Infiltration Trench or Basin

Multi-Benefit Trash Treatment System

Figure A: Urban Infiltration Trench

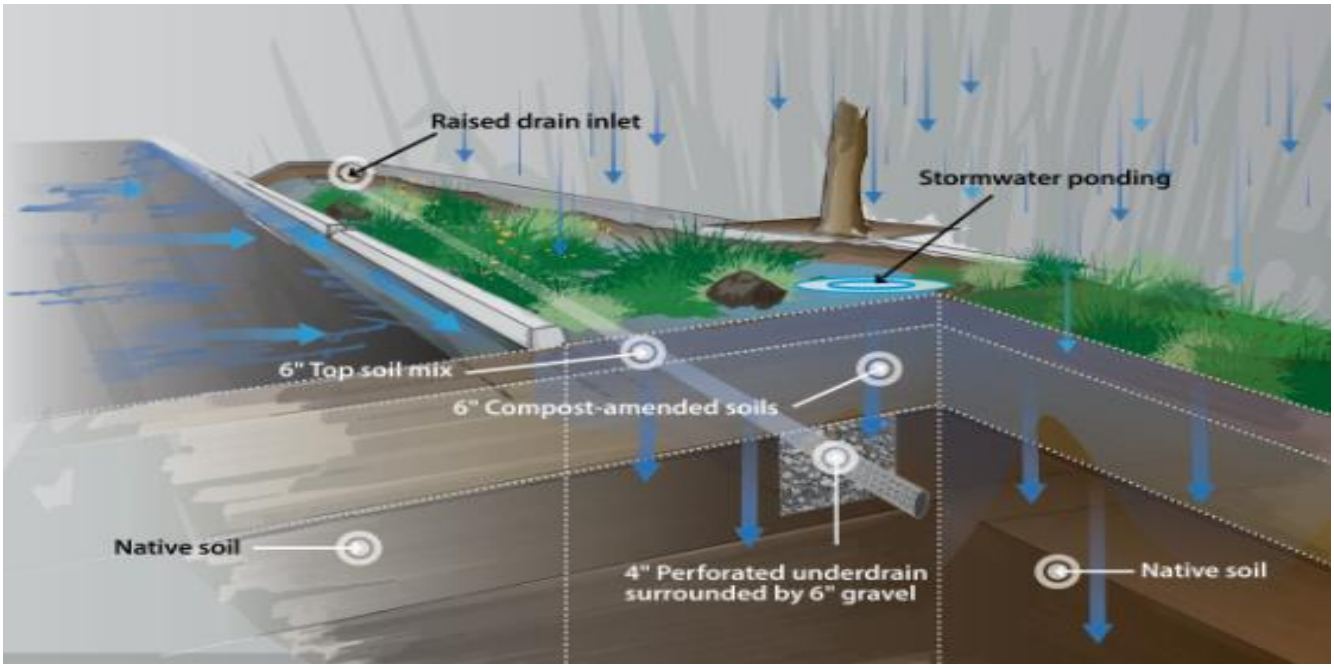

Figure A: CSU-Sacramento Generic Urban Infiltration Trench Detail

Description

Infiltration Trench or Basin Multi-Benefit Trash Treatment Systems come in various shapes and sizes. Such systems remove pollutants from stormwater runoff, also captures and infiltrates stormwater runoff into native soils. Infiltration Trenches or Basins may be backfilled with porous media such as gravel, sand, soil, or various locally earthed rocks (assuming such media does not generate pollutants of concern). Subsurface designs may be comprised of perforated pipe, chambers, open bottom concrete galleries or other high voids structures. These Infiltration Trenches and Basins store water for infiltration to underlying soils.

To qualify as a Certified Full Capture System, the design of the Infiltration Trench or Basin Multi-Benefit Trash Treatment System shall conform to the following five (5) requirements:

Performance, Design, and Maintenance

1. Infiltration Trench or Basin Multi-Benefit Trash Treatment Systems shall be designed and maintained to trap trash particles that are 5-mm or greater for the following:1
   a. The peak flow rate generated by the region specific 1-year, 1-hour storm event from the applicable sub-drainage area; or
   b. The peak flow rate of the corresponding storm drain (if corresponding storm drain is designed for less than the peak flow rate generated from a 1-year, 1-hour storm event).
2. Infiltration Trench or Basin Multi-Benefit Trash Treatment Systems may include either or both of the following to trap trash particles for either flow described above in section 1.a or 1.b:
   a. A screen at the system's inlet, overflow, or bypass outlet; or
   b. An up-gradient structure designed to bypass flows exceeding the flows described above in section 1.a or 1.b.2
3. The peak flow rates referenced in section 1.a, above, shall be calculated using one of the following methods:
   a. For small drainage areas (generally less than 50 acres) – The Rational Equation Method which is expressed as **Q = CIA** where:
      Q = design flow rate, cubic feet per second;
      C = runoff coefficient, dimensionless;
      I = design rainfall intensity as determined per the rainfall isohyetal map specific to each region, inches/hour; and
      A = subdrainage area, acres.
   b. For large drainage areas (~50 acres or more) - Other accepted hydrologic mathematical methods that more accurately calculate peak flow rates from large drainage areas.
4. Infiltration Trench or Basin Multi-Benefit Trash Treatment System design plans must be stamped and signed by a registered California licensed professional civil engineer (see Bus. & Prof. Code Section 6700, et seq.).
5. Regular maintenance is required to maintain adequate trash capture capacity and to ensure that captured trash does not migrate offsite. The owner shall establish a maintenance schedule based on site-specific factors, including the design trash capture capacity of the Infiltration Trench or Basin Multi-Benefit Trash Treatment System, storm frequency, and characterization of upstream trash and vegetation accumulation.

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1 Certified full capture devices have a design capacity to trap trash from flows not less than the peak flow rate at any time within a storm event. A Multi-benefit trash treatment system, including those that are volume-based, must have a design capacity to trap trash from flows not less than the peak flow rate at any time within a storm event to be a certified full capture system.

2 Upon approval by the appropriate Regional Water Quality Control Board Executive Officer, a 5mm screen and/or upgradient structure may not be required if the Multi-Benefit Trash Treatment System is designed for flows generated from very large 24-hour storm events.