



Brayman Construction Corporation: Innovative Solutions Since 1947

Established in 1947, Brayman Construction Corporation has evolved from a small family business into a nationally recognized leader in heavy civil and geotechnical contracting. The company specializes in complex projects such as large-scale bridges, deep foundations, dams, and marine construction, serving a diverse clientele in both the public and private sectors.

We leverage the capabilities of shotcrete technology to deliver specialized repair and protection solutions for a variety of slope stabilization challenges. With expertise in slope stabilization and support of excavation (SOE) techniques for earth retention, we use shotcrete's versatility and strength to deliver reliable solutions for challenging geotechnical conditions. Our approach ensures durability and efficiency, even in the most demanding environments. Our ACI-certified shotcreters are dedicated to quality, safety, and innovation that positions us as the go-to contractor for projects that require the precision and resilience of shotcrete.

REINFORCEMENT FOR DAM REHABILITATION WORK:

At the Bluestone Dam project in Hinton, WV, we used a soil nail wall reinforced with shotcrete to stabilize a critical slope, providing essential support before the installation of the anchors required for dam repairs. This solution involved drilling and installing soil nails and shotcrete for the retaining structure. The combined use of soil nailing and shotcrete ensured the slope's stability throughout the project, allowing for safe and efficient completion of the necessary dam repairs.

The North Fork Spillway Improvements Soil Nail Wall project in Ashville, NC, involved complex geotechnical solutions to stabilize the spillway and ensure its long-term functionality. This project required reinforcing steep slopes and controlling erosion, making the application of soil nailing and shotcrete essential to maintaining structural integrity. We used pressure grouting to install permanent tiebacks, achieving pressures of up to 140 psi (1.0 MPa) for maximum stability. To improve efficiency,



CONSOL Coal Refuse Disposal Area 7 Project
Greene County, PA



Bluestone Dam - Hinton, WV



North Fork Spillway
Improvements - Ashville, NC



we applied shotcrete to form 21 custom anchor blocks in place, instead of relying on standard precast blocks. This approach allowed for more streamlined block placement and faster tieback testing, significantly enhancing the overall project timeline and performance.

STRENGTHENING INFRASTRUCTURE:

To accommodate the expansion of the third lane of the Pennsylvania Turnpike from mile post (MP) 43.56 to MP 47.07, nearly 50,000 ft² (4600 m²) of soil nail walls for the PA turnpike were required. Our scope of work consisted of two temporary “fill walls” (needed to support the existing roadway in fill areas until new mechanically stabilized earth walls could be constructed) and two permanent “cut walls” (needed in areas where the new third lane construction required cutting existing embankments).

SLOPE STABILIZATION:

The Tombs Run Slide project presented a challenging slope stabilization effort along Route 44 in Lycoming County, PA. We were subcontracted to install a soil nail system to address a roadway slip near Pine Creek. Over 1350 soil nails will be installed to stabilize the slip, combined with a shotcrete finish wall. Reinforced wire mesh will be incorporated in critical areas for additional support. The steep slope adjacent to the creek poses unique logistical challenges, particularly due to limited workspace and proximity to an active hellbender habitat. The third phase will start in 2025, for the installation of fabric mesh anchors below the shotcrete wall for further stability and safety. The design needed to accommodate newly established utility poles, integrating their support into the constructability plan and turning a complex problem into a positive solution.

In 2022, we completed the drilling and installation of 1250 Nails and installed 29,000 ft² (2700 m²) of shotcrete as part of the CONSOL Coal Refuse Disposal Area 7 Project in Greene County, PA. The nails and shotcrete were installed as part of a system to line the side walls of the emergency spillway for the disposal area sediment pond.

The project was completed in two phases as overburden was excavated from the emergency spillway

area. In the first phase, soil nails were installed and grouted down to the next excavation level. During the second phase, additional soil nails were drilled at heights reaching up to 16 ft (4.9 m) above the spillway base. The wall face was scaled, cleaned, and reinforced with a welded wire mesh. Shotcrete was applied to complete the structural support. In addition to our safety policies, the crew had to obtain MSHA Surface Miner certifications and follow MSHA regulations while working onsite.



*Pennsylvania Turnpike
Allegheny County, PA*



Tombs Run Slide - Lycoming County, PA

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