



## UNITED STATES

## 5903 West Side Avenue North Bergen, NJ



### Owner

Bergen Logistics

### Engineer

SESI Consulting Engineers

### General contractor

RC Andersen, LLC

### Dates of work

July 2019 September 2019

## Main figures

Controlled Modulus Columns

1,580 EA.



## Description

Bergen Logistics is a rapidly growing, global-leading order fulfillment provider, primarily focused in the fashion and lifestyle sectors. Being on the forefront in technology and automation, Bergen Logistics provides order fulfillment, retail distribution, warehousing and pick and pack services in fashion, footwear, handbags, accessories, cosmetics, home goods, medical devices and supplements. The global company includes six North American logistics facilities.

In an effort to expand operations in Bergen, NJ -- beyond a 730,000 sq ft warehouse -- Bergen Logistics proposed the construction of a single-story, 130,000 sq-ft industrial warehouse at 5903 West Side Avenue.

Due to the compressible nature of the soils at the site, Menard USA was contracted to provide ground improvement – the selected technique was Controlled Modulus Column (CMC)® rigid inclusions.

## Ground conditions

The soil consists of medium dense to dense urban fill over soft, slightly organic fat clay. This is followed by a medium stiff clay layer. Beneath the clay layers is the medium-dense sand bearing layer.

## Solution

Other types of ground improvement such as concrete column rigid inclusions, as well as traditional deep foundations, were not feasible for this project due to prohibitive costs. Menard provided an economical and time-saving solution with CMCs. Menard's solution included 1,580 elements installed to an average depth of 78 ft and a maximum depth of 89 ft.

The slab loads were designed with an allowable bearing pressure of 800 psf. Building column loads ranged from 73 to 256 kips, while bearing capacity up to 4 ksf was required for spread footings. The design provided for 2 in of post-construction settlement, with less than 3/4-in of differential settlement, meeting the performance criteria of the new warehouse.

The depths of the soft soils at the site posed a challenge that Menard was able to meet – the CMC solution for the 130,000 sq-ft warehouse in Bergen successfully met the client's requirements for quality, safety and schedule.

