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Baton Rouge Country Club

January 25, 2019



Project Goals

Project Goal: Install a system that will

- Allow cart traffic to return to fairways quickly after a rain event
- Create firm playing conditions for the members
- Eliminate areas that cannot be mowed by maintenance
- Reduce deterioration to the golf course caused by saturated soils

Drainage Fundamentals

Two types of water

Surface



Seepage



Surface or Seepage

- Surface water problems- any area where standing water or streaming water is a problem
- Seepage problems- areas that present a problem either after all of the surface water is removed, or if no surface water was ever present. The ground remains saturated to the point that it interferes with either the mowability or playability of the hole.
- Area is a combination of both problems

ALL drainage problems, surface or seepage, can be classified as either a collection problem or a transportation problem

Baton Rouge Country Club

What are you missing?

- Transportation system that extends into all areas that need to be drained.
- Surface collection system
- Seepage collection to remove water that has become trapped on the profile.



Reduce Concentrations of flow above affected fairways



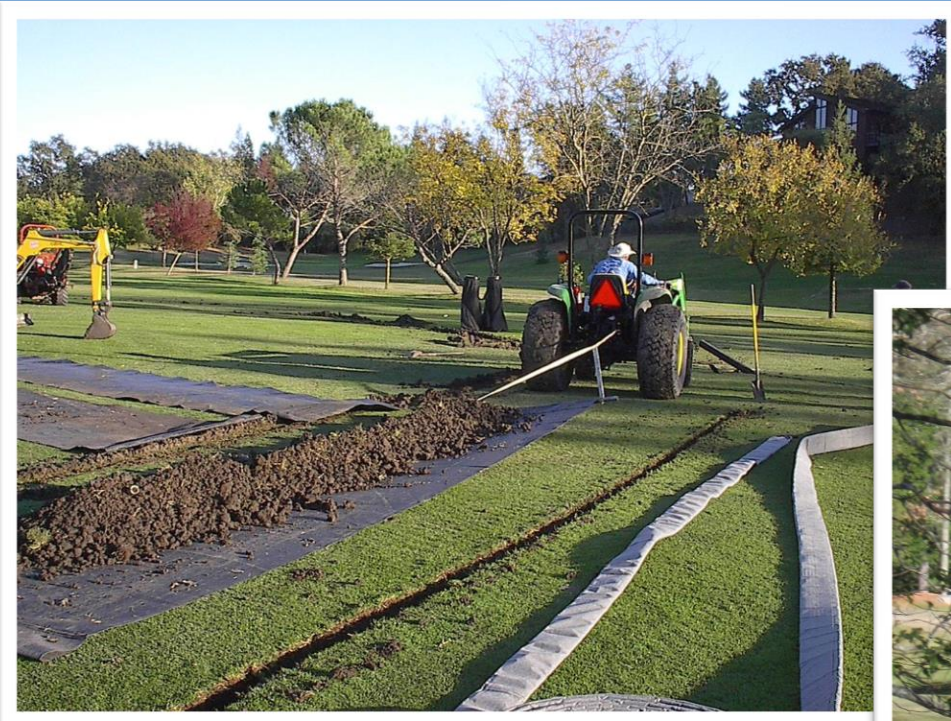
Channel Drain
at Valhalla # 9



Surface Collection



Surface Collection



Technology To Collect Seepage Water

Perma Basins



Technology to Reduce the Concentrations of Flow



Channel Drains

Turf Drain Siphon System



Turf Drain Open Area Calculation and Comparison



$$180 \text{ in}^2 \text{ Surface Area} \times .85\% \text{ Open Area} = 153 \text{ in}^2 \text{ Open Area}$$

Comparative Open Area				
Product	Minimum inlet area/ in ²	Maximum inlet area/ in ²	Average inlet area/ in ²	
ADS Turf-Flow 2" Perforated	0.11	Not given	Not given	Turf Drain has 1390 x the average opening area of 2" Turf Flow
ADS Turf-Flow 4" Perforated	1.0	5.90	3.45	Turf Drain has 45x the average opening area of 4" ADS
Turf Drain	153	153	153	

Installation Procedures

Trained Contractors

- Specialized equipment
- Knowledge of patented systems
- Method is designed to do the least amount of damage to grass surfaces
- Work can be completed without shutting down the course

Baton Rouge 2019 Drainage Plan.xls

Component Summary

Item	Qty		
Siphon Basins	21		
Perma Basins	211		
Channel Basins	154		
24" Special Basin	26		
24" Special 3 Basin	4		
24" Special 4 Basin	4		
24" Special 6 Basin	1		
36" Special 6 Basin	9		
48" Special 6 Basin w Electric Pump	1		
IDP Connections	3		
Turf Drain	86500		
Siphon Pipe	4295		
4" Gravity Pipe	22264		
6" Gravity Pipe	3115		
8" Gravity Pipe	875		
10" Gravity Pipe	100		
12" Gravity Pipe	525		
Gravity Pipe	26879		
Lateral Connectors	1298		
4" Discharge Pipe	650		
Berm Recommendation	110		
Estimated Man-Hours	14378		
		Yards	Tons
Estimated Sand	4694	6572	

Baton Rouge

Estimated vs. Actual

Phase	Contract	Actual	Difference
Phase 1	\$1,222,280.71	\$1,171,946.13	-\$50,344.58
Phase 2	\$1,255,372.00	\$1,198,727.05	-\$56,644.95
Total	\$2,477,652.71	\$2,370,673.18	-\$106,979.53

“There are countless areas throughout the property where after heavy rains, you couldn’t even walk through for days. Now we are driving through those same areas the day after a rain or in some cases sooner.”

Cory Kitchen
Baton Rouge Country Club, Baton Rouge, LA