



Heartland Coop Bin Expansion

Dallas Center, Iowa

Geopier Rammed Aggregate Pier® elements provided a safe and cost-effective solution, saving the owner time and money. Shoring was not required adjacent to the existing structures.

Description: Construction consisted of three grain bins with diameters of 78 feet and 84 feet eave heights for an existing facility in Dallas Center, IA. All the bins were set on ring foundations with above grade tunnels.

Subsurface Conditions: Soil conditions consisted of up to 6 feet of lean clay fill underlain by 7 to 14 feet of medium stiff to very stiff lean to fat clay overlying stiff glacial till.

Geopier Solution: Rammed Aggregate Pier® (RAP) elements were recommended by the geotechnical engineer to improve bearing conditions and reduce total and differential settlement. The Geopier GP3® system was used to install 24-inch diameter elements to provide an allowable bearing capacity of 4,700 psf.

A total of 905 RAP elements were installed in two phases to a depth of about 13 feet to support the three grain bins. Construction of these Geopier elements took place over 13 days. The designed total allowable settlement was 4 inches and allowable differential settlement was 1.5 inches. A modulus test was performed to confirm the RAP soil reinforcement design.



"The entire staff was very professional, timely and delivered a great product. Our settlements have always been uniform and within the tolerances stated in the contracts. We have done over 20 bins with Geopiers and always consider using them on all our future jobs."

- Alex Roorda, Construction Manager, Heartland Coop

PROJECT TEAM

Owner:

Heartland Coop

Geotechnical Engineer:

Allender Butzke Engineers

Millwright:

Mid States Millwright

Concrete Company:

Midwest Mechanical and Industrial Services

Geopier Installer:

Peterson Contractors, Inc.

Geopier Designer:

Ground Improvement Engineering