

परियोजना का नाम:- जिला योजना में जनपद बागेश्वर में देवीनगर (धामपुर)-तुसरेरा-ठांगा
मोटर मार्ग का निर्माण।

भू-वैज्ञानिक की आख्या

— संलग्न २ —

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- 198/सड़क/पुल समरेखण/कुमाऊ/2014

Geological assessment of the alignment corridor
proposed for Devinagar-Dhampur to Tushreda-
Dhaga motor road, Distt. Bageshwar.

15-दिसम्बर-2014

(10)

**Geological assessment of the alignment corridor
proposed for Devinagar-Dhampur to Tushreda-Dhaga
motor road, Distt. Bageshwar.**

Vijay Dangwal

15.12.2014

- 1- Introduction:** - The Provincial Division, Public works Department Bageshwar has been entrusted for the preparation of preliminary estimate of 7.00 Km long motor road namely Devinagar-Dhampur to Tushreda-Dhaga motor road in Kanda Constituency, Distt. Bageshwar, under Distt. Plan No. 1499/Jila Yojana /2010-11, dated 22.10.2011. The PD has prepared two alternative alignments No.1 & No.2 for preparing the estimate for the construction of this road and on the basis of the merits the Alignment No. 1 was referred to me by the Executive Engineer, Shri Mahendra Kumar, for carrying out the geological assessment. On the request made by him I carried out the geological assessment of the alignment on 12.12.2014 in presence of Er. B.C. Joshi, Asst.Engineer and Er. Chanchal Singh Koranga, Jr. Engineer.
- 2- Location:** - The alignment corridor proposed for the above said road originates from Dhampur hamlet falling at km 74 of Baijnath-Bageshwar-Berinag motor road located in Kanda Block Distt.Bageshwar.
- 3- Geological Assessment:** - Devinagar, Dhampur, Tushreda, Dhaga and it's surrounding environs geologically falls in the Kumaon Lesser Himalayan geotectonic block bounded by the Main Central Thrust(MCT) and Main Boundry Thrust(MBT) located in it's north and south directions respectively. Mostly the quartzites belonging to Berigag formation are exposed in the entire gamut of the proposed road. The quartzites are almost fresh, hard, compact and massive in nature and have been dissected by numerous discontinuities. The strike and dip orientation of the joint sets dissecting rock masses are almost fair and at places these become unfavorable but the relief of the hill slopes at these reaches is very low. The cross slopes of the proposed alignment are inclined at moderate to steep angle which becomes low at village Tushreda. These slope facets are oriented in north west direction at Devinagar which gradually turns towards southwest direction at Dhampur and finally toward the south direction at village Tushreda. Most of the alignment corridor of the above said road is formed by the overburden material comprised of sub angular rock fragments of all sizes which are firmly embedded in the clayey matrix. This material varies in thickness from 1.5 to 5.0m order and its maximum thickness were visually measured along km 6 and

7 of this alignment. Mostly the hillocks bearing the proposed alignment bears moderate relief except the steep slopes overlooking village Tushreda. Some part of this alignment passes across the stepped like cultivated fields which are comprised of the plastic clays. The soils comprising the grounds are almost residual soils which contains a good percentage of silty and plastic clays. It has been observed that the soils deposited on the alignment slopes are stiff and hard in dry state and these are dense and spontaneously well compacted. As the slope forming soils contain high percentage of clay minerals which are highly susceptible for water absorption, adequate arrangements for rainwater runoff along and across the proposed road must be made otherwise the slopes will get saturated and may fail. Though the large part of the alignment is exposed with the thick envelope of the overburden material but scanty outcrops of in situ quartzites which are fresh, hard and compact and widely jointed have been seen along it. The details of these joints traversing the rock mass are given in the following table.

Table

S. No	Dip Amount	Dip Azimuth
J ₁	35°	N 355
J ₂	85°	N 120
J ₃	78°	N 080
J ₄	65°	N 220

On the basis of the 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 these this report will be automatically treated as cancelled.

4- Recommendations:-

1. Construct the road by full excavation of hill slope and protect the road by constructing suitably designed retaining and breast walls.
2. The entire surface of the road from outer edge to inner edge must be sealed immediately after the excavation, this is so as to check the water infiltration into the sub soil, otherwise the slope will fail and threat the stability of the road.
3. Construct extra large lined drain all along the hill side of the road and make adequate cross drainage arrangements. The rain water run-off from the upslope catchment should not allow to percolate into the weak strata, otherwise it must be disposed on the safe/ stable ground.

4. Do not dispose the excavated waste on the down hill slopes.
5. Protect the either side slopes of the road by bio-engineering methods especially by plantation of eco-friendly plants.
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 / geotechnical studies carried at the site and with the above recommendations, the site was found geologically suitable for the construction of 7.00 Km long motor road namely Devinagar-Dhampur to Tushreda-Dhaga motor road in Kanda Constituency, Distt. Bageshwar.

Vijay Dangwal
15/12/14
(Vijay Dangwal)

Sr. Geologist

Office of the Engineer in Chief,
PWD, Dehradun.

कोटा प्रेम कुमार

By
आचार्य बनिमल
राष्ट्रीय खण्ड लो० नि० वि०
बागेश्वर 2618115