Suntree
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Grate Inlet Skimmer Box

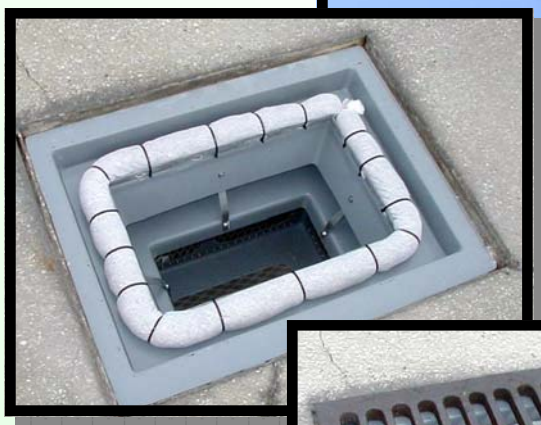
Stormwater Treatment System For A Grated Inlet

Captures Everything From Hydrocarbons, To Sediment, To Foliage, To Litter... Everything!

Patented

Installs Quickly

- Remove the grate
- Drop in the filter
- Replace the grate



Will Not Impede The Designed Flow Of The Inlet

Custom Sizes... No Problem

Grate Inlet Skimmer Box Special Features

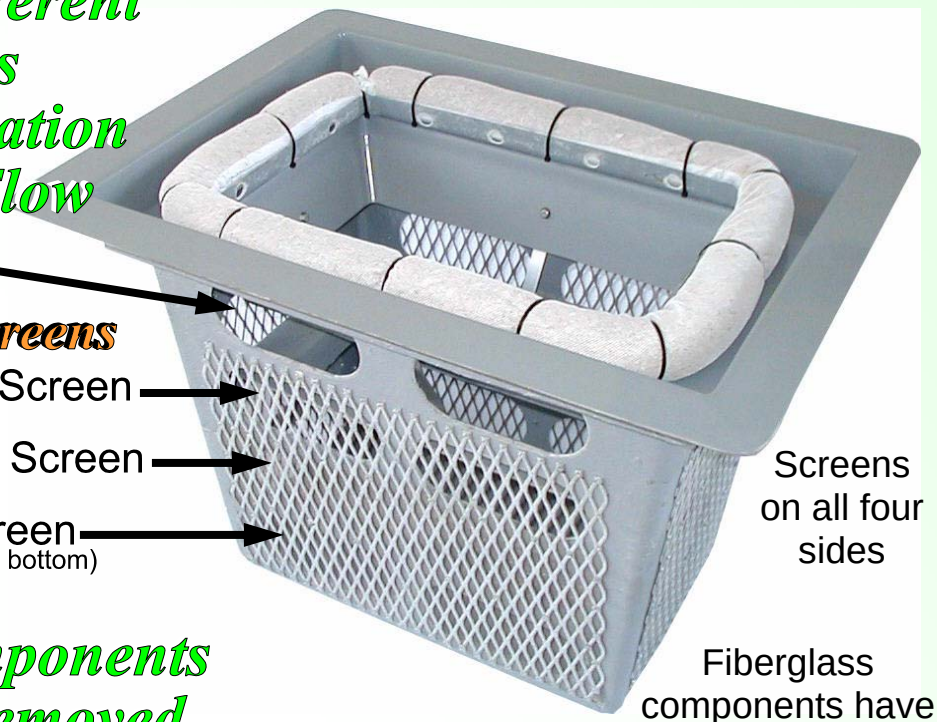
Multi-Stage Filtration

Screens of Different Sieve Sizes Optimize Filtration And Water Flow

- Bypass Openings

Stainless Steel Screens

- Coarse Sieve Size Screen
- Medium Sieve Size Screen
- Fine Sieve Size Screen
  (Fine sieve size screen also on bottom)



Screens on all four sides

Interior components are easily removed to allow easy access to lower filtration chamber

Fiberglass components have gelcoated finish + UV filter

- Storm Boom
- Zip Tie
- Skimmer Tray
- Deflection Shield

Storm Boom absorbs hydrocarbons

- Flange is reinforced with knitted 1808 ±45º biaxial fiberglass

Built Strong To Last!

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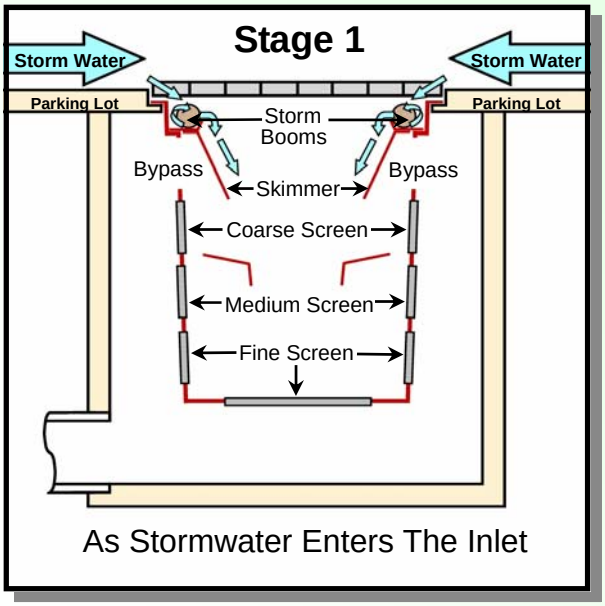
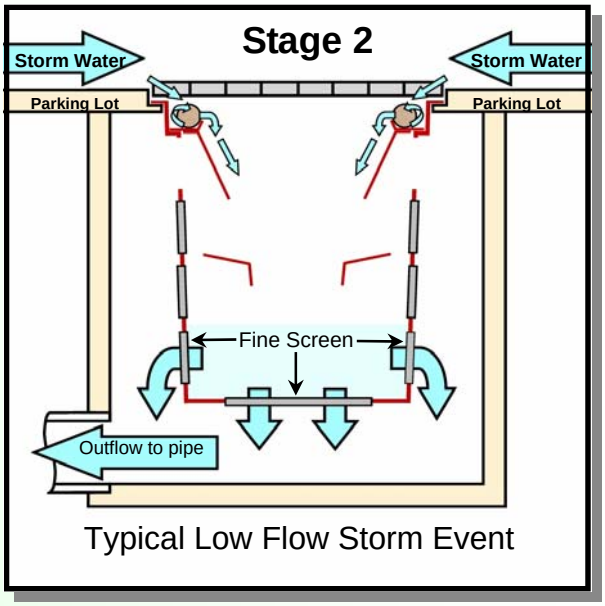
Grate Inlet Skimmer Box — Functional Description

Multi-Stage Filtration Utilizes Screens Of Different Sieve Sizes To Optimize Filtration And Water Flow

Stage 1: As stormwater enters the inlet through the grate it comes in contact with and passes through a ***Storm Boom*** located around the top perimeter of the ***Grate Inlet Skimmer Box***. After making contact with the ***Storm Boom***, the stormwater flows down into the lower filtration chamber which is equipped with 3 different sieve size filtration screens and bypass openings.



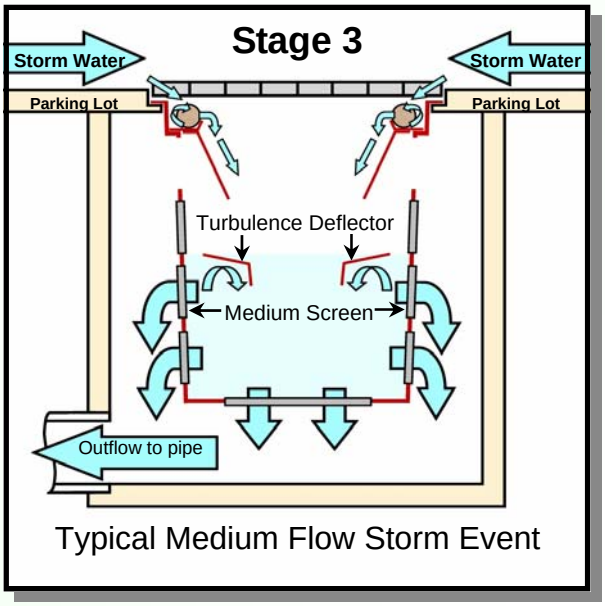
As Stormwater Enters The Inlet



Typical Low Flow Storm Event

Stage 2: Throughout the entire storm event, stormwater continues to come in contact with the ***Storm Boom*** and then flow into the lower filtration chamber, adjacent to the fine sieve size screens. The fine sieve size screens are sized to be able to capture sediment such as sand, clay, phosphates, etc. A sand filter quickly forms across the bottom which has the potential to capture the finest of particles.

Stage 3: As the storm event increases in intensity the water level in the ***Grate Inlet Skimmer box*** rises to a level adjacent to the medium sieve size screens and the *turbulence deflector*. The medium screen provides additional flow with less chance of obstruction than the fine screen. The *turbulence deflector* dramatically reduces the turbulence in the lower filtration chamber, which allows sediment to continue to settle, without re-suspending sediment that has previously been captured.



Typical Medium Flow Storm Event

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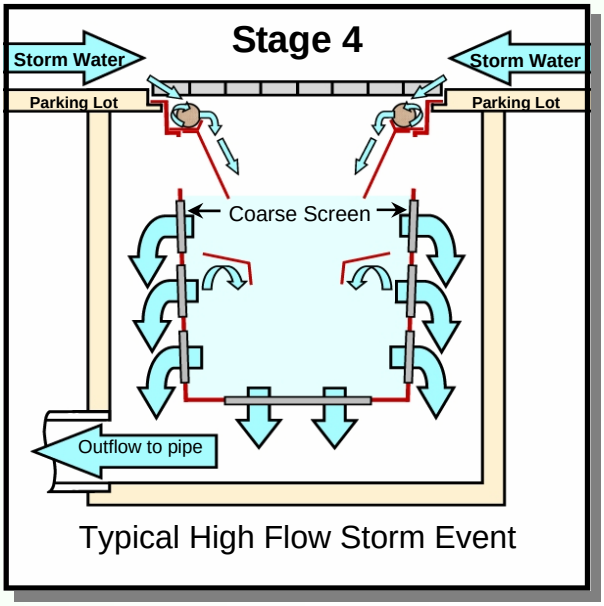
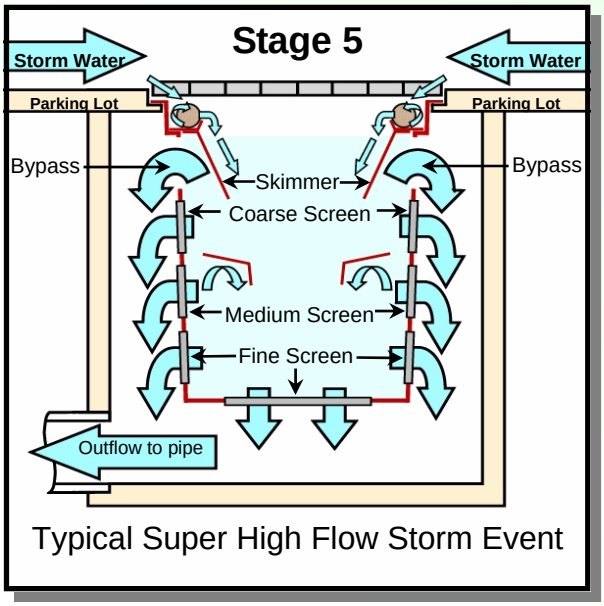
Stage 4: As the storm event increases in intensity to that of high flow storm event, the water level in the ***Grate Inlet Skimmer box*** rises to a level adjacent to the coarse sieve size screens above *turbulence deflector*.



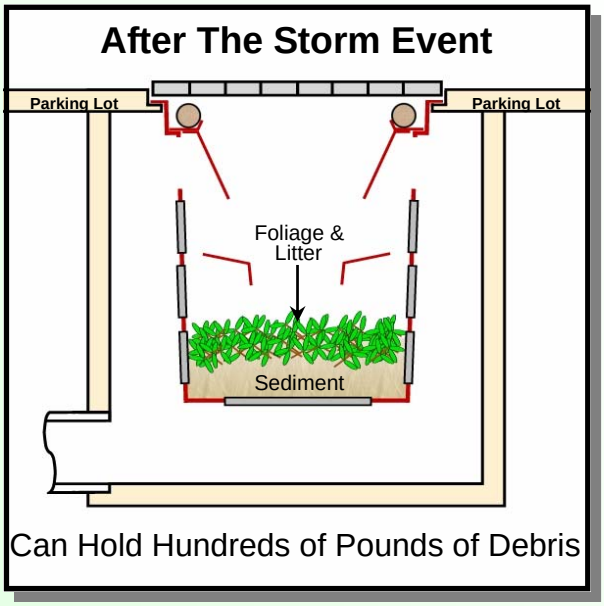
Typical High Flow Storm Event

The coarse screen provides additional filtered flow with less chance for obstruction than either the medium or fine screen. The coarse screen is sized to capture floatables like foliage and litter. At this stage water is flowing through all the different sieve size screens, the *turbulence deflector* continues to dramatically reduce the turbulence in the lower filtration chamber, and sediment continues to settle and collect toward the bottom.

Stage 5: If the storm event creates an extremely high flow rate into the inlet which exceeds the flow through all the screens, the water flow can bypass the filtration screens through skimmer protected bypass openings near the top of the ***Grate Inlet Skimmer Box***. As water flows through the bypass openings, it also continues to flow through all the other screens. Storm events that produce such high flow rates are rare and typically don't last very long.



Typical Super High Flow Storm Event



Can Hold Hundreds of Pounds of Debris

Drains Dry After Every Storm Event

After The Storm Event: The stormwater drains completely out of the ***Grate Inlet Skimmer Box*** after the storm event. The debris collected in the unit is stored in a dry state which helps to contain the nutrient pollutant load, prevents the filter from going septic, and prevents mosquitoes from breeding in the unit. After each storm event more debris is collected, which can ultimately weigh many hundreds of pounds.

Grate Inlet Skimmer Box - Captured Debris

The Challenge...

Take On The Toughest Inlets...
Capture & Keep The Debris...
Keep The Inlet Flowing!

The picture to the right shows an inlet with a ***Grate Inlet Skimmer Box*** immediately after the grate was removed, just 45 days after it was installed. Because this inlet is adjacent to a wash down area, it experiences a simulated storm event every day. The filter is full to capacity and has been operating in bypass mode for some time.

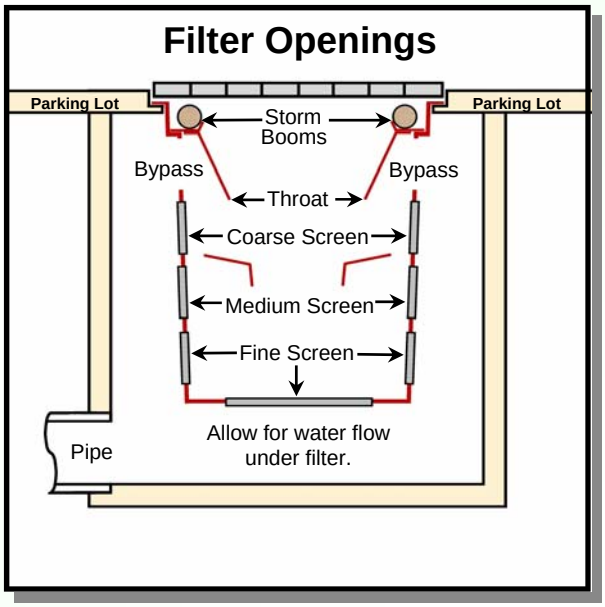
The picture to the left shows the ***Grate Inlet Skimmer Box*** immediately after the removal of booms and skimmer tray. Notice the bypass openings around the top are completely unobstructed. The filter is full to capacity and is operating in bypass mode. Because this inlet experiences an extra heavy hydrocarbon pollutant load it is fitted with extra ***Storm Booms***.

Stainless Steel Screens are easily cleaned to restore the original unobstructed flow rates to the Grate Inlet Skimmer Box

Although the inlet is relatively small with a grate that measures 24” x 24”, debris weighing 232 pounds with a volume of 78 quarts was removed during this servicing. To the right is a photo of the same ***Grate Inlet Skimmer Box*** after being serviced.

Ready For The Next Storm Event!

Grate Inlet Skimmer Box - Sizing and Flow Rates



Custom Sizes No Problem

The **maximum flow rate** of a *Grate Inlet Skimmer Box* is determined by the amount of flow that can pass through the throat, the exception is found only in very large units.

To determine the **minimum flow rate** of a ***Grate Inlet Skimmer Box***, consider only the potential flow through the throat and bypass. If the potential flow through the throat is less than the potential flow through the bypass, then the throat determines the minimum flow. If the potential water flow through the bypass is less than that of the throat, then the bypass determines the minimum flow. **Filtered Flow** represents the potential flow rate through all screens, and does not include the potential flow through the bypass. Water flow through the bypass happens only when the flow rate through the grate exceeds the flow rate through all the screens.

Flow Rate Table For 8 different Models

	Dimensions of the flange around the top of the Grate Inlet Skimmer Box			Flow Rate (cubic feet per second)		
Model Number	Width (inches)	Length (inches)	Depth (inches)	Throat	Filtered Flow	Bypass Flow
GISB-I-24-24-25	24	24	25	4.4	14.9	6.7
GISB-A-24-37-25	24	37	25	10.2	21.1	8.7
GISB-C-28-37-25	28	37	25	12.2	19.4	7.4
GISB-J-24-41-25	24	41	25	12	24.6	10
GISB-NK-32-32-25	32	32	25	12.5	19.1	10.3
GISB-36-36-25	36	36	25	18.8	23.4	13.4
GISB-D-36-48-18	36	48	18	33.2	26.3	13.3
GISB-G-52-58-18	52	58	18	89.3	40.1	25

♦ The yellow blocks represent the minimum flow rates.
♦ Filtered flow is based on unobstructed screens.

Drawings and flow specifications for any size Grate Inlet Skimmer Box is available upon request.