# LAKE MICHIGAN BLUFF RESTORATION
# SOUTH HAVEN, MI

NORTH AMERICAN GREEN®




**Application:** Steep Slope Stabilization
**Product:** C350 TRM + Sediment Logs

**Site Issues:** Slip plane potential • Steep slopes • Residential site • Water seepage • Natural vegetation

**Problem:** This private residence on Lake Michigan was experiencing severe erosion on the bluff. The embankment consisted of near vertical drop offs, 1:1 and 2:1 slopes, with clay and sand veins. The slope was experiencing water seepage out of the bank and high velocity surface runoff. The erosion was starting to expose many of footings to the stairwell. The impending loss of the stairwell forced the homeowner to seek solutions to the problem.

**Solution:** The homeowner wanted a cost effective solution to stabilize the bank and restore the bluff back to a natural vegetative setting. Upon consultation with local erosion control resources, it was determined that a geo-cellular confinement system along with North American Green turf reinforcement mat C350 would be used to contain soil, prevent slope slip plane isses and stabilize the 1:1 cut slope. Additionally the remainder of the slope was tiered using sediment logs with the tiered benched protected with the C350 TRM. It was extremely importnat to slow runoff water that would naturally discharge over the bluff, and the tiered benches helped with slowing runoff water as well as providing a more stable area to vegetate. A variety of perennial plant plugs and naturalized vegetation was installed for the long-term protection of the bluff slope.

**Result:** The finished vegetated system, that employed both permanent geosynthetics as well as natural-fiber erosion and sediment control products, provided an effective solutions for both cost and performance. The project site homeowners were happy with how quickly the site established new vegetation, and how the erosion control products seemed to disappear beneath the vegetation.

## PRODUCT HIGHLIGHTS

- The VMax C350 permanent TRM has a corrugated matting structure that offers true reinforcement to establishing vegetation, helping to protect vegetation roots and growth points from shearing effects created by ice and debris.
- The unique design creates a shear plane that deflects flowing water away from the soil surface while still allowing ground cover and moisture retention aspects from natural fiber mulch covers.

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