



ADM Soybean Oil Storage Tanks

Quincy, Illinois

The Impact® system eliminated the piles and created a stiffened crust in the upper 20 feet that controlled total and differential settlement to within project tolerances.

Description: Project included the construction of four new soybean oil storage tanks built at grade on the Mississippi River flood plain. Each tank had a diameter of 95 feet by 40 feet tall and was spaced 20 feet apart. The foundation consisted of a concrete ringwall installed to support the exterior tank wall. Compacted granular material was placed within the interior of the ringwall to support the flexible tank bottom.

Subsurface Conditions: Soil conditions consisted of approximately five feet of undocumented fill consisting of silty clay with sand and trace gravel. The fill was underlain by 10 to 25 feet of soft silty clay underlain by dense sand.

Geopier Solution: The Impact® System was recommended by the geotechnical engineer to limit total and differential settlements to an anticipated total settlement of five inches and a differential of one and one-half inches. Unreinforced settlements were in the 14 to 16 range. A total of 1,202 Rammed Aggregate Pier® elements, with a 20-inch diameter and a depth range of 14 to 32 feet below existing grade were installed to support the tanks.



PROJECT TEAM

Owner:

Archer Daniels Midland Company

Geotechnical Engineer:

Geotechnics

Structural Engineer:

ADM Design Services

General Contractor:

ADM

Geopier Installer:

Foundation Service Corp.

Geopier Designer:

GFC-St. Louis