

# CASE STUDY

Double Twist Mesh

Project: Lilly Pond Bridge to Quarry Rd Widening  
Date: Early 2011  
Client: NZTA  
Location: Puketona, Northland



## Gabions

Black Bridge road is a busy stretch of road that has to accommodate four buses and large transport trucks that make their way from Puketona Junction on SH10 to Paihia. The section of road at Lilly Pond Lane is narrow with no road shoulders of significance. This posed a significant traffic hazard to the road users and widening of the road was required. The undulating topography around this site meant that a retaining wall of up to 2m in height would be required to support any widening of the road.

**Gabions** provided a good solution to support the formation of the road widening requiring minimal treatment to the foundation prior to placement of the first layer. The added advantage of **gabions** for this site is their ability to accommodate differential settlements which is quite common in the young soil types found in the Northland region. The construction of this **gabion** retaining wall proved to be straightforward and cost-effective with good access to **gabion** rock and a contractor familiar with **gabion** construction.

A non-woven needle-punched bidim geotextile was placed behind the **gabion** to prevent the loss of fines from the retained fill and at the same time allow through any excess moisture that could in the longer term affect the stability of both the road shoulder and wall.

Construction began early 2011 and was completed within the project's construction schedule. The contractor had a crew of 1 supervisor and 3 labourers which is common practice for installing **gabions**. The contractor paid special care to ensure that the areas in the exposed facing of the structure were hand stacked to give a neat, flat and compact appearance. The installation and joining of the adjacent **gabion** units was expedited and made easier with the use of Geofabrics pneumatic tools and stainless steel rings. This replaces the traditional method of using lacing wire and is now common practice amongst installers of **gabion** and other mesh products in New Zealand.

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Before construction on the roadside



Construction of the Gabions using the frame



Completed Gabion structure

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