AirField Bunker Renovation Illustrated Manual

1. Remove existing sand fill material to subgrade level.

2. Inspect gravel filled trenches (if any) for contamination of sediments. If contaminated remove and replace as needed or if possible wash the sediments out until no sediments are visible. **Trenches should be lined with a filter fabric to keep sediments from contaminating the gravel and restricting water flow.** Before proceeding with installation of the AirField Bunker Drainage System test for uninhibited water flow through the trenches and exit pipe(s). Outlet drainage should flow freely to air or tie into the existing storm drainage system. Exiting water should be clear of color.

3. Amend the subgrade as needed for proper drainage and compaction. Make sure there are no low spots where water could pool. Finished subgrade elevations and compaction to be verified as acceptable before proceeding (see Figure 1 and Photos 1 and 2).

4. Install filter fabric over the top of the trenches. Take a piece of filter fabric and spread it out smoothly over the trench. Using a rubber mallet or hammer secure the filter fabric with heavy duty sod staples or landscape pins about 1 foot apart. On this particular installation there were no trenches and only 1 exit pipe. The exit pipe was connected to an elbow pipe fitting with a grid attached to the end of the elbow fitting (see photo 3). All the drainage for this bunker flows through that grid. Spray on glue was applied to the grid and a piece of filter fabric was affixed to the grid (see photos 4 and 5). The grid was then reattached to the elbow pipe fitting (see photo 6).

5. Install the bottom layer of filter fabric over the entire bunker floor. Take the first piece of filter fabric and smoothly spread it out length wise in the center of the bunker floor. At this time it is okay to extend the filter fabric up the sides of the bunker walls (it will be trimmed later). Next secure the first piece of filter fabric to the bunker floor using heavy duty sod staples or landscape pins (see photo 7). Using a rubber mallet or hammer nail the landscape staples or pins about 1 foot apart on all 4 sides/edges of the filter fabric. **Secure the filter fabric to the floor of the bunker but not in the walls.** Make sure the first piece of filter fabric lays smoothly on the floor of the bunker without wrinkles or folds. Now take the second piece of filter fabric and overlap the first piece of filter fabric by at least 6 inches. Smoothly spread it out on the floor of the bunker. As before secure the second piece of filter fabric using landscape staples or pins along all 4 sides/edges of the filter fabric. Continue this process until the bunker floor is completely covered in filter fabric (see photo 8). Next trim the bunker floor filter fabric so that **filter fabric is only on the bottom of the bunker and no filter fabric is on the walls of the bunker.**

6. After the floor of the bunker is completely covered and secured with filter fabric make a final inspection of the bunker floor filter fabric. Check that all the filter fabrics are secured about 1 foot apart with heavy duty sod staples or landscape pins. Add heavy duty sod staples or landscape pins as necessary. Final filter fabric underlayment to be only on the bottom of the bunker, with no filter fabric on the walls of the bunker and relatively smooth and free of any wrinkles, folds, puckers or gaps.

7. Upon approval of the filter fabric underlayment, begin installation of the AirDrain panels with one full panel in the upper left corner of the bunker. AirDrain panels are to be oriented with the larger clover openings facing upwards (struts or grid side up). Panels are to be placed with the indicator tab located toward the lower left-hand corner (see Figure 2). Ensuing panel connections to be secured with one-directional pull to interlock male and female connectors (see Figures 3 and 4). To facilitate a faster installation 3 panels can be put together and then connected to the main grid all at once. View a video of this procedure at the following link: AirDrain Installation Video

8. Install AirDrain panels in the flat bottom area of the bunker only. Do not extend panels up any bunker face slopes (see photo 9). Panels do not need to be trimmed to the exact outline of the bunker subgrade. Only install whole panels to facilitate a quicker installation process, there will be plenty of drainage. Use heavy duty sod staples or landscape pins to secure AirDrain panels as needed. AirDrain panels that might need anchoring would be:

1) the first panel or first row of panels, since you will be pulling against it/them to connect other panels

2) panel(s) directly above the drainage exit hole/box and

3) panels directly above the gravel trenches

9. Inspect and approve the completed AirDrain panel installation before proceeding (see photo 10). Upon approval of the AirDrain panel installation, proceed with installation of the top filter fabric layer above the AirDrain panels. Take the first piece of top filter fabric and smoothly spread it over the AirDrain panel grid. Extend the filter fabric overlayment past the edge of the AirDrain panels and onto the bunker floor filter fabric. As before use heavy duty sod staples or landscape pins and secure the top filter fabric to the bunker floor. Make sure that this filter fabric is pinned or stapled to the bunker floor about every foot along the sides of the bottom of the bunker. Next take the second piece of top filter fabric and overlap the first filter fabric by at least 6 inches. Secure the entire length of the overlap by use of heavy duty duct-tape (see Figure 5). Next secure the edges of the second piece of filter fabric overlayment to the bunker floor with heavy duty sod staples or landscape pins as done previously with the first piece of top filter fabric. Continue this method until all of the AirDrain grid is completely covered.

10. Next trim the top layer of filter fabric so that no filter fabric is on the walls of the bunker. After trimming inspect the filter fabric (see Figure 6). The top layer of filter fabric should:

1) have heavy duty duct tape affixed all along every overlap seam

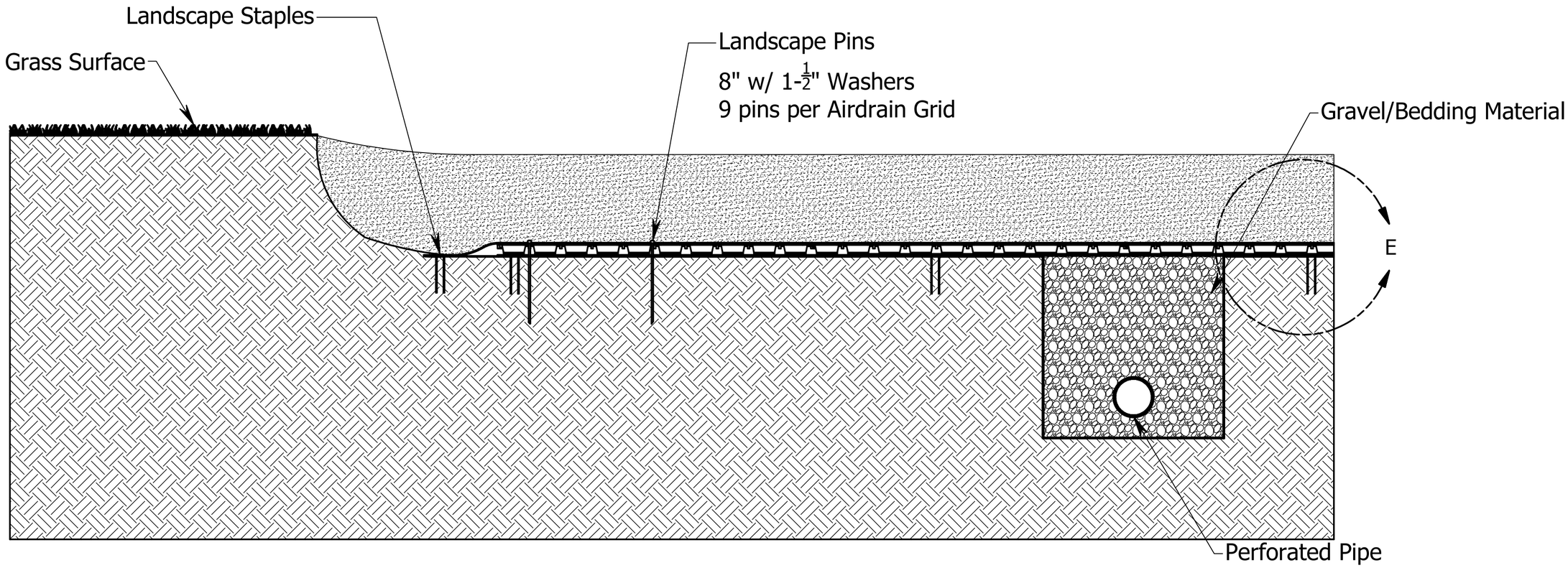
2) be secured to the bunker floor by heavy duty sod staples or landscape pins about 1 foot apart all around the sides/edges of the bunker floor

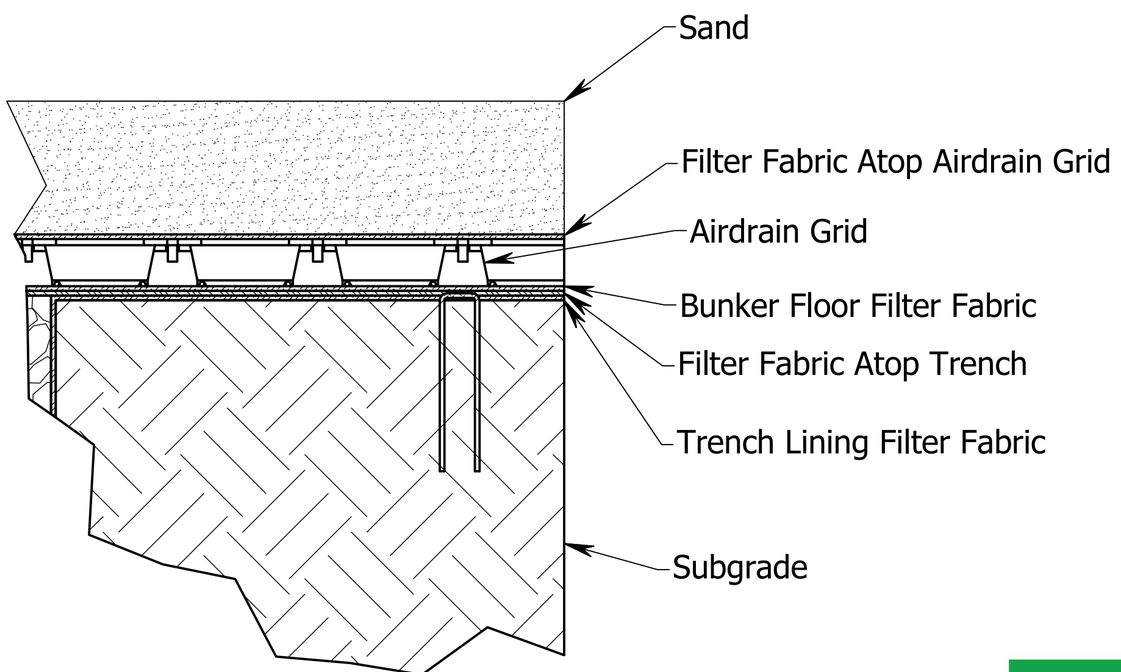
3) be relatively smooth and free of any wrinkles, folds, puckers or gaps

11. After approval of the top layer of filter fabric installation the AirDrain grid is now completely contained within filter fabric from above and below, and the sides. Now you may begin the installation of the specified sand fill material. Proceed cautiously during the sand fill placement to avoid any damage to the subsurface drainage system (see Figure 7 and photos 11 and 12).

DISCLAIMER: The preceding drawings and/or general installation instructions 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.





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).

DRAWN Gary	12/1/2013	
CHECKED		
QA		
MFG		
APPROVED		

Airfield Systems

TITLE

Bunker Airdrain Detail

SIZE	DWG NO	REV
C	Bunker_Detail_REV002	0

SCALE

SHEET 1 OF 1

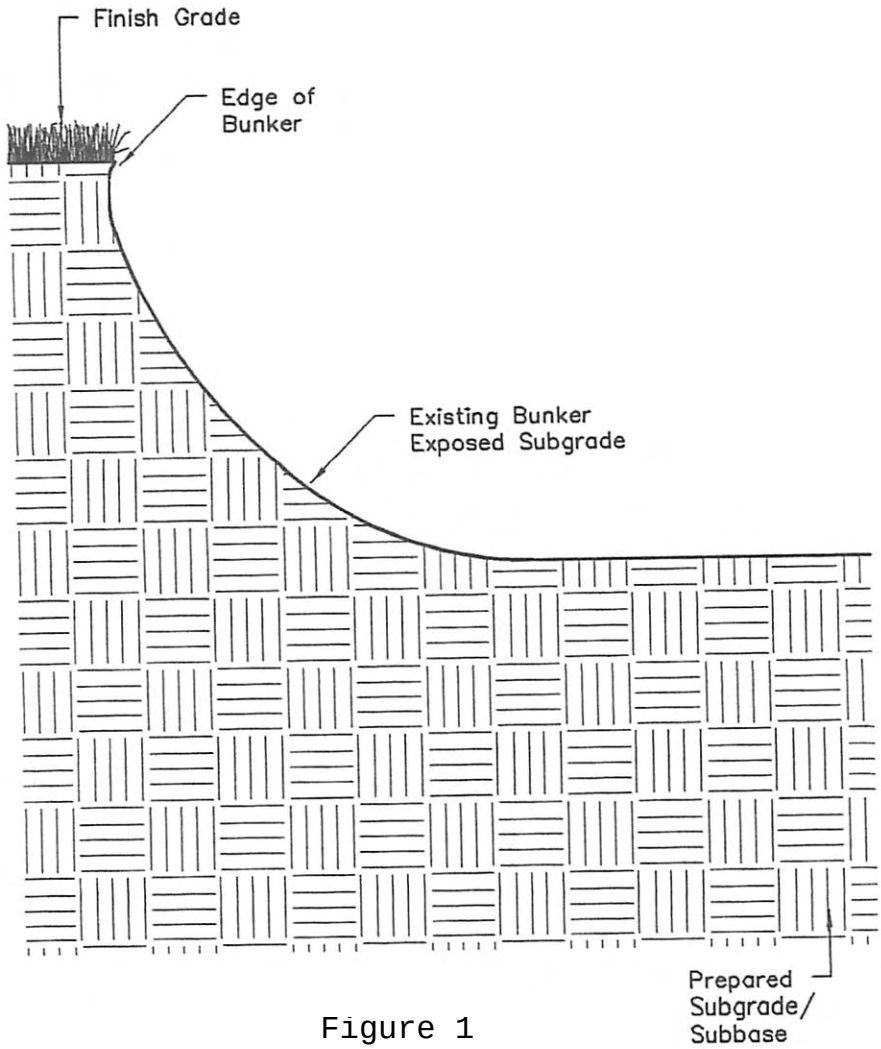


Figure 1

AIRBUNKER SYSTEM TYPICAL DETAIL

Not To Scale

Airfield Systems
(405) 359-3775

Airdrain® Geocell

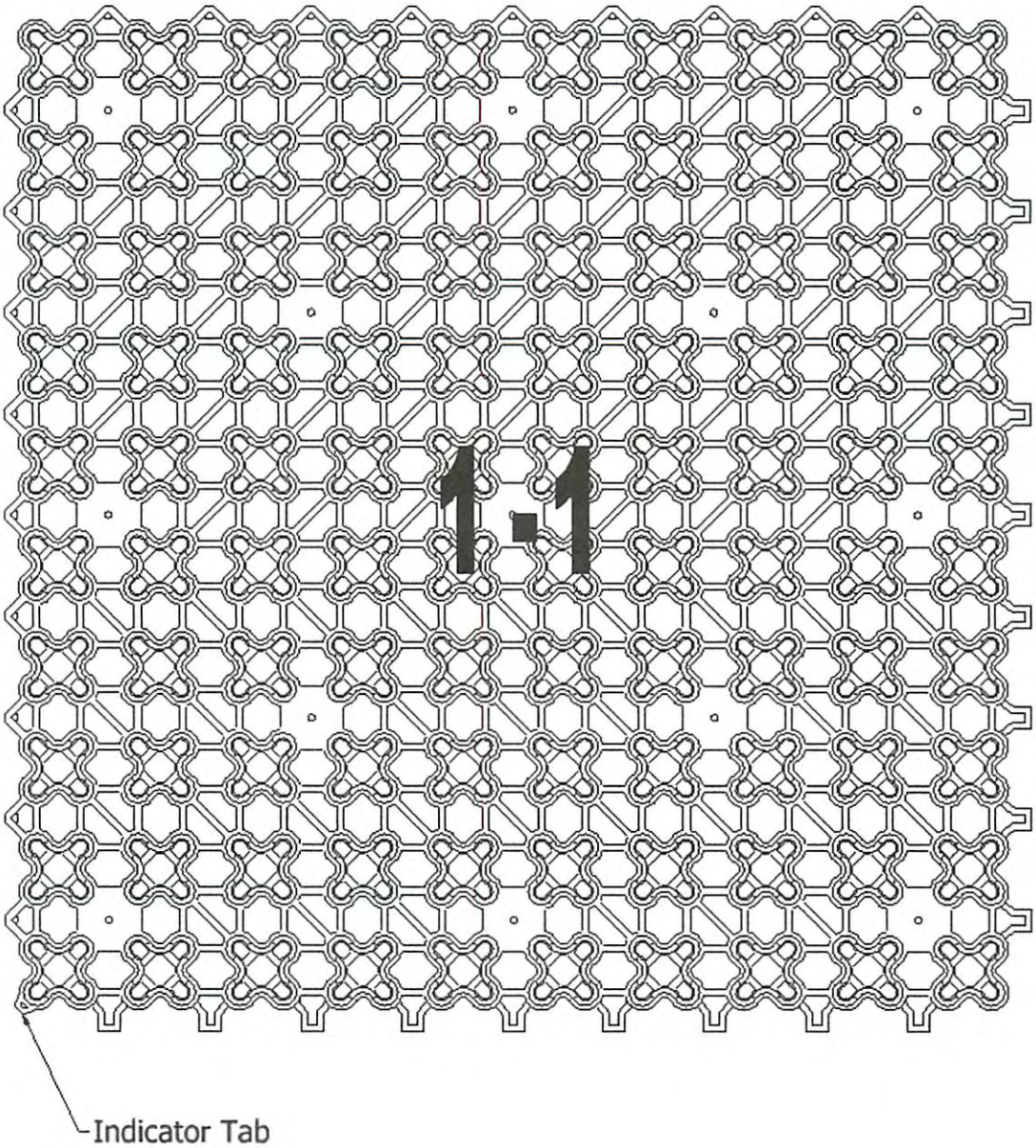
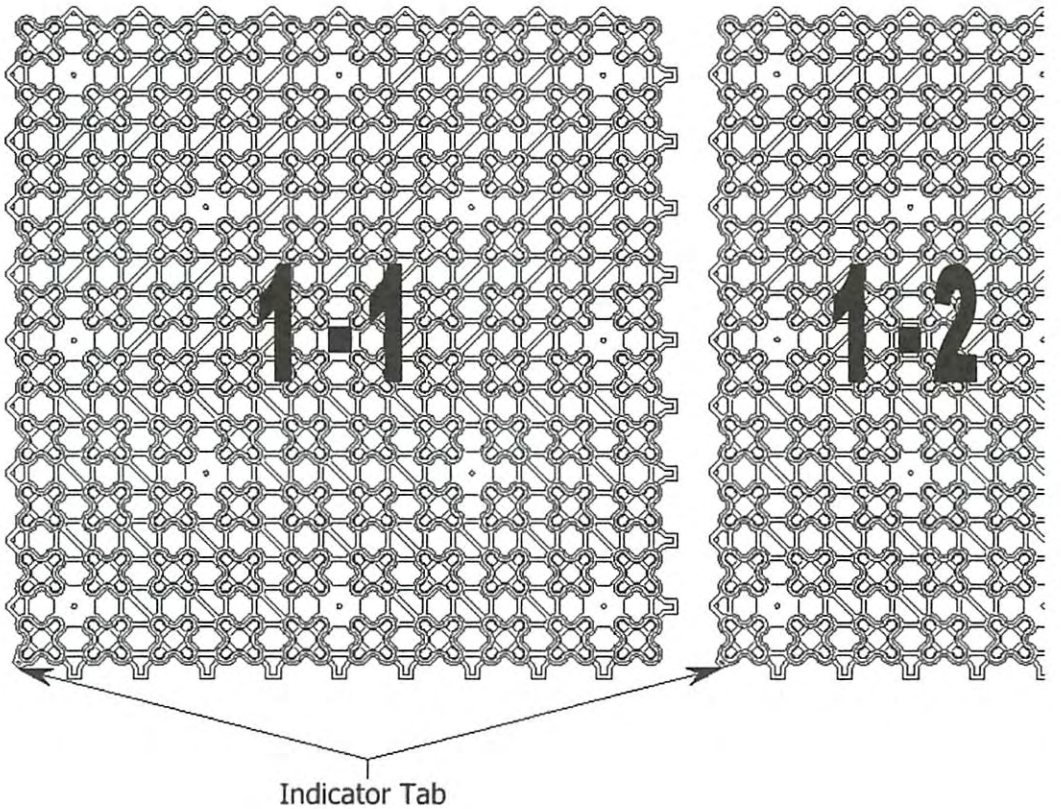


Figure 2

Airfield Systems, LLC
8028 N May Ave, Suite 201
Oklahoma City, OK 73120
(405)359-3375

www.airfieldsystems.com



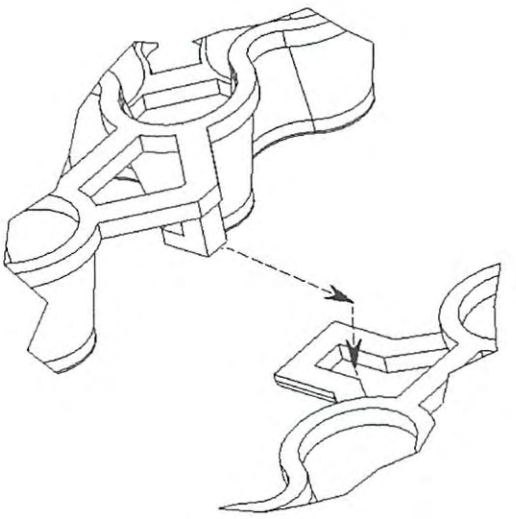


Figure 3

Airfield Systems, LLC
8028 N May Ave, Suite 201
Oklahoma City, OK 73120
(405)359-3375

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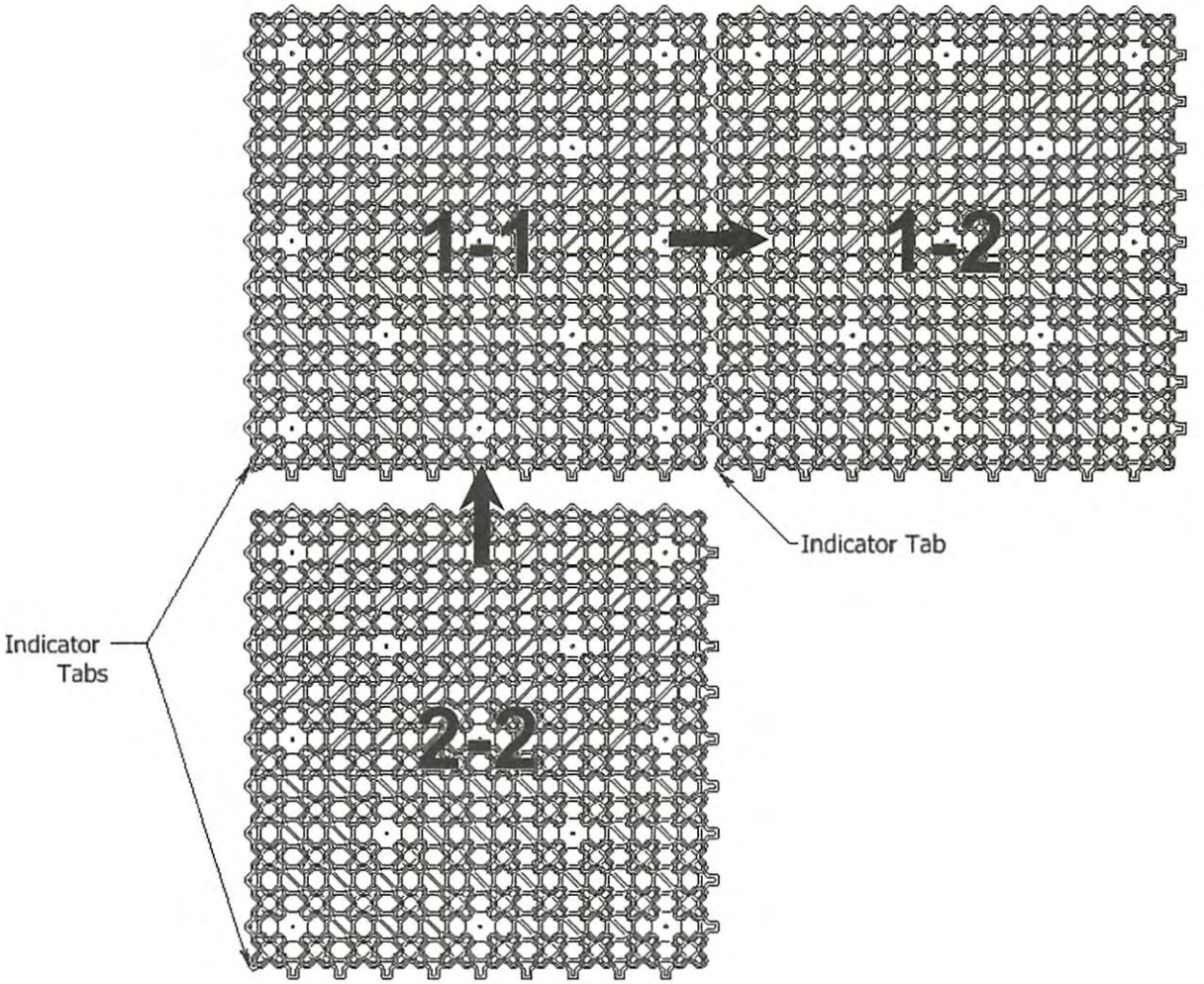

Figure 4

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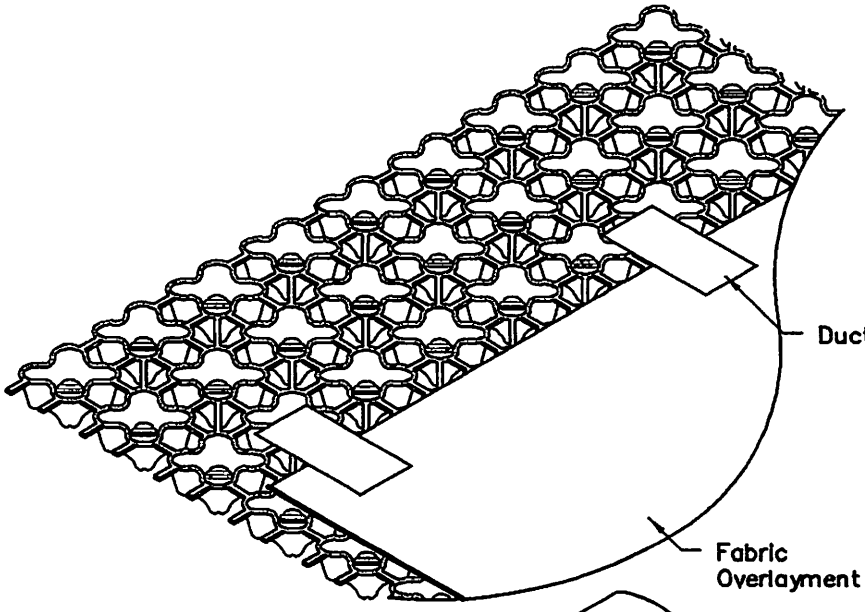

FIG. 6a

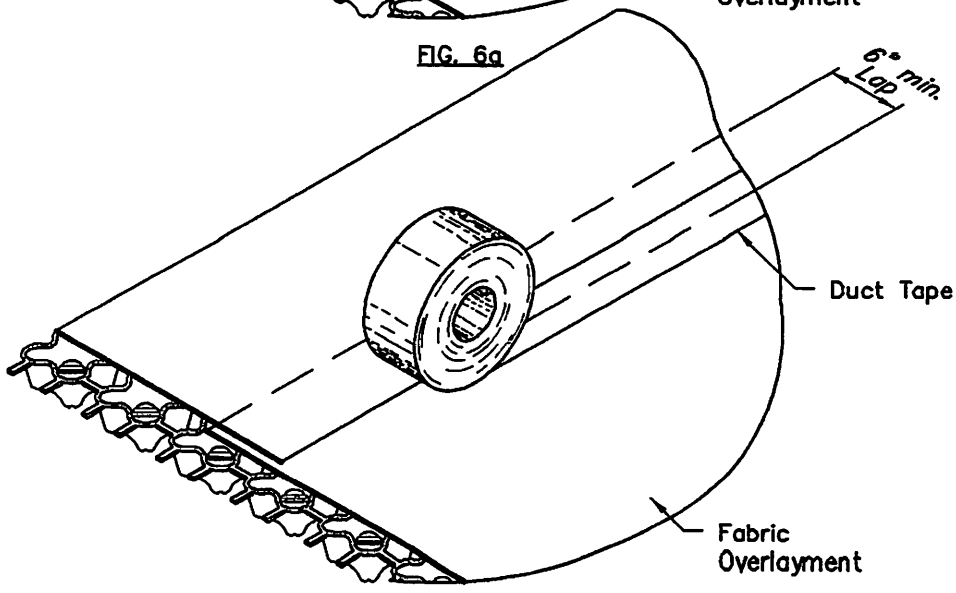

Figure 5

AIRBUNKER SYSTEM TYPICAL DETAIL

Not To Scale

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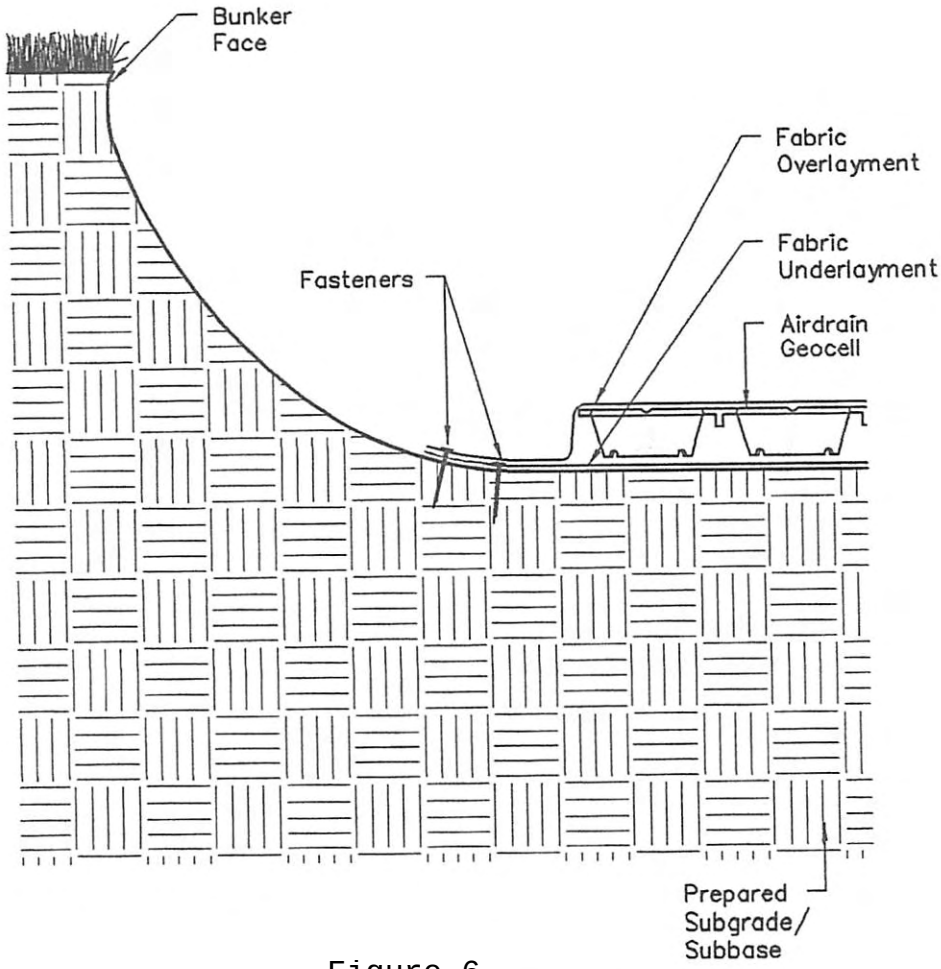

Figure 6

AIRBUNKER SYSTEM TYPICAL DETAIL

Not To Scale

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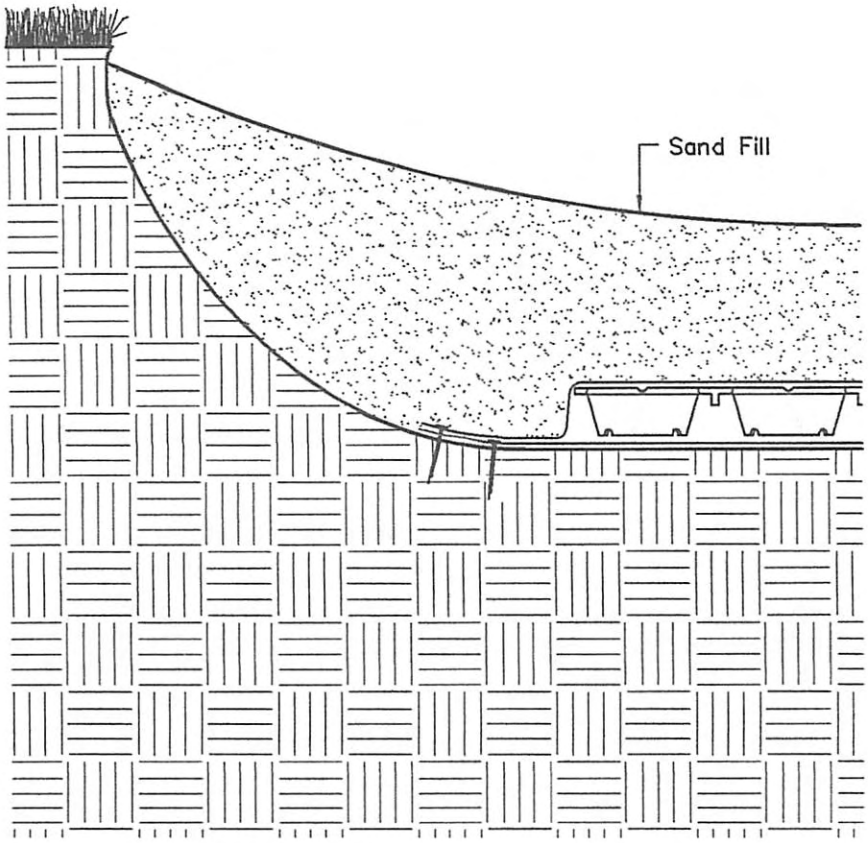

Figure 7

AIRBUNKER SYSTEM TYPICAL DETAIL

Not To Scale

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PHOTO 1

PHOTO 2

PHOTO 3

PHOTO 4

PHOTO 5

PHOTO 6


Scotts
snap
& Feed
Scotts
snap
Weed & Feed
VALUE PACK
LANDSCAPE PINS
Secure Fabrics, Nettings, Edgings, Frost Blankets, Hoses and other outdoor projects
Contactos del paisaje | Asegure las telas, las redes, los ribetes, las capas antihielo, Las mangueras y otros proyectos al aire libre
75 COUNT BAGS
75 BOLSOS DE LA CUENTA

PHOTO 7

PHOTO 8

PHOTO 9

PHOTO 10

PHOTO 11

PHOTO 12