



Geoweb® Stream Crossing Case Study



Cove Mt. Farm, located in South Central, Pennsylvania had three stream crossings used to move livestock and farm equipment across Little Cove Creek. The 40-foot wide main crossing, located about 100 yards east of the milking center, received the most traffic. While the streambed was fairly firm at this site, an improved crossing with level footing would provide a safer crossing for the animals and have less impact on water quality.

Presto's Geoweb® system provided the stable crossing. The Geoweb® system is a plastic, honeycomb-like structure designed to hold aggregate in place, even in flowing water. An engineered hole pattern in the system's cells helps to lock aggregate in the cells and resist aggregate washout. The anchoring system connects to high strength tendons running through the length of the sections to hold the sections in place.

After preparing the site, the Geoweb® system is expanded, secured to the stream bottom, and filled with the selected size aggregate. After infilling is completed and compacted, the stream crossing is ready for use.

Geoweb® sections, 8 feet wide by 20 feet long, are shipped to the site in collapsed form, folded on pallets. Four sections, covering an area of 16 feet wide by 40 feet long, were used to create the stream crossing at Cove Mt. Farm. The sections were expanded and the side seams interleaved and stapled together, forming a single connected system. The Geoweb material is anchored to the streambed with Presto's ATRA® Anchors (ATRA® Clips attached to 1/2" rebar steel stakes), and high-strength tendons.



A backhoe/loader was used to prepare the streambed. All loose rock and large stones were removed from the center of the stream to create a level work area. The backhoe dug two shallow trenches, sixteen feet apart, to provide a place to anchor the Geoweb sections' edges.



Anchors were evenly spaced and fastened over the tendons within the Geoweb sections to provide security against the stream's up-lift forces. During anchoring, the backhoe dropped crushed stone over the staked Geoweb sections. Equipment can be driven on the system as soon as the Geoweb cells are completely filled.

Next, a layer of 12 ft wide woven geotextile fabric was placed over the prepared streambed area. The geotextile is recommended to act as a separation layer between the aggregate infill and the soft-bottomed streambed.



Once the sections were all filled, additional stone was brought in to finish the approaches. The backhoe was used to level and compact the infill. Crushed limestone was used in the stream and local crushed shale for the approaches.

The finished product is a durable load support, erosion control platform that will provide a stable, stream crossing.

With the geotextile in place, one 16-foot edge of the Geoweb® system was placed over the geotextile and anchored using ATRA® anchors secured to the tendon ends. The Geoweb section was then stretched across the stream by pulling and expanding it to the opposite side of the stream.



Permits from the DNR may be required before beginning stream crossing projects.

The Geoweb® system's side edges were placed in the pre-dug trenches and anchored around the perimeter to hold the system in place. Anchors were driven with a hammer until the ATRA® Clip made contact with the streambed.



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