

# Lancaster Multi-Purpose Stadium

Lancaster, PA

Vibro Stone Columns

**Due to the potential for significant settlement underneath the stadium, DGI-Menard applied Vibro Stone Columns as a ground improvement technique.**



DGI-Menard installed over 1,100 Vibro Stone Columns up to depths of 25 feet.

**Client / Owner:** Redevelopment Authority of the County of Lancaster  
**General Contractor:** Warful Construction Company  
**Owner's Foundation Engineer:** Tetra Tech, Inc./HRG, Inc.  
**Ground Improvement Contractor:** DGI-Menard

## Project Overview

This project involved the construction of a multi-purpose sports stadium. The stadium was constructed on a portion of a 15 acre site; 11 acres considered part of a brownfield. The total investment in the stadium was more than \$20 million.

## Ground Conditions

The site selected for the new stadium was over layers of soft compressible fill and soil. The soil was variable in terms of strength and overall engineering properties. Before construction, ground improvement was specified to improve the bearing capacity of the soil.

Specifications for the project required a minimum total allowable bearing pressure of 3,000 psf underneath continuous strip and spread column footings. In addition, total settlement was to remain under 1 inch with differential settlement to remain under 1/2 inch.

## Ground Improvement Solution

DGI-Menard developed a ground improvement solution utilizing dry bottom-feed Vibro Stone Columns to minimize settlement and to enhance global stability for the retaining walls. DGI-Menard installed over 1,100 Vibro Stone Columns up to depths of 25 feet.

An unforeseen project challenge was the presence of a ballast layer consisting of shot rock up to 16 inches in diameter. Typically, this type of condition would slow or halt the installation of Vibro Stone Columns.

DGI-Menard was able to quickly mobilize the necessary drilling equipment, allowing penetration of the ballast layer.



**DGI-MENARD, Inc.**  
Ground Improvement Specialists  
Sustainable Technology

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