

# PAVEMENT STRENGTHENING AT NADIA - KAPADWANJ - MODASA ROAD

## NADIA-KAPADGANJ-MODASA, GUJARAT, INDIA

### Asphalt Pavement Reinforcement

#### Problem

Nadia-Kapadwanj-Modasa road stretch was subjected to severe problem of series of interconnected cracks. Due to the increased traffic, the existing pavement section was not able to survive for its initial design life. It was observed from the site that the existing pavement had cracks developed on the surface which had further deteriorated into large potholes.

Considering the pavement situations and heavy traffic loading it was required to re-strengthen the pavement by providing an overlay of suitable thickness.

#### Solution

Current pavement was needed to be repaired by placing an asphalt layer to increase the load carrying capacity of the pavement section. However the ability of asphalt to withstand tensile stress is limited. So there were chances of fatigue and reflective cracking in the surface course. To avoid this type of cracking, geosynthetic reinforcement are introduced between new overlay and the existing pavement.

For reinforcing the pavement, geogrid made of fiber glass yarns called MacGrid® AR V5 was suggested to be provided at the interface of the BUSG and BM layer. For ensuring proper adhesion of the MacGrid® to the surface, tack coat is applied over the BUSG layer before laying the MacGrid®.

MacGrid® AR V is a reinforcing material specially developed for pavements. It consists of glass fiber strands arranged in a grid structure and covered with a polymer coating.

Advantages of MacGrid AR V:

- High tensile strength.
- Low elongation.
- No long-term creep.
- Thermal stability.
- Asphalt compatibility.
- Durability.
- Easy Installation.

The road is completed in the month of June'10. The traffic on the constructed pavement is running smoothly.

**Client:** Road & Bridge Department, Gujarat

**Contractor:** Sai Inspiration Pvt Ltd

**Products used (Qty.)**

- MacGrid AR 71,000 sqm

**Date of construction:** 05/2010 - 06/2010

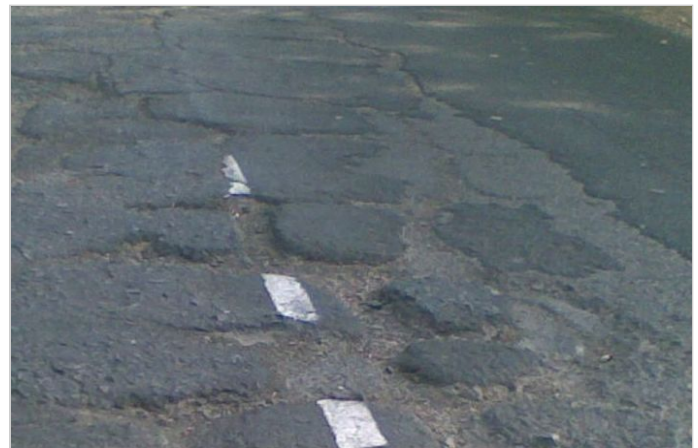


Photo 1: Before construction- cracking on the surface



Photo 2: Laying of MacGrid® over BUSG layer





Photo 3: Laying of 20mm thick SDBC layer



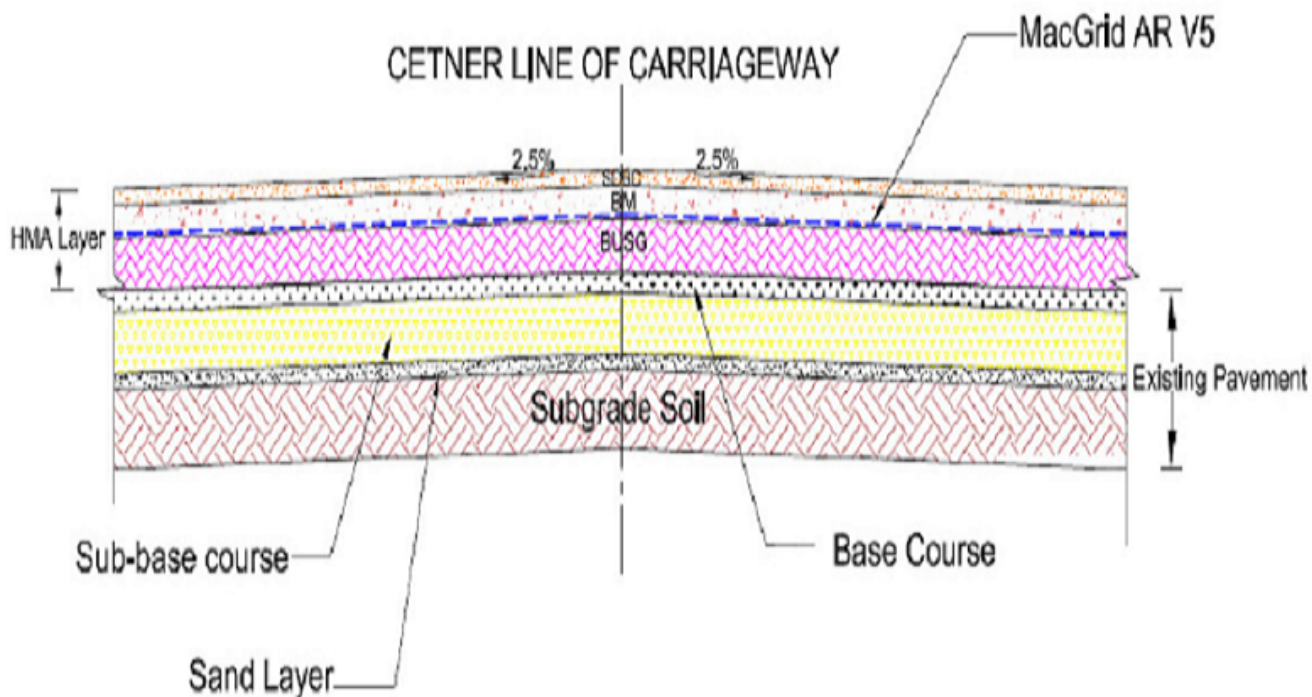
Photo 5: Laying of 75mm thick BM layer



Photo 5: Completion of construction



Photo 6: Completion of construction



Typical project drawing section