

कार्यालय प्रमुख अभियन्ता एवं विभागाध्यक्ष
उत्तराखण्ड लोक निर्माण विभाग,
देहरादून।

भू - गर्भीय निरीक्षण आख्या एस0जी0- 168/सड़क/पुल समरेखण/कुमाऊ/2014

Geological Assessment of the alignment proposed for
Deghat-Nagchulakhal to Chantharkhadi-Kaliyaligur-Jhipa
Bend motor road, Distt. Chamoli Garhwal.

27-मार्च-2014

Geological Assessment of the alignment proposed for Deghat-Nagchulakhal to Chantharkhadi-Kaliyaligur-Jhhipa Bend motor road, Distt. Chamoli Garhwal.

Vijay Dangwal

27.03.2014

1- Introduction:- The Provincial Division, Public Works Department, Ranikhet has proposed the construction of 2.5 km namely Deghat-Nagchulakhal to Chantharkhadi-Kaliyaligur-Jhhipa Bend motor road, Distt. Almora. On the request of Er. H.Pangti, Executive Engineer, I carried out the geological assessment of the proposed site of the above said bridge on 20.02.2014 in presence of Er. R.K. Punetha, Astt. Engineer and Er. Hemant Pathak, Jr. Engineer, P.D, PWD, Ranikhet.

2- Location:- The proposed alignment of Kaliyaligur-Jhhipa Bend motor road originates from km 1.00 of the branch road originating from km 17 of Deghat-Nagchulakhal-Chantharkhadi motor road located in Bhikyasain Tehsil, Distt. Almora.

3- Geological Assessment:- Located in the inner lands of Kumaon Lesser Himalayan Belt, Deghat-Nagchulakhal-Chantharkhadi-Kaliyaligur and Jhhipa bend and their surroundings areas are occupied by the rocks of Almora Thrust Sheet comprised of varieties of schists, granites and gneisses. These rock masses exposed along the alignment corridor are largely covered by the overburden material mostly formed of the residual soils. Most of the slope facets across which the proposed alignment passes is inclined at moderate to steep angles. The rock mass exposed along the alignment corridor is thinly foliated and oxidized upto the weathering grade W_2 (partially oxidized) and it has been traversed by many linear discontinuities which are tight and occasionally sealed in nature. These rock masses exhibits low values of physical competency and their "Uniaxial Compressive Strength" has been estimated at various locations along the alignment ranging upto 20 M Pa. The overburden material deposited on the alignment slope facets is comprised of composite material i.e, rock fragments embedded in silty clay matrix. This slope forming material is naturally compact and dense in nature. Its "Undrained Shear Strength" has been assessed ranging between 300 K Pa to 400 K Pa.

The soils forming the overburden material on the slopes are "Stiff" in consistency and do not contain any soft/dispersive material.

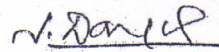
By and large the alignment slopes are stable and do not bear any signature of mass wasting/sliding etc.

On the basis of the above geological/geotechnical studies carried at the site and the facts mentioned above the following recommendations are being made for the construction of the proposed road failing to which this report will be treated as cancelled.

4- Recommendations:-

- 1- Form the road by half cut-half fill techniques and compact the loose fill by dyanamic compaction.
- 2- Seal the entire surface of the road bench by black top immediately after the excavation this is so as to check the water infiltration into the subsurface soils.
- 3- Construct extra wide lined drain all along the hill side of the proposed road and make adequate arrangements for cross drainage.
- 4- Do not dispose the drained water on the loose/dispersive/soft ground.
- 5- Do not dispose the excavated waste on the lower slope, otherwise it will threat the stability of the lower slopes.
- 6- Protect the entire road by constructing the suitably designed retaining walls.
- 7- All the construction activities should be carried out as per the norms and Standard laid by the MORTH/ BIS codes for the Construction similar Structures.

5- Conclusion:- On the basis of the geological / geotechnical studies carried at the site and with the above recommendations, the alignment was found geologically suitable for the construction 2.5 km namely. Deghat-Nagchulakhil to Chantharkhadi-Kaliyaligur-Jhhipa Bend motor road, Distt. Almora.



27/03/2014

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