X1®

Refrigerated Distribution Center for U.S. Cold Storage

Covington, Tennessee

The Geopier X1™ system was ideal for rapid installation of deep Rammed Aggregate Pier® (RAP) elements and provided superior subgrade improvement at a great value.

Description: A 460,000 square foot freezer warehouse facility with floor slab pressures from 150 psf to 1,070 psf was planned, to be built atop approximately 4 to 7 feet of grade-raise fill across the building pad. .

Subsurface Conditions: Soil conditions consisted of up to 8 feet of soft to very stiff lean clay, underlain by 20-25 feet of soft to stiff silt and sandy silt. Medium dense to dense silty sand was encountered below the silt. Groundwater was discovered at a depth of approximately 12 feet.

Geopier Solution: The geotechnical engineer, Geotechnology, Inc., recommended a Geopier Rammed Aggregate Pier™ system as a foundation and floor slab support option. The project consisted of two phases: Phase 1 included nearly 5,000 RAP elements for fill and floor slab support, and Phase 2 included an additional 600 elements for foundation support. The RAP elements ranged in depth from 27 to 30 feet to penetrate the soft silt and clay and tag the medium dense silty sand. Daily production rates ranged from 100-200 elements, or 4,000-5,000 feet of Geopier support installed each day. Post-construction settlement monitoring revealed less than 1 inch of settlement and validated Primus' decision to use Geopier ground improvement instead of a more costly and time-consuming deep foundation and structural slab support system.

PROJECT TEAM

Owner:
U.S. Cold Storage

Geotechnical Engineer:
Geotechnology, Inc.

Structural Engineer:
Primus Builders, Inc.

General Contractor:
Primus Builders, Inc.

Geopier Installer:
Peterson Contractors, Inc.

Geopier Designer:
Geopier Foundation Company

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