

## REINFORCED SOIL STRUCTURE AT MB ROAD MEHRAULI-BADARPUR ROAD, DELHI, INDIA

### Vertical Walls with Concrete Facing Panels

#### Problem

In Delhi at MB road, a Rail Over Bridge was constructed to Connect the Noida mod to ITO Chungi. It was decided to construct the approach wall as reinforced soil wall. There were two approach walls i.e. towards Vikas Marg side and Towards Noida side and two cross walls. The foundation soil and structural fill was Silty sand . The bearing capacity of founding soil wall was relatively low. In order to avoid extensive foundation improvement schemes, Reinforced soil wall was selected as the solution in stead of conventional Reinforced concrete wall. The structure which ever is adopted will be getting a lot of attention as it is in one of the prime location of the capital city of India.

#### Solution

Reinforced Soil Wall with concrete panels as facia and Geogrid as reinforcement was selected as the best solution for the above problem. Cruciform shape discrete panel were used as facia. The Standard Panels were Cruciform shaped, some of the top and bottom panels were half panel of varying heights. Some special end panels and corner panels were also used. The connection between the panels & reinforcement was done by Hook and rod arrangement.

For the structure Polyfelt rock biaxial Geogrid was used as reinforcement. The height of walls varies from 3m to 12m. The total Facia area was 1210 Sq.m. Speed was satisfactory and project was completed in 8 months. It is the first structure of its kind where Maccaferri India has used geogrid (Woven) with panel.

**Client:** PUBLIC WORK DEPARTMENT— DELHI

**Designer / Consultant:** STUP CONSULTANT PVT LTD.

**Contractor:** M/s NAGARJUNA CONSTRUCTION COMPANY LTD.

#### Products used (Qty.)

- |                               |           |
|-------------------------------|-----------|
| - MacGrid EG                  | 42000 sqm |
| - MacTex Non-woven Geotextile | 200 sqm   |

**Date of construction:** 04/2004 - 12/2004



Photo 1: Construction of leveling pad



Photo 2 : Concreted panels ready for construction



Photo 3 : Laying of Geotextile



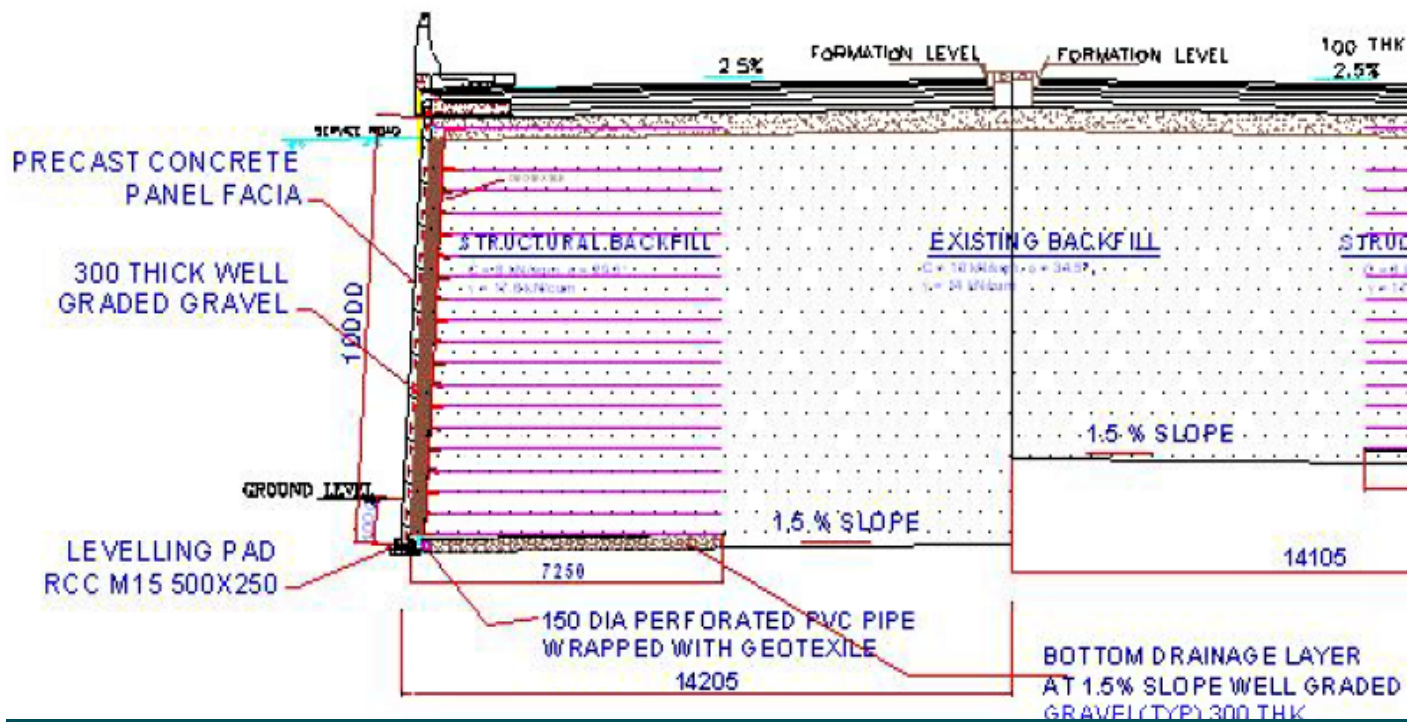
Photo 4 : Placing of Structural fill and compaction



Placing of panels and Geogrid



Completed Structure



Typical Project section drawing