

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

भू-गर्भीय निरीक्षण आख्या एस0जी0-239/सड़क/पुल सम्प्रेषण/कुमांऊ/2015

Geological Assessment of 3 km long alignment corridor
proposed for Shanti Bazar Mathkhal Talladob motor road
in Bageshwar Constituency, Distt. Bageshwar, Uttarakhand.

10-अगस्त-2015

**Geological Assessment of 3 km long alignment corridor
proposed for Shanti Bazar upto Mathkhal Talladob motor
road in Bageshwar Constituency, Distt. Bageshwar,
Uttarakhand.**

Vijay Dangwal
10-08-2015

1. Introduction:- The Provincial Division, PWD, Bageshwar has been entrusted for the construction of 3 km long alignment corridor proposed for Shanti-Bazar-Mathkal upto Talladob motor road in Bageshwar Constituency, District Bageshwar, Uttarakhand vide G.O No-4417 / 111(2) / 15-04(मु0मं0घ00) / 2015 दिनांक 27.05.2015. On the request made by Shri. R.K Punetha, Executive Engineer I carried out the geological/geotechnical assessment of the proposed alignment corridor on 07.08.2015 in presence of Er. A.S. Bisht, Astt. Engineer and Er. Kokital Bhonriyal, Junior Engineer, PWD, Bageshwar.

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 comparative study the alignment No.1 was found suitable for the construction of the above said road. The present report is being generated based on the geological assessment carried out along the alignment corridor No. 1.

2. Location:- The proposed alignment of the above said motor road originates from km 8 of Dhaina-Lakhni motor road and it contains 3 HP Bends.

3. Geological Assessment:- Geologically the alignment corridor proposed for the above said motor road lies in a part of Kumaon Lesser Himalayan Belt. Mostly the rock masses belonging to Almora Group which are represented by granites, granodiorites and varieties of schists and the quartzites belonging to Nagthat Formation are exposed in this gamut. The terrain containing this alignment is characterized by the moderately inclined hill slopes, rugged and dissected topography. The cross slopes of this alignment are inclined at low to moderate angle and most of cross slopes are occupied by the overburden material of 1-4 m order. The rock masses are scantily exposed along the alignment corridor and these are fair in physical strength. The bed rocks exposed along the alignment corridor have been traversed by four prominent joint sets which are moderately smooth along the surfaces and widely spaced to one another, tight and infilled by the secondary inclusions at places. These rock masses exhibits moderate values of physical competency according to the manual test performed at the site. According to estimation the "Uniaxial Compressive Strength" of these rocks was found ranging between 30 M Pa to 75 M Pa. It has been observed that the rock masses exposed on the alignment slopes have attained moderate degree of exogenic alteration i.e W_0 to W_1 Grade. The bed rocks exposed along this alignment corridor contains good amount of plagio-clays fell spars, the mineral prone to exogenic alteration.

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The overburden material deposited on the cross a slope of this alignment is naturally dense, hard in dry state and well compacted. It contains clay minerals in abundance. This material exhibits high values of competency in dry state.

The slope forming soils do not contain considerable amount of soft soils and entire ground containing this alignment do not exhibits signatures related to the ground subsidence i.e sink/pot holes. Nowhere slush like ground conditions were encountered during the walkover.

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. Construct the road by half cut-half fill method and compact the fill material by dynamic compaction.
2. Do not dispose the excavated waste on the lower slopes, otherwise it will erode the lower slopes and threat the overall stability of the hill slopes.
3. Protect the entire road by constructing suitably designed either side i.e. hill/valley side retaining/breast walls.
4. Seal the entire surface of the road by the black top from outer edge to the inner edge. This is very much required to check the water infiltration into the subsurface material.
5. The road must have adequate long and cross drainage arrangements and the drain water must be disposed off on the safe and stable ground.
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 studies carried at the site and with the above recommendations, the proposed site was found geologically suitable for the construction of 3 km long alignment corridor proposed for Shanti-Bazar-Mathkal Talladobe motor road in Bageshwar Constituency, District Bageshwar, Uttarakhand.

Photocopy attached
26-8-15
सहायक अभियन्ता
ग्रन्तीय खण्ड लोड निगम वि०
बागेश्वर

V. Dangwal
10/8/15
(Vijay Dangwal)
Sr. Geologist

Office of the Engineer in Chief,
PWD Dehradun