

SLOPE STABILISATION- WALL NEAR CDP ROAD OF 'THE PROMONT' PROJECT BANGALORE, KARNATAKA, INDIA

Mass Gravity Retaining Walls

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 wall near CDP road varies from 2.5m to 11m.

Solution

The solution comprised of nailing with Gabion facia for lower portion and Gabion wall at upper portion of the slope. The gabion facia units at foundation level also had vertical nails at base of 1.5m length at spacing of 1m c/c along the length. The nailing was done using HYSD bars of 25mm dia.

The Gabion facia units of width 1m-2m had H-frame arrangement at the rear end to connect the gabion units with the lateral nails. The lateral nail lengths are varying from 2.5m to 5m. 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 gabion retaining wall had units of width 1-2m.

The design of slope stabilization with nails and design of Gabion retaining wall are done with SLIDE and MacSTARS software respectively.

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- 481 SQ.M

Date of construction: 01/2013 - 01/2016



Figure-1 Wall near CDP road-Initial site condition



Figure-2 Wall near CDP road-During construction



Figure-3 Wall near CDP road-During construction



Figure-4 Wall near CDP road-During construction



Figure-5 Wall near CDP road-after completion of works

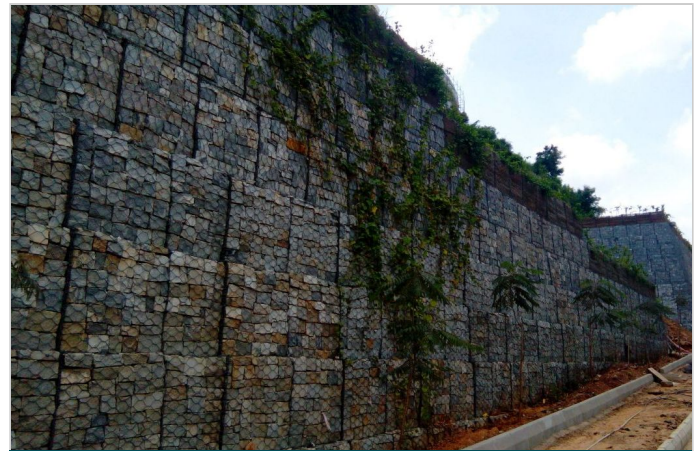
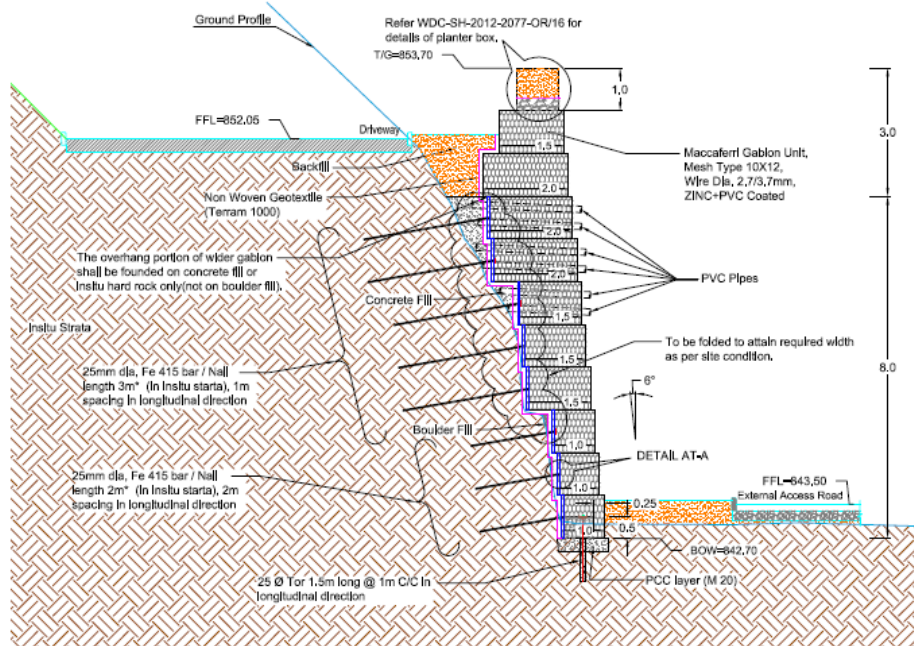


Figure-6 Wall near CDP road-after completion of works



Typical Cross-section at CH:10

Typical Cross-section

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