

NOTES:

1. All Tankage, piping and installation provided by others. StormTEE® and treatment insert supplied by Bio-Microbics, Inc.®
2. Bio-Microbics® treatment insert must be sealed to tank lid using non-toxic sealant and concrete bolts. Bolts provided by others. See Plan view for suggested bolt pattern.
3. Treatment insert legs must be bolted to tank with a minimum of two bolts per leg. Bolts provided by others.
4. Legs are adjustable to any height using SCH 40 PVC pipe and Bio-Microbics supplied screws. If Legs are to be extended past 24" then Sch 80 PVC or Stronger Pipe must be used.
5. The entire treatment module should be level.
6. Tank shown as a two compartment tank, also possible to utilize two separate tanks
7. Required weir plate height and location shown with one example of a diversion box design.
8. Follow all applicable codes.

DO NOT SCALE
UNLESS NOTED
DIMENSIONS
ARE IN INCHES
[CENTIMETERS]
TOLERANCES
± 0.02 IN/IN
[± 0.05 CM/CM]



BIOSTORM

WEIGHT		lb	SIZE	DRAWING NUMBER		SHEET 3 OF 8
NAME	DATE	A	BioSTORM® 1.0			
DRAWN	CTC	4/27/2006	REVISED 10/21/2013			
CHECKED	PF	10/21/2013	REV. INI-01-A+			

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BioStorm® Specifications

I. Stormwater Treatment System

The stormwater treatment system shall be a BioStorm® stormwater treatment system. The BioStorm® treatment system shall consist of a Diversion Structure that collect the first flush of stormwater and the remaining flow up to the design flow capacity of the stormwater treatment system. Following the Diversion Structure there shall be a settling tank with an effluent screening device referred to as the StormTEE®. This settling tank shall be used to collect the large settling debris and the floating objects that are present in the first flush of the stormwater. Following the first cell there shall be a second cell that includes the BioStorm® solids and floatable oil recovery system. The entire system of the Diversion Structure and the two cells make up the stormwater treatment system.

II. Diversion Structure

The Diversion Structure shall be a concrete vault designed to be installed in the stormwater outfall pipe. This concrete vault shall contain a specially designed concrete weir that directs the first flush into the first cell of the BioStorm® treatment system. The weir shall be specifically designed so that the height of the weir directs the flow to the first cell and provides the correct hydraulic flow to the rest of the BioStorm® treatment system. The excess flow passes over the weir and then passes through the Diversion Structure into the outfall piping which takes the excess flow to the receiving stream or discharge point.

III. BioStorm® First Cell

The first cell of the BioStorm® shall be a concrete vault used to settle the large debris and floatables generally present in the first flush. The material captured in the first cell is generally the street litter and trash, such as cans, bottles, paper, plastic cups, leaves and lawn waste, normally present in the first flush of stormwater. Included at the discharge end of the first cell shall be a StormTEE® screen which is used to filter the effluent from the first cell through the 9.5 mm (3/8 inch) slots. The hydraulic capacity of the StormTEE® shall limit the flow through the first cell into the second cell. The StormTEE® shall cause the excess flow to be backed up into the Diversion Box where it overflows the weir into the outfall pipe.

The StormTEE® shall have a manual plunger which can be used in between storm events to clean the surface of the StormTEE®. The StormTEE® shall be constructed from all noncorrosive plastic materials designed to withstand the forces from the high flow rates and the debris that is customary in stormwater. There shall be no moving parts or electrical requirements needed for this screening device.

The solids which settle out in the first cell shall be easily removed on a periodic basis by means of a vacuum truck. The floatables which also are retained in the first cell shall also be easily removed with the vacuum truck on a periodic basis as required.


IV. BioStorm® Second Cell

The second cell of the BioStorm® system shall receive the filtered effluent from the first cell. The second cell shall be a concrete vault that contains the BioStorm® solids and floatable hydrocarbon recovery device. The BioStorm® recovery device shall include a plastic liner which contains a honeycomb media that is used to settle fine soil particles. The BioStorm® recovery device shall also be designed so that the honeycomb media will act as an oil coalescer which allows hydrocarbon particles to attach to the media and grow in size so that they will float to the surface within the upper zone of liner. The BioStorm® recovery device liner shall extend above the operating water level so that the hydrocarbons that float to the surface are contained within the liner.

The effluent from the first cell shall enter the second cell so that the flow is directed around the BioStorm® recovery liner to reduce the velocity of the incoming flow. The flow shall then enter the BioStorm® recovery system at the front of the liner and flow through the honeycomb media to the opposite end of the liner. The honeycomb media shall be constructed of polypropylene, oleophilic sheets which are corrugated and angled at 60 degrees from the vertical. The projected surface shall be a minimum of 15 m²/m³. The effluent from the recovery system shall be collected from a point below the static water level to allow the floatable hydrocarbons to remain on the surface inside the liner. The honeycomb media shall be designed so that the solids that are removed from the media by settling down the 60 degree surface of the media. The BioStorm® recovery device shall be designed with vertical height adjustable legs that allow the solids which settle off the honeycomb media to settle out under the bottom of the liner in an undisturbed zone in the second cell. There shall be no moving parts or electrical requirements needed for the solids and floatable hydrocarbon recovery device.

The effluent from the recovery liner shall exit the second cell of the BioStorm® system through the effluent pipe which extends outside of the concrete vault. The effluent pipe shall then tie into the stormwater outfall piping to the receiving stream or discharge point.

The solids which settle out in the second cell and under the recovery liner shall be easily removed on a periodic basis by means of a vacuum truck. The floatable hydrocarbons which are retained in the recovery liner shall be easily removed with the vacuum truck on a periodic basis as required.

DO NOT SCALE UNLESS NOTED DIMENSIONS ARE IN INCHES [CENTIMETERS] TOLERANCES ± 0.02 IN/IN [± 0.05 CM/CM]		 BETTER WATER. BETTER WORLD.® BIOSFORM	
WEIGHT	lb	SIZE	DRAWING NUMBER
		A	Specifications
DRAWN	4/27/2006	CHECKED	PF
	10/21/2013	REVISED	10/21/2013
		REV.	

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