
On request of Sri Ajit Singh - Chief Engineer, Northern Railway Sri.P.K.Choudhury, Principal Technologist of NJB inspected the sites of vulnerable slope on cuttings of Railway off Nangal Dam on 05.09.17 to advise them the feasibility of using Jute Geotextiles (JGT) and its type for stabilizing the slope. On inspection of sites it was advised to use 500 gsm OW JGT in the slope angle < 35 and 730 gsm in the slope angle >35.

NJB’s advice was accepted by N Rly to use two types of JGT for use in slope protection work. They had procured 18,000 m² each of 500 gsm and 730 gsm OW JGTs from Reliance Jute Mills. In the recent past Sri R.K.Kalra - Dy. C.E. requested NJB for a visit to the site to provide installation guidance at site. With the concurrence of Secretary, NJB Sri Choudhury inspected the sites on 22nd March 2018 for the purpose. The engineers present were Sri R.K.Kalra-Dy CE., Sri Rakesh Bains - EE , Sri Sanjib kumar-JE of Sri Babulal Punia- Sr.Sec.E.

Out of total 16km length of new railway track from Amb to Doulatpur Chawak about 600 m stretch from bridge no 166 to 167 at Nangal Dam and Talwar site of village Karluhi was most vulnerable for erosion. Avg. slope length of the cutting was about 25m on both the sides and material type was of poorly graded sand (SP) along with gravels(GP). As in no. of places slope length was high berms were prepared to make the slope gentle and reduce the impact of run off. 500 gsm JGT was installed on the slope having its angle <35. As per slope length pieces of fabric were cut, top end was anchored in trench dug along the length of slope and other end was also anchored similarly at the bottom of slope. Subsequently, the cut pieces of fabric were laid side by side with on overlap of 10 cm. The fabric was fixed on to the slope surface with bamboo pegs of 20 cm length. In consultation with IISWC (ICAR), Chandigarh the dept procured 3 varieties of gross seeds (kikkar and others) from Dehradun which were immerged in water for 24 hrs prior to spreading on to the treated slope. But Sri Choudhury advised them that in the next phases seeds must be spread on to the prepared slope first thereafter laying of JGT to follow for better and quicker germination. It was also suggested that the deep rooted small plants grown locally should be transplanted to the JGT treated slope surface in a scattered way in order to protect the slope from erosion more effectively as those plants is expected to thrive on the particular geo-environmental condition. It was advised to follow the same installation procedure for 730 gsm JGT in the comparatively steeper slope. However, progress of the work was quite satisfactory and photographs was taken for record.
Eroded Slope of Cuttings

Prepared slope and beam followed by laying of JGT
Trench dug at top of slope to anchor JGT