

GEOTECHNICAL / REINFORCED SOIL WALLS
Product: Terramesh™ System & Geogrids

Problem

A ramp was required to allow access to a crusher for the mine's 40 ton trucks.

The soil, consisting of a decomposed sandstone with a high clay content, hampered the construction of traditional structures.

A vertical retaining wall, which would withstand all forces created by vehicle motion, was required to construct the ramp.

Construction needed to be as quick and efficient as possible so as to minimise the delay in mining activity.

Solution

Galvanised gabions and a Terram geogrid were used to construct a 10m high wall, with a vertical front face. The gabion baskets were lined with MacMat™ and then filled with tailings, with diameters that ranged from 0,4mm to 200mm, from the mine. Finer tailings, with diameters ranging from 0,1mm to 10mm, were used as the backfill material. The backfill was reinforced with Terram geogrid 110/25, a product with superior strain characteristics.

The structure was then capped with geotextile followed by a layer of the in-situ clay soil and finally a 500mm thick reinforced concrete slab.

Benefits

The use of gabions and the geogrid for the ramp allowed for the readily available, abundant tailings to be used as a construction material. This not only reduced the cost of the structure but also assisted in disposing of the tailings.

Gabion construction is labour intensive but does not require specialist contractors or labourers for construction. This property of gabion construction allowed labourers from the mine to under-take all construction.

The flexibility of the geogrid allowed for the quick and easy installation of the product. These combined benefits allowed rapid construction and the project was completed within 2 weeks (with two shifts).

Client name:

DIAMOND WORKS

Main contractor name:

DIAMOND WORKS

Consultant:

DIAMOND WORKS

Product used:

TERRAMESH™ SYSTEM, PARAGRID™

Construction info:

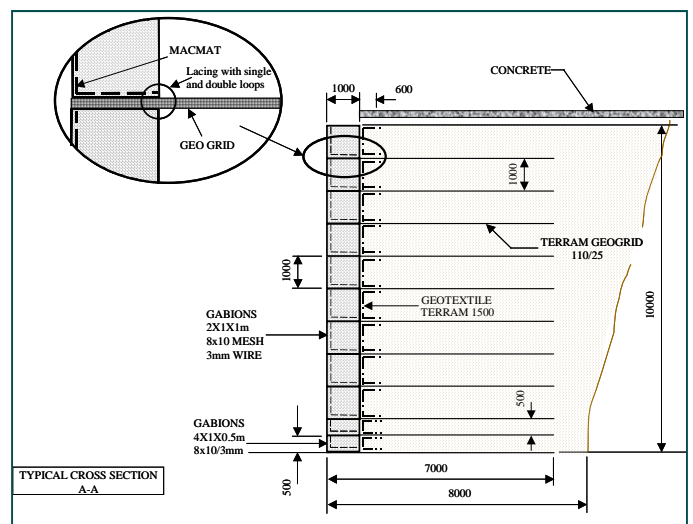
Construction date: MARCH 1999

Completion date: APRIL 1999

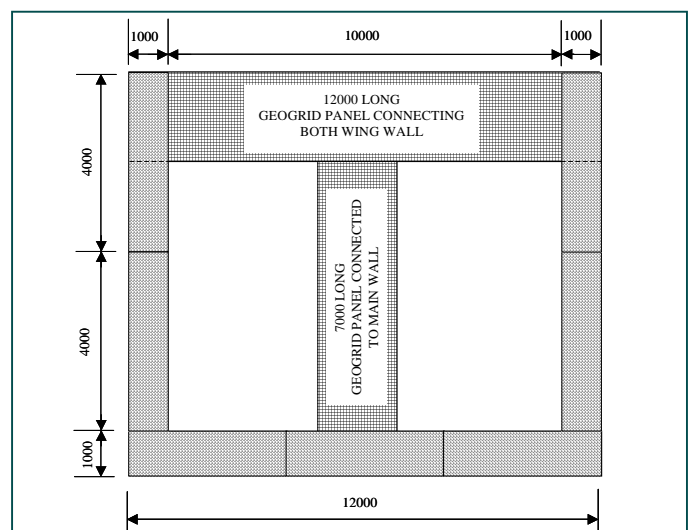


During construction

Date: Apr 1999



Typical Section



Plan

Maccaferri SA (Pty) Ltd

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