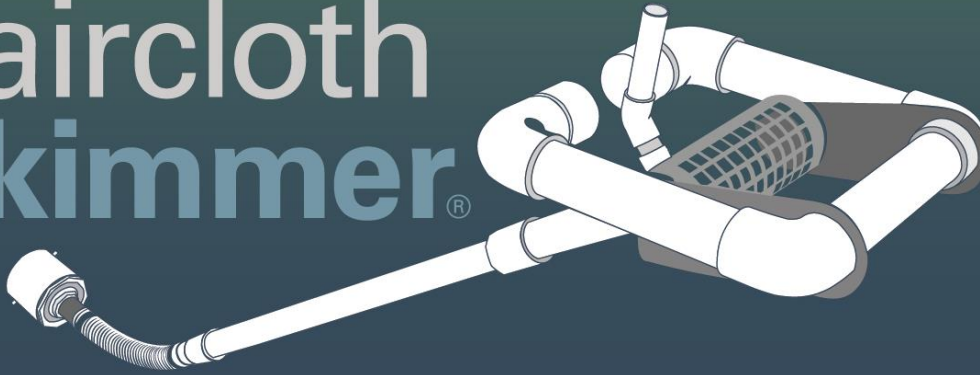


Faircloth Skimmer[®]



Surface Drains for Dewatering Sediment Basins

- Trust Faircloth Skimmer, the ORIGINAL surface drain for dewatering sediment basins

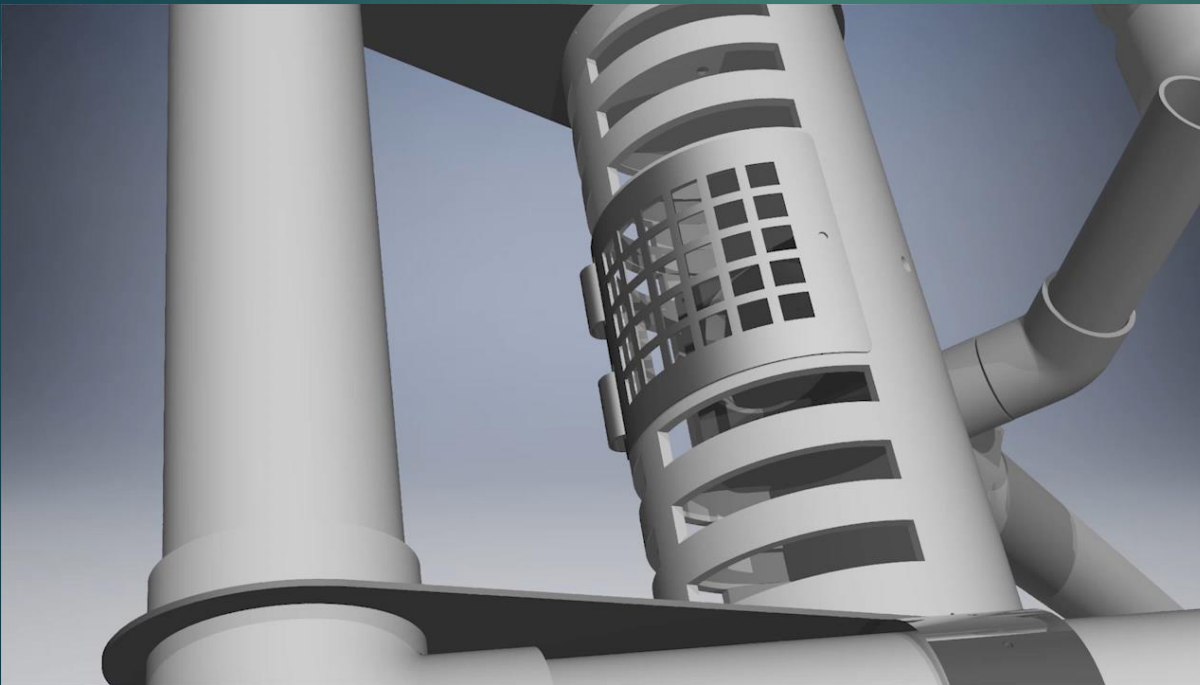
- Easy to install, reliable BMP that drains the cleanest water from the surface instead of the dirtiest water from the bottom to reduce sediment discharge

- Simple, automatic, gravity operation gives uniform flow rate – 8 sizes with adjustable flow rates

Visit

www.FairclothSkimmer.com

for sizing calculator, design details, or to place an order





Skimmer Workshop

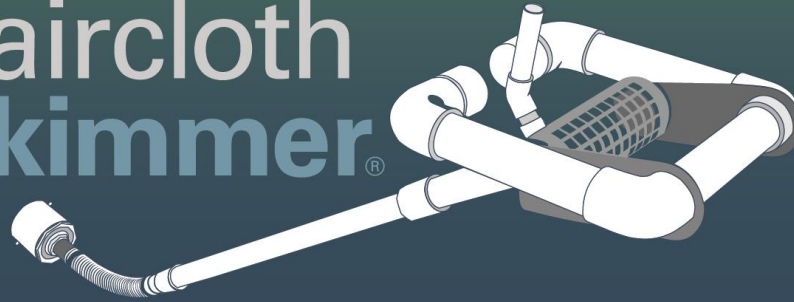
June 15, 2023

Faircloth Skimmer

Michael Brewer

CEO

Faircloth
Skimmer®



The Faircloth Advantages:

1. Best Design / Highest Quality / Easiest to Maintain
2. Most Trusted and Specified
3. Excellence in Customer Service

The EPA's Construction General Permit under the Clean Water Act.

f. Surface Outlets:

When discharging from basins and impoundments, permittees are required to utilize outlet structures that withdraw water from the surface, unless infeasible.

Source:
Code of Federal Regulations
450.21 Effluent limitations reflecting the best practicable technology currently available (BPT).
<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-N/part-450/subpart-B/section-450.21>



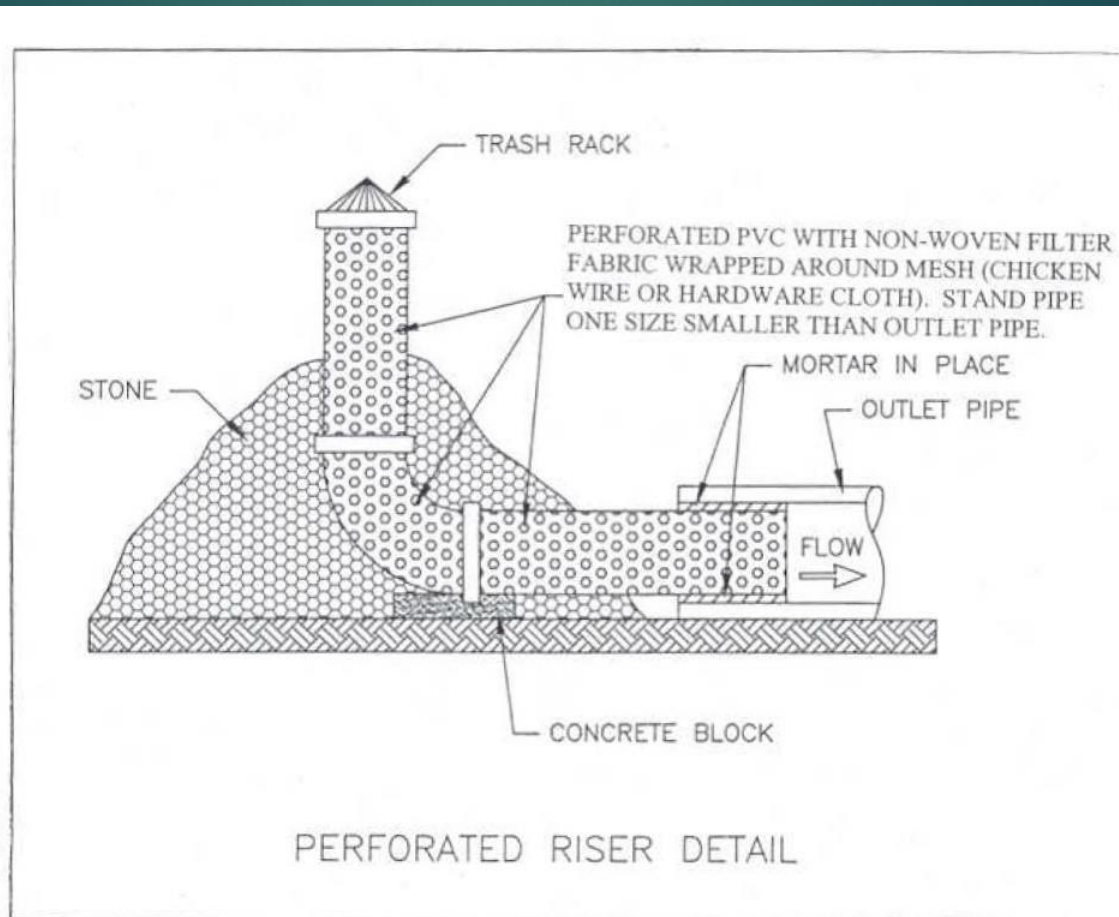
Rainwater and Land Development

Ohio's Standards for Stormwater Management, Land Development and Urban Stream Protection

Chapter 6 — Sediment Control

- Sediment Basin

Status Quo: Perforated Riser



Warren Faircloth

Inventor of the Sediment Basin Skimmer

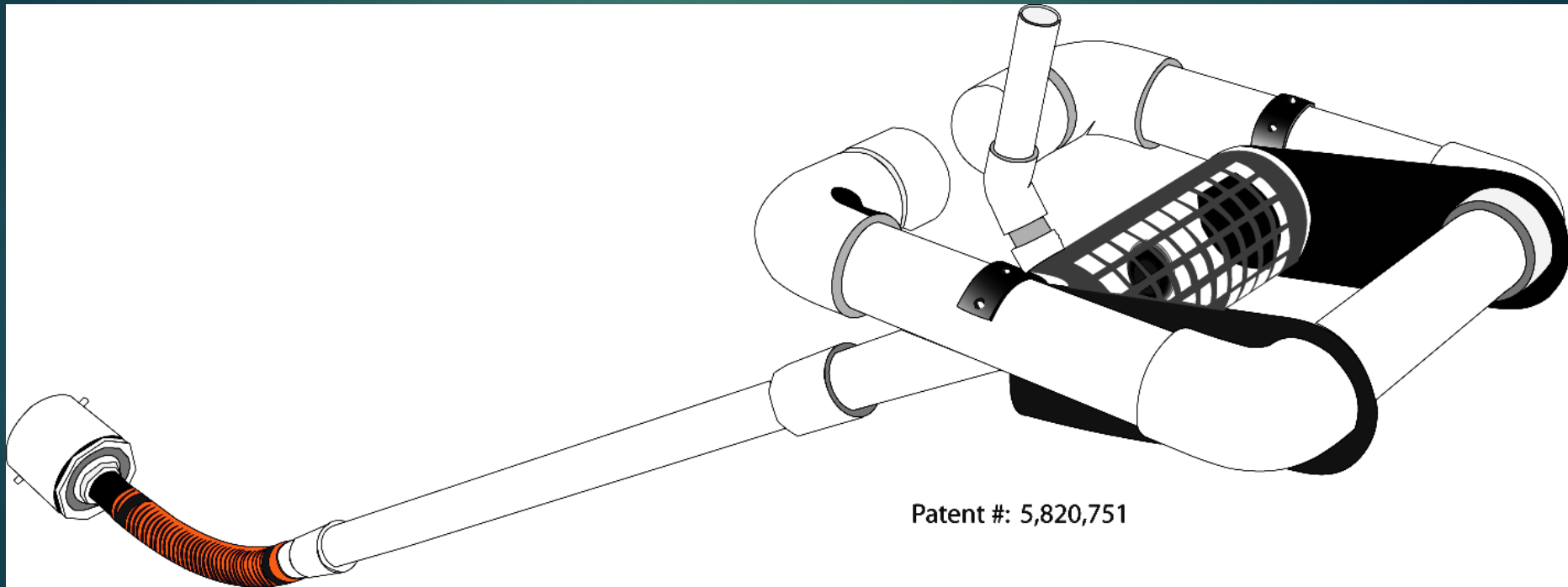








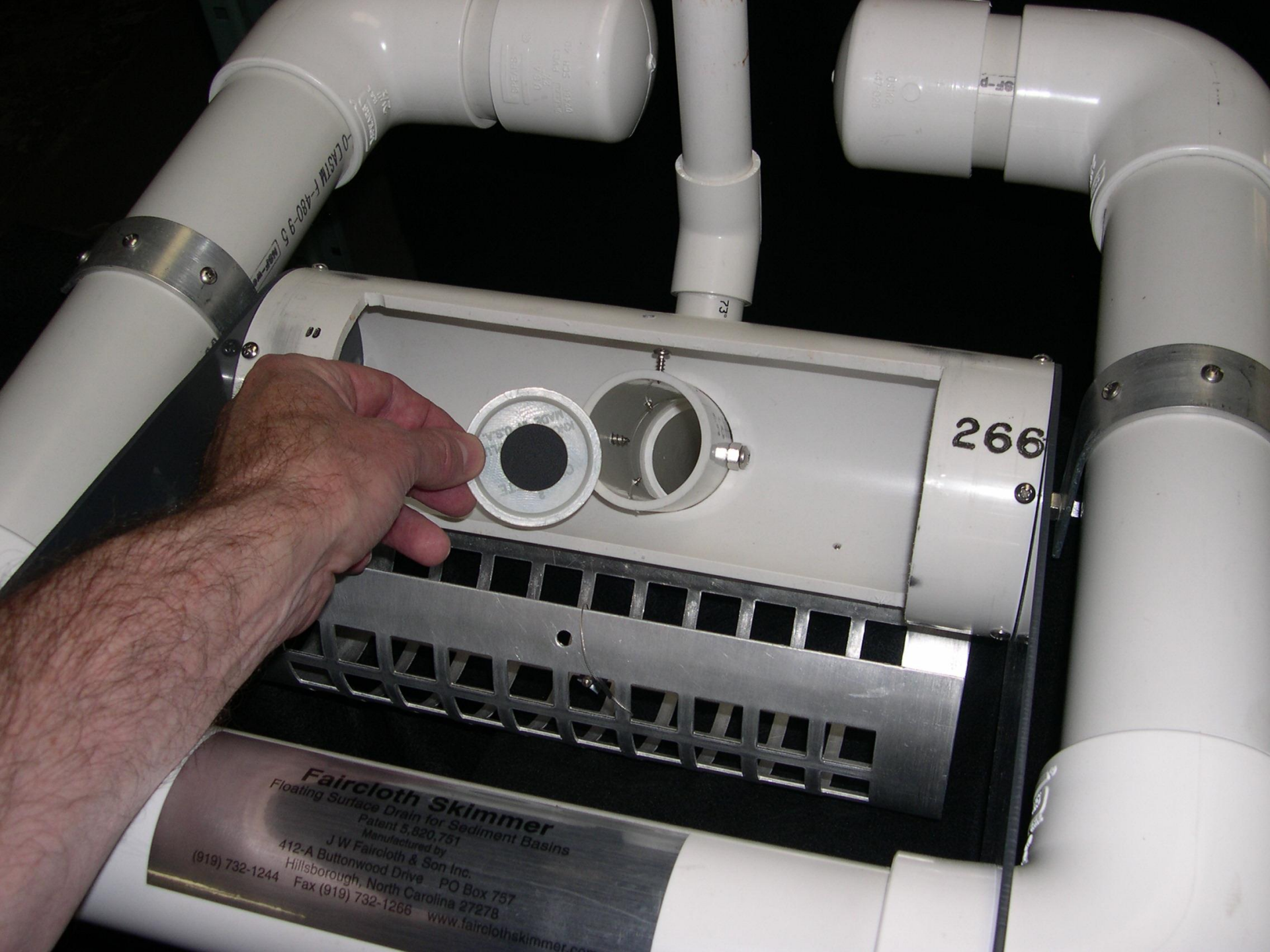
On the Cutting Edge of Common Sense



Faircloth Skimmer

Product Description

- All skimmers will come with a pre-installed 4" coupler. For larger size skimmers the coupler is sized accordingly.
- The coupler connects to these galvanized steel nipples which seat to a heavy-duty reinforced material handling hose. These connection points are secured with stainless steel punch lock clamps.
 - This hose is one of the most expensive components of our skimmer because we understand that conditions in these sediment basins can get extreme. This hose needs to be able to flex appropriately and yet maintain its structural integrity for the life of the skimmer
 - The hose then connects to the barrel pipe. The barrel pipe should be 1.4 x's the depth of the sediment basin that it is getting installed in. This provides enough freeboard to keep the skimmer on the surface even during high flows and it allows the contractor to pull it to the basin slope during maintenance and inspection.
 - This pipe is usually supplied by the installer/contractor who can buy pvc locally. Because the barrel pipe is normally between 4' and 8' in length, they are expensive to ship and often get damaged in transit. That said, we do have clients that request the barrel pipe to be included in their orders.
 - The barrel pipe is typically one size smaller than the size of the inlet. This reduces the amount of air in the pipe to make it less buoyant. For example, the barrel hose for this 2" skimmer would be a 1.5" diameter pvc pipe.



9-6-08-1 MSY 0-

266

Faircloth Skimmer
Floating Surface Drain for Sediment Basins
Patent 5,820,751
Manufactured by
J.W. Faircloth & Son Inc.
412-A Buttonwood Drive PO Box 757
Hillsborough, North Carolina 27278
(919) 732-1244 Fax (919) 732-1266 www.fairclothskimmer.com

Faircloth Skimmer Product Description, cont'd

- The inlet is protected by an aluminum screen with $\frac{3}{4}$ " square holes, which allows for small material to pass through without clogging while preventing larger debris from entering. The square shape is less likely to clog than round penetrations.
 - The screen operates with a hinge for easy maintenance and is secured using an eye screw that is attached to the inlet by a nylon lanyard. This prevents the contractor/inspector from dropping the screw in the water or mud.
 - The orifice is cut on site using the supplied adjustable cutter. The orifice size is determined by the engineer and is found on the plans.
 - The inlet rotates on a hinge and is set at a specific elevation that does not change as the water rises and falls.
 - The vent allows air into the plumbing so that the orifice controls the flow rate, not the slope of the barrel.
 - If the vent were to be closed or blocked it would double or triple the flow rates
 - The vents also are marked with a specific color tape for visual identification of its size. The inspector can confirm the skimmer size without having to pull the skimmer to the side of the basin.
- The skirts, along with the float itself, provide protection from floating trash and debris
- The float is properly weighted to counteract the buoyancy of the barrel pipe. It is sealed with heavy duty primer and glue.

What the Skimmer DOES NOT DO

- ▶ Make a “hole in the ground” an efficient basin
- ▶ Allow reduction in the basin’s size because of improved efficiency
- ▶ Overcome inefficiency caused by poor basin design
- ▶ “Filter” sediment laden water
- ▶ Produce clear, clean outflow in clay soils

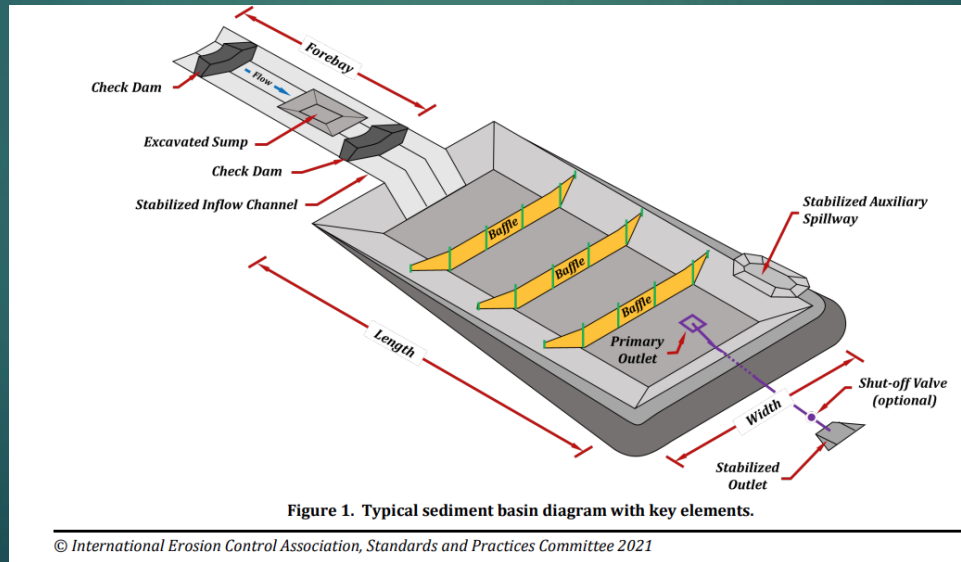
What the Skimmer Does



- ▶ Regulates filling to create impoundment for gravity settling
- ▶ Drains the basin from near the surface where the cleanest water is located
- ▶ Drains the basin at a predetermined rate
- ▶ Allows varying the drawdown time by changing the orifice

Improving Basin Efficiency

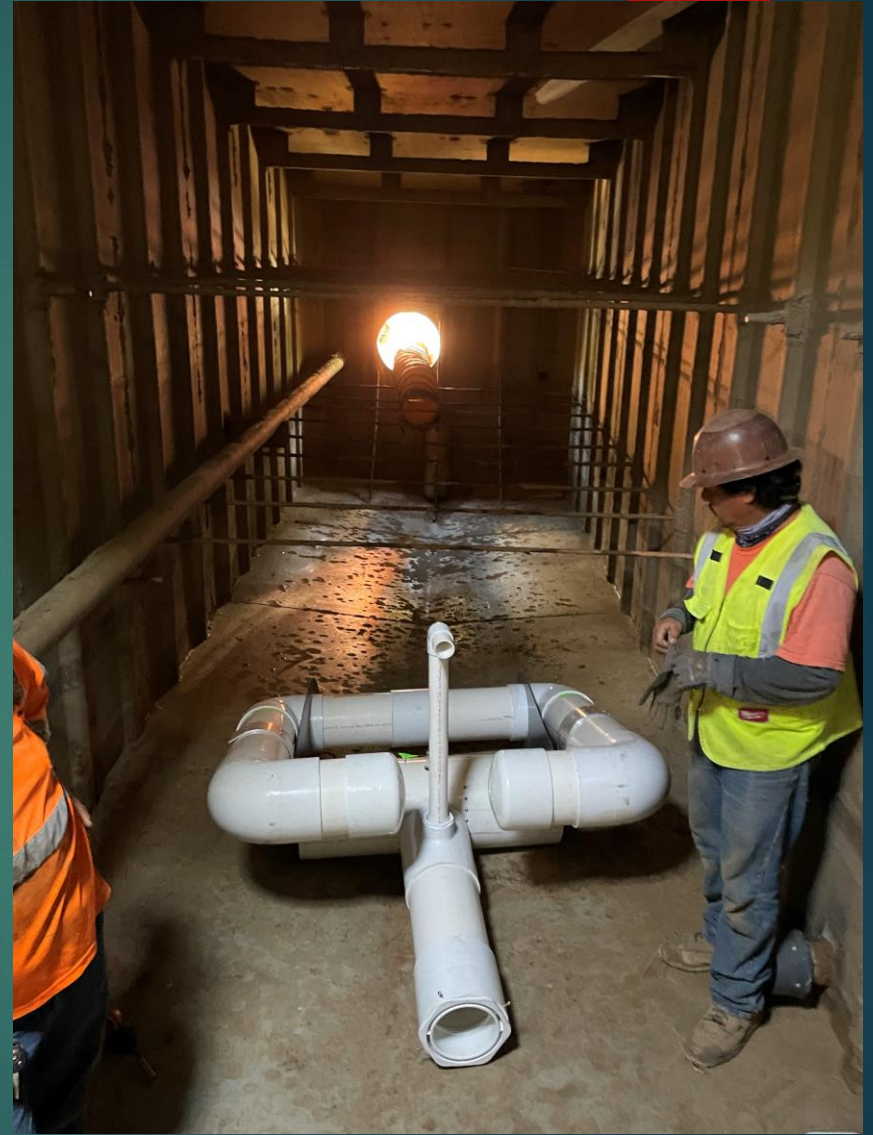
- ▶ Calculate basin volume based on **total** drainage area
 - not just disturbed area
- ▶ Protect basin side slopes with matting and establish vegetation ASAP
- ▶ Use a series (typically 3) porous baffles in basin to dissipate energy
- ▶ Use flocculants to reduce turbidity in basin (treatment train)
- ▶ Use a Faircloth Skimmer as a floating surface drain to create proper impoundment, settling, and nearly constant discharge.













Auburn University Testing Facility





Inspection & Maintenance

















Inspection and Maintenance

- ▶ Confirm that the correct skimmer is installed at the correct elevation.
- ▶ Inspect the sediment basin at least weekly and after each significant storm event ($\frac{1}{2}$ inch or greater).
- ▶ If water remains turbid in the basin, reapply flocculant as specified.
- ▶ Remove and properly dispose of sediment when it accumulates to $\frac{1}{2}$ the design volume.
- ▶ Remove trash and other debris from the skimmer, emergency spillway and pool area.

Other Skimmer Designs



EVALUATING FLOATING SURFACE SKIMMERS

James E. (Jay) Sprague, CPESC

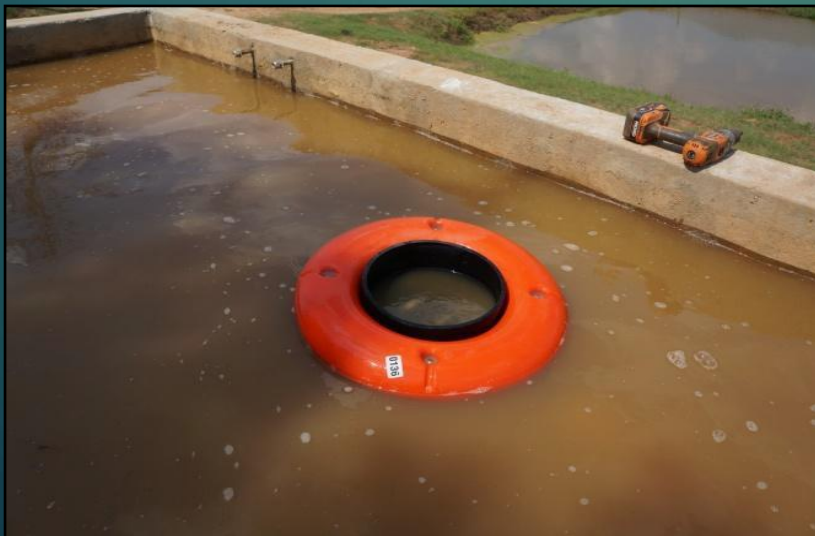
TRI/Environmental – Denver Downs Research Facility, Anderson, SC.

Joel Sprague, P.E. TRI/Environmental, Inc.

Benton Ruzowicz, CPESC, CESSWI Georgia Soil and Water Conservation
Commission

- ▶ Each skimmer product (and each product size) has a unique performance, including the associated hydraulics, which is affected by the floatation, inlet, and drain design chosen. The discharge rate is dependent on the specific product design and can only be determined through product-specific testing.

Four Skimmers Evaluated for GSWCC



Skimmer Sizing Table

Example Shown: 125 ft x 125 ft x 4 ft deep pond; Drainage Time < 72 hours

Inputs		Calculations							Skimmer Size Selection Optimization													
Time to Drain, hrs = 72		Calculated Pond Volume, ft ³ = 40833							Skimmer Size, in / Orifice Size, in													
Pond Depth, ft = 4		Calculated Pond Volume, gal = 3E+05							Type 1: 1.5 / 0.00		Type 1: 2.0 / 0.00		Type 1: 3.0 / 0.00		Type 3: 3.0 / 0.00		Type 1: 4.0 / 0.00		Type 1: 6.0 / 0.00		Type 3: 6.0 / 0.00	
Pond Top Length, ft = 125		No. of Increments for Calcs, in. = 20							Flow Rate:		Flow Rate:		Flow Rate:		Flow Rate:		Flow Rate:		Flow Rate:		Flow Rate:	
Pond Top Width, ft = 125		Depth Increments for Calcs, in. = 2.4							7.9914 * d ^{0.3116}		13.985 * d ^{0.5514}		36.676 * d ^{0.2702}		70.714 * d ^{0.1747}		66.588 * d ^{0.3494}		180.07 * d ^{0.1981}		227.83 * d ^{0.5118}	
Pond Bottom Length, ft = 75		Note: Flow rate equations are from product testing →																				
Pond Bottom Width, ft = 75																						
Water Level Depth (d), in.	Avg. Water Level Depth, in.	Incr. Depth, in	L	W	Incr. Dis-charge, ft3	Cumm. Dis-charge, ft3	Cumm. Dis-charge, gal	% of Total Volume Dis-charged	Skimmer Flow Rate, gal/min	Skimmer Drain Time, hrs.	Skimmer Flow Rate, gal/min	Skimmer Drain Time, hrs.	Skimmer Flow Rate, gal/min	Skimmer Drain Time, hrs.	Skimmer Flow Rate, gal/min	Skimmer Drain Time, hrs.	Skimmer Flow Rate, gal/min	Skimmer Drain Time, hrs.	Skimmer Flow Rate, gal/min	Skimmer Drain Time, hrs.	Skimmer Flow Rate, gal/min	Skimmer Drain Time, hrs.
48			125	125																		
45.6	46.8	2.4	123	123	3063	3063	22911	7.5%	12	31	30	13	53	7	90	4	107	4	236	2	457	1
43.2	44.4	2.4	120	120	2940	6003	44905	14.7%	12	62	29	26	52	14	89	8	105	7	233	3	445	2
40.8	42	2.4	118	118	2820	8824	66002	21.6%	12	92	28	38	51	21	88	12	103	10	231	5	433	2
38.4	39.6	2.4	115	115	2703	11527	86219	28.2%	12	121	27	51	51	28	87	16	101	14	228	6	420	3
36	37.2	2.4	113	113	2588	14115	105577	34.6%	11	149	26	63	50	34	86	20	99	17	225	8	407	4
33.6	34.8	2.4	110	110	2475	16590	124093	40.6%	11	177	25	75	49	41	85	24	97	20	222	9	393	5
31.2	32.4	2.4	108	108	2365	18955	141787	46.4%	11	204	24	88	48	47	84	27	94	23	219	10	379	6
28.8	30	2.4	105	105	2258	21213	158676	52.0%	11	230	23	100	47	53	83	31	92	26	216	12	364	6
26.4	27.6	2.4	103	103	2153	23366	174780	57.2%	10	256	22	112	46	58	82	34	89	29	212	13	349	7
24	25.2	2.4	100	100	2050	25417	190117	62.2%	10	282	21	124	45	64	81	37	86	32	209	14	333	8
21.6	22.8	2.4	98	98	1950	27367	204706	67.0%	10	306	20	136	44	70	79	40	83	35	204	15	316	9
19.2	20.4	2.4	95	95	1853	29220	218566	71.6%	9	331	19	148	42	75	78	43	80	38	200	16	299	9
16.8	18	2.4	93	93	1758	30978	231715	75.9%	9	355	17	161	41	81	76	46	77	41	195	18	280	10
14.4	15.6	2.4	90	90	1665	32643	244172	79.9%	9	379	16	174	39	86	74	49	73	44	190	19	261	11
12	13.2	2.4	88	88	1575	34219	255956	83.8%	8	403	15	187	38	91	72	51	69	47	184	20	239	12
9.6	10.8	2.4	85	85	1488	35707	267086	87.4%	8	427	13	201	36	96	69	54	64	50	176	21	216	13
7.2	8.4	2.4	83	83	1403	37110	277580	90.9%	7	451	11	216	33	102	66	57	59	53	168	22	190	14
4.8	6	2.4	80	80	1320	38430	287456	94.1%	6	477	10	234	30	107	63	59	52	56	157	23	160	15
2.4	3.6	2.4	78	78	1240	39670	296735	97.2%	5	505	7	255	26	113	57	62	44	59	142	24	123	16
0	1.2	2.4	75	75	1163	40833	305433	100.0%	4	542	4	292	20	120	47	65	30	64	114	25	70	18
Lowest depth that can still drain through skimmer.			Skimmer / Orifice Combinations with Sufficient Flow:							no	no	no	Type 3: 3.0 / 0.00		Type 1: 4.0 / 0.00		Type 1: 6.0 / 0.00		Type 3: 6.0 / 0.00			

Table 1 – Typical Floating Surface Skimmer Sizing Table

Various Skimmers - Flow Characteristics

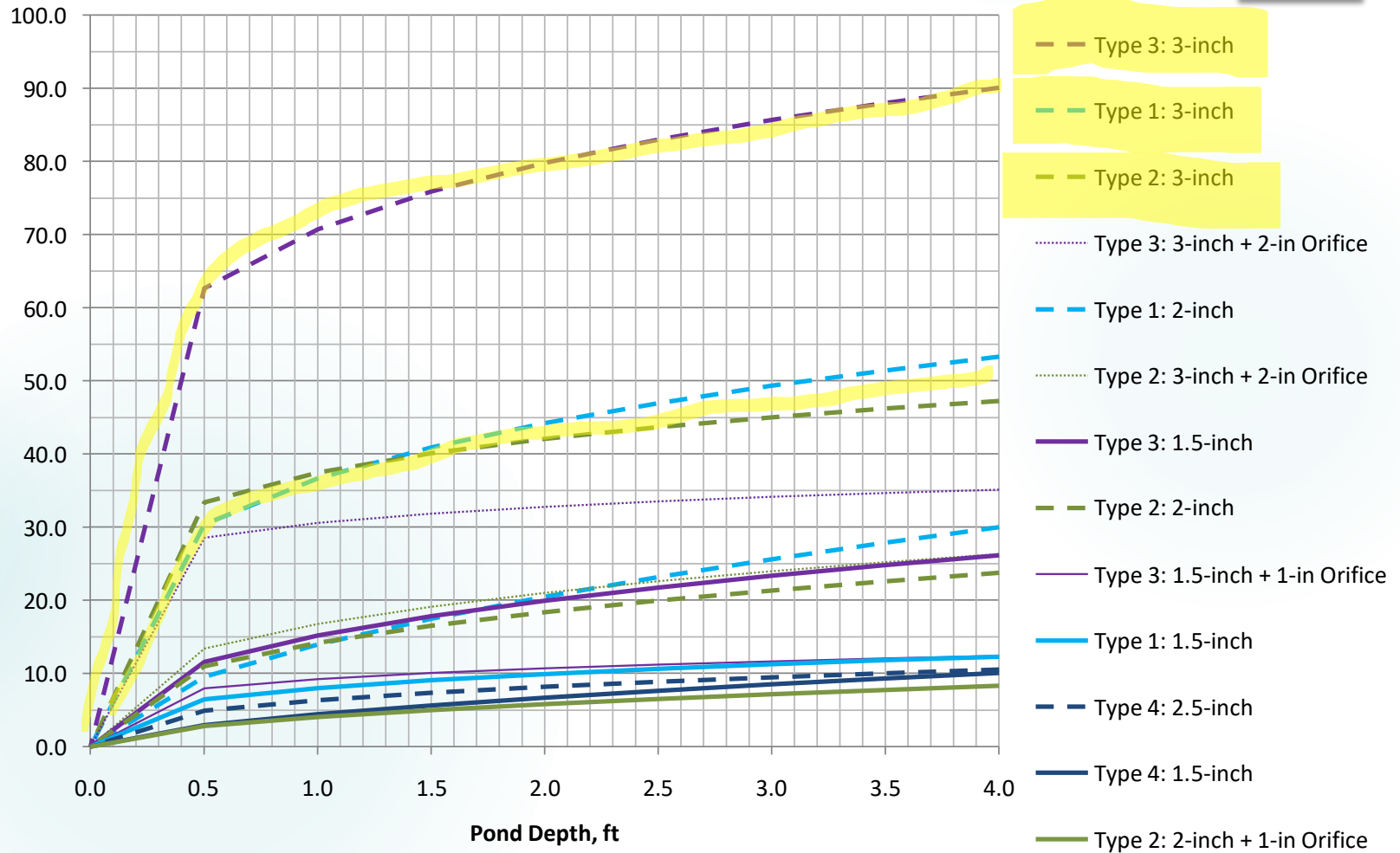


Figure 12. Summary Data Table – Skimmer Flow Rate, gal/min

Various Skimmers - Flow Characteristics

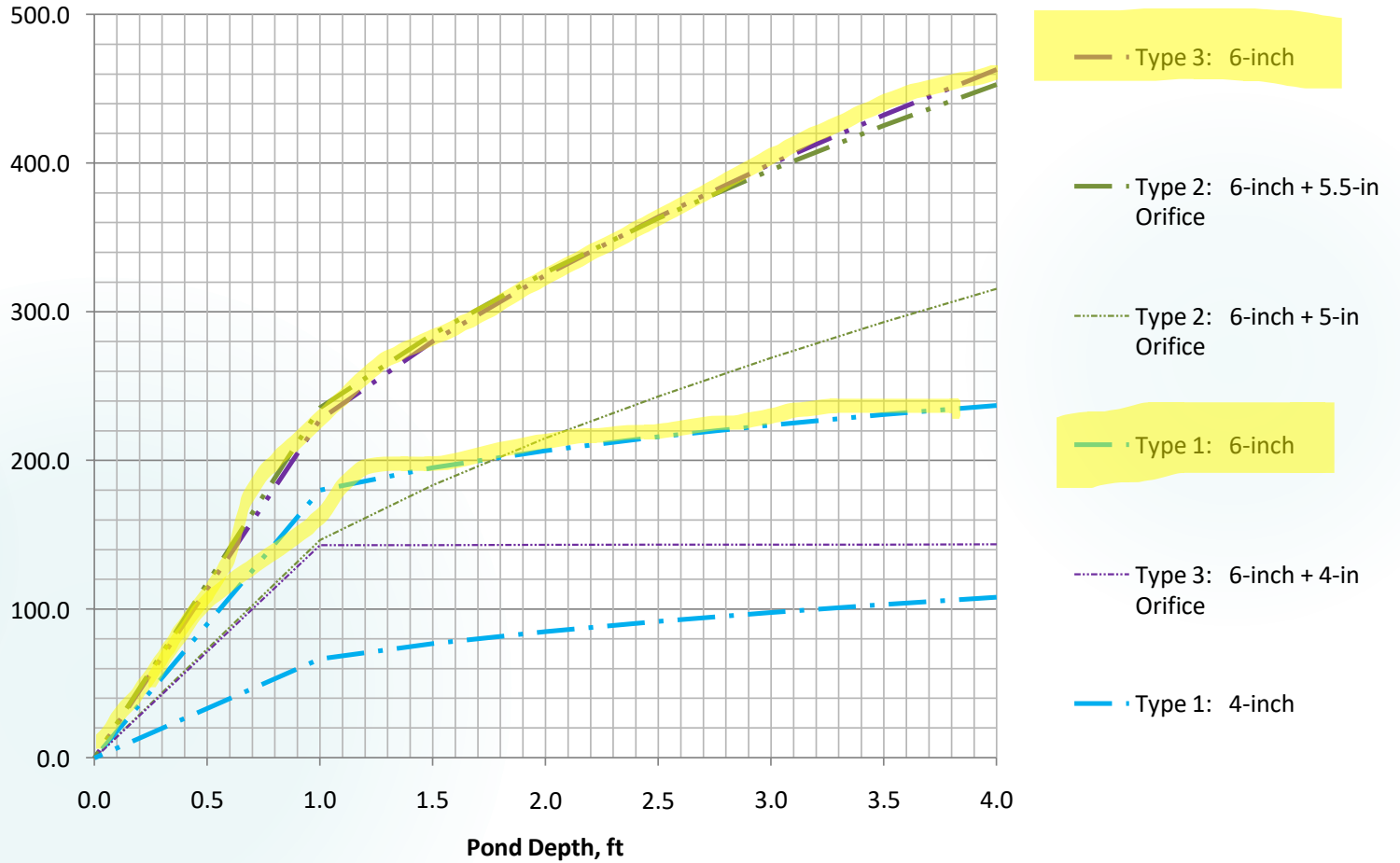


Figure 13. Summary Data Table – Skimmer Flow Rate, gal/min

Manual for Erosion & Sediment Control in Georgia

- Georgia Soil & Water Conservation Commission

TO BE SHOWN ON THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN

When a FLOATING SURFACE SKIMMER is used, show the following information along with each sediment pond, trap or basin being used on the site:

1. Pond, trap or basin size, length* (top and bottom) width* (top and bottom) and depth =

2. Time to Drain (hrs) = _____

3. Skimmer Dimensions (orifice and head size)** _____

4. Manufacturer's name _____

*feet, ** inches

Sizing Calculator

CALCULATE FAIRCLOTH SKIMMER® SIZE

Basic volume in cubic feet

68000

Days to Drain

3

Volume is the actual or provided volume the you intend to drain, usually not the required volume which is often smaller. If a pool of water is to be maintained between storms, do not include that volume. In some cases a sediment basin may be larger than required because it will be used as a permanent stormwater pond.

Number of Days to drain is usually determined by local or state regulations. Where there is no requirement 3 days is recommended. Keep in mind the quicker the basin is to drain the larger the skimmer required. In NC, assume 3 days to drain.

SKIMMER SIZE

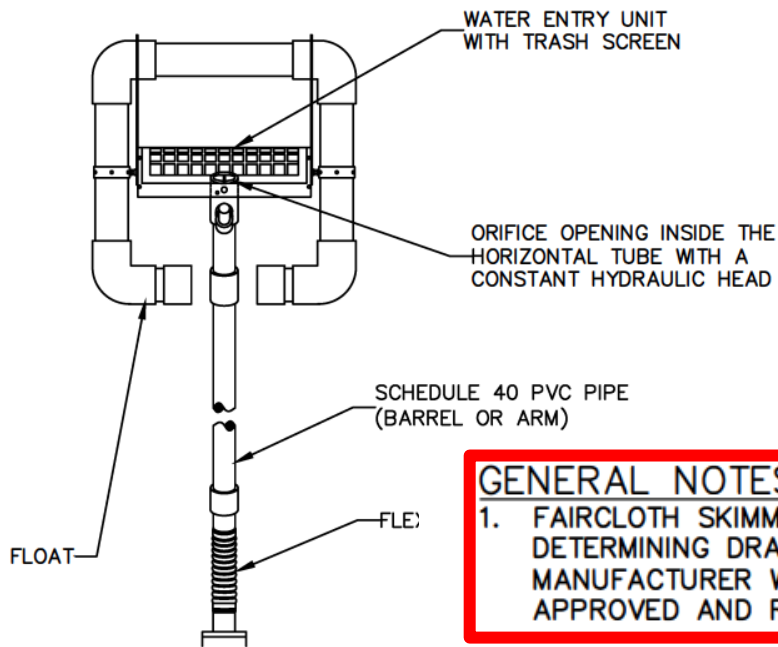
5.0 inches

ORIFICE RADIUS

2.1 inches

ORIFICE DIAMETER

4.2 inches



TOP VIEW

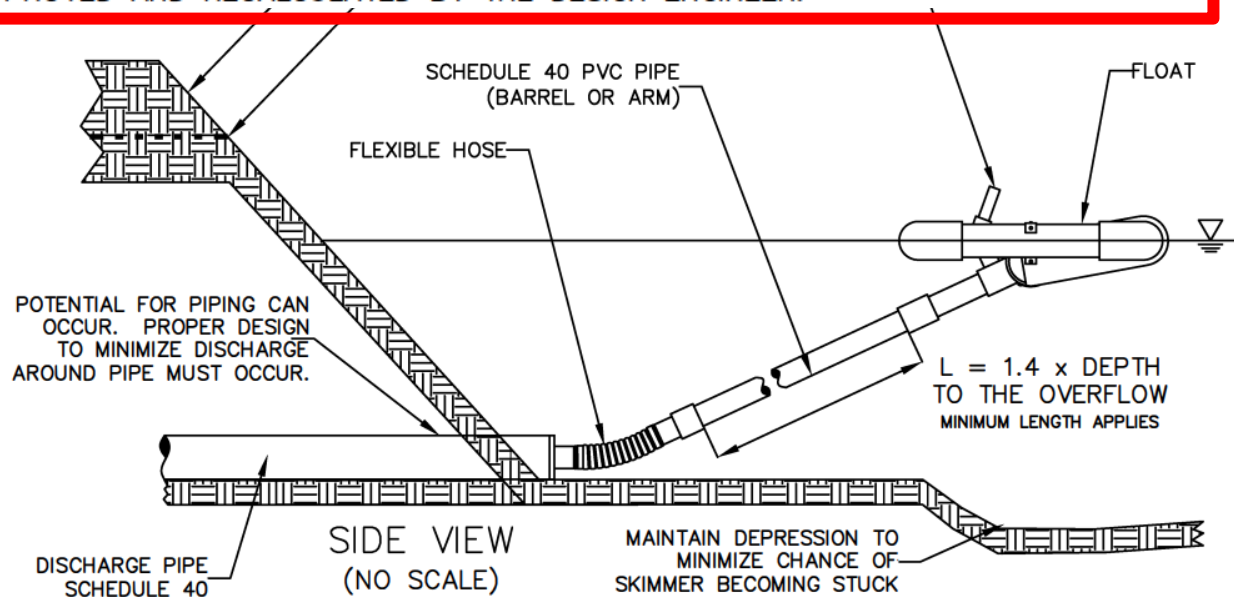
BASIN NAME	SKIMMER SIZE	ORIFICE DIAMETER
SB - 1	6	4.8
SB - 2	4	3.5
SB - 3	4	3.7
SB - 4	8	7.0

GENERAL NOTES:

1. FAIRCLOTH SKIMMER® FLOW RATES WERE USED AS THE BASIS OF DESIGN WHEN DETERMINING DRAINAGE CALCULATIONS. UTILIZING A PRODUCT FROM AN ALTERNATIVE MANUFACTURER WILL CREATE A SIGNIFICANT DEVIATION TO THE DESIGN AND MUST BE APPROVED AND RECALCULATED BY THE DESIGN ENGINEER.
2. PROPER DESIGN MUST BE COMPLETED TO MINIMIZE PIPING AROUND DISCHARGE PIPE.
3. PROPER ORIFICE OPENING MUST BE SELECTED TO ENSURE POND DRAINS IN CORRECT AMOUNT OF TIME. MODIFICATIONS MAY BE REQUIRED IF FIELD CONDITIONS WARRANT A CHANGE.
4. EMBANKMENT MUST BE COMPACTED TO DESIGN SPECIFICATIONS.
5. EMERGENCY SPILLWAY MUST BE CORRECTLY SIZED AND EROSION PROTECTION INSTALLED.
6. EROSION PROTECTION MUST BE INSTALLED ALONG THE EMBANKMENT AND AT THE DISCHARGE END OF THE PIPE.
7. INSPECT SYSTEM REGULARLY TO ENSURE IT IS FUNCTIONING IN A CORRECT MANNER.
8. DIFFERENT SIZES OF SKIMMERS ARE AVAILABLE, REFER TO THE FLOW SHEET, CUT SHEET, AND INSTRUCTIONS ON WEB SITE FOR EACH SIZE.
9. BARREL PIPE SHOULD BE 1.4 X. DEPTH OF THE BASIN TO ENSURE PROPER FUNCTION.

GENERAL NOTES:

1. FAIRCLOTH SKIMMER® FLOW RATES WERE USED AS THE BASIS OF DESIGN WHEN DETERMINING DRAINAGE CALCULATIONS. UTILIZING A PRODUCT FROM AN ALTERNATIVE MANUFACTURER WILL CREATE A SIGNIFICANT DEVIATION TO THE DESIGN AND MUST BE APPROVED AND RECALCULATED BY THE DESIGN ENGINEER.



DRAWN BY T. R. EVANS 06/23

Resources



CONTACT US
(919) 732-1244

[HOME](#)

[TECHNICAL INFO](#)

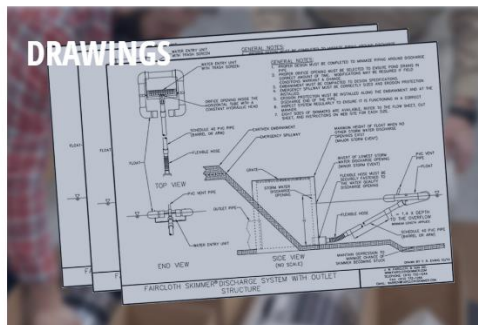
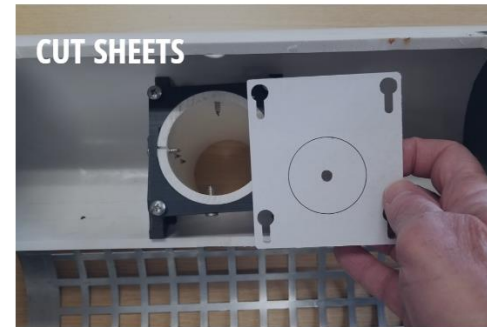
[SKIMMER SIZING](#)

[ORDER SKIMMER](#)

[MEET OUR TEAM](#)

[CONTACT](#)

TECHNICAL INFORMATION



Modern Manufacturing and Distribution Facility



Hillsborough, NC





CAUTION

CAUTION

CAUTION
PROFANE

Inventory On Hand – Typically Ship Same Day





Thank You!

Contact us to schedule a
lunch and learn for your
organization

Michael Brewer

mbrewer@fairclothskimmer.com

mobile: 919-622-6439

www.FairclothSkimmer.com