



GENERAL MAINTENANCE CARD

Stormwater Coalition of Albany County

Facility: Open Channels - Dry Swale (O-1)

Funding for This Project Provided by the
New York State Department of Environmental Conservation
Environmental Protection Fund

Prepared By: HAZEN AND SAWYER

November 2009

MAJOR AREAS OF PRACTICE

- | | | |
|--------------------------|--|------------------------|
| A. Maintenance Accessway | D. Check Dam (For longitudinal slopes greater than 3% or additional detention) | F. Underdrain |
| B. Inlet Structure | E. Vegetated Swale | G. Gravel Inlet Trench |
| C. Forebay | | H. Outlet Structure |

PURPOSE AND FUNCTION

An open drainage channel or depression explicitly designed to detain and promote the filtration of stormwater runoff into the soil media.

SHORT-TERM MEASURES (FREQUENCY: AT LEAST ONCE A MONTH)

Drainage Issues:

1. Maintain contributing drainage area.

- Remove trash and debris and dispose off-site, as required.
- Stabilize and mow area as required. Remove clippings.
- Ensure that activities in the drainage area minimize oil/grease and sediment entry to the system.

2. Inspect inlet (Location B) and forebay (Location C), or other pretreatment devices.

- Remove debris manually and dispose off-site, as required.
- Note any cracks in pipe and concrete pipe collar.
- Note any displaced field stone.
- Note any evidence of altered flow around check dam (Location D).

3. Inspect vegetated swale (Location E).

- Remove debris manually and dispose off-site, as required.
- Note dewatering time. The facility should drain completely within 24-48 hours of a storm event.

4. Inspect gravel inlet trench (Location G).

- Remove debris manually and dispose off-site, as required.
- Note dewatering time. The facility should drain completely within 24-48 hours of a storm event.

5. Inspect outlet structure (such as half round pipe weir at Location H).

a. Half Round Pipe Weir

- Remove debris manually and dispose off-site, as required.
- Note any cracks/damage to half round pipe, weir and weir box.

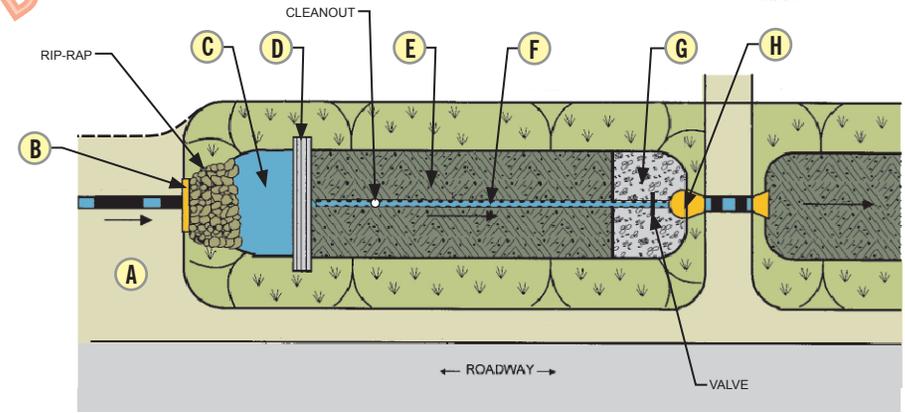
Landscaping:

6. Inspect overall condition of vegetation onsite.

- Irrigate as necessary during plant establishment and during periods of little rain or drought
- Remove vegetative invasives manually, ensuring root removal, to the extent possible.
Note any significant establishment for future removal/maintenance.
- Relocate rodents and/or provide exclusion devices, as required.

SIDE A

DRAFT



- Trim shrubs and cut grass along street frontages, as required.
- Mow vegetation in dry swale as required to maintain grass heights in the four to six inch range. Mow only when swale is dry to avoid rutting. Dispose of clippings off-site.

Perimeter Treatment:

7. Inspect overall condition of the perimeter treatment items.

- Remove accumulated litter/debris by hand; dispose off-site.
- Secure gates, guiderails, signs, and boulders as required.

MEDIUM-TERM MEASURES (FREQUENCY: ONCE EVERY SIX MONTHS)

Drainage Issues:

1. Measure sediment depth in pretreatment forebay (Location C).

2. Inspect inlet (Location B), and forebay (Location C), or other pretreatment devices.

- Repair cracks in pipe and concrete pipe collar, as required.
- Replace displaced field stone, as required.
- Repair check dam (Location D), as required.

3. Inspect outlet structure (such as half round pipe weir at Location H).

- Repair cracks/damage to half round pipe, weir and weir box, as required.
- Clear culvert as required to maintain conveyance.

4. Inspect for unstable embankments.

- Repair/reinforce as required using field stone, plantings, etc.

Landscaping:

5. Inspect for plant mortality.

- Remove dead vegetation by hand; dispose off-site; replant as required.
- Remove trees that start to grow in the vicinity of the swale (Location E), and dispose off-site, as required.

- Note any bare areas. Cultivate soil and revegetate as required. Introduce alternative plantings, as required.

6. Inspect for significant establishment of invasives and develop an area-wide plan for removal.

7. Inspect for herbivore damage.

- Repair burrows/damage created by rodents, as required.
- Introduce alternative plantings, as required.

Perimeter Treatment:

8. Lubricate locks and hinges on gates, as required.

9. Refurbish accessway with wood chips or other appropriate material, as required.

10. Inspect and repair damaged locks, gates, guiderails, and signs, as required.

LONG-TERM MEASURES (FREQUENCY: ONCE EVERY YEAR)

Drainage Issues:

1. Remove sediment from forebay and adjacent catch basins; vactoring recommended.

2. Inspect vegetated swale (Location E).

- If water remains 24-48 hours following a storm event, cleanout underdrain (Location F) and replace top two to five inches of media as required:

- Close valve at end of underdrain pipe, near outlet structure.
- Attach a standard compressor and fitting to cleanout and run compressed air through pipe. Repeat until swale surface is sufficiently broken up.
- Remove compressor hose and fittings. Restore valve to original setting.
- Remove top two to five inches of media and dispose off-site.
- Replace media according to original specifications or to approved, revised specifications.
- Seed or sod to restore ground cover, as required.

- If sediment accumulation is greater than 25% of channel capacity, remove sediment as required.

- Inspect for uniformity in cross-section and longitudinal slope. Correct as required.

3. Inspect gravel inlet trench for clogging. Remove and replace top two to five inches of media as required.

4. Inspect stone diaphragm for clogging. Remove accumulated sediment. Replace stone as required.

LONG-TERM MEASURES (FREQUENCY: ONCE EVERY THREE TO FIVE YEARS)

Drainage Issues:

1. Restore vegetated swale (Location E) and gravel inlet trench (Location G) as required.

- Remove all media and dispose off-site.
- Inspect perforated pipe for clogging or damage and replace as required.
- Replace media according to original specifications.
- Seed or sod to restore ground cover, as required.

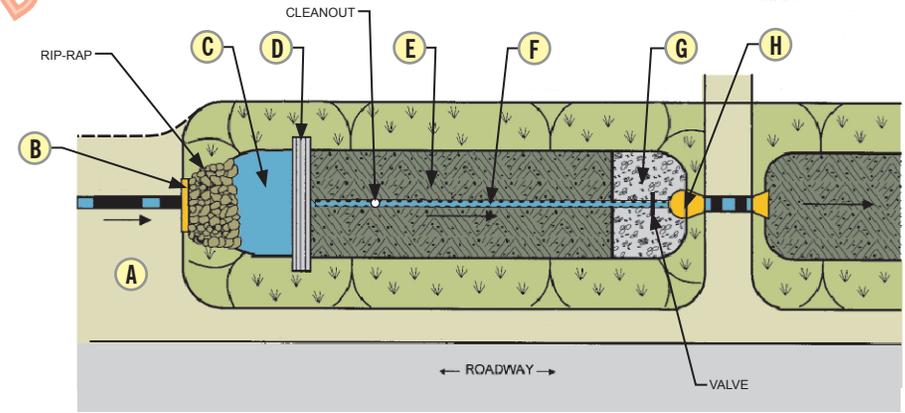
DEWATERING PROCEDURE AT PRETREATMENT DEVICE

The forebay or other pretreatment device must be dewatered before proceeding with vactoring operations.

Methodology:

1. Park the vactor truck along the maintenance accessway near the inlet (Location A). The boom should be extended in the direction of the forebay.
2. Ensure clear access for a two-person crew down the slope near the forebay (Location C).
3. Pump out the water from the forebay to the swale (Location E) downstream.
4. Proceed with vactoring operations.

DRAFT



VACTORING PROCEDURE AT PRETREATMENT DEVICE

Methodology:

1. Connect the vactor truck to an approved nearby source of clean water for vactoring purposes.
2. Unwind the water jet hose reel and place it down the slope of the forebay to Location C. Use hose to loosen the accumulated sediment.
3. Place the flexible suction hose into the forebay (Location C).
4. Perform vactoring operations by simultaneously using the suction arm and water jet hose to remove slurry until the rip-rap base is reached.
5. Continue slurry removal until capacity of vactor truck is reached.
6. Stop vactoring work. Dispose of slurry off-site.
7. Repeat Steps 1-6 until all the sediment has been removed.
8. After vactoring work is complete, carefully remove the flexible suction hose and the water jet hose from forebay, and transport them back to the truck.
9. Inspect the accessway and adjacent area for damage, such as dislodged field stone, wood chips, etc., and refurbish as required.

Note: Secure locks on gates as necessary prior to exiting site.

Maintenance Considerations During Design

- Erosion and Sediment Control
 - Inlet/Outlet Protection
 - Sediment Removal
- Pretreatment Devices
- Landscaping
- Maintenance Access
- Cold Climate Considerations