

# CASE STUDY

## StrataWall helped decongest National Highway 58

### Owner:

National Highway Authority Of India (NHAI)

### Contractor:

Gayatri Projects Ltd.

### Project Size:

11,700 sqm

### Max. Height of Wall:

7.63 m

### Project Type:

Construction of Reinforced Soil Wall using StrataGrid as soil reinforcement

### Location:

Meerut- Muzzaffarnagar (NH 58 in the state of Uttar Pradesh)

### System Offered:

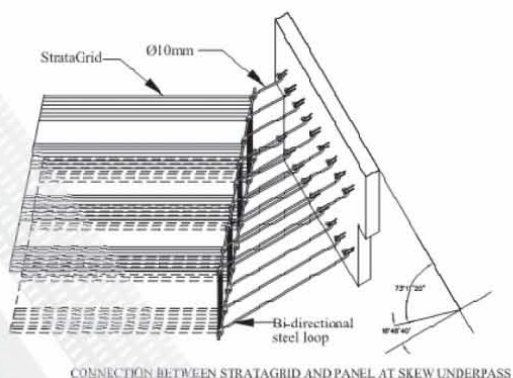
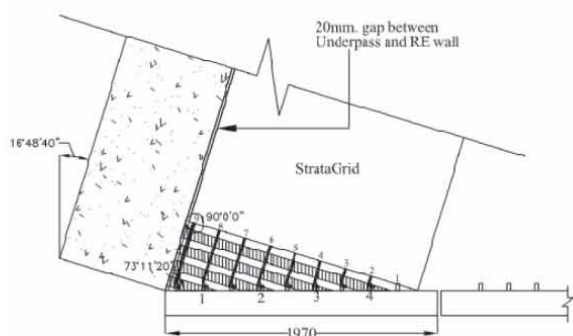
StrataGrid + StrataWall

### Consultant:

EGIS BCEOM International Ltd.

### Completion Year:

2010



## Project Brief

The National Highway connecting Meerut to Muzzaffarnagar needed a site solution that would not only be aesthetically pleasing, technically sound but would also create a seamless travel at all the Meerut – National Highway intersections. Strata Geosystems (India) Pvt. Ltd. along with Gayatri Projects Ltd. was involved in the construction of StrataGrid reinforced soil wall approaches to the VUPs on the Meerut – Muzzaffarnagar stretch. The system offered was a combination of StrataGrid reinforced soil wall with a panel fascia - StrataWall.

## Challenge

The biggest hurdle lay in the designing of the walls involved, as it was identified that the side walls were making an acute corner with the abutment and sufficient space was not available to place the StrataGrid. Compaction of soil in the acute corner presented several difficulties. The design and detailing of the soil reinforcement for the acute angle corners was a challenge. This required innovative and lateral thought process.

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### Strata Solution



The design of the structure was carried out by the competent design team at Strata Geosystems (India) Pvt. Ltd. with inputs from design consultants- LEA Associates South Asia Pvt. Ltd. The facing comprised of StrataWall - T-shaped panel wall which is an extremely stable system and ideal for tall reinforced soil walls. While constructing a reinforced soil wall the geogrid is laid perpendicular to the fascia, which was not possible here due to the space constraint caused by the acute corner. Thus the geogrid was laid parallel to the abutment wall and at a distance from the panel. Special bidirectional loops for this purpose were used and as an additional safety measure panels were anchored with the abutment through steel strips. Since compaction in this narrow area was an important task, Strata used coarse grained soil. The design of the walls were carried out using the Federal Highway Administration – National Highway Institute (FHWA-NHI) guidelines and comprised checks for external, internal and global stability under static and seismic conditions. The design calculations and construction drawings were proof-checked by EGIS – BCEOM International Ltd.

Strata Geosystems not only provided solutions and raw materials but also oversaw that the construction was completed in the given time period. To meet the requirements of the heavy traffic flow on the National Highway, work was completed within the time frame provided i.e. less than 8 months. Subsequently, post construction structural audit had been carried out by QC team of Strata which suggests that the performance of the structure has been impeccable.

### Benefits to client

Strata Geosystems (India) Pvt. Ltd. did not only help the project meet its deadline, but also help maximize the development's profitability to the owner/client by allowing it to open on schedule.

### About Strata

**Strata Geosystems (India) Pvt. Ltd.**, established in 2004, is a joint venture with Strata Systems Inc., USA (part of the 130-year old Glen Raven group of companies). Strata Geosystems is a one-stop shop for geotechnical applications like retaining soil walls, soil stabilisation, engineered landfills, weak soil solutions, railway and river embankments etc. We are renowned for our quality, durability and cost effectiveness and manufacture conforming to strict international quality standards. Our committed team of experienced design engineers and project implementation specialists ensure timely and accurate installation.



**STRATA**  
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(A Joint Venture with Strata Systems Inc. U.S.A.)  
ISO 9001 : 2008 Certified



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