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कार्यालय प्रमुख अभियन्ता एवं विभागाध्यक्ष
उत्तराखण्ड लोक निर्माण विभाग,
देहरादून

भू–गर्भीय निरीक्षण आख्या ए0जी0– 194/सड़क/पुल/सम्रेखण/उत्तराखण्ड/गढ़वाल–2019

Geological Assessment of the alignment corridor proposed for the construction of 6 km long motor road joining village Danda to Ranari-Dandagaon-Majaf motor road at km 6, in Dunda block, distt. Uttarkashi.

11 फरवरी 2019

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Geological Assessment of the alignment corridor proposed for the construction of 6.00 km long motor road joining village Danda to Ranari-Dandagaon-Majaf motor road at km 6, in Dunda block, distt. Uttarkashi.

Shiv Kumar Rai
11.02.2019

1-Introduction:-The Provincial Division, Public Works Department, Uttarkashi vide G.O. No. 1704/III(2)/18-18(एम0एल90ए0)/2017 dated 04.05.2018 has been instructed for the construction of 6.00 km long motor road joining village Danda to Ranari-Dandagaon-Majaf motor road situated in Dunda block, distt. Uttarkashi. The work of survey has been carried out across the slope where the actual length is same as the sanctioned length of 6.00 km comprising 8 HP bends (at chainages 0/20, 0/38, 1/17,2/20,3/33, 4/12, 4/40 and 5/23). On the request made by Er. V.S Pundir, Executive Engineer, I carried out the geological assessment of the site proposed for the above mentioned alignment on 05.02.2019 in presence of Er. O.P Semwal, Additional Astt. Engineeer, P.D, PWD, Uttarkashi.

2- Location:-The alignment corridor of the road originates from km 6 of Ranari-Dandagaon-Majaf motor road in the upslope direction comprising 8 HP bends in whole along its length of 6 and ultimately joins to village Danda, situated in Dunda block, distt. Uttarkashi.

3- Geological Assessment:-Geologically the alignment corridor of the proposed road lies in the part of Inner Lesser Himalayan Belt comprised of the rocks belonging to Jaunsar Group bounded by the Main Central Thrust (MCT) and Srinagar Thrust (ST) from North and South direction respectively. The entire belt containing the alignment corridor is occupied by the rock of Jaunsar Group which are formed of hard quartzite with sub-ordinate bands of shale/slate. The bed rock (quartzite) is covered by thin layer (3-5m) of overburden material comprising fragments mixed with sandy silty matrix. The bed rock exposed nearby has experienced multi-phase of deformation stage and hence jointed and deformed in nature. Terrace like cultivated land is most exposed along the alignment but few stretch also passes through forest land covered by thick pine . The alignment slope are inclined at low to moderate angle comprised of the residual soils. The ground forming solid are naturally well compacted and dense in nature and this is characterized by the high content of silt. In case of the construction of this road, the entire surface needs to be sealed in order to check the water infiltration into the subsurface materials. The HP bends are located on the gentle and stable ground.

By and large the alignment slopes are stable and presently free from any landslide/mass wasting ground subsidence activities.

On the basis of the geological inspection of the studies carried and the facts given above, the following recommendation are being made for the construction of the proposed road failing to these this report will be automatically treated as cancelled.

Attested

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4-Recommendations:-

1. Construct the road by box cutting or full excavation technique and compact the fill material properly by dynamic compaction.
2. The either side slopes of the entire road wherever required must be protected by suitably designed retaining walls/breast walls, this work shall be carried out simultaneously with the advancement of the road cutting. This is very important for the stability of the hill slide slopes.
3. The entire surface of the road from outer edge to inner edge must be sealed immediately after the excavation, this is so as to check the water infiltration into the sub soil, otherwise the slope will fail.
4. Construct extra large lined drain all along the hill side of the road and made adequate cross drainage arrangements. The accumulated rain water run-off from this road and its upslope catchment should not allow to flow freely over the lower hills.
5. Do not dispose the excavated waste on the lower slopes, it will damage the entire down hill slopes and village located below it.
6. All the construction activity must be carried out as per the standard codes of practice laid by the BIS and MORTH.

5- Conclusion:- On the basis of the geological/geotechnical studies carried at the site and with the above recommendations, the alignment corridor was found geologically suitable for the construction of 6.00 km long motor road joining village Danda to Ranari-Dandagaon-Majaf motor road at km 6 comprising 8 HP bends (at ch.0/20, 0/38, 1/17, 2/20, 3/23, 4/12, 4/40 and 5/23) each on gentle and stable ground, in Dunda Block, distt. Uttarkashi.

05/2019

(Shiv Kumar Rai)
Astt. Geologist
Office of the Engineer-in-Chief,
PWD, Dehradun

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