CASE HISTORY

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AE 65 - IMPROVEMENT OF ROADS IN EASTERN SUBURBS - ROAD NO.14 SHIVAJI NAGAR, GOVANDI, MUMBAI

MUMBAI, MAHARASHTRA, INDIA

TECHFAB INDIA

Soil Stabilization

Client:	Products used & Quantity supplied:
MUNICIPAL CORPORATION OF GREATER MUMBAI Main contractor:	• TECHGRID PET BIAXIAL GEOGRID • TFI 1200 WOVEN GEOTEXTILE
Manufacturer & Supplier:	Year of construction:
TECHFAB (INDIA) INDUSTRIES LTD.	2019

Project description:

Road 14, Shivaji Nagar is location in Govandi near Deonar Dumping Ground, one of the largest dumping grounds in Mumbai, the road is adjacent to the dumping ground and due to the leachate of landfills, water accumulation during monsoon the nearby soil become marshy and the ground water table also rise which make the subgrade foundation of the pavement weak, so roads needs to be maintain regularly due to such problems. Looking at the advance solution available using Geosynthetics, MCGM (Municipal Corporation of Greater Mumbai) decided to construct pavement doing proper soil stabilization using Geosynthetics.

Project Challenges:

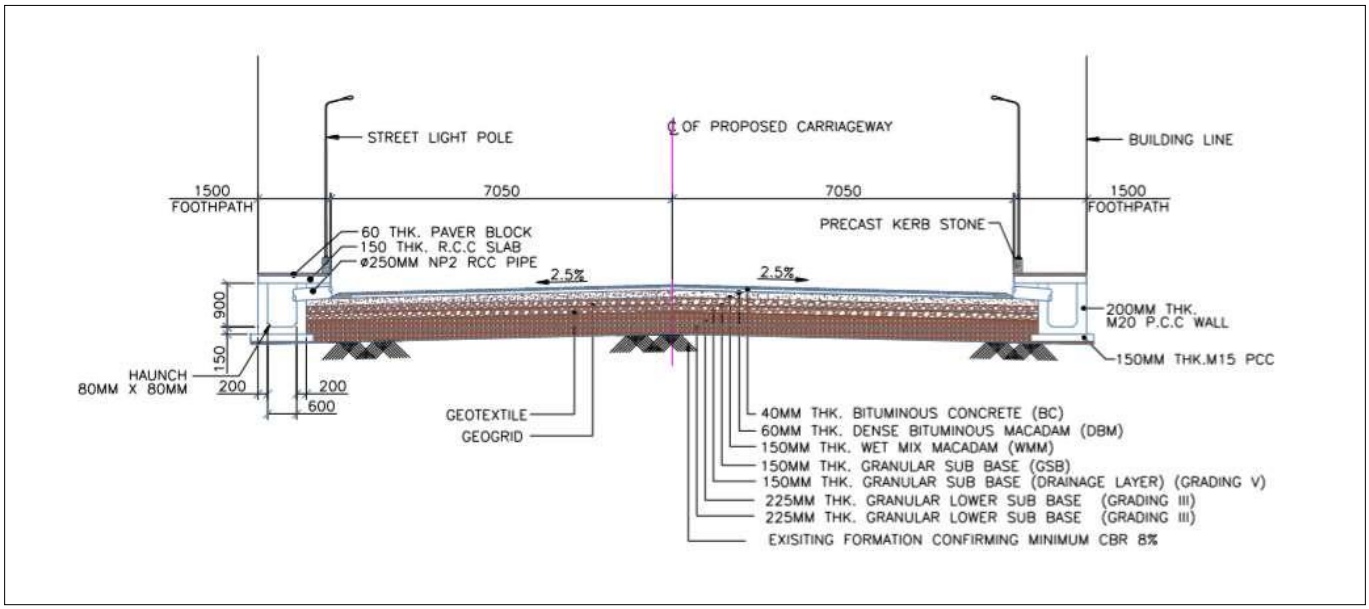
Due to above mentioned problem of soft marshy soil and high ground water table, the only prepared subgrade was not enough to act as foundation to pavement as it was not providing desired stability and resulting it in failure of existing road.

Conventional solution for such problem is the Soil stabilization by adding suitable stabilizers to enhance the existing soil properties but it is uneconomical as well difficult to maintain the quality of the stabilized soil is such large quantum. After comparing cost and long term benefits of geosynthetics MCGM authority decided to use geosynthetics for subgrade stabilization.

Solution proposed:

Consultant has suggested using Techgrid Biaxial Geogrid and TFI Woven Geotextile at GSB level for this problem. The pavement section for given CBR and traffic data is designed as per IRC 37 2012 and in addition to that to enhance the performance of pavement a layer of Biaxial Geogrid as reinforcement and woven geotextile as separator layer are provided at GSB level.

The solution suggested here is less time consuming, easy to install economical and provide durable solution with good life.



Typical Cross Section of the Proposed solution

Execution on Site:

After cleaning the existing subgrade Profile correction with suitable lower sub base soil was done and it was well compacted, as per the design section layer of Woven Geotextile TFI 1200 was laid properly as per the installation guideline then 150mm thick GSB laid (drainage layer) was laid and compacted again after a layer of Techgrid PET Biaxial Geogrid was laid as reinforcement layer, followed by a layer of GSB 150 mm, 150 mm WMM and 60 mm DBM, 40mm BC laying and compaction was done as per design. During execution, proper safety measures were taken.

During Construction

During Construction

Conclusion:

Project was executed in 2019. Client was happy with timely supply and quality of material. Project is still under observation and will be observed through Defects Liability Period of project.

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