Annexure-A1

Detailed Slope Stabilization Plan including both Engineering and Biological measures

NH 766 C is connecting Coastal region with Malnad region and northern Karnataka with a length of 203 km. This Highway from km 55.50 to 90.70 of intermediate lane runs almost in forest and hilly terrain with 235 horizontal curves and large no of Vertical curves with a gradient up to 10 % at many places , this Highway needs to be widening and improvements in view of road safety as per NH norms since the traffic is about 8643 PCUD.

The improvements on existing alignment is impossible due to its terrain and forest area and hence the Ministry of Road Transport and Highways examined the 4 alternative options and approved the best alignment of length 13.82 km in plain terrain with only 7 no of curves where the length of road reducing from 35.20 km to 13.82 km and enhances road safety. This proposal also reducing the journey time from 1 hour to 10 minutes and saves the economy by fuel.

Hence Ministry of Road Transport and Highways has sanctioned the DPR of this project on approved new alignment for Rs 313.56 crores along with provision of Rs 25.93 crores for FC approval NPV,CA, WMP, Tree Felling, Seedling and Aforestration charges

The proposed new alignment passes through back water of Sharavathi, pertain to KPCL , MPM land, Forest land, and Revenue lands. For back water of Sharavathi provision made for construction of major bridges of length 1.54 km and 0.72 km, The KPCL has issued NOC for construction of these bridges and road in their land and GoK has released the Govt revenue land and the process of LA of private revenue land has also completed and MPM , Bhadravathi has also issued NOC for construction of road on their land

This project involves excavation for road in a length of 4600 meters out of its total length 13.830 km (33%) at 18 locations with a shorter lengths and remaining 9230 meters (67%) involves the construction of bridges and road

embankment, and where the depth of excavation for road is also very less i.e from 05.0 to 3.0 meters for road construction.

Any how these following Engineering and Biological measure will be adopted for Slope stabilization on excavated and road embankment portions in consultation with the local Forest authorities

Engineering measures to be adopted

The provision has been made in the sanctioned DPR for construction of Reinforced Concrete breast / retaining wall cum drain for slope protection to prevent any kind of Soil erosion. (enclosed photo showing breast wall) And to protect falling of animals at the excavation portion of road, suitable chain link mesh fencing will be provided for a depth of 1.50 meters from ground level will be provided

Bio –Engineering measures to be adopted

Along with the construction of Chain link mesh fencing at excavated portions of road to avoid falling of animals these following Biological measures will be adopted at excavated portions and slopes

1 Planting Vetiver Grass (Vetiveria zizanioides)

To protect soil erosion from excavated portions beyond RCC breast wall and drains Vetiver grass will be planted , Vetiver is deep rooted grass is excellent for slope stabilization, this hardy bunch grows naturally and it is extremely resilient and can survive deep inundation of up to 6 m Vetiver grass is being used as an efficient bio-technology for slope protection, especially for its attributes: longer life, strong and long finely structured root system, and high tolerance of extreme climate conditions. (Photo enclosed)

2. Coir Geo textiles with grass seeding

Apart from planting Vetiver grass , Coconut fiber mats with seeded grasses will be provided for protection of soil erosion and earth stabilization at excavated portions of road (Photo enclosed)

3. Planting cuttings of native shrubs and bushes

Planting cuttings of locally available shrubs and bushes to stabilize slopy terrain along with contours

4 Planting of small trees or bamboos along with combination of vegetation

Planting combination with vegetation: bamboo, cut branches, banana leaves and other brush mats can be applied as a cover on the slope's road embankments and, wattle fences or brushwood can be placed on the side slope of the embankment with stone protection of the toe

Executive Engineer
National Highway division
Shimoga

Annexure-A.

BREAST WALL Constructed @ NH369E
@ Cutting portion of Road.

IVER GROSS PROPOSED TO PROTECT SOIL EROSION

Annexure - A1

Annexure – A1