

## Non-Structural Low Impact Development Controls

### Vegetated Conveyance Systems

#### Plan Symbol



#### Description

Vegetated conveyances are designed and installed as an alternative to curb and gutter and hard piping storm water conveyance systems. Open vegetated conveyances improve water quality by providing partial pollutant removal as water is filtered by the vegetation and by the opportunity to infiltrate into the soil. Open vegetated conveyances also are designed to reduce flow velocities when compared to hard piping systems.

#### When and Where to Use It

Open vegetated conveyance systems are incorporated into moderate to low density development sites where land is available and where the land surface is gently sloping (less than 5 percent). The soil must be able to withstand the design tractive forces and flow velocities of the open conveyance, or an applicable

#### Design Criteria

Design Turf Reinforcement Mats or Erosion Control Blankets to protect the open conveyance. Install a dense cover of strong rooted vegetation in the conveyance systems. For maximum water quality benefits, design vegetated open conveyances with a flat longitudinal slope to promote low velocity flow.

#### Installation

Construct vegetated conveyances with trapezoidal or parabolic cross section with relatively flat side slopes (flatter than 3H:1V).

Install a flat bottom between 2 and 8 feet wide.

During construction, it is important to stabilize the channel before the turf has been established, either with a temporary grass cover or with the use of natural or synthetic erosion control products.

#### Inspection and Maintenance

- The useful life of a vegetated swale system is directly proportional to its maintenance frequency. If properly designed and regularly maintained, vegetated swales can last indefinitely.
- The maintenance objectives for vegetated swale systems include keeping up the hydraulic and removal efficiency of the channel and maintaining a dense, healthy grass cover.
- Maintenance includes periodic mowing (with grass never cut shorter than the design flow depth), weed control, watering during drought conditions, re-seeding of bare areas, and clearing of debris and blockages.
- Remove accumulated sediment manually to avoid the transport of resuspended sediments in periods of low flow and to prevent a damming effect from sand bars. Minimize the application of fertilizers and pesticides.
- Repair damaged areas within a channel.
- Inspect for a healthy thick grass cover. Re-seed as necessary.