

## CASE HISTORY

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FOUR LANING OF LUCKNOW - MUZAFFARPUR SECTION ON NH-28, CIVIL CONTRACTOR PACKAGE NO. LMNHP EW-II (WB), PACKAGE 06 (KM 208.00 - KM 251.70) INDIA



### RS Wall with Descrete Panel facia

Client:	Products used:
NATIONAL HIGHWAYS AUTHORITY OF INDIA (NHAI)	TECHGRID KNITTED & PVC COATED POLYESTER GEOGRID WITH TENSILE STRENGTH OF 40 TO 250 KN/m
Main contractor:	NONWOVEN GEOTEXTILE
BSCPL INFRASTRUCTURE LTD.	
Manufacturer & Supplier:	Year of construction:
TECHFAB (INDIA) INDUSTRIES LTD.	2009

### Project description:

M/s BSCPL Infrastructure Limited has awarded the work of Reinforced soil wall to M/s Techfab India Industries Ltd. The scope of work include, design of reinforced soil wall, their approval, submission of drawings, supply of moulds and supervision at site. Reinforced soil wall structure with height ranging from 1.5 meter to 9.5 meter.

### Project Challenges:

There is a poor soil strata area for foundation, for which the safe bearing capacity has been worked out lesser than the required bearing pressure at particular height. Need is arises for the ground improvement to increase the safe bearing capacity.

### Solution:

Detailed soil investigation has been carried out and based on the borelog data, ground improvement analysis has been done with replacement at various depths from ground level with good quality granular fill. Also layers of Geosynthetic material has been suggested along with the replacement.



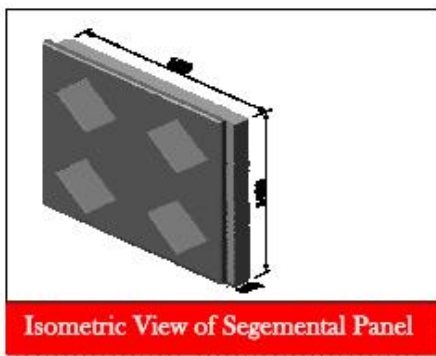
Photo 1 : Elevation view of RS Wall

### Salient Features of the Reinforced Soil Walls :

- Wall Facing Area: 18100 Sqm.
- Wall Height: 1.5m - 7.5m and 2.0m - 9.5m
- Soil Reinforcement: TechGrid knitted & PVC coated polyester Geogrids with Tensile Strength of 40 to 250 KN/m
- Facing: Discrete Panel Fascia
- Design Methodology: BS 8006: 1995 (Static Condition)  
FHWA-NHI-00-043 (Seismic Condition)
- TFIL's scope of work: Detailed Engineering designs & drawings, supply of Geogrids, supply of Moulds for Discrete Panels, Nonwoven Geotextile & Supervision of construction

Table-1 shows the property of the reinforced infill, retained fill and foundation soil taken into consideration in the designs.

**Table-1**



Property/Fill	Cohesion (C) - KN/m <sup>2</sup>	Angle of Internal Friction (φ) -	Unit Weight (γ) - KN/m <sup>3</sup>
Reinforced Infill Soil	0	30	20
Retained Soil	0	30	20
Foundation Soil	0	30	18

The design of the walls was carried out using the BS 8006: 1995 for Static Condition & FHWA-NHI-00-043 for Seismic Condition, which comprised checks for external, internal and global stability under static and seismic conditions.

Construction of the wall was carried out under the supervision of TechFab India Industries Ltd's supervision.



**Photo 2 & 3: Erection of RS wall**



Elevation view of RS wall

### **Conclusion:**

The project was successfully completed in September 2009.

### **For further details kindly contact :**

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