

CAUSEWAY CONSTRUCTION WITH GABIONS ON DHADHAR RIVER

KURAL - SHANPUR - SOKHADA RAGHU ROAD, GUJARAT, INDIA

Weirs, Culverts and Transverse Structures

Problem

Dhadhar river is flowing in Gujarat State. It originates from the Pavagadh Hills of Gujarat State and flows through Vadodara and Bharuch districts. Kural—Shanpur—Sokhada raghu road is an approach between two villages in Gujarat.

There is an existing causeway with pipe culverts over river Dhadhar on the approach road. The road located beyond the pipe culvert portion was constructed over fills which was retained with RCC structure. Due to frequent floods, the RCC structure was damaged and the approach road beyond the pipe culvert portion was washed away and the road link between two villages was affected. The villagers had to suffer through out the year by using long route for travel. Road and Buildings Department requested Maccaferri for a suitable solution.

Solution

The embankment being located in high flood zone, an inherently permeable and free draining structure would be technically suitable. Maccaferri suggested flexible gabion retaining walls. Considering the heavy flood conditions and extensive discharge through culvert, few more pipes of higher diameter were provided as compared to the existing ones.

Flexible structures of approximately 6m height was designed and constructed.

Major highlights of the solution and the execution are :

- Flexible nature of the solution accommodates differential settlement of foundation to a considerable extent. Further the flexibility and modular structure permitted the construction culverts through the retaining walls.
- Permeability ensures dissipation of pore water pressure.
- Simplicity in construction ensured timely execution in difficult conditions like presence of ground water table, poor ground conditions etc.
- Environment friendly solution.

Client: Road & Building (Panchayat), Gujarat

Contractor: Maccaferri Environmental Solutions Pvt. Ltd.

Products used (Qty.)

- Gabion	3780 Cum
- MacTex N	1048 sqm

Date of construction: 05/2012 - 07/2012



Photo 1. Before Construction



Photo 2. Before construction



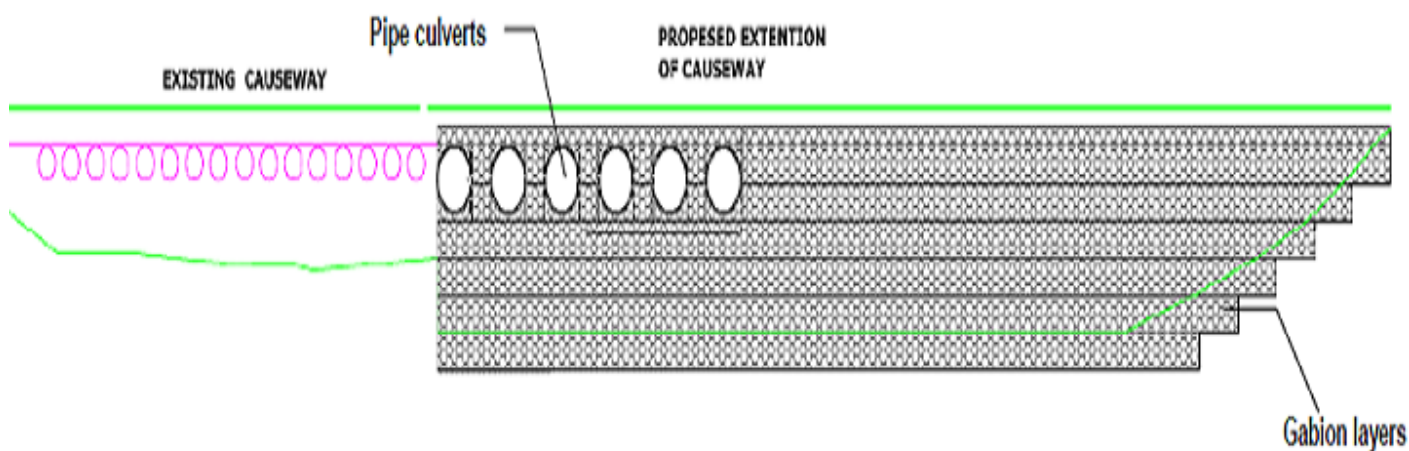
Photo 3. Pipes placed in position



Photo 4. Construction of Gabion wall



Photo 5. Construction of Approach Road



Typical Schematic Drawing

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