

परियोजना का नाम:- जनपद बागेश्वर में सोलिया बजानी-मैजुलिया मोटर मार्ग का निर्माण ।

भू-वैज्ञानिक की आख्या

— शेखर ए —

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 एस0जी0-244/सड़क/पुल समरेखण/कुमांऊ/2015

**Geological Assessment of the 3 km long alignment corridor
proposed for Soliya-Bajani to Maijuliya motor road in Garur
Block, Distt. Bageshwar, Uttarakhand.**

24-अगस्त-2015

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Vijay Dangwal

24-08-2015

1. Introduction:- The Provincial Division, PWD, Bageshwar vide Chief Minister's Declaration No- 666/2015 has been entrusted for the construction of 3 km long motor road namely Soliya-Bajani to Maijuliya 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 15.08.2015. Er. A.S. Bisht, Astd. Engineer and Er. Sanjay Karki, 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 10 of Jintoli-Udakuli motor road located in Garur Block, Distt. Bageshwar.

3. Geological Assessment:- Garur and its surrounding environs geologically falls within the Realm of Almora Crystalline Thrust Sheet and at many places the rock masses belonging to Berinag Formation and Tejam Group are also encountered in this area. The terrain is rugged and dissected and it is characterized by the moderate to steeply inclined hill slopes having irregular relief. The cross slopes of the proposed alignment are inclined at 25° to 35° angle oriented towards N 140- N 110 degree. These slopes are exposed by the varieties of schists, gneisses and the overburden material in iratic form. The rock masses exposed on and across of this alignment corridor are slightly weathered and oxidized in nature and these have attained weathering grade of W_1 order. These are thinly foliated in nature and have been traversed by four prominent joint sets. The outcrops of bed rocks exhibits moderate values of physical competency according to onsite manual tests. The rock defects are closely spaced to one another and do not bears very long persistence except to the foliation planes therefore, the entire visible section of these rock masses are intensely jointed and deformed in nature. According to the estimation made at the site the "Uniaxial Compressive Strength" of the rock masses exposed along this alignment corridor was found ranging between 30 M Pa – 75 M Pa.

Large part of the alignment in question passes across the hill slopes formed of the overburden material which is comprised of the angular rock fragments embedded in the silty clay matrix. This material is naturally dense, hard and compact and its thickness was assessed ranging between 0.5 m to 5.0 m order at various sites. This overburden material is "Stiff" to "Very Stiff"

and it contains clayey minerals in abundance in dry state. The material deposited on the cross slopes of this alignment seems free from any soft soils as the entire either side visible ground do not bears ground deformation signatures i.e sink/pot holes. It has been noticed during the walkover that the entire alignment corridor is free from ground subsidence and nowhere slush like ground conditions were encountered. The physical competency of the slope forming soils was assessed ranging between 300 K Pa to 400 K Pa and this material is more or less monolithic and it exhibits good consistency.

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 size lined long hill side drain all along the road and make adequate cross drainage arrangements.
5. Make adequate arrangements to dispose the drained water 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 3 km long alignment corridor namely Soliya-Bajani to Maijuliya motor road located in Garur Block, District Bageshwar, Uttarakhand.

V. Dangwal
24/8/15

(Vijay Dangwal)
Sr. Geologist

Office of the Engineer in Chief,
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Photo copy attached.

सहायक अभियन्ता
ग्रन्थीय खण्ड लोडिंग विड
बागेश्वर 24/8/15