

SLOPE STABILISATION- BOTTOM WALL OF 'THE PROMONT' HOUSING PROJECT BANGALORE, KARNATAKA, INDIA

Soil Nailing

Problem

'The Promont' housing complex has been planned over a hilltop in Banashankari Stage III area of Bangalore. The hill slope strata is of predominantly rock (Granite). However, at certain locations, highly weathered Charnockite is also present making slope stabilization works essential. Various stabilization/retention structures namely, Top wall, Bottom wall, Access Ramp retaining wall, wall near CDP road etc are constructed as a part of external works of project. The cut height for bottom wall varies from 4 to 10m.

Solution

The solution comprised of nailing (HYSD bars of 25mm dia) with Gabion facia of width 2m. The Gabion facia units had H-frame arrangement at the rear end. The nail lengths are of approx.6m long with min. drill hole dia. of 75mm. Wider Gabion units were used for closing wall and Paralink layers were used in isolated locations based on requirements for strengthening.

Gabion facia gives uniform facing which is aesthetically pleasing and environmental friendly. Gabion facia element offers flexible surface reinforcement and protection to the slope surface and allows free drainage of the insitu strata. The design of nails in nailing with gabion facia system is done with SLIDE software.

Top 1m high planter units (Gabion units lined with non woven geotextile and BioMac filled with soil on top two-third of the height) were installed throughout the stretch length for vegetation (in consultation with local horticulturist). Suitable drainage measures were additionally adopted.

Client: Promont Hilltop Pvt. Ltd (a subsidiary of Tata Housing Development Company)

Designer / Consultant: Maccaferri Environmental Solutions Pvt. Ltd.

Contractor: Maccaferri Environmental Solutions Pvt. Ltd.

Products used (Qty.)

- Gabion

Approx. Facia
Area-1097 SQ.M

Date of construction: 01/2013 - 01/2016



Figure-1 Bottom wall-PCC layer preparation at base



Figure-2 Bottom wall-Scaffolding for nailing operation



Figure-3 Bottom wall-Drilling and grouting for nails



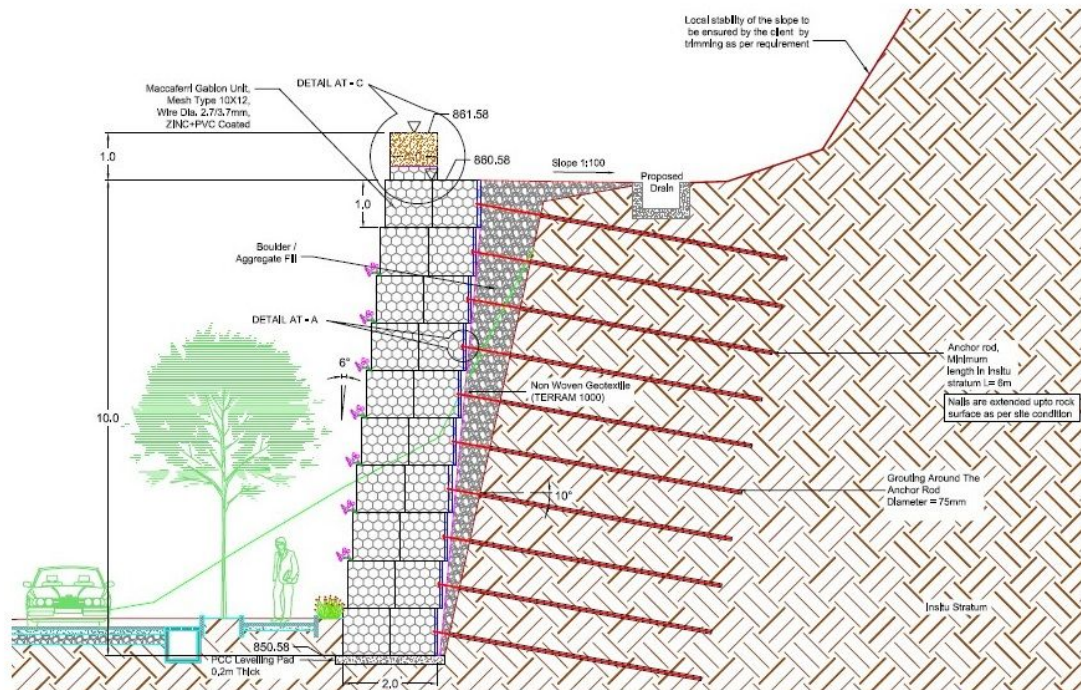
Figure-4 Bottom wall-Placement of Gabion Units and structural H-frame arrangements



Figure-5 Bottom wall-Gabion filling



Figure-6 Bottom wall-After construction



Typical Cross Section (Between CH 365 to CH 375)