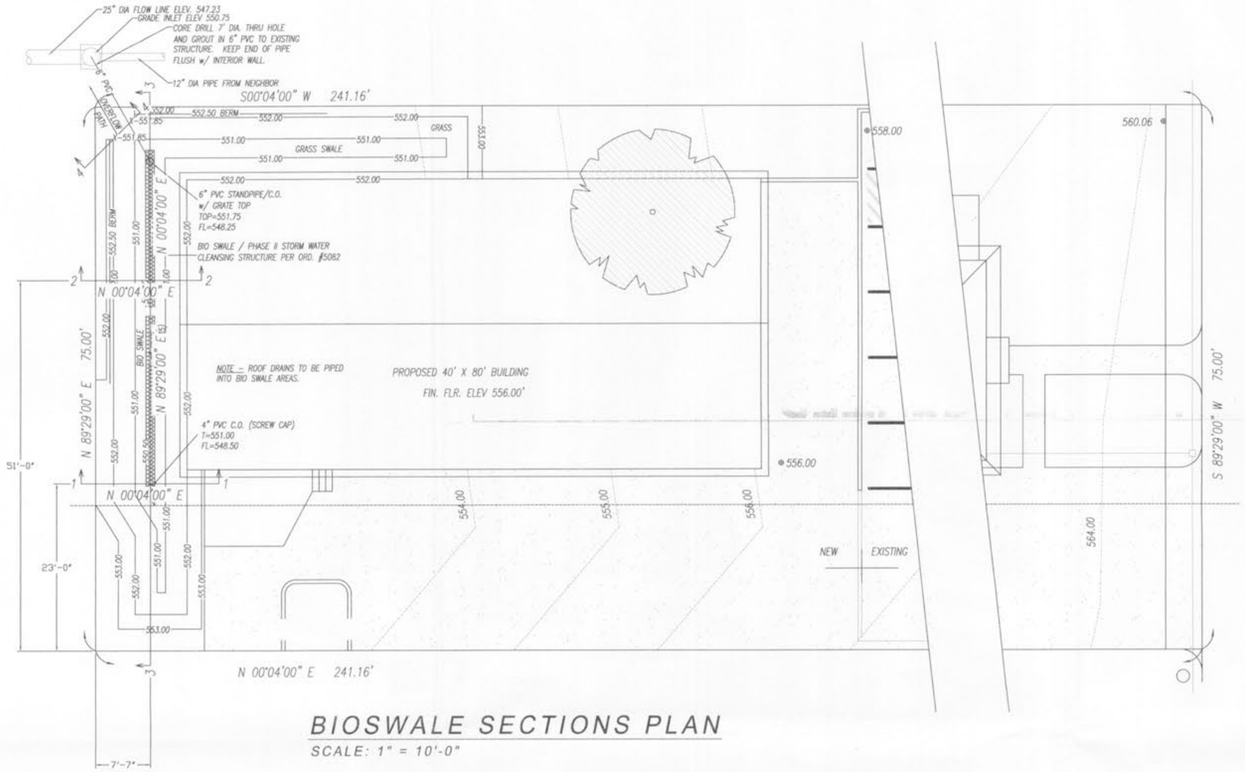


BIOSWALE SECTIONS PLAN

SCALE: 1" = 10'-0"

MAINTENANCE AND OPERATION PLAN FOR POST CONSTRUCTION B.M.P.

Sand Filter Maintenance Plan

The owner agrees to the following requirements in exchange for the issuance of a sewer permit:

A. Maintenance

The property owner will maintain all private stormwater facilities in good working order. Minimum maintenance of the private facilities shall include the routine removal of sediment, debris, oil and foreign material from the storm sewers and storm sewers and sand filter so that the operation and capacity of the facilities continues to function properly. The stormwater facilities will have an annual inspection, maintenance, and reporting schedule, every 3 months as well as every storm exceeding 1 inch of rainfall or as actually needed, whichever is most restrictive. A copy of the inspection reports shall be submitted upon request of the City.

In surface sand filters with turf grass bottom surfaces, mowing and/or trimming of vegetation must be performed on a regular schedule based on specific site conditions. Grass should be mowed at least once a month during the growing season. The use of fertilizers and pesticides should be kept to a minimum so as not to negate our efforts at protecting water quality. Vegetated areas must also be inspected at least annually for erosion and scour. The sand filter area must be inspected for unwanted underbrush and tree growth at least once a year. All structural components must be inspected for cracking, subsidence, spalling, erosion, and deterioration at least annually. Hazardous structural defects shall be inspected by a structural engineer.

Should standing or pooling water become a maintenance burden (if water fails to infiltrate within 72 hours), minor corrective action can usually correct it. Pooling water is usually cause by clogging or blockage of the surface layer and the surrounding planting soil. The surface blockage problem may be corrected by raking the surface. If the soils themselves are causing the problem, the topsoil should be replaced.

Trash and Debris

Runoff flowing into stormwater facilities may carry trash and debris with it. Trash and debris should be removed regulary both to ensure that inlets do not become blocked and to keep the area from becoming unsightly.

B. Inspection of Facilities

In first year of operation, inspection shall take place at least once each quarter during the spring, summer, and early fall. Bi-monthly inspections should be conducted from November through March to determine how leaf litter will impact the flow capacity of the structures. After the first year of operation routine inspections shall take place every 3 months. A copy of the inspection reports shall be submitted upon request of the City..

Routine (every 3 months) inspection of stormwater facilities shall consist of the following:

1. Inspect each manhole, inlet structure, and outlet structures for any silt or debris build-up.
2. Check to see that all sewer structure grates and lids are in place seated properly and no damage has occurred to the grates or lid.
3. Inspection of the sand filter will consist of the following:
   a. Inspect for any sediments or debris at the surface of the filter. Remove any debris. Sediment shall be cleaned out when it reaches a maximum depth of 6".
   b. Check the perforated pipe in the sand filter for blockages. An indication of an improperly functioning perforated pipe is the ponding of water over the filter (if water fails to infiltrate within 72 hours).
4. In the event that any of the filter media in the stormwater treatment basin needs to be replaced the following are the requirements for filter media replacement.

Sand Filter Layer:

Washed ASTM C33 Fine Aggregate Concrete Sand is utilized for applications in St. Louis County. MSD requires a uniform standard sand depth of 12 inches. Manufactured sand or stone dust is not acceptable.

Gravel Bed Around Underdrain Pipe(s)

The washed gravel layer surrounding the underdrain pipe(s) must meet AASHTO M-43, and be a uniform depth as shown ion drawings.

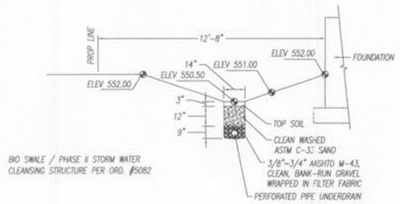
Underdrain Pipe

The underdrain pipe consists of 6-inch diameter SDR35 or stronger perforated PVC pipes at 0.00% slope. Perforations must be 3/8 inch in diameter and must be located 4 inches on center, every 90 degrees around the pipe.

C. Cleaning of Facilities

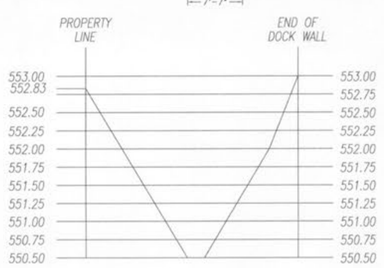
The stormwater facilities shall be cleaned shortly after the project is completed, erosion control has been removed, and vegetation established. Runoff shall not be directed to the BMP's until the site is stabilized.

All silt and debris should be removed from the storm structures and the storm sewer lines before reaching the detention facilities. All sediment removed from the site shall be disposed of according to current erosion and sediment control regulations.



BIOSWALE SECTION A

N.T.S.



BIOSWALE SECTION 1 - 1

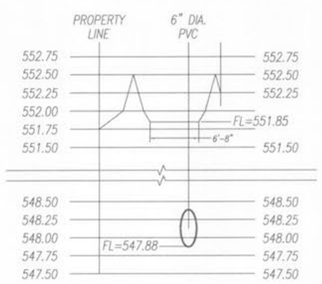
HORIZONTAL. SCALE: 1" = 5'-0"
VERTICAL SCALE: 1" = 1'-0"

BIOSWALE SECTION 2 - 2

HORIZONTAL. SCALE: 1" = 5'-0"
VERTICAL SCALE: 1" = 1'-0"

BIOSWALE SECTION 3 - 3

HORIZONTAL. SCALE: 1" = 5'-0"
VERTICAL SCALE: 1" = 1'-0"



OVERFLOW PATH SECTION 4 - 4

HORIZONTAL. SCALE: 1" = 5'-0"
VERTICAL SCALE: 1" = 1'-0"

General Notes

STATE OF MISSOURI
JOHN PAUL WILLEMS JR.
NUMBER E-22852
REGISTERED PROFESSIONAL ENGINEER

No.	Revision/Issue	Date
4	FOURTH SUBMITTAL REVISIONS	03-19-11
3	THIRD SUBMITTAL REVISIONS	03-28-10
2	SECOND SUBMITTAL REVISIONS	10-8-09
1	FIRST SUBMITTAL REVISIONS	09-25-09

Engineer:

Romacker & Associates
4434 St. Louis Rock Road
Villa Ridge Mo. 63089

Architect:

S.L. Dickinson Architect
238 Barter Ave.
Kirkwood Mo. 63122

Customer Name and Address

D-Low Repairs LLC
115 Church Street
O'Fallon Mo. 63366
314-267-3736

Project Name and Address

New work shop / warehouse
115 Church Street
O'Fallon Mo. 63366
314-267-3736