

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

भू-गर्भीय निरीक्षण आख्या एस0जी0-245/सड़क/पुल सम्प्रेषण/कुमांऊ/2015

**Geological Assessment of the 2 km long alignment corridor
proposed for Pandeykhark-Jijoli (Govt. Polytechnic) motor
road in Garur Block, Distt. Bageshwar, Uttarakhand.**

25-अगस्त-2015

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Vijay Dangwal

25-08-2015

1. Introduction:- The Provincial Division, PWD, Bageshwar vide G.O. No-4417/111(2)45-04 मुम0घ0/2015 दिनांक 27.05.2015 (announcement no. 668/2014) has been entrusted for the construction of 2 km long motor road namely Pandeykhark-Jijoli (Govt. Polytechnic) motor road located in Garur Block, District Bageshwar, Uttarakhand. On the request made by Shri. R.K. Punetha, Executive Engineer I carried out the geological/geotechnical assessment of the proposed alignment corridor on 14.08.2015. Er. A.S. Bisht, Astd. Engineer and Er. Virendra Kumar, Junior Engineer, PWD, Bageshwar was present during the site visit.

Two alternative alignments i.e Alignment No.1 and Alignment No.2 was proposed for the construction of the above said motor road. On the basis of the various geological, geotechnical, geo-morphological parameters and vis-a-vis study, the alignment No.1 was found suitable for the construction of the above said motor road. The present report is being generated based for the proposed alignment No. 1.

2. Location:- The proposed alignment of the above said motor road originates from km 64 of Kausani Baijnath motor road within the vicinity of Garur Block, Distt. Bageshwar.

3. Geological Assessment:- Geologically, this alignment corridor lies in a part of Kumaon Lesser Himalaya Belt and this area is characterized by mild topographical features i.e low line hill slopes and wide river valleys. The rock masses belonging to Almora Formation exposed in this area which along this site are characterized by the quartzmica schist and quartz chlorite schists. The cross slopes of this alignment corridor are inclined between 25° to 35° and the slope facets are oriented towards N 100 to N 120 direction. These slopes are widely drained by small gullies and are manifests that the slope forming material is partially dispersive in nature. The entire cross slopes of this alignment is formed of thick overburden material which is largely residual soils and measures thickness of 4-6 m order as estimated at the site. This slope forming overburden material is dense, hard, compact and semi-dispersive in nature. According to an estimation made at the site the "Undrained Shear Strength" of this slope forming material was found ranging between 250 K Pa to 350 K Pa.

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

On the basis of the above and the study carried at the site the following recommendations are being made for the construction of the proposed road, failing to these the report will be treated as cancelled.

4. Recommendations:-

1. Form the road by half cut - half fill method and compact the fill material properly by dynamic compaction.
2. Avoid box cut, otherwise in order to form the bench excavate the hill maintaining the angle of repose i.e 30° .
3. Do not dispose the excavated waste on the lower slopes, otherwise it will threat the overall stability of the hill slopes.
4. Construct suitably designed retaining walls/ brest walls all along the road.
5. Construct large hill side lined drain all along the road and make adequate cross drainage arrangements.
6. Make adequate arrangements to dispose the drained water on the safe/ stable ground.
7. The drainage work must be taken up immediately after the excavation of the hill slopes.
8. All the construction activity must be carried out as per the standard codes of practice and standards and norms laid by the BIS/MORTH.

5. Conclusion:- On the basis of the geological studies carried at the site and with the above recommendations, the proposed site was found geologically suitable for the construction of 2 km long motor road namely Pandeykhark-Jijoli (Govt. Polytechnic) motor road located in Garur Block, District Bageshwar

V. Dangwal
25/8/15

(Vijay Dangwal)
Sr. Geologist

Office of the Engineer in Chief,
PWD Dehradun

Photo copy attached

[Signature]
सहायक अभियन्ता
राज्यीय खण्ड लोडिंग विभाग
बागेश्वर 26/8/15