

Full Title of the Project: Development of 4-lane Greenfield road connecting NH-7 (old NH-72) (near Jhajhra) to Delhi-Dehradun Expressway NH-307 (old NH-72A) at Asharori section from Km. 0.000 to Km. 12.000 in the State of Uttarakhand.

Proposal No.: FP/UK/ROAD/140350/2021

Date of Proposal: 01/04/2021

Forest Land Proposed for Diversion: Total Area: 20.0849 Hectare

प्रारूप-35

Task Force Certificate

- (i) Layout of the Land-be followed as far as possible.
- (ii) Heavy cutting/filling be avoided-as far as possible. The technology of cut and fill method is to be adopted. Steep hill slopes also to be avoided.
- (iii) Unstable/slide-prone areas to be avoided. For identifying such areas, the advice of Geotechnical engineers and geologists to be taken during the survey for alignment.
- (iv) Comparison of various possible alignments with reference to erosion potential be made and the alignment involving minimum erosion risks be preferred.

A part from the stage of planning the road alignment, effective steps are also required to be taken by ground engineer during the process of road construction for minimized ecological disturbance to the hill roads. Broadly the measures to be taken have been identified as:-

- (i) Cut and fill method to be adopted while excavating for road formation and heavy earth cutting is to be avoided Box cutting is to be avoided to the extent possible.
- (ii) Blasting by explosives is to be restricted to the minimum. Layout of holes to be drilled for blasting is to be planned keeping in view the line of least resistance and the existence of joints Controlled blasting should be repeated using low charge and care be taken to avoid activating slide zones or widening fissures and cracks in rock. Use of delay detonators in large scale blasting work is to be made for an online dispersion of chock waves, so that minimum disturbance is caused to the rock stratum as a result of the blasting process.

- (iii) All cut slopes, unusable hill side and slide prone erosion prone areas are to be provided with suitable correct jon measures by using one or the other of the techniques developed by CRRI. Several techniques have been sponsored by

परियोजना निदेशक

भारतीय राष्ट्रीय राजमार्ग प्राधिकरण

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प०क०ई०-वसन्त विभाग (देहरादून)



CRRRI. like simple vegetative turning, bitumen much treatment and slide treatment by jute netting Coir netting of these simple vegetative turning seems to be the most appropriate preventive measure in many situations. This should be established in the denuded slopes immediately after the excavation is made.

- (iv) Adequate drainage measures and protective structures like intercepting catch water drains, longitudinal drains/culvers, breast walls, retaining and the walls are provided for purposes of establishing the slips Growth vegetative cover is stimulated in the disturbed hill slops above the road level by planting suitable fast-growing shrubs and plants. In certain selected unstable areas terraced afforestation has a so been plasticized as a stabilizing measure with good results.
- (v) Over the past few years the roads wing of the Ministry of Road and transport has issued instruction laying down broad guidelines and check list of the preparation of road construction projects which provide an inbuilt mechanism of tackling landslides/erosion control for the guidance ana-follow up action by engineers of state 'PWD', Border Roads Organization and other engaged in construction of hill roads these should be observed.

प्रमाणित किया जाता है कि योजना आयोग द्वारा गठित टास्क फोर्स द्वारा प्रदत्त उक्त संस्तुतियों का परियोजना के निर्माण के दौरान अनुपालन सुनिश्चित किया जायेगा।

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