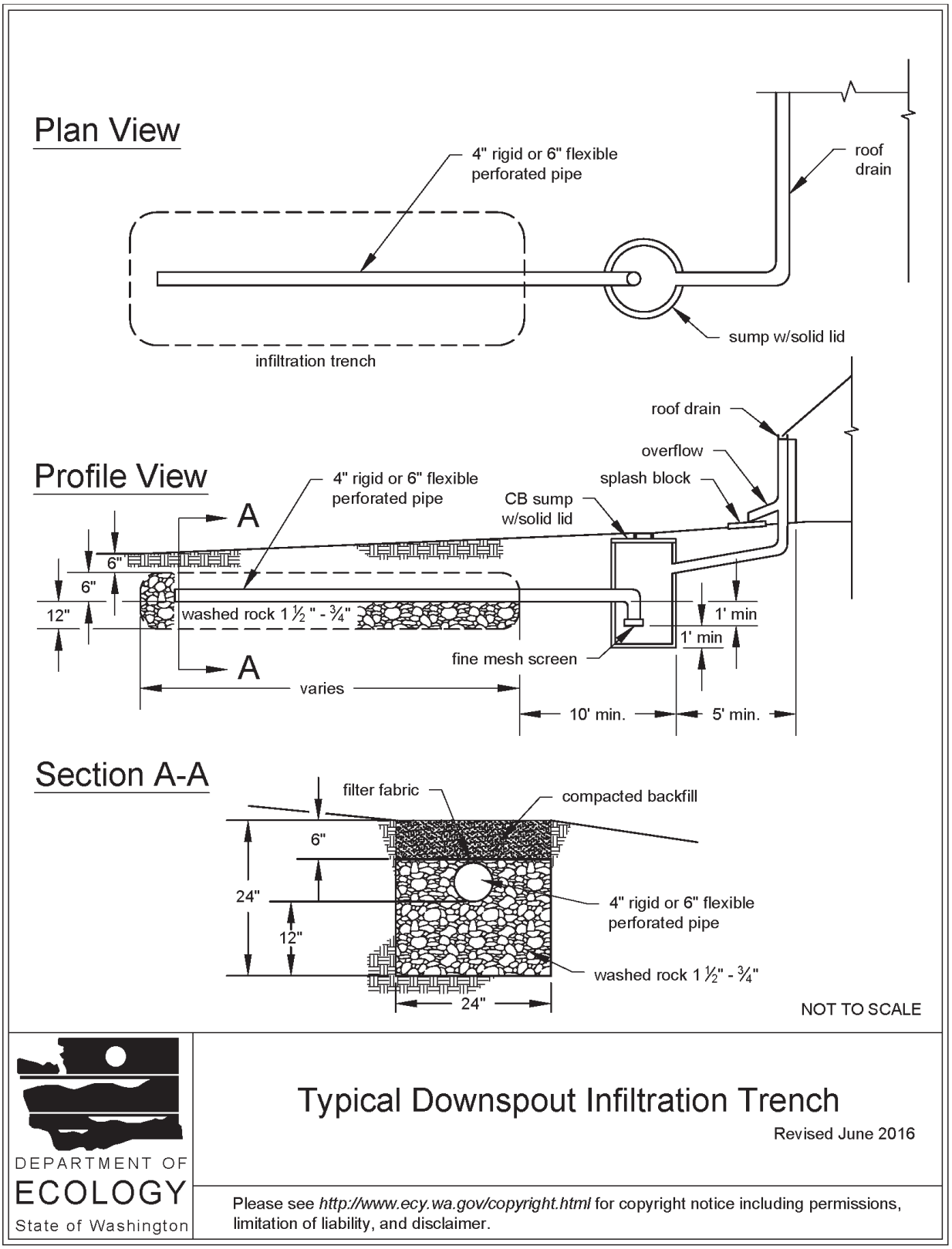
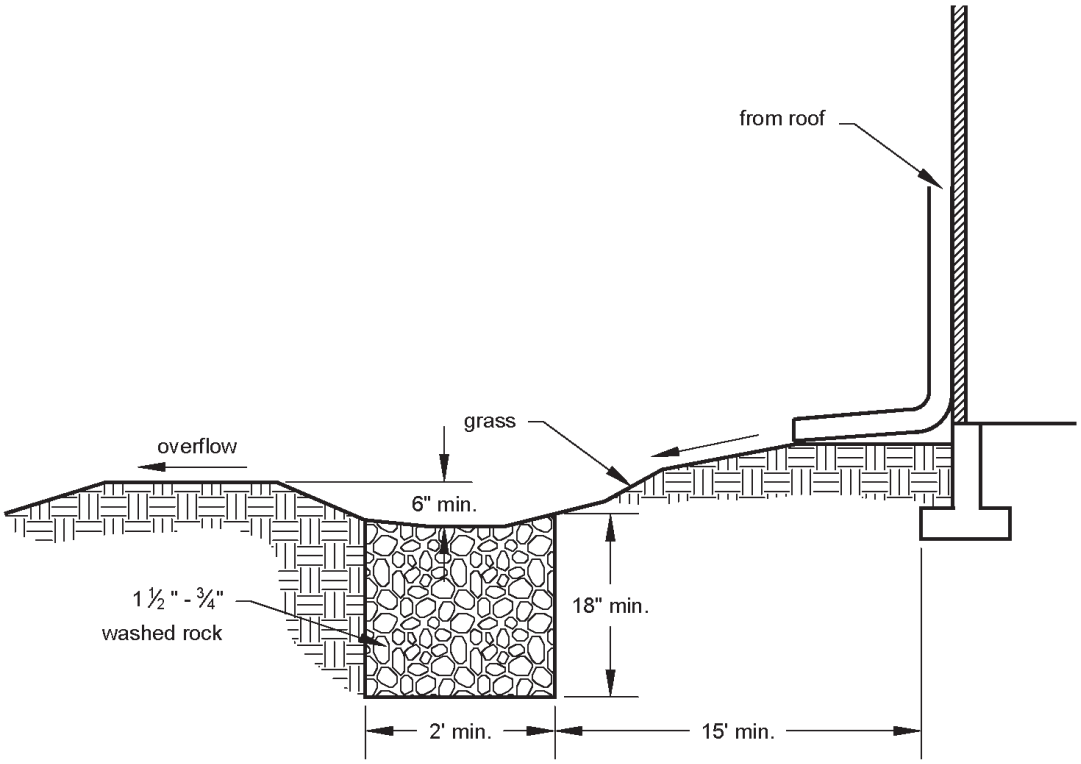


Figure V-4.2: Alternative Downspout Infiltration Trench System for Coarse Sand and Gravel



Note: Same length dimensions and site limitations as typical system

NOT TO SCALE

DEPARTMENT OF ECOLOGY
State of Washington

Alternative Downspout Infiltration Trench System for Coarse Sand and Gravel

Revised June 2016