



Bridge Commerce Center West

Miami Gardens, FLA

UNITED STATES



Owner
Bridge Commerce Center West

Engineer
DDA Engineers, P.A.

General contractor
Hernandez Group

Dates of work
December 2021 - October 2022

Main figures

Controlled Modulus Columns
27,406 EA.



Description

The Bridge Commerce Center West is designed as a modern, new logistics facility with prime distribution location. The development highlighted South Florida's demand for warehouse space. Several industries in the region continue to experience uninterrupted growth and continue to require Class-A industrial space. The two-building development was proposed for Bridge Commerce Center West Warehouse with each building having an area of 794,230 sq. ft for a total development area of 1,588,460 sq. ft. In addition, a pump station located between the two buildings was included in the scope of work. Prior to initiating Menard's scope of work, dynamic compaction was performed on the entire site. In addition to ground improvement of the two buildings and pump station, Menard's scope of work included an area load test of 20 ft x 20 ft with two different spacings. The strain gauges, borehole extensometers and settlement plates were installed to monitor settlement. The test program was monitored for three months.

Due to the nature of the soils at the site, which included debris, wood, glass, fabric and other debris, Menard Group USA's proposal to provide ground improvement was accepted and a contract was provided to install Controlled Modulus Column (CMC)[®] rigid inclusions.



Ground conditions

The project site was a former landfill characterized by 15-20 ft of loose landfill material overlying medium dense sands. Initially, a lake existed in the northeast corner of one building. Prior to ground improvement work, the lake was drained and backfilled with stone.

Solution

While dynamic compaction was performed by another sub-contractor, Menard USA installed CMCs. With a dynamic compaction and CMC program completed, the design predicted a reduction of settlement to 1 to 2 ins over 25 years. The use of CMCs enabled Menard to bypass obstructions within the fill, while creating minimal spoils and minimizing the need for disposal. Due to dynamic compaction, some areas were compacted to a high level, requiring pre-drilling before CMC installation. This was particularly required in the lake, which was backfilled with stone approximately 13 ft to 15 ft below the working platform. The CMCs in the lake area were drilled to refusal.

Menard installed 27,406 CMCs, totaling 860,555 LF, to a maximum depth of 56 ft and minimum depth of 12 ft. Menard designed a layout of CMCs at each shallow footing with a minimum design soil bearing pressure of 4,000 psi and ground floor load of 750 psf slab – supporting the truck apron and pump station. The slab on grade was designed for uniform loading of 450 psf. The design provided for 1-1/2 in or less of post-construction settlement with a differential settlement of less than a 3/4 in, meeting the performance criteria of the building.