



BRIDGES ON FATALA & TIBOLA RIVERS

Guinea, 2001

CHARACTERISTICS OF THE PROJECT

Project: foundations of 2 bridges on Tibola and Fatala rivers by drilling wells up to the rock.. The wells were executed from the top of slopes created in the rivers, in presence of flood tide ranges of over 3.5 m.

Work done:

- *Wells Diameters:* Fatala 18.4 - Tibola: 9 m
- *Wells Deepness:* Fatala 13 m from the top of slope, Tibola 7.6 m
- *Micropiles: 120 mm of diameter:* Fatala 72 - Tibola: 120 piles in 2 ranges 0.6 m spaced.
- *Slope Volume:* Fatala: 6001 m³
- *Tide Height:* - 2 m a +1.5 m slm
- *Water Speed:* average 0.8 m/s, maximum 3 m/s

Materials:

- *Slopes:* Laterite with stoneware gres and syenite (from 0.1 until 0.5 m).



PROFESSIONALS SERVICES

Geotechnical and geological analysis of the site, Design of a constructible solution, Definition of an execution programme. Technical specifications for the non standard productions, Checking computations of the key elements.

In the original design were expected rectangular foundations of 15 x 16 m for Fatala and 6.20 x 9.40 m for Tibola. In this solution the work was done underwater and at 6-10 m of deepness, at the presence of height currents.

The alternative solution suggested by SC, sighting the special nature of the river sides, was to execute circular walls of $R = 10$ m from the top of slopes created in the rivers, narrowing in part the section at + 2.50 m, 1 m over the maximum tide.

For all the 4 wells a micropiles belt was constructed with a 2 0.6 m diameter jetgrouted concentric columns pushed to enter 1 m into the sound rock..

The digging out and the installation of centrings at the same time and, if necessary, the application of gunite..