GeoTech Foundation Company - West®
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PROJECT DESCRIPTION

PROJECT: Box Culvert Apron -- Segunda Deschecha Grading, Storm Drain and Stream Stabilization Project

LOCATION: San Clemente, California

DESIGN TEAM:
Geotechnical Engineer: Stoney-Miller Consultants, Inc. : Irvine, CA
Program Manager: Stoney-Miller Consultants, Inc. : Irvine, CA
Structural Engineer: RBF Consulting : Irvine, CA

CONTRACTOR: Sukut Construction : Santa Ana, CA

DESCRIPTION:

- Reinforced concrete apron at the inlet to a new 14’ x 14’ box culvert
- 30’ of new structural fill to be placed around and over the box culvert
- Areal settlement downdrag on the apron was controlled by Geopier reinforcement

The geotechnical investigation revealed a soil profile consisting of about 20’ of soft alluvial soil underlying the planned culvert inlet apron, and groundwater occurring at shallow depth. Geotechnical analyses indicated that placement of the planned 60’ to 80’ of new structural fill over the culvert would cause significant settlement of the apron slab if it were to be constructed on the existing ground. Use of an apron slab on-grade was feasible only if the 20’ of soft soils were (a) reinforced with Geopier elements, or (b) removed and replaced with structural fill.

Geopier soil reinforcement was selected as the most cost effective and expedient solution to supporting the apron slab on-grade.

A total of 48 30" diameter Geopier elements were installed beneath the apron slab. The piers all penetrated the soft alluvial soils and terminated in the hard, Monterey Formation.

The Geopier reinforcement was completed in only 4 working days on-site.

REFERENCES:

Matt Holley, Project Manager
Sukut Construction Co.
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Dwight Haggard
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Jeff Langdon
RBF Consulting

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