Comparison of Common Soil Stabilization Methods

Example Road = 1 mile

	Over-Excavation	Chemical Stabilization	Fabric	Biaxial (BX) Geogrid	TriAx Geogrid
Method Description:	Remove existing soil and replace it with some type of "select fill."	Chemically modifying the existing soil by adding and mixing cement, lime or a similar product.	Installing a layer of geotextile and placing a material (usually an aggregate) on top of it.	Installing a layer of BX geogrid and placing an aggregate fill material on top of it.	Installing a layer of TriAx geogrid and placing an aggregate fill material on top of it.
Typical reason this is chosen:	They know it will work if they dig deep enough and haul-in enough select material.	This is the "norm" or common solution that is most often utilized.	Interest in a geosynthetic solution for potential cost savings. Believe performance is equivalent to geogrid.	Specifically interested in geogrid solution. Perceived as being lower cost than TriAx. Larger distributor footprint.	Knowledge of the product and/or its documented performance. Speficiation by owner/ operator.
Average material costs:	$1.50 yd for 12" + $1.00 SY Agg base 9" **$10.50 SY**	$0.50 SY-in ($3 for 6") + $1.00 SY Agg base 9" **$12.00 SY**	$0.55 SY (non-woven) + $1.00 SY Agg base 9" **$9.55 SY**	$0.80 SY DOT Type 2 + $1.00 SY Agg base 9" **$9.80 SY**	$2.55 SY + $1.00 SY Agg base 6" **$8.50 SY**
Is water required?	No. The material being excavated usually must be dry.	Yes, always	No. Also fabric cannot be installed in wet conditions.	No. It can also be installed in wet conditions and in standing water.	No. It can also be installed in wet conditions and in standing water
Average pace to build:	**1/8 mile per day**	**1/2 mile per day**	**1 mile per day**	**1 mile per day**	**1 mile per day**
Anticipated annual maintenance costs:	Annual pothole repair and re-grading: **$8,000 annual**	Annual pothole repair plus re-grading: **$8,000 annual**	Annual pothole repair plus re-grading: **$8,000 annual**	Annual pothole repair plus re-grading: **$3,000 annual**	No pothole repair necessary. Re-grading: **$1,000 annual**
Anticipated Design Life:	**2 - 3 years**	**2 - 3 years**	**2 - 3 years**	**3 - 5 years**	**8+ years**
Conclusions:	Expensive initial costs although proven to work. Expensive to maintain long-term.	The "go to" solution is also the most expensive initially and expensive to maintain	Less expensive and faster to build than non-geosynthetic options but still just as expensive to maintain.	Product is less expensive and fast to build but additional aggregate requirements make it as expensive as fabric. Long-term maintenance costs are less than fabric.	Total installed cost makes it the cheapest option. It's fast to build and it drastically reduces maintenance costs for the greatest long-term savings.