

Horseshoe Casino Parking Deck Council Bluffs, Iowa

Geopier® Rammed Aggregate Piers™

Project Team

Geotechnical Engineer: Terracon

Structural Engineer: Desman Associates

Owner: Hnedak Bobo Group

General Contractor: C. Rallo Contracting

Geopier Installer: Peterson Contractors, Inc.

Geopier Designer: GFC — Midwest

Success on a previous project led the design team to consider a Geopier® RAP solution - saving both time and money compared to foundation supported by augercast piles or driven steel H-piles.

Project Overview

Description:

Construction of a 120,000 square foot, five-level parking deck next to the existing Harrah's Casino. Column loads ranged from 200 kips up to 1800 kips and the wall loads were between 21.4 klf and 34.8 klf.

Subsurface Conditions:

Up to 9 feet of fill and native clay underlain by loose to medium dense sand.

Geopier Solution:

With column loads of 1800 kips, initial consideration was given to deep foundations consisting of either augercast piles or driven steel H-piles. Based on previous project performance, the contractor pushed to use a Geopier RAP solution being that he was familiar with the cost/construction RAPS benefits observed during the casino addition. Subsequently, a Geopier RAP solution was accepted by the design team to control total and differential settlement to 1 1/2" and 1/2", respectively. A total of 710 RAPs were installed in 20 days working with



2 crews. Pier lengths ranged from 10 to 14 feet. Due to loose caving soils near the bottom of the pier, the normal RAP installation process required modification in the field in order to construct suitable reinforcing elements. The modification consisted of using larger diameter, open-graded aggregate in the bottom of the shaft to stabilize the loose, saturated native sands. The result of a modulus test showed 0.5" of deflection at a maximum design stress of 16,700 psf.

FOR MORE INFORMATION
Contact Geopier Foundation Company at 800-371-7470
or at www.geopier.com



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The Intermediate Foundation System