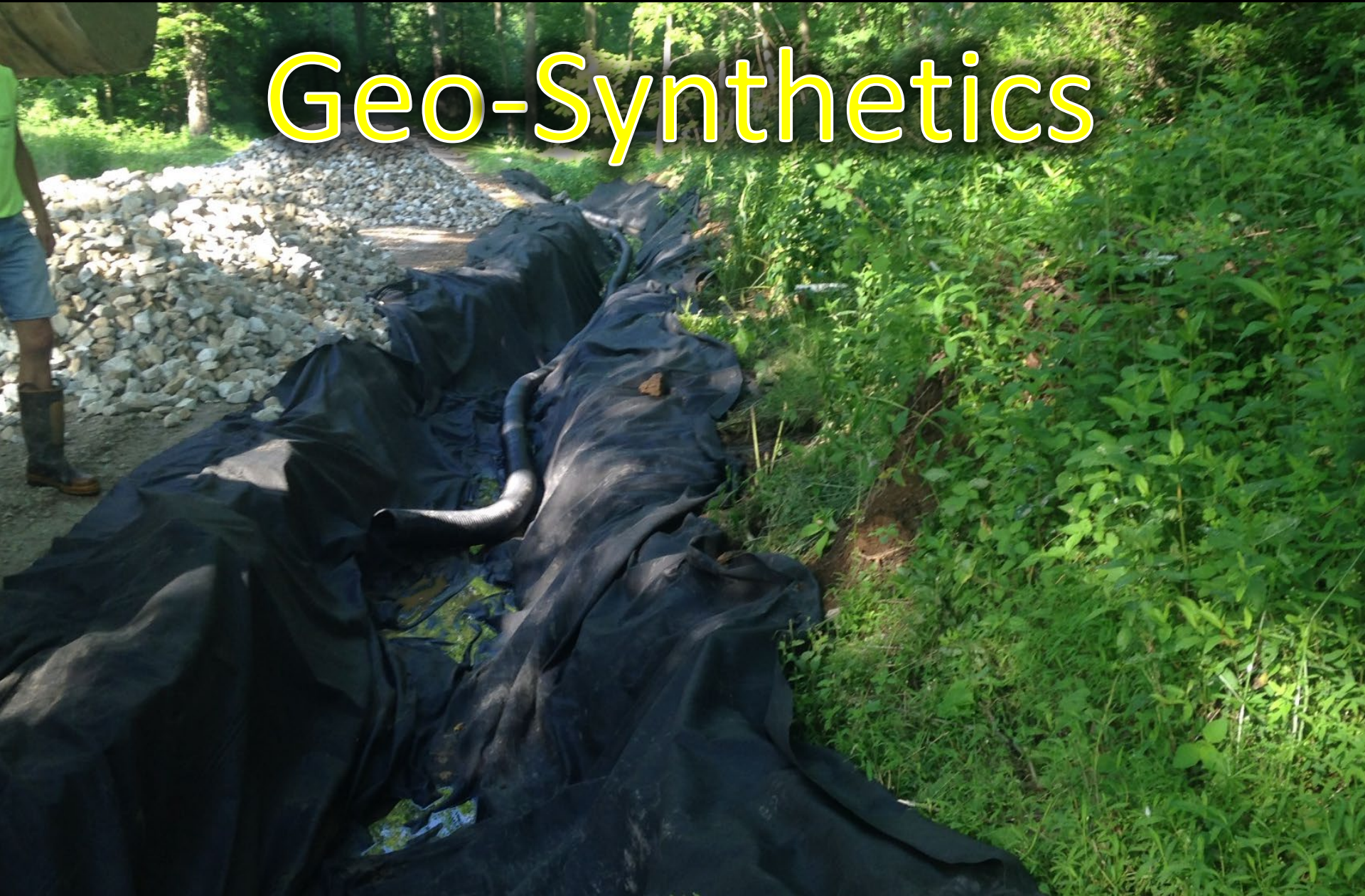


Environmentally Sensitive Maintenance for Dirt, Gravel, and Low-Volume Roads

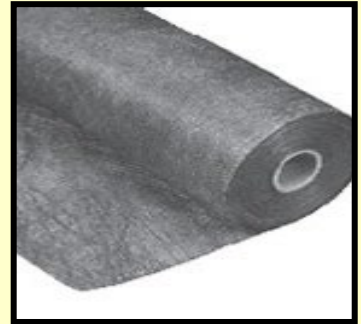


Geo-Synthetics

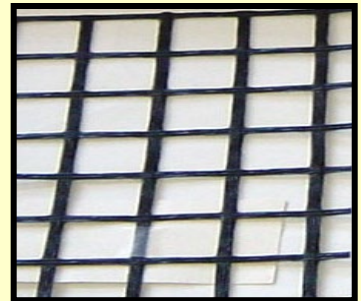


GEO-SYNTHETICS:
means “Man-made earth”

Separation FABRIC




Geo-GRID



Geo-CELL



NOTE:

- Permanent, non-biodegradable plastic support products intended to be buried
- Different from  biodegradable surface products such as “jute matting”

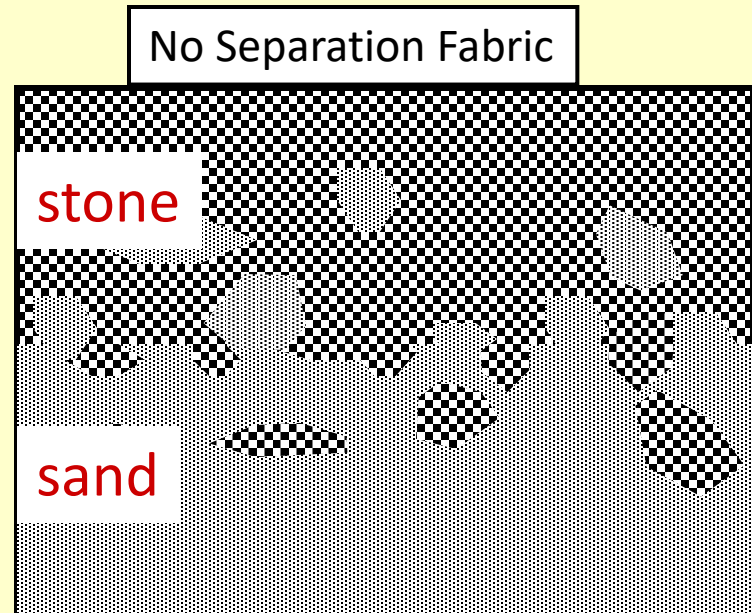
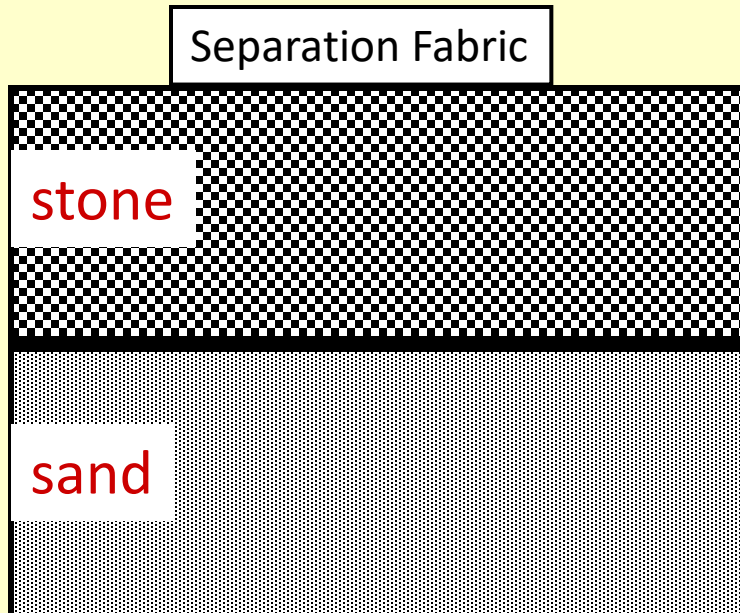




Separation Fabric: Plastic “cloth” used to separate different materials in soil.

Separation Fabric Uses:

- **Separates** two types of material
 - Adds some strength
 - Distributes loads over larger area
 - Prevent clogging of underdrains



Considerations:

- Allows water to pass through
- Not biodegradable
- Should be buried 1 foot minimum
- Many types, sizes, thicknesses, and uses
- Some typical rolls: (600 sqyd)
 - 12.5' wide x 432' length
 - 15' wide x 360' length
 - 17.5' wide x 309' length



Types:

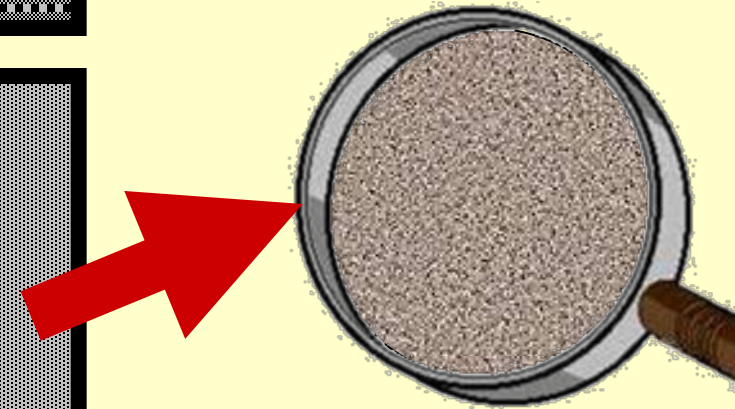
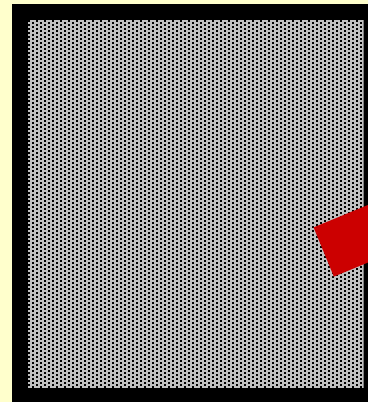
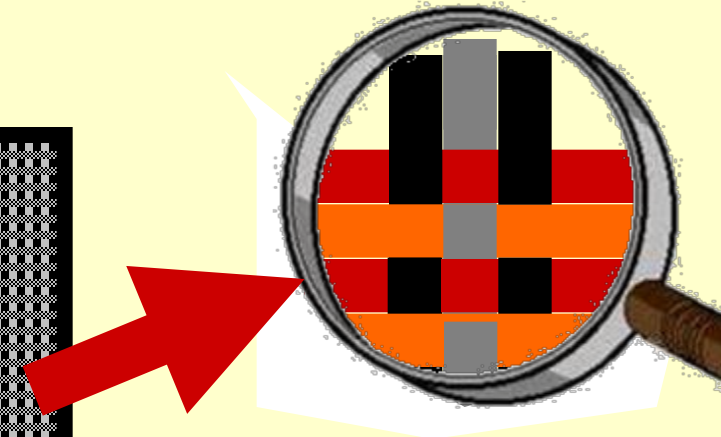
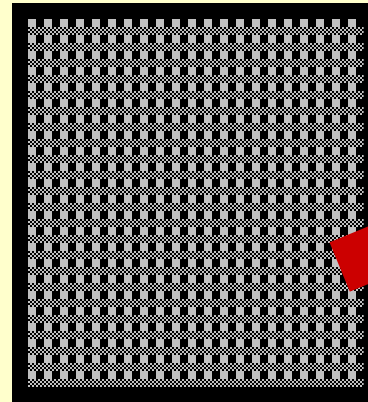
- Two major classifications:

- Woven

- separation
- Support
- 4-10 gpm/sqft

- Non-woven

- separation
- filtering
- 95-140 gpm/sqft



Types:

The “Classification” of the fabric needed varies upon use:



- **PennDOT Class 2-A Woven**
 - Separation of materials/soils
 - Base support for road
- **PennDOT Class 1 Non-Woven**
 - Sub-surface drainage – Underdrain
 - French Mattress
- **Consult manufacturer for intended use**

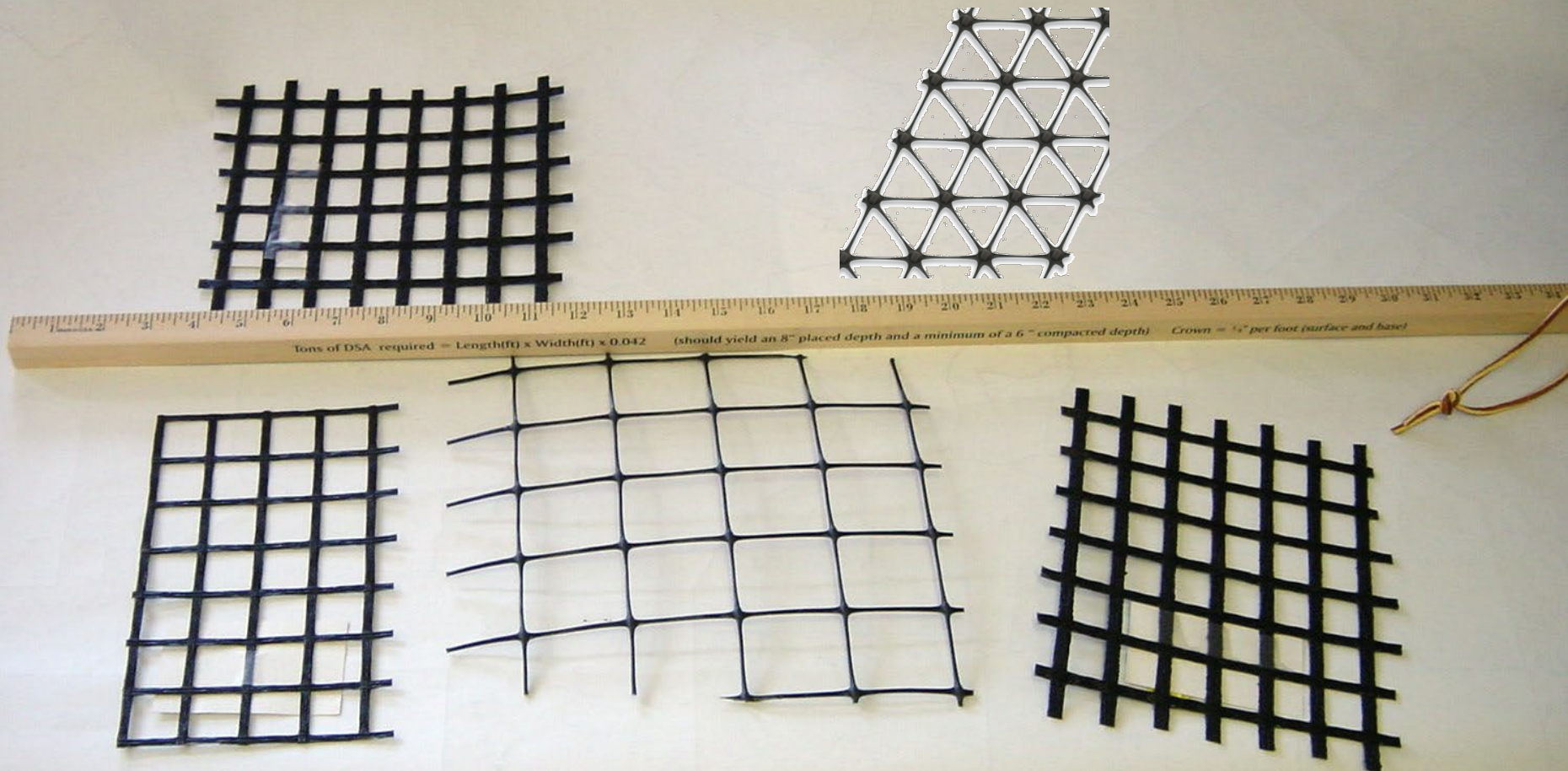


Common Uses

Uses will be detailed throughout training

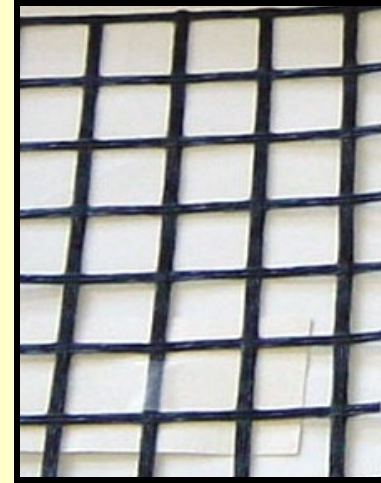


GEO-GRID: Plastic grid used to stabilize and strengthen soil.



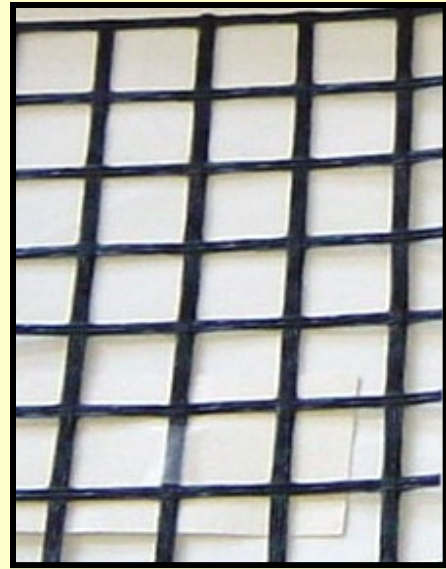
Geo-Grid Uses:

- Strengthen road base
- Spreads weight (**snowshoe effect**)



Considerations:

- Does not separate material like fabric
- Adds more strength than fabric
- Spreads weight better than fabric
- Reduces depth of fill required.
- Should be buried 1 foot minimum
- Many types, sizes, patterns, and uses
- Typical roll: 600 sqyd



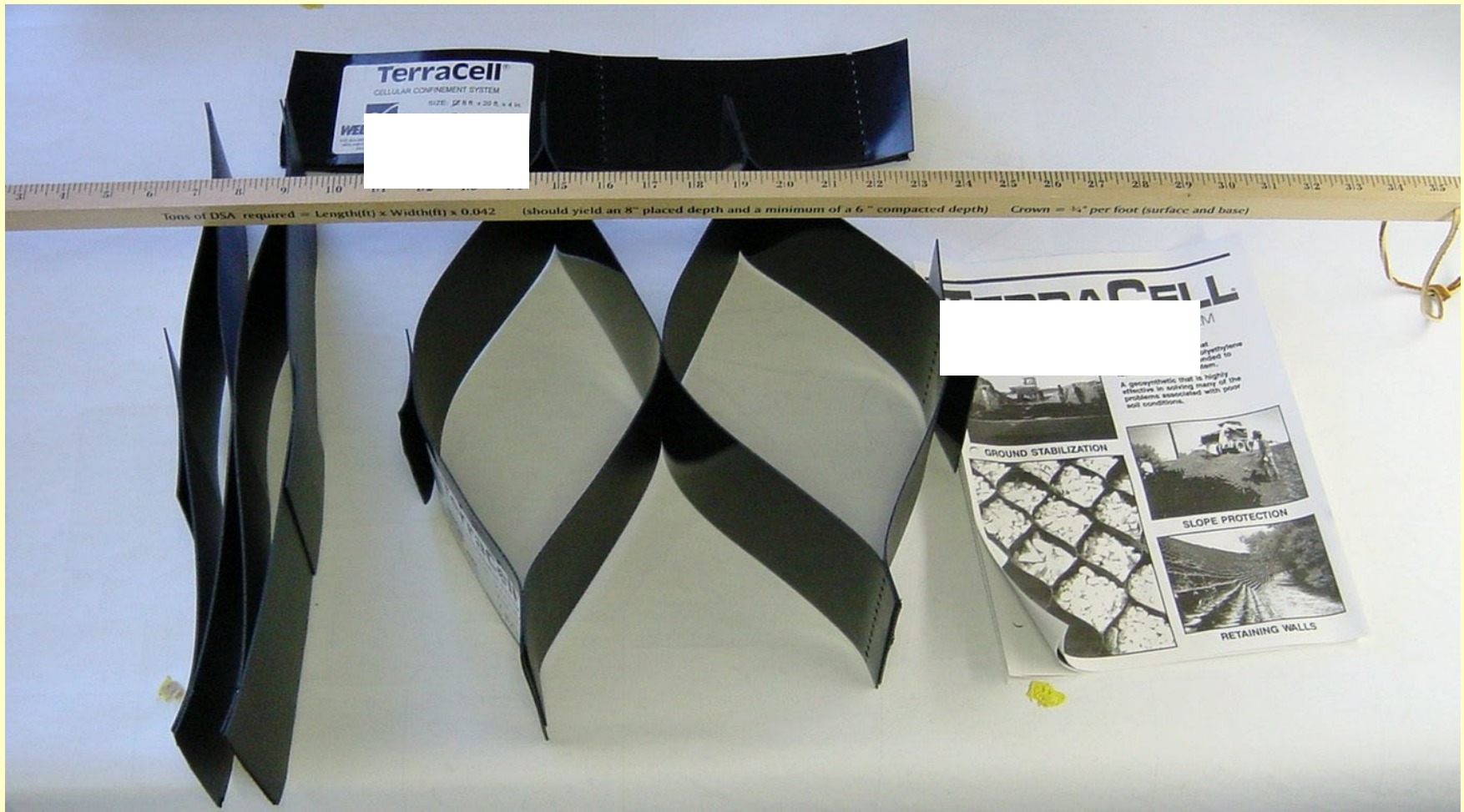


Common Uses

Uses will be detailed throughout training



GEO-CELL: 3 dimensional plastic grid that can be filled with material to stabilize surfaces



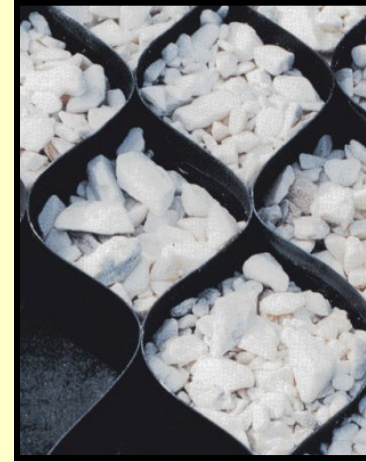
Geo-Cell Uses:

- Provides maximum structural support
- “Cellular Confinement”



Considerations:

- Can fill with variety of materials
 - Stone for support & drainage
 - Soil to support vegetation
- Holds fill material in place
- Typically available in 6" or 9" depths
- Many types, sizes, patterns, and uses
- Comes folded flat for transport
- Typical sheet: 8'X20'





Common Uses

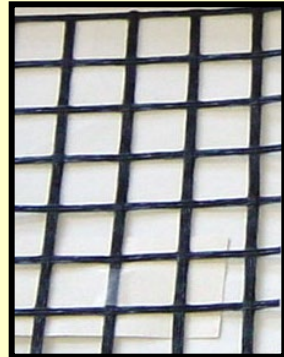
Uses will be detailed throughout training



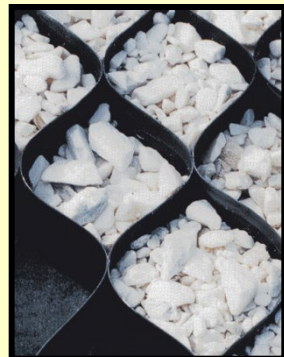
FABRIC - SEPARATE, some structural support



GRID - Structural Support



CELL - Maximum Structural Support, cellular confinement

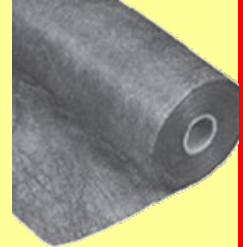


**Specific uses
discussed
throughout rest of
training.**

**Look for these
reminder blocks.**

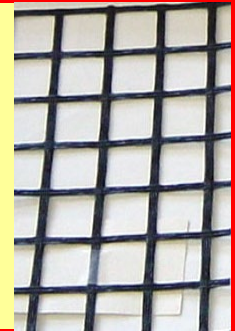
Separation Fabric

- separates
- spreads load
- some support



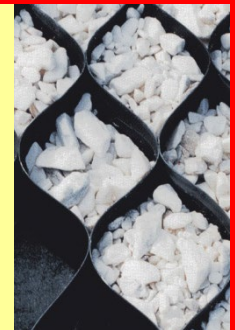
Geo-GRID

- “snowshoe”
- spreads load
- strong support



Geo-CELL

- 3-dimensional
- holds material
- max support



Geo-synthetics

ADDITIONAL RESOURCES:

- Your Conservation District
- Your Municipal Engineer
- www.dirtandgravelroads.org

next chapter:
Road Base

