



Imphal-Kangchup-Tamenglong Road Project, India

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| Consultant | SMEC |
| Main contractor | Hindustan Construction Company |
| Gripple Terra-Lock™ System | TL606-A4, TL100-A3, GMAT C-350, TLP2 |
| Application | Slope Stability and Erosion Control |

A new road between Imphal and Tamenglong stretching 109,970 km faces many difficulties due to the mountainous terrain it passes through. Limited Rights of Way (ROW) meant large steep cuts were needed to be stabilised and held back from the utility zone.

A lack of protection on the cut slopes meant they were susceptible to weathering, erosion and growing instability. This coupled with a steep batter meant proper protection was needed to maintain the structure and prevent debris / fines running into other utilities.

Gripple were asked by the main contractor HCC and the client PWD Manipur to propose an alternative solution to the cost and labour intensive traditional methods. A Gripple engineer visited the site to carry out an initial inspection and to provide concepts for the 50 m length (CH 17+270 to CH 320), further backed up with provided site details and soil conditions.

Several slope stability calculations were carried out for the varying slope profiles, to ensure the correct and most cost effective system, depth and spacing was selected to meet requirements of the project. Gripple's Terra-Lock™ system, consisting of, TL-606-TL-A4, GMAT-C-350 and TLP2 were proposed to protect the slopes.

Gripple's Terra-Lock™ system is an innovative method of controlling heavy erosion and slope stability, which creates a sustainable and durable green structure by reinforcing nature. The GMAT-C-350 is an erosion control mat with a combination of 100% coconut fibre matrix incorporated into permanent three dimensional turf reinforcement matting.

The Terra-Lock™ system is ideal due to the extremely steep nature of the slopes. It allows for fast and easy installation with lightweight equipment. The soil itself was hard, however the nature of Terra-Lock™ anchors allowed for appropriate depths to be reached on installation to hold back surface planes. The Terra-Lock™ anchors aid in promoting revegetation of the slope by maintaining a close contact between ground and the matting.



Before construction with the Gripple install



During the installation of Gripple solution



Completed installation

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