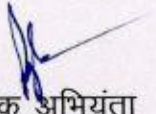
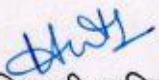


परियोजना का नाम:- जनपद बागेश्वर में फटगली-धमोली-मालूझाल-ओखलसों मोटर मार्ग का निर्माण ।

भू-वैज्ञानिक की आख्या

— संलग्न है —

  
सहायक अभियंता  
प्रान्तीय खंड, लो०नि०वि०  
बागेश्वर

  
अधिशाली अभियंता  
प्रान्तीय खंड, लो०नि०वि०  
बागेश्वर

नोट- प्रयोक्ता एजेन्सी द्वारा भू-वैज्ञानिक की आख्या प्राप्त कर प्रस्ताव के साथ संलग्न की जायेगी।

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

भू-गर्भीय निरीक्षण आख्या एस0जी0-258/सड़क/पुल समेखण/कुमाऊं/2015

Geological Assessment of 6 km long alignment corridor  
proosed for Dhamoli-Malujhal-Okhalson motor road in  
Bageshwar Constituency, Distt. Bageshwar, Uttarakhand

18-सितम्बर-2015



**Geological Assessment of 6 km long alignment corridor  
proposed for Dhamoli-Malujhal-Okhalson motor road in  
Bageshwar Constituency, Distt. Bageshwar, Uttarakhand.**

*Vijay Dangwal*  
18-09-2015

**1. Introduction:-** The Provincial Division, Public Works Department, Bageshwar vide G.O No. 2724/111(2)/15-05(मु0म0घ00)/2015 दिनांक 24.04.2015 has been entrusted for the construction of 6 km long motor road namely Dhamoli-Malujhal-Okhalson motor road in Bageshwar Constituency, Distt. Bageshwar, Uttarakhand. On the request made by Shri. R.K. Punetha, Executive Engineer, I carried out the geological assessment of the proposed alignment corridor of the road on 15.08.2015. Er. A.S. Bisht, Asst. Engineer and Er. Jagat Singh Bora, Jr. Engineer PWD, Bageshwar accompanied 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 with no HP Bend 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 corridor of the above said motor road originates from km 4 of Baijnath-Bageshwar-Berinag motor road km 12 to Kamol motor road located in Bageshwar constituency, Distt. Bageshwar.

**3. Geological Assessment:-** Geologically, the alignment corridor proposed for the above said motor road lies in a part of Inner Lands of Kumaon Lesser Himalaya Belt exposed by the rock masses belonging to Berinag, Chakrata and Mandhali Formations. The terrain containing this alignment is rugged and dissected and the entire segment containing it is characterized by the hill slopes dissected by the cross drains of river Gomati. The alignment corridor of the road largely passes across the hill slopes formed of the overburden material largely comprised of the hill/slope wash and at places contains residual soils. The rocks masses exposed along this alignment corridor are heterogeneous in nature. The quartzites are exceptionally hard, fresh and compact in nature, the dolomites are slightly weathered, hard and compact while the medium to fine grained muddy quartzites are slightly weathered, fairly hard and compact. These rock masses are traversed by four prominent joint sets which are almost widely spaced to each other. At places the rock masses are intensely deformed and distressed in nature. The joints recorded at the site are given in the following table.

**Table**

S.No	Feature	Dip angle	Azimuth
1	2	3	4
J <sub>1</sub>	joint	45°	N 220
J <sub>2</sub>	joint	30°	N 105
J <sub>3</sub>	joint	85°	N 300
J <sub>4</sub>	joint	45°	N 045



These rocks exhibits moderate values of physical competency and according to an estimation made at the site the "Uniaxial Compressive Strength" of these rock masses was estimated ranging between 100 M Pa to 200 M Pa.

The large part of this alignment passes across the cross slopes formed by the overburden material generated in the form of hill/slope wash. This material is comprised of the rock clasts embedded in the silty-clay matrix. This material is naturally dense and hard in dry state. It do not contain any signatures related to the ground movement and it do not contain any cracks. Nowhere sink holes/pot holes, slush like conditions were encountered. This material is good in physical competency.

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. Do not dispose the excavated waste on the lower slopes, otherwise it will threat the overall stability of the hill slopes.
3. Construct suitably designed retaining walls/ brest walls all along the road.
4. Construct large hill side lined drain all along the road and make adequate cross drainage arrangements.
5. The drained water shall be disposed on the safe/ stable ground.
6. The drainage work must be taken up immediately after the excavation of the hill slopes.
7. 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 6.00km long motor road namely Dhamoli-Malujhal-Okhalson motor road in Bageshwar Constituency, Dist. Bageshwar, Uttarakhand.

*V. Dangwal*  
18/9/2015  
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Sr. Geologist  
Office of the Engineer in Chief,  
PWD Dehradun

लेटे बरि बगिचन

सहायक अभियन्ता  
राज्यीय लण्ड लोड निगम  
बगेश्वर