



## Emergency MagnumStone Wall Rescues Home After Hurricane

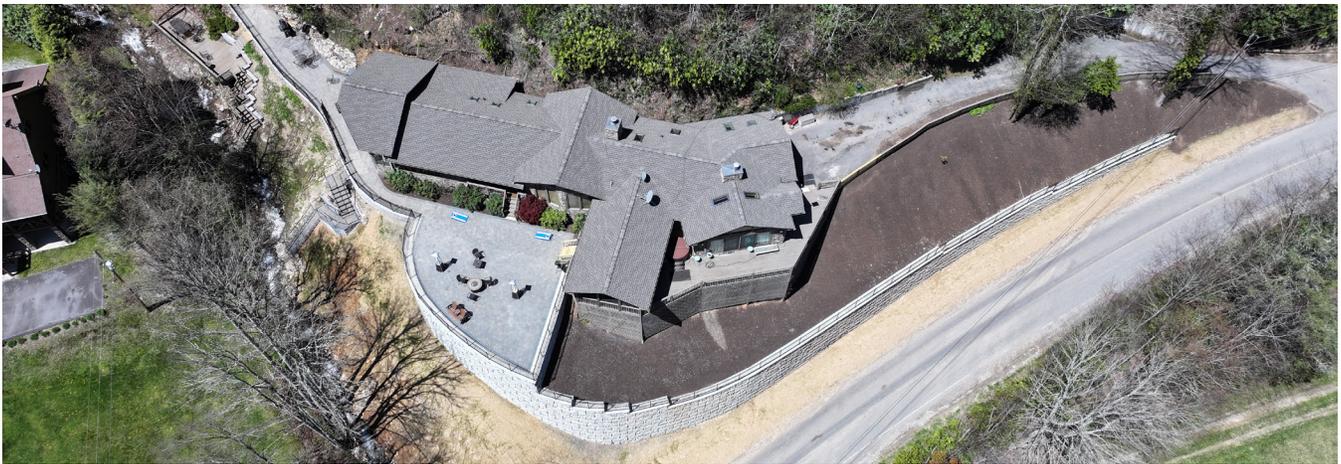
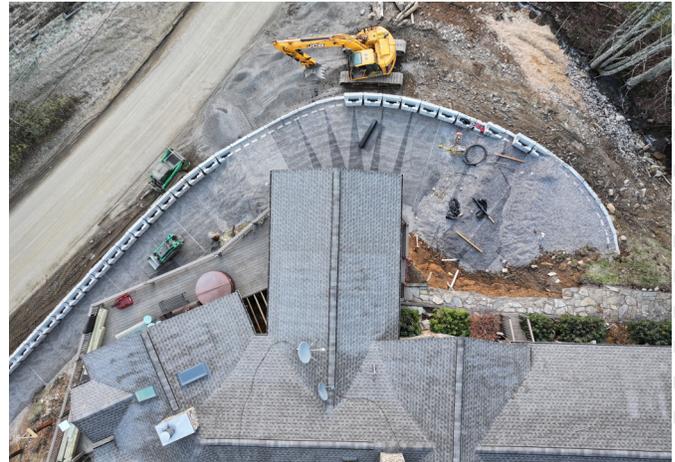
After Hurricane Helene struck Maggie Valley, NC in September 2024, a vacation home's hillside faced severe erosion and risk of collapse due to surging stormwater. A geogrid-reinforced MagnumStone retaining wall, with blocks produced by Valley Precast, was urgently built to stabilize the slope.

Its precast blocks provided a strong, versatile solution that effectively secured the site's steep, curved terrain. The tiered wall design spans 240 ft. (73 m.) wide, 22 ft. (6.7 m.) high, and over 4,500 sq. ft. (420 sq. m.) in area. The wall not only stabilized the foundation but also added usable space above for a beautiful patio, delivering a durable and effective geotechnical rescue.

<b>Total Block Installed</b>	4,500 sq. ft. (420 sq. m.)
<b>Maximum Height</b>	22 ft. (6.7 m.)
<b>MagnumStone Manufacturer</b>	<u>Valley Precast</u>
<b>Contractor</b>	<u>Engineered Retaining Walls</u>
<b>Engineer</b>	<u>UES</u>
<b>Installer</b>	<u>Carlos Morales</u>

# EMERGENCY MAGNUMSTONE WALL RESCUES HOME AFTER HURRICANE

Maggie Valley, North Carolina, USA



## PROJECT OVERVIEW: MAGNUMSTONE STABILIZES HURRICANE-DAMAGED PROPERTY

This vacation home's steep slope in Maggie Valley, North Carolina, was in severe danger of collapsing after Hurricane Helene. The hurricane devastated the region in September 2024, damaging properties and destroying infrastructure with widespread flooding and erosion. Surging stormwater from a nearby stream caused major erosion, compromising the structure's foundation, entrenched on the hillside.

After extensive on-site analyses, experts at Engineered Retaining Walls chose MagnumStone's retaining wall system for slope stabilization and reinforcement. The blocks' precast strength and versatility delivered a durable tiered wall, contoured to the residential property's naturally vertical, curved terrain.

With outstanding support from local MagnumStone producer, [Valley Precast](#) based in Waynesville, NC, the retaining wall was crucial to this complex geotechnical rescue. It totals over 4,500 sq. ft. (420 sq. m.), reaching 240 ft. (73 m.) wide and a maximum height of 22 ft. (6.7 m.). The geogrid wall design successfully stabilized the property and created more usable space above the wall.

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## ■ CHALLENGES & SOLUTIONS: PRECAST BLOCKS FORTIFY HOME'S FOUNDATION

This project presented several urgent and complex challenges, including rapid slope failure directly beneath the home's foundation, compromising its safety. The swift response, strategic planning, and MagnumStone's reinforced retaining wall contributed to fortifying the quickly eroding mountainside property.

Critical challenges of this retaining wall project included:

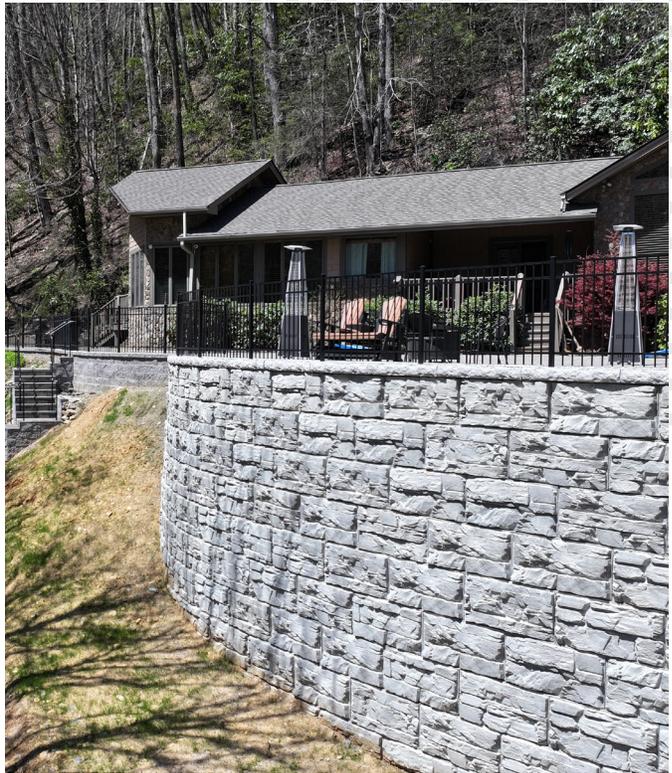
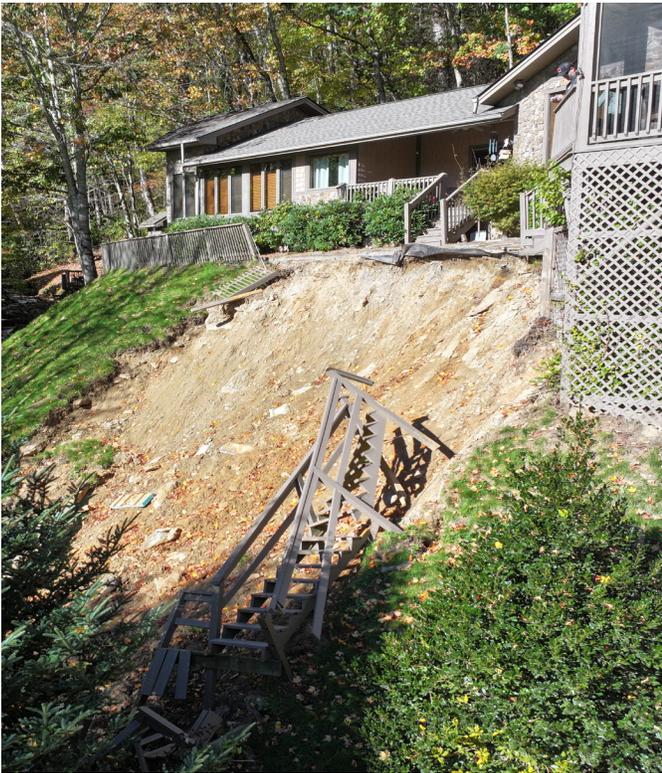
- Hurricane floodwaters caused severe erosion, putting property at risk
- Securing structure before and during retaining wall construction
- Steep, unstable slope complicated access and equipment logistics
- Executing a highly controlled excavation to mitigate risk of slope collapse
- Urgent construction timeline and material sourcing and logistics coordination

To deal with unstable soil conditions, steep terrain and limited construction access, a large weight distribution pad was built. This elevated the wall's foundation and created a platform for heavy equipment to construct the MagnumStone retaining wall.

The precast blocks were installed entirely from in front of the wall, using a long-reach excavator to overcome access limitations. The retaining wall allowed the homeowner to develop and transform the steep overgrown hillside into a hardscaped outdoor living space.

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## ■ WALL DESIGN: REINFORCED RETAINING WALL AVERTS IMMINENT SLOPE COLLAPSE

The fast erosion of this immense slope prompted immediate action and required quick, durable solutions. Art Miller ([Engineered Retaining Walls](#)) and Dennis Huckaba ([UES](#)) promptly formulated a strategic stabilization plan with in-depth site assessments.

They chose MagnumStone's hollow core block system because of its superior drainage and success with previous challenging retaining wall projects. MagnumStone's integrated drainage channels help mitigate hydrostatic pressures from accumulating behind the wall. This was a critical wall design consideration due to the region's persistent heavy rainfalls and the site's groundwater infiltration.

Facing a potential landslide, the teams worked proactively and adapted to real-time conditions throughout the wall installation. The project manager, Carlos Morales, shared daily visual updates with engineers at UES, who also performed weekly site monitoring visits. This meticulous documentation ensured strict adherence to engineering specifications, as construction was forced to begin before final plans were finalized.

The [geogrid wall design](#) was built on a large weight distribution pad composed of Class B riprap. This raised the retaining wall's foundation, to provide stability and allow sufficient geogrid reinforcement. It also created an accessible area for equipment to install the retaining wall blocks from, in front of the wall.

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## ■ INSTALLATION: SLOPE FAILURE PREVENTED BY FAST MAGNUMSTONE INSTALL

Experts at Engineered Retaining Walls wasted no time on this project, beginning construction just one week after the initial consultation. The new weight distribution pad served as a stable platform for the long-reach excavator to install a MagnumStone wall. The [hollow core blocks](#) reduced weight and were easier to lift and position, reaching heights of 22 ft. (6.7 m.). This was a major advantage while working on a dangerous, exposed slope.

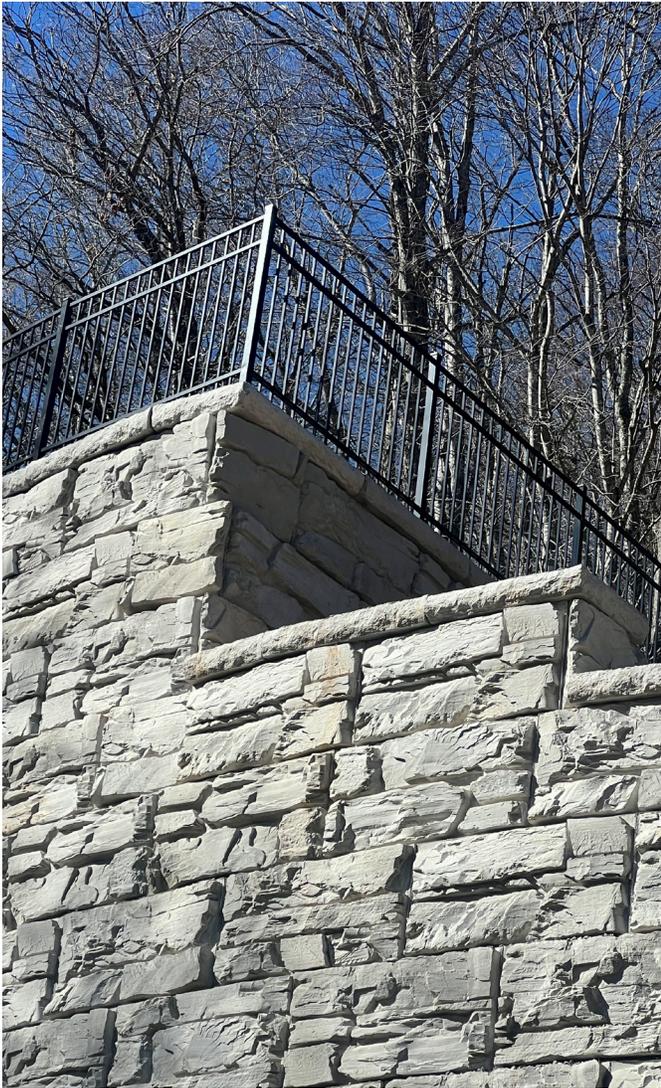
Each standard MagnumStone unit covers 8 sq. ft. (0.74 sq. m.) of block facing, which expedited construction. This quickly stabilized the site and protected the home from further damage. It also minimizing block quantities and their associated truckloads. SecureLugs along the base of the blocks interlocked into the courses below to ensure consistent alignment and setback.

Rock veins throughout the excavation area were another complication, which required precision jackhammering to remove. Crush drainage gravel was then installed and compacted within the blocks' hollow cores to regain mass and promote drainage efficiency. The MagnumStone geogrid wall fortified the hillside with precise placement and even load distribution.

Remarkable designs, construction and streamlined block deliveries transformed this eroding hillside into a tall, stunning MagnumStone-reinforced wall and paver patio.

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## ■ AESTHETICS: MAGNUMSTONE BLOCKS NATURALLY ENHANCE LANDSCAPE DESIGN

While safety and performance were paramount to this project, it helped that the blocks integrated well with the property's landscape. MagnumStone's rugged, [natural stone appearance](#) suited the mountainous backdrop of Maggie Valley. The blocks blend into the forested terrain and add to the home's rustic aesthetic.

The new paver patio, framed by a safety fence along the top, beautifully complemented the tall MagnumStone retaining wall. This notable enhancement to the property converted the steep hillside into a functional, inviting outdoor space.

To accommodate a pathway connection along the house, a small segmental retaining wall was added where site access was limited. The project delivered reinforced stability and a natural stone appearance, enhancing the property's value with long-term structural reassurance.

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## ■ PROJECT SUMMARY: URGENTLY BUILT WALL REINFORCES POST-HURRICANE EROSION

Following the aftermath of Hurricane Helene in Maggie Valley, NC, this hillside home's foundation was critically endangered by severe erosion. Local professionals, Engineered Retaining Walls and UES, urgently responded, selecting a trusted precast retaining wall system to fortify the slope. MagnumStone's high-strength durability, drainage capabilities, and adaptability was deemed the best long-term solution for the site's steep, unstable conditions.

The terraced geogrid retaining wall design spans 4,500 sq. ft. (420 sq. m.) and reaches 22 ft. (6.7 m.) high. Its [fast-tracked installation](#) required a long-reach excavator to build from in front of the wall due to accessibility challenges. The key advantages that MagnumStone's hollow core blocks provided this project include:

- Streamlined installation efficiency
- Enhanced drainage and design versatility
- Slope reinforcement for future stormwater conditions

With excellent support local MagnumStone block producer, Valley Precast, the retaining wall restored slope stability and now protects the property. Additionally, the wall created valuable outdoor living space with a scenic paver patio overlooking the home's beautiful surrounding landscape.

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This case study demonstrates MagnumStone's proven slope stabilization and swift installation capabilities necessary for emergency response applications. The system's precast blocks can overcome any challenging terrain with reinforced gravity, geogrid, cantilever and soil nailing wall design solutions.

Save time and expedite planning your upcoming retaining wall projects with [MagnumStone's Retaining Wall Design & Analysis Software](#). Gain more insight on versatile design features, block specifications and pricing details - [find your nearest MagnumStone supplier here](#).

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This project was successfully completed thanks to [Valley Precast](#) (MagnumStone Producer), [Engineered Retaining Walls](#) (Contractor) and [UES](#) (Engineer).

**CONTACT OUR TEAM TODAY**

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