GeoTech Foundation Company - West®
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PROJECT DESCRIPTION

PROJECT: Oak Valley Development Box Culvert

LOCATION: Beaumont, California

DESIGN TEAM:

Architect:	The Keith Companies: Moreno Valley, CA
Structural Engineer:	ConSpan : Sacramento, CA
Geotechnical Engineer:	Pacific Soils: Corona, CA
Civil Engineer:	The Keith Companies : Moreno Valley, CA

CONTRACTOR: SunCal Companies: Irvine, CA

DESCRIPTION:

- 12'x 28'x 200' Pre-cast culvert structure with up to 20' of placed fill
- 5' to 30' of silty fine-grained soils overlying formational material
- Spans supported on 6' wide strip spread footings sized for 7500 psf

The Geotechnical Engineer identified up to 30' of alluvial soils overlying formational material at the site. The alluvium was identified to have both moderate compressibility and collapsibility characteristics. Initial recommendations specified 24" diameter drilled piers with depths of up to 50'. The project Geotechnical Engineer recommended the Geopier® System to the contractor as a cost saving alternative.

The Geopier design allowed the project structural engineer to use a composite bearing pressure of 7500 psf for proportioning conventional spread footings. Design pier loads were 110 kips each.

A total of 186, 30" diameter Rammed Aggregate Pier® (RAP) elements were installed. All piers terminated on bedrock and had shaft lengths of up to about 30'. The flexibility of the Geopier system afforded the ability to span areas of shallow alluvium to deep alluvium without sacrificing differential settlement control. This also offered the potential of time and cost savings to the contractor when compared with drilled piers with a specified penetration into formational material. Ultimately the Geopier system saved 30% on this project over concrete drilled piers.

The RAP's were installed in only 8 working days on-site.

REFERENCES:

Phil Creamer, P.E.
ConSpan Bridge Systems
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