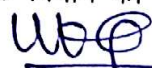


Task Force Certificate

- i. Lay out of the land be followed as far as possible.
- ii. Heavy cutting/ filling be avoided as far as possible. The technology cut method is to be adopted. Steep hill slopes also to be provided.
- iii. Unstable/slide prone areas to be avoided. For identifying such areas the advance geotechnical engineers and geologists to be taken during the survey alignment.
- iv. Comparison of various possible alignment with reference to crosion portion made and the alignment involving minimum crosion risks be preferred. A part from the stage of planning the road alignment, effective steps are also required be taken by ground engineer during the process of road construction for min ecological disturbance of the hill roads Broadly the measures to be taken have identified as:-
 - i. Cut and fill method to be adopted while excavating for road formation and 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. Lay out of ... be drilled fro blasting is to be planned keeping in view the line of least res.. and existence of joints controlled blasting should be repeated using charge and care be taken to avoid activating slide zones or widening fissures cracks in rock. Use of delay detonators in large scale blasting work is to be for anaoline dispersion of chock waves, so that minimum disturbance is ea... the rock startum as a result of the blasting process.
 - iii. All cut slopes, unusable hill side ad slide prone erosion prone areas an.. provided with suitable correction measures by using one or the other techniques developed by CRRI. Several techniques have been sponsor CRRI like simple vegetative turning, bitumen much treatment and slide tr.. but jute netting coir netting of these simple vegetative turning seems to be the appropriate preventive measure in many situations. This should be establish the denuded slopes immediately after the excavation is made.
 - iv. Adequate drainage measures and protective structures like intercepting water drains, longitudinal drains culvers, breast walls, retaining and the wall provided for purpose of establishing the slips growth vegetative co.. stimulated in the disturbed hill slops above the road level by planting suitable growing shrubs and plants. In certain selected unstable area to afforestation has also been plasticized as a stabilizing measure with go res.....
 - v. Over the past few years the roads wing of the Ministry of Shipping and tr..... has issued instruction laying down broad guidelines and check list preparation of road construction projects which provide and inbuilt mechanism tacking land slides/erosion control for the guidance and follow up act.. engineers of state PWD Border Raods Organization and other engineer construction of hill roads these should be observed.

प्रमाणित किया जाता है कि योजना आयोग द्वारा गठित टास्क फोर्स की उपरोक्त सह याचक विभाग को मान्य है।


 सचिव, राजस्व विभाग
 निर्माण शाखा उ पे सं वि एवं नि निषम
 रायनगर (ननोताल)