APEX CENTER OF NEW ENGLAND
PRESSURE RELIEF WALL
MARLBOROUGH, MASSACHUSETTS

RETAINING WALLS & SOIL REINFORCEMENT
Product: Welded Wire L Panels, ParaGrid, MacTex

Apex Center is a mixed-use development that will become the premier retail, entertainment, and hospitality destination in Boston's Metro West region. The development will consist of 11 new buildings, one of which will include an indoor children's swim center called Goldfish Swim School. Maccaferri helped value engineer a solution for a pressure relief retaining wall that would save the developer time and money.

Problem
Geosciences Testing & Research (GTR) Inc. contacted Maccaferri to value engineer a 30ft high foundation wall for the inside of a building that required significant site grading. The original design included a cantilevered retaining wall, 30" thick with a 3.5' thick, 26' wide footing. The entire project was bearing on top of a glacial till, consisting of brown to gray to tan, well-graded, fine to medium sand with some silt (> 20%) and gravel. The fine-grained composition of the glacial overburden rendered the soils poor for drainage, moisture sensitive, and frost susceptible. The goal of the value engineering was to reduce the size of the concrete retaining wall and ultimately reduce project cost.

Client:
RA VENTURES

Main Contractor:
REPUBLIC BUILDING CONTRACTORS, INC.

Designer:
GEOSCIENCES TESTING & RESEARCH, INC.

Products used:
WELDED WIRE L PANELS, PARAGRID, MACTEX

Date of Construction:
JANUARY 2017 - APRIL 2017
Solution
As in most value engineered projects, time and cost were key factors in the development of the alternative solution. The project was already under construction. A pressure relief wall was designed by GTR Inc. in collaboration with the Maccaferri’s technical department. Pressure relief walls are used to support soil and building loads below grade for new construction and rehabilitation projects. The goal was to eliminate lateral earth pressure on the below grade wall in order to design in for compression loads only. This drastically reduced the concrete reinforcement and overall retaining wall size while providing a structurally equivalent retaining wall.

The solution utilized a combination of Maccaferri products including Welded Wire L Panels, uniaxial geogrid ParaGrid and woven geotextile MacTex® W1.