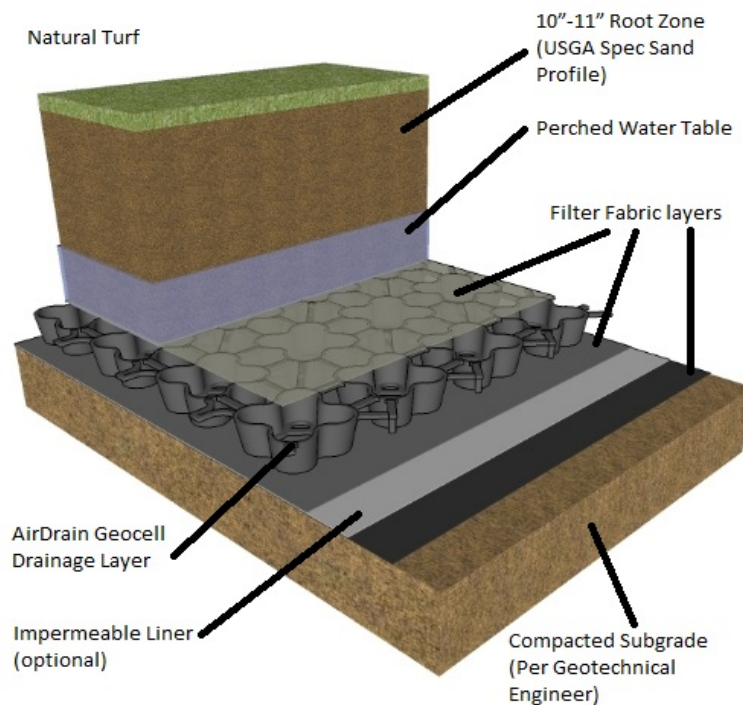


AirDrain – What drains better than Air?

For Natural Turf Sideline/Perimeter Drainage

Using AirDrain for the perimeter and sideline drainage is an excellent way to cheaply drain a pop up field. The AirDrain can be installed along the field in a 32" x 12" deep trench and to a collector at each end of the field. Using a USGA spec sand the trench should drain 12 to 15 inches and hour. And the grid itself dependent on slope should drain between 40 and 50 gallons per sqft per minute. Another advantage is that the sidelines should stay dry and playable for the sideline players and coaches. Also the turf on top of the AirDrain should be the best turf on the field. Ease of installation and peak performance brings value to your project.

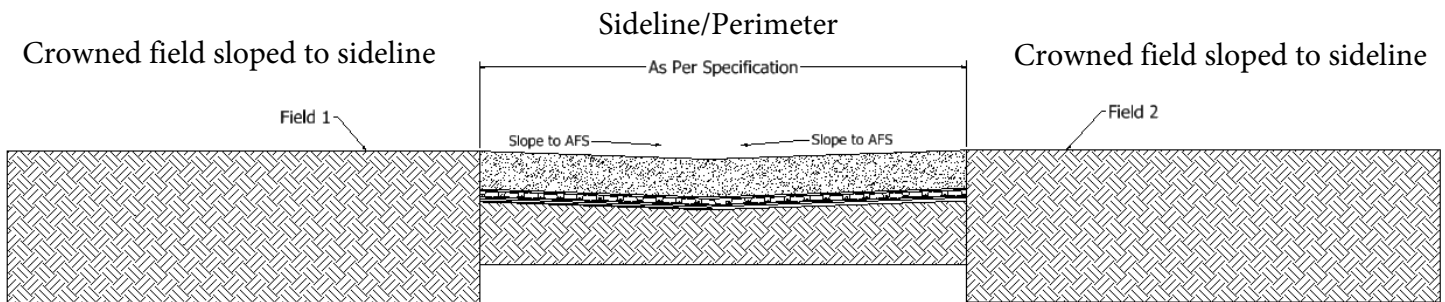
Click here for more information about the study titled [“A Comparison of Water Drainage and Storage in Putting Greens Built Using Airfield Systems and USGA Methods of Construction”](#).



Benefits of an AirField System Design include:

- 1 to 3 more days of plant available water stored in the root zone (depending on climate)
- Significantly reduces daily irrigation needs (as told to us by our customers)
- Healthier turf / stronger root system (as told to us by our customers)
- 100% Vertical Drainage under the entire playing surface
- AirDrain is a 100% recycled copolymer which has the impact modifier “metallocene” added to it for qualification as a “No Break” plastic, making it able to withstand extreme heat and cold and still maintain performance
- Helps eliminate standing water / simplifies maintenance (as told to us by our customers)
- Minimal site disturbance / far less excavation and disposal
- Several installation days are saved over a gravel installation
- Compact shipping which reduces overall storage and transportation costs
- AirDrain System sand profiles create its own perched water table

*This drawing, specifications and the information contained herein is for general presentation purposes only. All final drawings and layouts should be determined by a licensed engineer(s). HIC & Gmax testing are measured in a lab setting and are not site specific.



AirDrain Sideline Drainage

Not to Scale

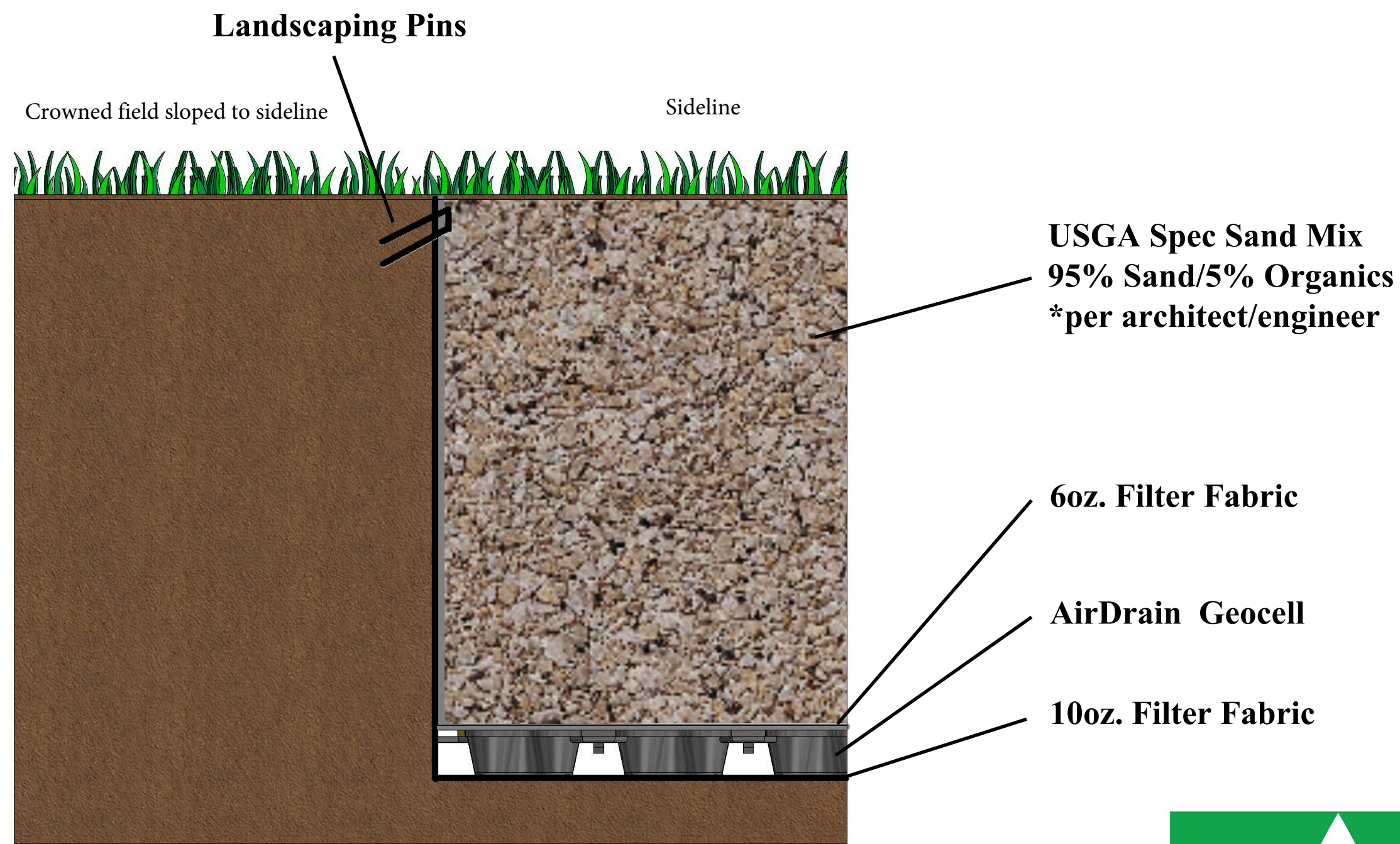
For Natural Turf



Airfield Systems, LLC
 8028 N May Ave, Suite 201
 Oklahoma City, OK 73120
 Natural Cross Section (405)359-3375 www.airfieldsystems.com

This is a typical drainage profile, your profile may vary. Check with a Geotechnical Engineer for recommendations for your site conditions and geographical region.

Sideline Drainage Application



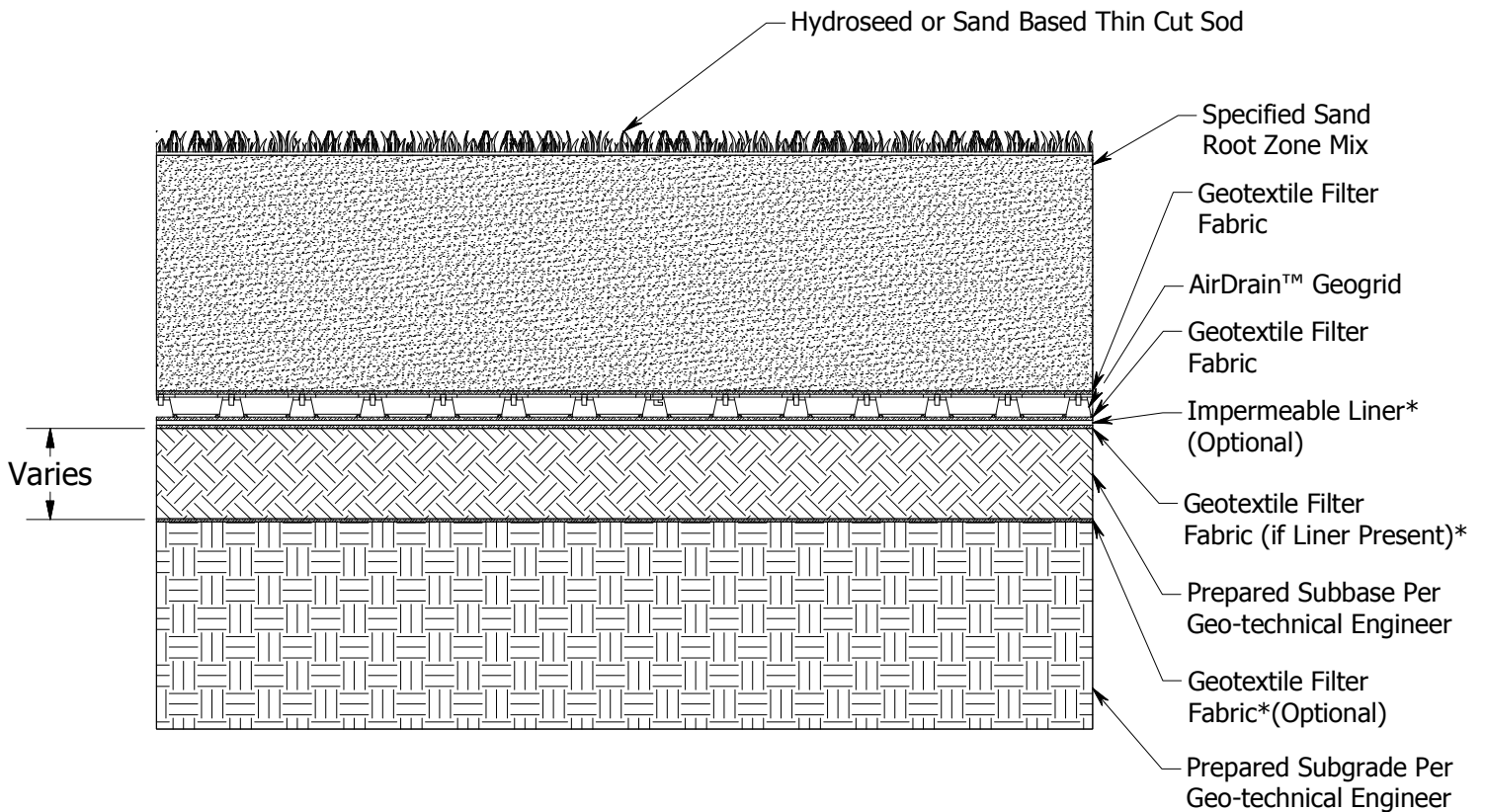
DETAIL A



DRAWN G. Abdo	3/22/2015	AirField Systems	
CHECKED		TITLE	
QA		Sideline/Perimeter Drainage	
MFG		SIZE C	DWG NO French_Drain_Rev001
APPROVED		SCALE	REV
			SHEET 1 OF 1

This is a typical drainage profile, your profile may vary.

Check with a Geotechnical Engineer for recommendations for your site conditions and geographical region.



AirDrain™ Natural Turf Typical Detail

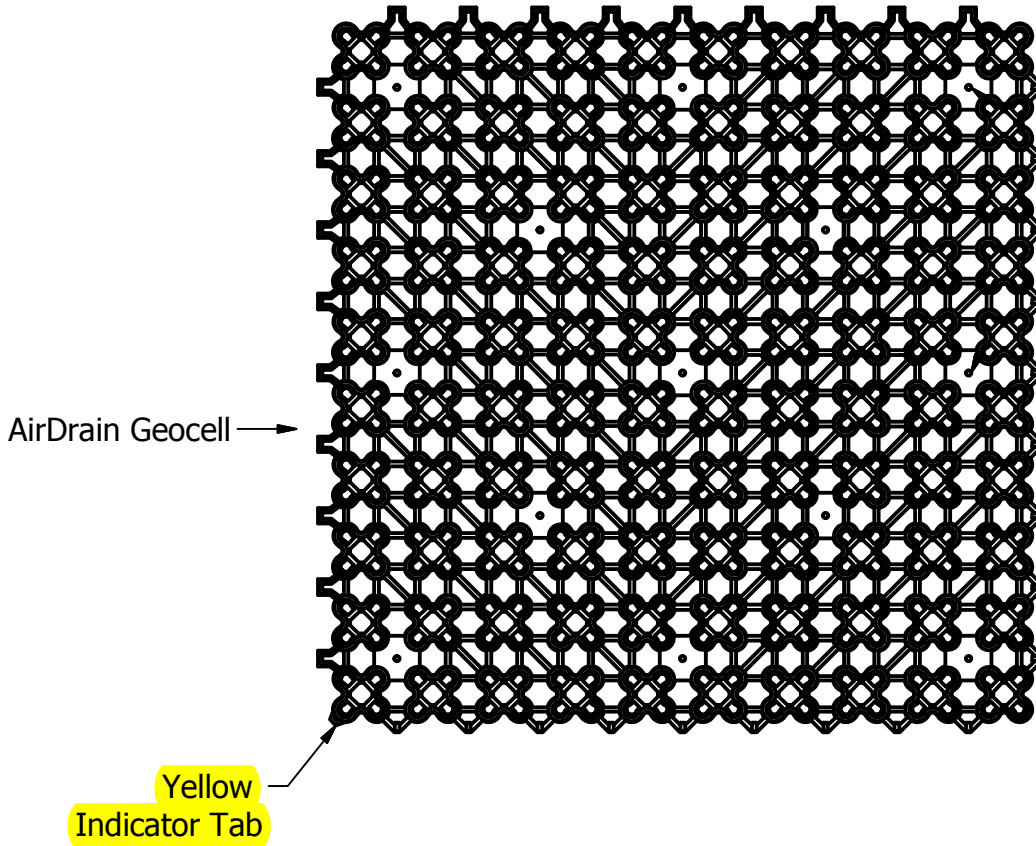
AirDrain™ Impermeable Natural Turf Detail

Airfield Systems
8028 N. May Ave., Suite 201
Oklahoma City, OK 73120
(405) 359-3775

*per geotechnical engineer

www.airfieldsystems.com
AirDrain_Nat_Turf_Typical_Detail_002.idw





Unit Panel Specifications:

- Size: 32" x 32" x 1"
- Weight: 3.1 lb
- Volume: 8% material, 92% air void
- Strength: 233 psi (unfilled)
- Resin: 100% Recycled (PIR)
Copolymer with Impact Modifier
"No Break" Polymer Material
- Color: Black (3% carbon black added for UV Protection)

AirDrain Cross Section

Scale 0.12:1

Typical

For AirDrain Grass Systems



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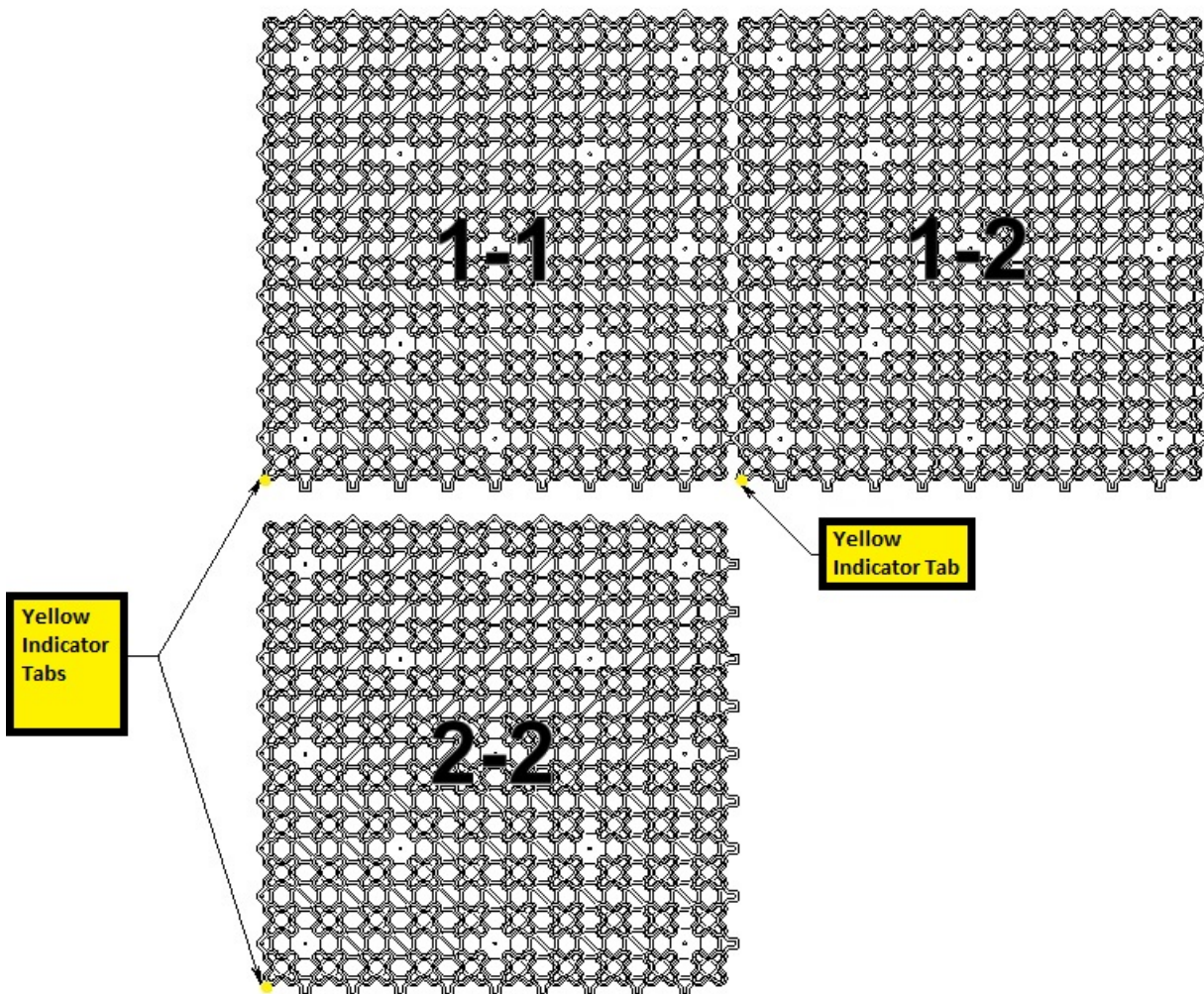
Drawing No. ADCS002.dwg

Proper Sequencing and Orientation of AirDrain GeoCell Panels for Rapid Installation

Pallet Staging: AirDrain pallets cover approximately 798sqft. per pallet and should be staged accordingly within the installation area so that you minimize the amount of time to stage the AirDrain grid along the install lines across the project. Typically placing the AirDrain every 65 feet across and 15-20 feet back from each other. (Call AirField with questions that you might have about proper staging and installation.)

All Installations must start in the Top Left Corner of the Field and work Left to Right to be installed properly.

1. Orientate the AirDrain GeoCell materials with the integral indicator tab to the panel's bottom left corner (painted yellow). **Install the AirDrain units by placing units with the connectors and platforms up creating a flat surface for the profile above. If the male connectors do not fall or drop into the female connectors then the orientation is incorrect, please call AirField Systems Immediately at 405-359-3775.**



2. Install the AirDrain panels across the field in a rowed pattern. Staggering of rows will allow for multiple row completion by a multi-manned crew.
3. Once the first row has progressed across the project, start with a second row. Have a person staging the panels in groups of three snapped together along the row. The crew can then install the left side of the panel while elevating slightly the top portion (so the male and female connectors don't touch each other). Once the left side has been snapped with a pull along the row direction, the top portion should fall into place and with a bottom vertical pull holding the inside of parts 1 & 3 snap all three parts in place.



4. AirDrain panels can be shaped to individual field areas as needed with appropriate cutting device. If a typical field is installed correctly there should only be two sides that would need to be trimmed.
 - A. If only a few parts need to be trimmed, use tin snips.
 - B. If many parts require trimming, set up a table and use a circular saw with a no melt, plastic cutting saw blade.

Visit [AirField Systems Flickr page](#) to watch a video of a 74,000 sq ft project for Chesapeake Energy illustrating a 3 man crew installation.

DISCLAIMER: The preceding and following drawings and/or general installation guidelines are provided only to show a concept design for installation and are not instructions for any particular installation. These drawings and general instructions are not complete and are provided only to assist a licensed Geo-Technical Engineer, a Landscape Architect and/or Civil Engineer in preparing actual construction and installation plans. These drawings and instructions must be reviewed by a licensed Geo-Technical Engineer, a Landscape Architect and/or Civil Engineer and adapted to the condition of a particular installation site and to comply with all state and local requirements for each installation site. THESE DRAWINGS AND/OR GENERAL INSTRUCTIONS DO NOT MODIFY OR SUPPLEMENT ANY EXPRESS OR IMPLIED WARRANTIES INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IF APPLICABLE RELATING TO THE PRODUCT.

General Information			
General			
Construction	Injection Molded Copolymer		
Composition	Copolymer Polypropylene Using an Impact Modifier		
Dimensions	31.784" x 31.880" x 1.000" (7.03 sq ft.)		
Unit Weight	3.1 lbs.		
Material	Resin Pellets		
Shipping			
Parts Per Pallet	114		
Pallet Dimensions	33" x 33" x 48"		
Pallet Weight	390 lbs.		
Area Coverage Per Pallet	798 sq. ft.		
Pallets Per Trailer	114 (3 wide x 2 tall x 19 deep)		
Area Covered Per Trailer	90,972 sq. ft.		
ASTM and ISO Properties ¹			
Physical	Nominal Value	Test Method	
Specific Gravity	0.940	ASTM D792	
Melt Mass-Flow Rate (230°C/2.16 kg)	20 g/10 min	ASTM D1238	
Mechanical	Nominal Value	Test Method	
Density	57.490 lb/ft ³	ASTM D1505	
Tensile Strength (Yield, 73°F)	2,145 psi	ASTM D638	
Tensile Elongation (Yield, 73°F)	16%	ASTM D638	
Flexural Modulus (73°F)	100,175 psi	ASTM D790	
Compression Strength (73°F)	233 psi unfilled	ASTM D6254	
Impact	Nominal Value	Test Method	
Notched Izod Impact (73°F, 0.125 in)		ASTM D256	
Thermal	Nominal Value	Test Method	
Deflection Temperature Under Load 264 psi, Unannealed	160°F	ASTM D648	
Expansion/Contraction Index ¹			
Temperature	Humidity	Length	Width
100°F	98%	31.881"	31.817"
-5°F	0%	31.765"	31.713"
Change		.116"	.104"
Joint Expansion/Contraction Capacity		.420"	.572"
Safety Factor		362%	550%
Examples of Usage			
Application	Required Strength	Safety Factor	
Auto	40 psi	x 168	
Truck	110 psi	x 61	

¹ Independent laboratory testing conducted by TRI/Environmental, Inc., TSI/Testing Services, Inc. and Wassenaar.

100% Post Manufactured Content



Recycled

The **AirDrain** GeoGrid is made of 100% post-manufactured material, you can feel good about helping the planet [while adding valuable LEED Points](#) to your project! We also add an impact modifier for incredible strength and superior performance in extreme heat and cold - on top of the already durable **AirDrain** design.

AirDrain Co-Polymer with an Impact Modifier Performance and Temperature Durability

Attached you will find the specification of the resin used to produce both the 32 x 32 and the 32 x 18 Geo cells. This material is a co-polymer polypropylene that is 100% recycled resin. In order to be able to produce a consistent recycled resin a PIR (post industrial resin) is used for the base resin. This is the only way to produce a consistent material as opposed to a PCR (post consumer resin) which is dependent on the consumer to supply a consistent material. Using the PIR as a base resin 3% carbon black is added to insure good UV stabilization and metallocene (an ethylene base material) is used as an impact modifier.

Impact Modifier

The impact modifier is added in an amount to achieve a 10.0 Notched Izod Impact which comfortably qualifies this material as a NO BREAK material (4.0 and greater are normally considered no break material). The **AirDrain** resin offers an advantage over many ethylene and HDPE products since the **AirDrain** resin is often superior when it comes to pliability, warping and internal stress related issues. Referring to the attached specification sheet you will notice that all testing is done to specific ASTM Standards.

Resin Blends

AirDrain's blend of resins gives it the ability to perform in extreme temperatures. **AirDrain** does not need a temperature above 50 degrees Fahrenheit to be installed or warmed in the sun to be pliable on site for install. In addition, **AirDrain's** unique resin blend also helps prevent breakage and cracking in extreme temperatures, thus giving it the ability to withstand repeated freeze thaw cycles.

Airfield posts its resin content and performance values with ASTM test methods and guide lines to measure the properties of our grid.