

GABION WALL FOR KOLLAM-SHENKOTTA SECTION GAUGE CONVERSION KOLLAM, KERALA, INDIA

Mass Gravity Retaining Walls

Problem

Kollam is located in Western part of Kerala state and is one of the major city of Kerala. It is also a important junction connecting to rest of Kerala. The government of Kerala had commenced gauge conversion work in approximately 49-km Kollam-Shenkotta section, coming under the Southern Railway division.

In the project, near Ezhukone station in Kollam district, there was an area with weaker soil and prone to slides. As the gauge conversion was proposed, the area was to be protected against such calamities. A flexible system was preferred by the Southern Railway engineers.

Also there is over bridge resting on poor stratum. So, the bridge protection was another requirement of the project as there were chances of collapse of bridge over the railway track. As the soil condition was poor, if they are adopting a rigid system, it will not be economical as the foundation requirements will be large. So the engineers considered Gabion wall solution as a best cost effective alternative.

Solution

Gabions were proposed to construct the retaining wall because of its free draining nature and speed of construction. Another advantage was the effective use of stones which were acquired from vicinity and utilized for the filling of Gabion walls.

The random rubble wall and concrete wall were ruled out as they were rigid, exert too much pressure at the base and necessitate the requirement of separate drainage arrangements.

Gabion wall of approximately 6m height including foundation was constructed. Geotextile is also provided as a filter behind the retaining wall. The productivity observed was about 100-110 Cu.m/day.

Additional advantages of Gabion retaining wall are as 1. Cost-Effectiveness 2. Simplicity in construction and economy 3. Environmental Friendliness 4. Permeability 5. Flexibility 6. Structural Safety 7. Versatility

Client: SOUTHERN RAILWAY

Contractor: M/s.Perumalil Granite Constructions

Products used (Qty.)

- Gabion 8828 cu.m

Date of construction: 07/2008 - 02/2009



Photo 1: Site before construction



Photo 2: Site before construction



Photo 3: During construction



Photo 4: During construction



Photo 5 : Completed structure



Photo 6 : Completed structure



Photo 7 : Structure after 6 years of construction