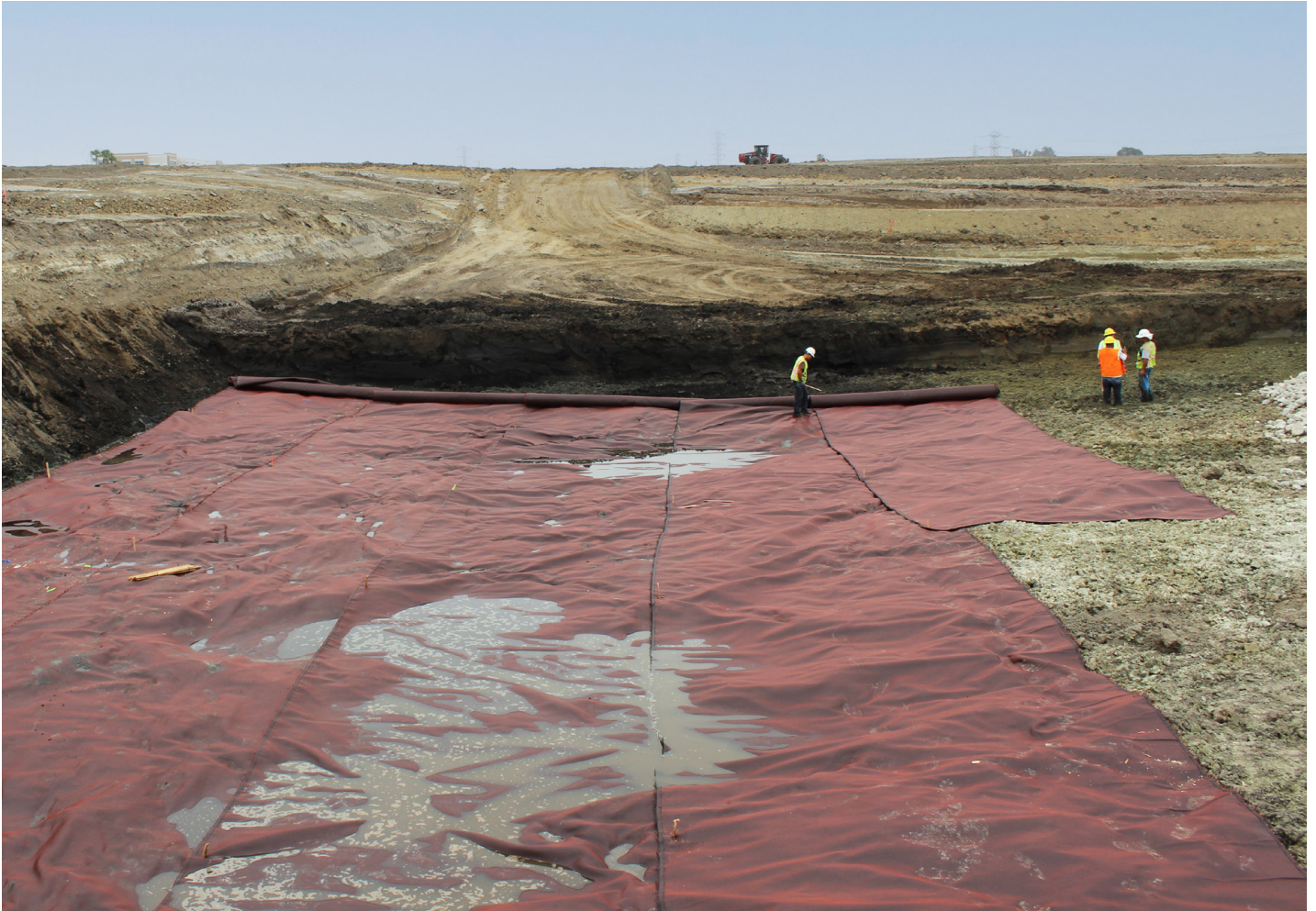


CHINO, CALIFORNIA

Meeting subgrade stabilization challenges with MIRAFL



Industry: Site development
Sub-industry: Roadways and parking lots
Location: Chino, California
Product: MIRAFL® RS380i

Overview

This project involved the construction of four new commercial/industrial buildings, with sizes ranging from approximately 89,100 ft² (8,281 m²) to 789,084 ft² (73,319 m²). These were designed as single-story structures made from tilt-up concrete, and all except for the one located in the southeast section of the site featured truck docking areas. The buildings were surrounded by asphalt and Portland cement concrete pavements.

To reach the intended ground levels for this development, fills of between 2 ft (0.61 m) and 30 ft (9.14 m) were required.

Challenge

In the areas previously utilized as detention ponds, extensive excavation was recommended prior to the introduction of new fill material. Soil assessments at the boring locations showed that the existing soils in the proposed building areas needed to be excavated to a minimum depth of 3 ft (0.91 m) below

Wet soils were anticipated to be encountered at the base of the recommended over-excavation.

CASE STUDY

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the planned foundation elevation, or 4 ft (1.22 m) below the existing ground level, whichever was greater. Very moist or wet soils were anticipated at the base of these over-excavations. SCG provided preliminary recommendations for subgrade stabilization in their soils report. The stabilization process involved laying down a permeable, durable geotextile fabric (**MIRAFI RS380i**) over at least an 18 in (45.72 cm) layer of crushed stone, with particle sizes ranging from 2 to 4 in (5.08 to 10.16 cm).

Solutions

The application of the **MIRAFI RS380i** geotextile fabric greatly enhanced the extremely poor subgrade conditions, allowing for the creation of a stable platform. The **MIRAFI RS380i** geotextile provided:

- Superior tensile strength that supported the subgrade effectively.
- A separation layer that prevented the mixing of poor native soils with the aggregate base.
- Filtration that managed water from the saturated soils efficiently.



- Lateral confinement that maintained the integrity of the stone base.

Furthermore, this geotextile remained intact during the placement and compaction of the angular 2 to 8 in (5.08 to 20.32 cm) crushed concrete. The result was a robust and stabilized platform, suitable for the construction of the four commercial buildings, along with the associated parking lots and loading docks.



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