



## Strong Performance of Nashville Music Facility's Gravity Walls

A new music production campus in Nashville, TN, used MagnumStone's reinforced gravity walls to maximize land use. The two walls total over 21,000 sq. ft. (1,950 sq. m.), with the tallest wall reaches 20 ft. (6.1 m.) and 1,000 ft. (305 m.) long.

Designed to handle stormwater management and erosion control, the walls have gravity extender reinforcement to build taller walls closer to property lines and reduce excavation.

The precast blocks' hollow core design and versatility enhance the retaining walls' drainage and durability. The blocks, produced by [Lee Building Products](#), enabled quick and cost-effective construction, and optimized usable space for infrastructure. MagnumStone's strong retaining walls are key to this state-of-the-art commercial development's success.

<b>Total Block Installed</b>	21,400 sq. ft. (1,988 sq. m.)
<b>Maximum Height</b>	20 ft. (6.1 m.)
<b>MagnumStone Manufacturer</b>	<a href="#">Lee Building Products</a>
<b>Contractor</b>	<a href="#">JP Yard</a>
<b>Engineer</b>	<a href="#">Jacob Ervin, Blue Rock Engineering &amp; Testing</a>



## STRONG PERFORMANCE OF NASHVILLE MUSIC FACILITY'S GRAVITY WALLS

Nashville, Tennessee, USA



### PROJECT OVERVIEW: GRAVITY WALLS PROTECT DEVELOPMENT SPACE

A new state-of-the-art music production facility based in Nashville, TN, chose MagnumStone's reinforced gravity wall system to maximize land use. The 55-acre development is home to a full-sized stadium production rehearsal facility, amphitheatre, recording studios and more.

Key details about this commercial project's two MagnumStone retaining walls:

- Two MagnumStone gravity retaining walls total over 21,000 sq. ft. (1,950 sq. m.)
- Largest wall stretches 1,000 ft. (305 m.) in length and a maximum height of 20 ft. (6.1 m) with embedment, covering nearly 15,000 sq. ft. (1,400 sq. m.) of facing.
- The walls are vital to the development's stormwater management and erosion protection.
- Blocks' natural stone look adds to facility's modern architecture and landscape design.

Each wall maximized valuable property space to facilitate construction of the development's buildings, infrastructure and parking areas. MagnumStone's precast modular block system and gravity extender reinforcement delivered secure, compact retaining wall designs with quick, cost-efficient installation. Blocks for this project were manufactured and supplied by local MagnumStone manufacturer [Lee Building Products](#).



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## ■ CHALLENGES & SOLUTION: MAGNUMSTONE SECURELY MAXIMIZES USABLE LAND

This major development required comprehensive, reinforced retaining wall designs for vast lengths, tall heights, corner features, and stormwater management considerations. The retaining walls' primary purpose is to protect and extend buildable space for the sprawling campus buildings and infrastructure.

MagnumStone's [reinforced gravity wall system](#), with interlocking gravity extender units, were critical to extending the property's construction area. The system's gravity extender units reduce retaining wall excavation depths compared to traditional

geogrid reinforced retaining wall designs. The extenders created more usable land and minimized excavation of tough bedrock to keep the project on schedule.

The precast system's hollow core blocks enhance drainage capabilities to bolster durability of the retaining walls. These MagnumStone walls deliver erosion protection for nearby wetlands and convey runoff from neighboring properties. The strength and versatility of MagnumStone's precast modular blocks were a cost-friendly solution to maximize the project's development space.

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## ■ ENGINEERING: TALL WALLS & STORMWATER MANAGEMENT DESIGNS

MagnumStone's engineered retaining walls fortified critical design considerations to improve space efficiency and long-lasting stormwater protection. The gravity system offered advanced wall design flexibility and reinforcement capable of withstanding [Nashville's increasingly common 100-year storms](#). Each retaining wall expedites water conveyance and protects the property in different ways.

A large swale is installed above the largest wall to reduce the velocity of stormwater runoff from adjacent properties. This engineered channel safely manages waterflows and promotes retaining wall drainage to [mitigate erosion and flooding](#). MagnumStone's gravel-filled hollow core blocks offer exceptional drainage solutions to safely redirect and streamline water removal from behind the wall.

The second wall, on the property's southern boundary, borders wetlands that extend from

Ewing Creek. For this wall design, MagnumStone's weather-resistant blocks protect against rainfall events that raise the creek's water levels. Serving as a [detention pond application](#), the precast concrete blocks' low absorption prevents scour and erosion during storm surges. This MagnumStone wall preserves the land's commercial infrastructure by withstanding temporary stormwater levels that slowly evaporate or move downstream.

The project's wall designer, Blue Rock Engineering & Testing, delivered secure, long-standing solutions to make the most of this land investment. The walls are reinforced with MagnumStone gravity extenders to achieve a base-to-height ratio as low as 40%. Comparatively, a geogrid reinforced retaining wall design requires further excavation depths, typically with a 60% base-to-height ratio. This created more usable space to build the campus' state-of-the-art facilities.



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## ■ INSTALLATION: QUICK, COST-EFFICIENT GRAVITY WALL CONSTRUCTION

The [ease of installation](#) for MagnumStone retaining walls provides major cost savings for robust commercial development projects. Blocks are lifted and placed using construction equipment to reduce labor, streamline installation and decrease the likelihood of project delays. The installation team from [JP Yard](#) expertly built both retaining walls, following the wall designs to account for essential details.

MagnumStone's retaining wall system was selected to:

- Greatly reduce excavation with gravity extender reinforcement, to expedite construction.
- Only need 8 ft. (2.44 m.) excavation depth for tall 20 ft. (6.1 m.) gravity retaining wall.
- Build closer to property lines and increase development's infrastructure capacity.
- Save space by installing fence directly into the hollow core blocks atop one of the walls.

Cut and fill installation techniques were used to extend level, functional space above and below the retaining walls. The taller wall is cut into a steep slope, to maximize buildable land below the wall. The second is a fill wall with a [fence built into the top blocks](#), increasing usable land above the wall. Together, these two retaining walls expand the campus' development potential to deliver a larger, reinforced construction zone.



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### ■ BLOCK AESTHETICS: VERSATILE RETAINING WALL FINISHING DETAILS

The various block size offerings and natural stone appearance of the two MagnumStone retaining walls are valuable to this project. In addition to the system's standard block units, the wall is finished with half-high top blocks and half-wide top blocks. [MagnumStone's extensive block selection](#) makes wall designs and built-in fence posts simpler to plan and install.

For this project, half-high blocks create a gradual step-down effect to blend with the site's natural elevation changes. These top of wall details offer diverse landscaping options for developers and landowners. Half-wide blocks and corner units give the walls a smooth finish at each end, with clean, balanced aesthetics.



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## PROJECT SUMMARY

This premier music production campus in Nashville, TN, selected MagnumStone's reinforced gravity wall system to maximize land for its latest development. Two retaining walls support essential infrastructure, achieving critical engineered design elements for the modern music facility.

To overcome tough bedrock below the surface, MagnumStone's gravity extender system minimized excavation depth, allowing for faster, cost-effective installations. The hollow core blocks enhance drainage and erosion control, playing a critical role

in stormwater management. A swale above the tallest wall regulates runoff, while the second wall protects wetlands along a local creek to prevent potential erosion along the property.

MagnumStone's efficient reinforced gravity walls streamlined installation and expanded usable land for parking, roadways, and large structures. By combining durability, space optimization, and a natural stone aesthetic, MagnumStone retaining walls were essential to the development's successful construction.

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MagnumStone's comprehensive [Retaining Wall Design & Analysis Software](#) helps engineers, architects and wall designers save time and expedite plans. From reinforced gravity walls, to streambanks and erosion protection, MagnumStone's proven retaining wall system has you covered.

For more details on MagnumStone's block pricing, installations, designs and solutions, [contact your nearest MagnumStone experts](#).

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This project was successfully completed thanks to [Lee Building Products](#) (MagnumStone Producer), [JP Yard](#) (Installer), Jacob Ervin, Blue Rock Engineering & Testing (Wall Designer), Nashville 360 (Drone Photography).

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Email: [info@magnumstone.com](mailto:info@magnumstone.com)



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