

# Subsurface Constructors

Ground Improvement

## Glenmore Distillery



# Subsurface Constructors

## Rigid Inclusions Installed to Support Large Tank at Kentucky Distillery

Subsurface Constructors recently completed the design and installation of approximately 160 [rigid inclusions/grouted columns](#) for a 1.6 MG wastewater tank located at the Glenmore Distillery in Owensboro, KY. The rigid inclusions for the 97.5-foot diameter tank were designed to support a maximum uniformly distributed load of 2,500 psf beneath the ring footing and concrete tank slab. The soil profile for the site consisted of fill underlain by silt, sand, and silty clay, with layers of very soft to soft silt. A load transfer platform (LTP) was installed after the installation of the rigid inclusions, consisting of graded crushed stone and geogrid reinforcement.

Rigid inclusions are stiff grouted columns that are used to reinforce the soil, which increases bearing capacity and reduces settlement. Rigid inclusions are considered [ground improvement](#) because they are not structurally connected to the foundation that they support. The LTP installed between the rigid inclusions and structure distributes the load to the soil and columns, and helps prevent too much point stress on the footing.

### Project details:

**Year:** 2022

**Location:** Owensboro, Kentucky