GENERAL DESCRIPTION
A dry swale can be thought of as an enhanced grass swale that incorporates an engineered filter media bed and optional perforated pipe underdrain or a bioretention cell configured as a linear open system. It is designed to convey and treat stormwater from impervious areas into a bioretention media system or to allow stormwater to infiltrate into the underlying native soil.

ABILITY TO MEET SWOM OBJECTIVES

OPERATION AND MAINTENANCE
Dry swales require routine inspection and maintenance of the landscaping as well as periodic inspection for less frequent maintenance needs or remedial maintenance. Generally, routine maintenance will be the same for any other landscaped area, including pruning, planting, and irrigation.

CONSTRUCTION CONSIDERATIONS
Ideally, dry swales should sit outside the footprints of new development. Furthermore, the construction of the swale begins to prevent soil compaction by heavy machinery and to prevent disturbance of the underlying native soil. The swale should be positioned to allow for natural drainage of excess water. The swale should be constructed with a surface slope of at least 1% and should not be placed in areas where the soil is too sandy or has a high water table.

CONVEXITY AND OVERFLOW
Should be designed to provide a minimum of 0.5 m or less than 4 hours for a 0.5 m Chicago storm event. The swale should also convey the locally required design stormwater volume into the bioretention media system or infiltrate directly into the native soil.

MONITORING WELLS
A typical dry swale consists of an anchored 100 to 150 millimeter diameter perforated pipe with a box-like cap installed at the bottom of the facility at the filter bed material. It is recommended for monitoring the length of time required to fully drain the facility between storms.

FILTER MEDIA
- COMPOSITION: To ensure a consistent and homogeneous bed, filter media should come pre-mixed from an approved vendor.
- DEPTH: Should be a minimum of 300 mm deep and sized to provide the required storage volume. Granular material should be 50 mm diameter clear石子.
- GRAVEL STORAGE LAYER: Should be a minimum of 300 mm deep and sized to provide the required storage volume. Granular material should be 50 mm diameter clear 石子.
- PE GRABE CHOKING LAYER: A 100 mm deep layer of pea gravel (3 to 10 mm size) should be placed on top of the coarse gravel storage layer as a chocking layer separating it from the overlying filter media bed.
- SITE IMPACT PLANNING DESIGN GUIDE

STORAGE REQUIREMENTS
- Pea gravel choking layer: A 100 mm deep layer of pea gravel (3 to 10 mm size) should be placed on top of the coarse gravel storage layer as a chocking layer separating it from the overlying filter media bed.
- Geotextile: Material specifications should conform to Ontario Provincial Standard Specification (OPSS) 1808 for Class II geosynthetic fabrics.
- Underdrain: Granular sand and gravel storage layer (stone reservoir).
- Filter media: Composite Filter Media Soil Mixture to contain: 85 to 88% sand, 8 to 12% soil fines, 3 to 5% organic matter (leaf compost).
- Stream Channel Erosion Control Specifications and Volume:

GEOMETRY AND SITE LAYOUT
- SHAPE: A parabolic shape is preferable for aesthetic and maintenance purposes. The parabolic cross-sectional area should be equal to the area of the filter bed.
- WIDTH: Should be a minimum of 1.0 to 1.25 m.
- DEPTH: Should be a minimum of 1.0 to 1.25 m. However, in certain cases, such as on slopes, the depth may be reduced to a minimum of 0.75 m.

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