MERIT FILTER CORPORATION

THE FUTURE OF DEWATERING

THE MERIT FILTER MEDIA™ ADVANTAGES

Many years of developing and testing various dewatering devices for efficiency and reliability ends right here. The ***Merit Filter Media***™ *sludge dewatering system now offers the best financial alternative to both costly mechanical dewatering and obsolete, inefficient sand drying beds. Best of all,* ***Merit Filter Media***™ *can be retrofitted to any existing sand drying bed simply and inexpensively. The new* ***Merit Filter Media***™ *is the improved dewatering system.*

LOW OPERATING COST

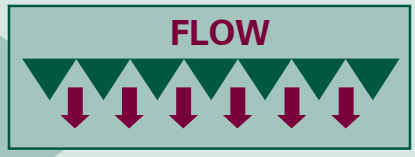
What could be more efficient than **Merit Filter Media**™ ? There are no mechanical parts to break down, minimal maintenance requirements and there is no power source needed other than the force of gravity. Also, there is no costly media loss as with sand drying beds. The **Merit Filter Media**™ system requires less polymer than other advanced systems and since operation is noiseless and produces no unwanted by-products, **Merit Filter Media**™ is the kindest to the environment. With the **Merit Filter Media**™ improved sludge dewatering system, the future of dewatering is here. But the cost advantage doesn't end there...

LOW START-UP COST

Given that the new **Merit Filter Media**™ has its own built-in underdrain system and requires no technically complicated installation, the initial savings over new mechanical dewatering devices is dramatic. The **Merit Filter Media**™ requires only 1/6 to 1/10 of the space of outmoded, inefficient sand drying beds and **Merit Filter Media**™ can retrofit any size bed with installation being a snap.

TRIANGULAR OPENINGS

The **Merit Filter Media**™ has an inverted triangular-designed open area. The large open area means speedy dewatering of polymer treated sludge and the innovative triangular opening design defies clogging.



MODULAR DESIGN

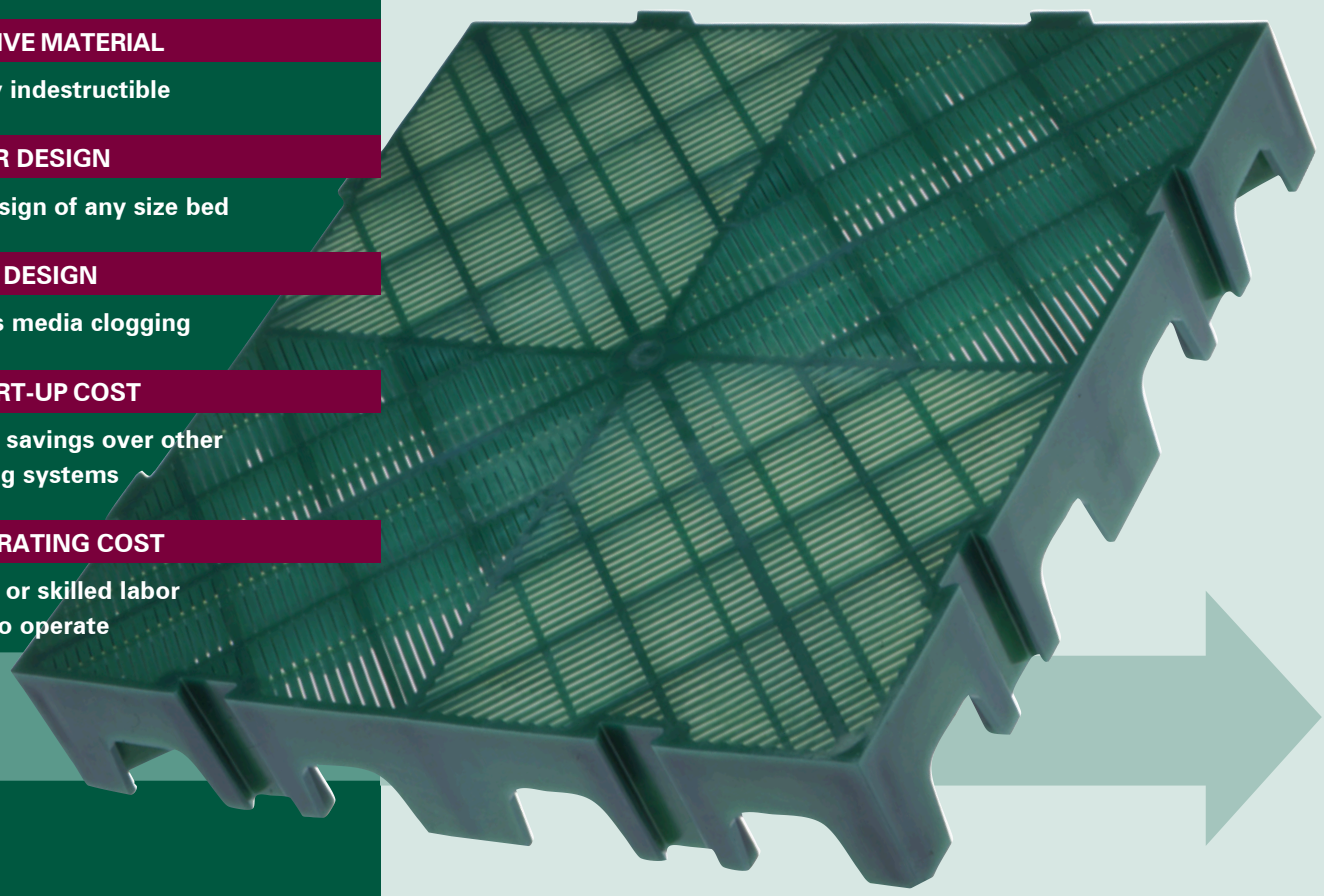
The ingenious interlocking sections of this system allow the formation of any size sludge bed for either new construction or for retrofitting existing obsolete sand drying beds. The snap-and-lock feature eliminates the need for special tools or training. With no moving parts, there are no break downs. If a section of media ever needs replacing, the job is simple and immediate.

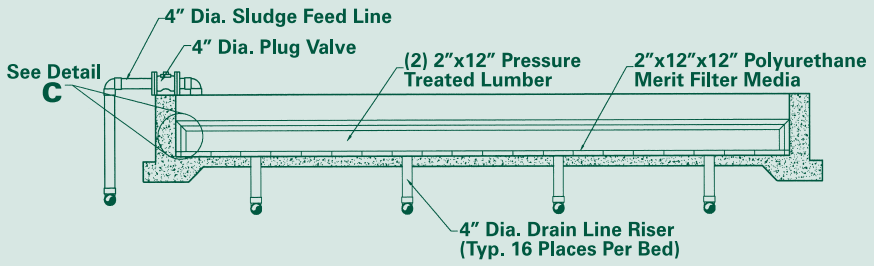
QUICK AND EFFORTLESS OPERATION

With its own built-in underdrain system, sludge is dried in a mere 48 to 72 hours as air circulates above and below the media, while gravity does all the work. The sludge is then easily removed with a small front-end loader, and a quick wash-down readies the system for the next cycle.

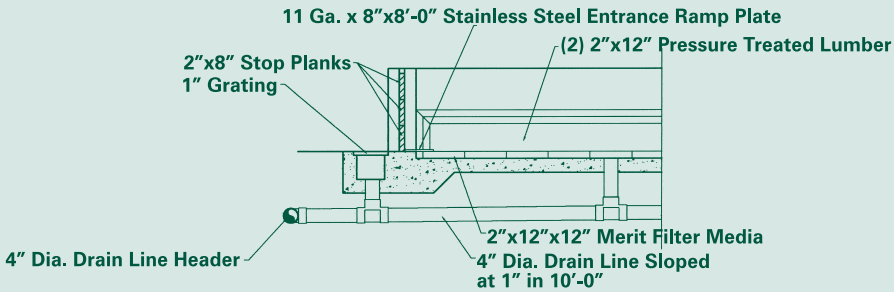
THE MERIT FILTER MEDIA™ SLUDGE DEWATERING SYSTEM

- **INNOVATIVE MATERIAL**
  Practically indestructible
- **MODULAR DESIGN**
  Allows design of any size bed
- **OPENING DESIGN**
  Eliminates media clogging
- **LOW START-UP COST**
  Huge cost savings over other dewatering systems
- **LOW OPERATING COST**
  No power or skilled labor required to operate





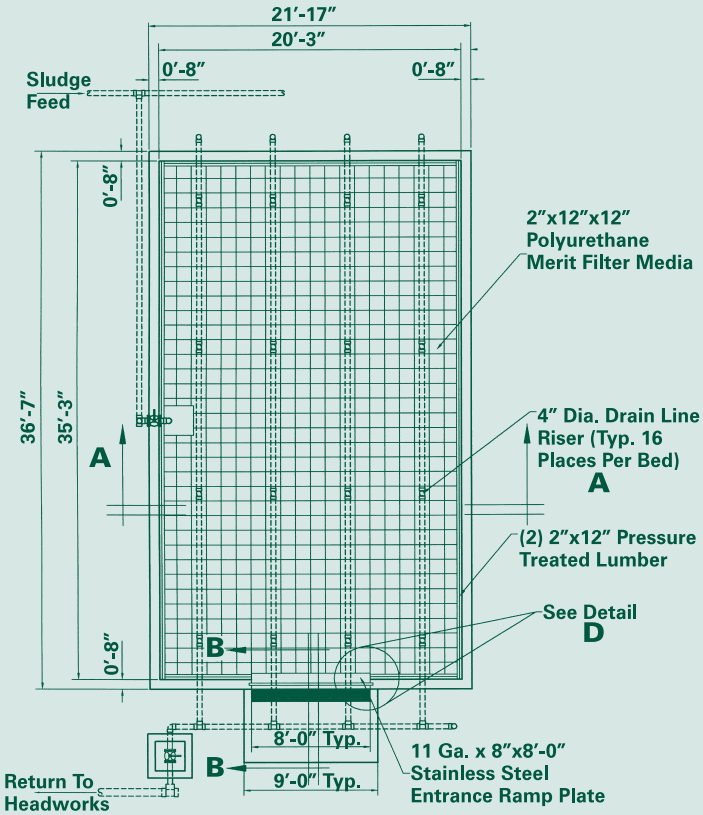
SECTION A-A



SECTION B-B

MERIT FILTER CORPORATION

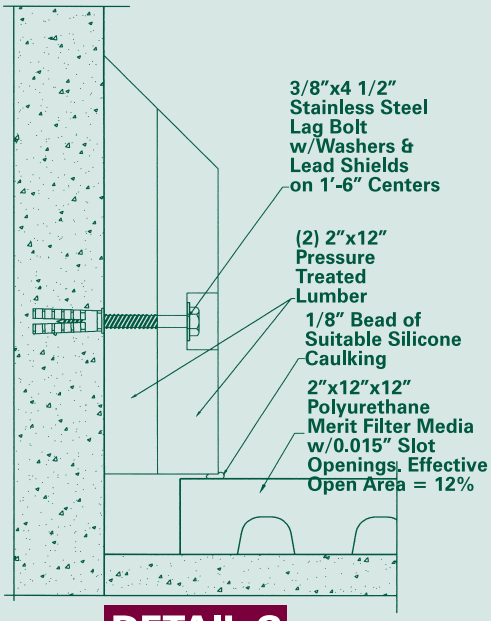
Merit Filter Corporation has complete AutoCAD capabilities and can provide complete bid and approval drawings at your request.



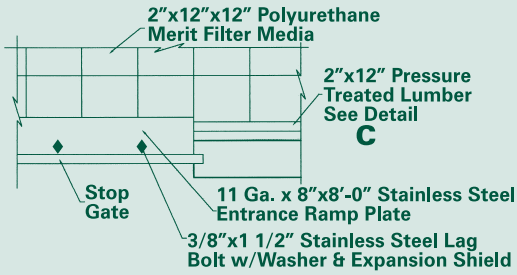
PLAN VIEW

INNOVATIVE MATERIAL

The **Merit Filter Media**™ sludge dewatering system is virtually indestructible and maintenance free. Constructed of high-density polyurethane, the **Merit Filter Media**™ can stand up to harsh chemicals and intense UV light. Only 2″ thick, this remarkable material can easily support the weight of a small front-end loader.



DETAIL C



DETAIL D

Because each sludge has it's own variation in concentration, drying times may vary in accordance with the individual nature of a particular sludge. Contact Merit Filter Corporation for specific design data. Merit Filter Corporation accepts no responsibility for any operational or design data not submitted in writing directly from Merit Filter Corporation.

MERIT FILTER CORPORATION STATIC SCREEN™

- The Merit Filter Corporation Static Screen offers a low cost and dependable solution for the removal of suspended solids from municipal and industrial wastewater streams.
- The Merit Filter Corporation Static Screen is stationary, requires no power to operate and has no moving parts, thus making it the most economical method of screening and classifying wastewater streams.
- The Merit Filter Corporation Static Screen is self-cleaning requiring minimal operator maintenance or input. It is compact, highly reliable and easily installed. The Merit Filter Corporation Static Screen can pay for itself in a short time by reducing treatment costs and recovering valuable by-products.
- By using the Merit Filter Corporation Static Screen for primary screening the organic loading on a wastewater plant is reduced, thereby reducing loading and maintenance on digesters, clarifiers, lagoons and pumps. It may also allow piping size to be reduced, by reducing volume into the plant. Thus, the Merit Filter Corporation Static Screen will improve overall efficiency of the waste treatment system.
- The Merit Filter Corporation Static Screen is constructed entirely of Type 304 stainless steel for maximum durability and is available in Type 316 stainless steel.
- Available to handle flows from 10 GPM up to 1.0 MGD in a single unit. Units may be "ganged" together to handle higher flows.
- Slot size can range from 0.010" (1/4 mm) up to 0.100" (2 1/4 mm).
- Standard sizes range from 2 feet wide to 6 feet wide.

OPERATION

Wastewater, or process water, enters the headbox where a special baffle modifies hydraulic turbulence so the influent and suspended solids will flow over the wire and onto the screen face evenly. The triangular cross section of the wedgewire screen element then strips the liquid from the solids allowing the effluent to travel on for further treatment. The recovered solids then continue downward on the face of the screen, where additional moisture evaporates until the screenings drop off the face of the screen. The screenings are then disposed of to a landfill, screenings press, or dewatered further for incineration.

APPLICATIONS

MUNICIPAL

The Merit Filter Corporation Static Screen is most commonly used for the primary treatment of raw sewage and/or combined storm water pretreatment. Pretreatment removes most of the settleable solids and non-biodegradable floatables.

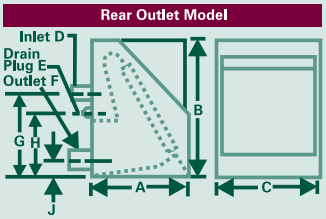
The Merit Static Screen can:

- Remove up to 30% of suspended solids
- Increase DO levels by 1 to 3 mg/L
- Replace a comminutor at the headworks
- Reduce BOD levels by 15 to 35%
- Remove floatable by up to 90%

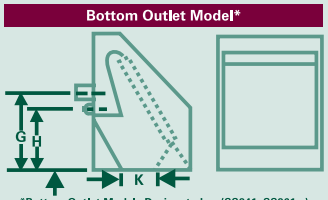
INDUSTRIAL

Please consult Merit Filter Corporation for industrial applications.

Rear Outlet Model



Bottom Outlet Model*



*Bottom Outlet Models Designated as (SS241, SS361...)

SPECIFICATIONS

DIMENSION	SS240	SS360	SS480	SS600	SS720
A	48"	48"	48"	48"	48"
B	72"	72"	72"	72"	72"
C	26 1/4"	37 1/4"	50 1/4"	62 1/4"	73 1/4"
D	6"	8"	8"	10"	10"
E	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"
F	8"	10"	10"	12"	14"
G	34 1/2"	35 3/4"	35 3/4"	37"	37"
H	26"	26"	26"	26"	26"
J	7 11/16"	9"	9"	10"	10 5/8"
K	14"	14"	14"	14"	14"

TYPICAL PERFORMANCE AND CAPACITIES
MUNICIPAL APPLICATIONS

		MERIT FILTER STATIC SCREEN™ MODEL NUMBER				
Application	Screen Slot Opening	SS240	SS360	SS480	SS600	SS720
Sanitary Sewage (Headworks)	0.060"	(Capacity in Gallons Per Minute - GPM)				
		230	350	460	575	695
		(Capacity in Million Gallons Per Day - MGD)				
		0.33	0.50	0.66	0.83	1.00
Storm Water Treatment	0.060"	(Capacity in Gallons Per Minute - GPM)				
		230	350	460	575	695
		(Capacity in Millions Gallons Per Day - MGD)				
		0.33	0.50	0.66	0.83	1.00
Grit Screening/Dewatering	0.010"	(Capacity in Gallons Per Minute - GPM)				
		50	75	100	125	150
		(Capacity in Million Gallons Per Day - MGD)				
		0.07	0.11	0.14	0.18	0.22

MERIT FILTER CORPORATION SLUDGE THICKENING DEVICE™

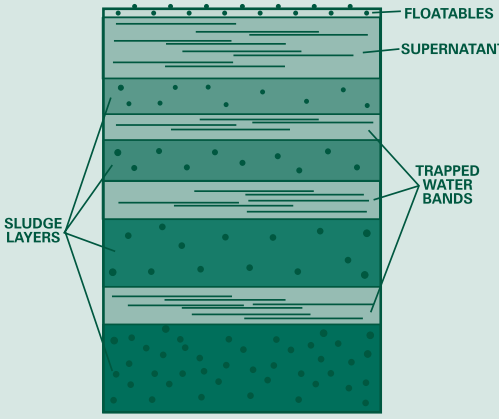
A Practical Solution for Sludge Thickening and Removal of Excess Liquid

MERIT FILTER CORPORATION SLUDGE THICKENING DEVICE™ is the most practical method of thickening virtually all biological and industrial waste sludges. The **SLUDGE THICKENING DEVICE™** has no direct power requirements. Thickening can be accomplished, in most cases, without the use of coagulants or inorganic additives, such as alum.

The **MERIT FILTER CORPORATION SLUDGE THICKENING DEVICE™** works by taking advantage of the laws of nature and physics. Dilute sludges, when not being aerated, or stirred, will settle. This settling will result in separate layers of sludge and supernatant. This separation, or stratification, will result in the heavier layers of sludge sinking to the bottom of your tank, while the lighter layers, or supernatant, will rise to the top. The **MERIT FILTER CORPORATION SLUDGE THICKENING DEVICE™** enables the plant operator to easily remove the layer, or layers, of supernatant while leaving a thickened sludge behind. The removal of the supernatant is accomplished by the Sludge Thickening Devices ability to allow draw-off of the supernatant, by providing an area of reduced head, in the device's well, while retaining the sludge on the outside of the device.

The **MERIT FILTER CORPORATION SLUDGE THICKENING DEVICE™** can be installed in existing sludge holding tanks, aeration basins, or incorporated into new sludge holding/aeration basins. The **SLUDGE THICKENING DEVICE™** can thicken digested sludge one day and primary sludge the next and a chemically treated sludge another.

The **MERIT FILTER CORPORATION SLUDGE THICKENING DEVICE™** is durable and practically maintenance free. It is constructed entirely of Type 304 stainless steel and has no moving parts. It is typically operated without the use of expensive chemicals and requires no direct supervision.



PRINCIPAL OF NATURE AT WORK FOR YOU

By allowing biological or industrial sludges to settle, specific gravity causes the components to separate. Floatables and supernatant rise to the top while the heavier solids sink to the tank floor. Some sludges will form a natural floc and while settling downward will form layers of sludge and supernatant, into bands with differing specific gravities. The **SLUDGE THICKENING DEVICE™** has the ability to remove the supernatant while retaining the sludge in your tank.

TYPICAL APPLICATIONS

MUNICIPAL TREATMENT APPLICATIONS

- Thicken all types of dilute sludges, with or without the use of chemical coagulants or inorganic additives prior to dewatering, land application or liquid hauling.
- Increase digester capacity by thickening dilute clarifier sludge prior to digestion, either aerobic or anaerobic.
- Thicken water treatment plant sludges from backwash operations and settling basins prior to dewatering, land application or liquid hauling.
- Use an aerobic digester to serve as a thickening tank by placing a **MERIT FILTER CORPORATION SLUDGE THICKENING DEVICE™** right in the digester unit, the **SLUDGE THICKENING DEVICE™** is isolated during the digestion phase by using a "screen shield".

INDUSTRIAL TREATMENT APPLICATIONS

- Any industrial sludge showing a tendency to settle, with or without the use of chemical coagulants or inorganic additives prior to dewatering or liquid hauling to a dewatering site.
- Use the same tank for formation and thickening of sludge where the process produces sludge via precipitation.

TYPICAL PERFORMANCE*

SLUDGE TYPE	INITIAL SOLIDS	FINAL SOLIDS	AVERAGE VOLUMETRIC REDUCTION
Raw Primary	1.0 - 3.0%	5 - 8%	70%
Waste Activated	0.5 - 1.5%	4 - 7%	80%
Aerobically Digested	0.5 - 1.5%	4 - 6%	80%
Anaerobically Digested	0-5 - 2.0%	4 - 6%	65%
Alum Sludge (Water Plant)	0.5 - 1.0%	3 - 6%	75%

*The performance figures in the above table are for general information purposes only. Because each sludge is different in nature and has its own characteristics, including initial solids concentration, final solids and volumetric reduction can vary from those shown above. Contact Merit Filter Corporation for specific design data and anticipated performance characteristics.

The performance figures above illustrate typical average operating results from installations utilizing the **MERIT FILTER CORPORATION SLUDGE THICKENING DEVICE™** and from pilot demonstration experience.

MERIT FILTER CORPORATION

607 FERN STREET • CLARKS SUMMIT, PA 18411-2209
TEL: 570-587-4837 • FAX: 570-587-5281

PO BOX 73423 • HOUSTON, TEXAS 77273-3423 • PHONE: 281-586-9845