PROJECT PROFILE



ARVS with TMax

Anchor Reinforced Vegetated System • High Performance Turf Reinforcement • River Stabilization

Chagrin River Residential Slope



Situated in the greater Cleveland area, Moreland Hills, Ohio boasts rolling hills, beautiful views of the Chagrin River, and is a sought out neighborhood for residential developments. But with all of the hills and valleys, development of the land can be particularly challenging, especially when river flows and natural erosion of steep slopes are added factors. For these discerning property owners, the main goal of the project was to provide stabilization to the 1:1 (H:V) slope allowing for the development and construction of a residential home and an infinity pool at the top of the slope.

To begin the design process, the engineering lead at Cloonan Design Services worked closely with the technical teams at North American Green and its local distributor JMD Company, a division of Hanes Companies, to develop a slope stabilization solution for the project site. The property owners wanted to maintain a naturalized slope as a long-term design, and requested a stabilization solution that would allow native species to be planted.

The stabilization process was started at the toe of the slope with the installation of concrete pylons and soil nails. The permanent infrastructure would help support the overall structural stability needed for the top of slope impact. The surface and sub-surface slope stabilization was addressed by the use of an Anchor Reinforced Vegetated System (ARVS). To finish the look, large boulders and stones would be placed to add a more natural look to the slope, while also helping to anchor the systems.



- TMax was installed along the slopes and secured with a combination of twist pins and PDAs.
- TMax HPTRM is optimized for steep slopes, with is UVstability and woven synthetic construction.

• The extended longevity of the product allows for permanent erosion protection and support of vegetation.

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PROJECT PROFILE



ARVS with PP5-Xtreme

Anchor Reinforced Vegetated System • High Performance Turf Reinforcement • River Stabilization

Chagrin River Residential Slope cont.

The North American Green TMax high-performance turf reinforcement mat (HPTRM) installed with a combination of twist pins and percussion driven anchors was selected for the combined ARVS system and would provide the soil stabilization needed while still allowing permanent vegetation establishment.

System installation was smooth and completed in short order in spring of 2021. After the infrastructure was placed and the slope brought to grade, the slope was seeded with native grasses and Regreen seed mix. Regreen seed mix is a good choice for erosion control in conjunction with native seed mixes as it allows for quick vegetation establishment while not competing with the native species during their longer establishment phase. After seeding, the TMax HPTRM was rolled into place. Six-foot percussion driven anchors, TL606-TLA3-6FT by Gripple, were installed across the face of the TMax HPTRM, and then supplemented with a 12" twist pins. In total over 1,500 anchors, and nearly 11,000 pins were installed across the expanse of TMax matting. The majority of the work was completed in April, the installation of multiply trees in addition to the seeding. Additional planting occurred throughout the spring and summer, with the addition of flowers and shrubs.

The annual Regreen grasses planted on site began establishment within weeks of the system install. Even with cool spring temperatures, late snow, and spring rains, the TMax anchor reinforced vegetated system showed vegetation growth within weeks. Now several growing season later, the site is well vegetated, and the slope is now stabilized and construction of the residential home and surrounding property has begun.

