

CONSTRUCTION OF ROB AT DWARKA DWARKA, DELHI, INDIA

Vertical Walls with Concrete Facing Panels

Problem

It was proposed to construct the road over bridge from Dwarka Dwar to NH-8 (Old Delhi Gurgaon Road) through cantonment area.

The project involved the design and constructions of a grade separator (four Lane) from Dwarka Dwar in Sector 1 & 7 to ROB on Rewari Railway Line including ramps at both ends and foot bridges etc. including electrification. For the approach wall, it was proposed to construct a reinforced soil wall.

The bridge was present in the heart of the Delhi city hence, extreme importance had to be given to the aesthetics of the wall. For this, the client and the consultant agreed to construct a segmental retaining wall.

Solution

As per Maccaferri's standard block, two types of blocks were proposed- one with flat facing and other one with curvature facing. Keeping the aesthetics in view, client and consultant agreed to move ahead with both the block with alternate arrangement (Photo 2). Corner block was made according to the requirements.

The maximum height of the wall was 4.0m. Maccaferri's Woven Grid (WG 06 & WG 09) was used as a reinforcement. Design was done according to British Standard- 8006. The surcharge was considered as per the Indian code (Indian Road Congress 6 Class AA loading condition). In addition to this, a high crash barrier load was considered for horizontal shear load according to Indian code- India Road Congress-6.

The connection between the fascia and grid was made by the arrangement of shear key. The design of segmental block and shear key depth were done according to NCMA.

Client: DELHI DEVELOPMENT AUTHORITY

Designer / Consultant: ICT Pvt Ltd.

Contractor: M/s LARSEN & TOUBRO LTD.

Products used (Qty.)

- MacGrid WG 10,000 sqm

Date of construction: 03/2005 - 11/2005



Photo 1: Moulds for making segmental blocks



Photo 2: During construction



Photo 3: During construction



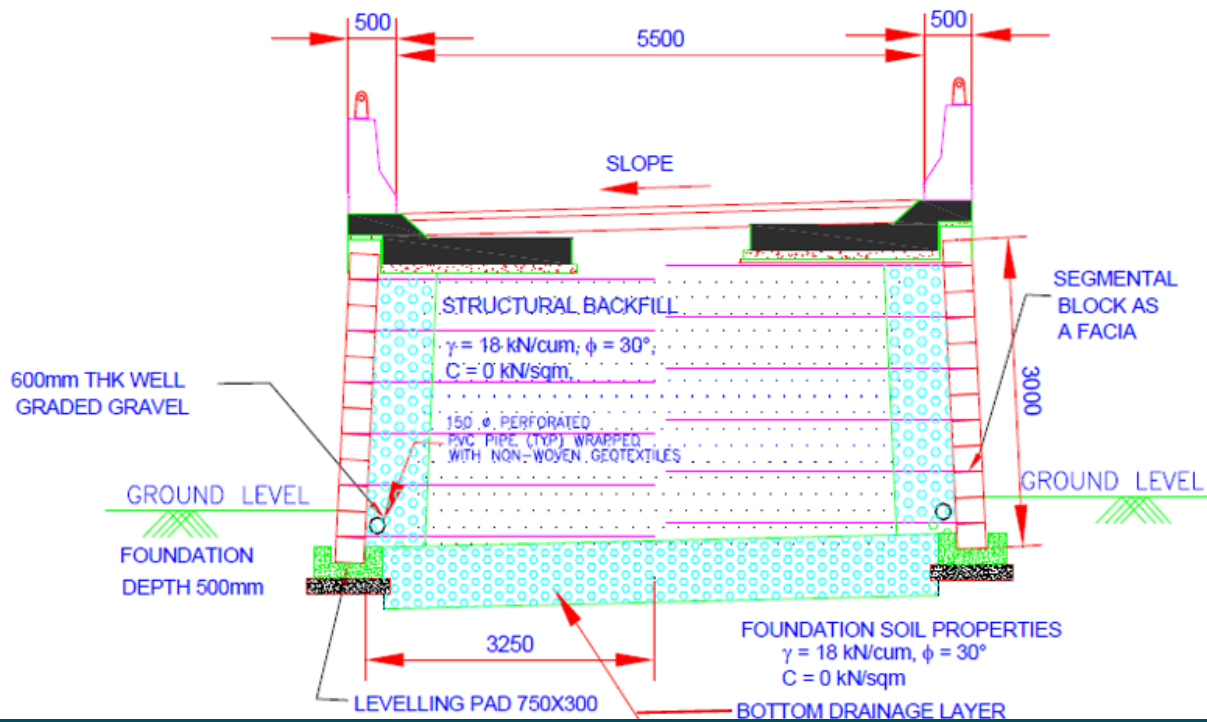
Photo 4: Geogrid placement and temporary anchoring



Photo 5: During construction



Photo 6: Completed structure



Typical cross-sectional drawing