Subsurface Constructors

Ground Improvement

Midwestern YMCA Structures



When the soils were just too soft to support the footings for a new YMCA in downtown Springfield, Illinois, Subsurface Constructors helped develop a solution to provide higher bearing pressure using aggregate piers. This

seemed to be a common theme, as Subsurface has now completed aggregate pier work for YMCA structures in Des Moines and Davenport, Iowa, Mexico, Missouri and a medical office building adjacent to the YMCA in downtown Indianapolis.

At the Springfield site, Subsurface designed and installed approximately 830 aggregate piers / stone columns to provide post-treatment bearing pressures ranging from 2,500 psf to 5,250 psf in order to support the foundations, floor slabs and swimming pools. The site generally consisted of existing fill materials atop natural silt and silty clay, grading to sandy shale to the maximum depth explored of 39 feet. The existing fill is generally composed of silty clay with various inclusions of concrete, organics, brick and cinders. The fill extends to depths of 4 to 8 feet below the ground surface and N-values from standard penetration tests (SPT) performed in the existing fill varied between 1 and 14 blows per foot (bpf).

Project details:

Owner: Springfield, Illinois YMCA
Geotechnical Engineer: Intertek – PSI
General Contractor: O'Shea Builders
Structural Engineer: Hanson
Services Provided: Ground Improvement, stone columns
Year: 2019
Location: Springfield, Illinois