PROJECT SPOTLIGHT:
SOLAR ENERGY DEVELOPMENT

Subgrade Stabilization

200 psi	>35	17
Unconfined Compressive Strength requirement exceeded	CBR value achieved during field installation	Miles and 16 acres of weak native soils stabilized

CHALLENGES

- Stabilize 17 miles of access road subgrade to support the extreme energy infrastructure development traffic
- Achieve the specified unconfined compressive strength of 200 psi by utilizing the site's existing weak fine sand soil (classified as A-3).
- Test sections built with up to 8% Portland cement (conventional design) did not achieve the design strength requirements, causing project delays.

SOLUTION

- Stabilized the top 6" of native soil with Midwest's Soil Sement Engineered Formula® polymer.
- Installed a layer of aggregate on top of the stabilized subgrade as a wear course.
- Independent testing was performed on every section to verify that the strength requirements were met.

RESULTS

- **Designed to Withstand Extreme Traffic:** Laboratory testing with the selected mix design achieved over 200 psi in Unconfined Compressive Strength – exceeding the required strength and outperforming cement stabilization.
- **>35 CBR Value Achieved:** Increased the A-3 soils CBR value from 2 to over 35 with Soil Sement Engineered Formula®.
- **Efficient Installation:** Midwest stabilized 17 miles of roads and 16 acres of laydown yards in 21 days – demonstrating the scalability of the stabilization process.
- **Eco-Friendly Alternative:** Midwest utilized its eco-friendly polymer to stabilize native soils, thereby eliminating the carbon emissions typically associated with importing aggregate and using cement stabilization.

PROJECT BACKGROUND

Product: Soil Sement Engineered Formula®
Location: New Mexico
Industry: Renewable Energy
Customer: Solar Energy Company

This large-scale renewable energy development project features solar power generation and battery storage, covering over a thousand acres. Expected to deliver substantial amounts of clean electricity and offset significant carbon emissions, the initiative also brings economic benefits to the region, including new jobs and increased tax revenue. However, the site presented a major challenge: the local sandy soils lacked the strength needed for construction and infrastructure, and initial attempts to stabilize the ground using cement were inconsistent and unreliable, prompting the need for a more effective solution.

LOOKING FORWARD

The success of this project sets a new standard for future renewable energy development projects that encounter challenging soils and difficult strength requirements. As renewable energy development accelerates, Soil Sement Engineered Formula® is positioned as the preferred alternative stabilization solution for projects where conventional cement stabilization falls short.