

2128

दस्तावेज नं० 2324
पत्र सं० 109 सी
दिनांक 3-7-12

कार्यालय प्रमुख अभियन्ता ,
लोक निर्माण विभाग, देहरादून।

भू - गर्भीय निरीक्षण आख्या एस0जी0 - 78/सड़क समरेखण/कुमाऊँ/2012

**Geological Assessment of the Alignment proposed
for Ghughuti- Kailani to Masmoli motor road,
District- Almora, Uttarakhand.**

25-जून-2012

छायाप्रति सत्यापित
सहायक अभियन्ता
प्रान्तीय खण्ड लो० नि० बि०
राजीव

**Geological Assessment of the Alignment proposed for
Ghughuti- Kailani to Masmoli motor road, District- Almora,
Uttarakhand.**

Vijay Dangwal
25-06-2012

1. **Introduction:-** The Provincial Division, Public Works Department, Ranikhet has proposed the construction of 6/10 km long Ghughuti- Kailani to Masmoli motor road in District Almora, Uttarakhand. On the request of Er. K.S Aswal, Executive Engineer I carried out the geological inspection of the site on 12-05-2012. Er. N.K Pant, Asstt. Engineer and Er. S.P.S. Negi, Additional Asstt. Engineer, P.P. Tiwari, Jr. Engineer was present during the inspection visit.
2. **Location:-** The proposed alignment originates from village- Surmoli at km 3 (8-10) of Deghat- Bungidhar motor road and passes through Kailani and ends at km 12 of Chakargaon – Babalia motor road near village- Ghughuti in District- Almora, Uttarakhand.
3. **Geological Assessment:-** The area of the proposed road is located in the Kumaon Lesser Himalayan Zone bounded by the North Almora Thrust (NAT) and South Almora Thrust (SAT) in the north and south respectively. The entire gamut is occupied by the rocks of Almora Thrust Sheet comprised of vast overthrust succession of a variety of schists, micaceous quartzites and gneisses belonging to lower amphibolites series. Mostly granite, grainodiorites, augen gneisses, schists with micaceous quartzites are exposed in and around the area of the proposed alignment. These rocks are thinly foliated and partially weathered (W_1 - W_2 grade) and oxidized in nature. Four prominent joint set traverse these rocks which are mostly tight and infilled by secondary inclusion.

Most of the rock mass is covered with the envelope of overburden material comprised of residual soil, which is naturally dense and well compacted.

The Uniaxial Compressive Strength (UCS) of the rock has been estimated between 20 M Pa to 50 M Pa and the Undrained Shear Strength of the soil was assessed between 200 k Pa to 350 k Pa. The slope forming over burden material do not contain soft/ dispersive minerals.

छायाप्रति सत्यापित
सहायक अभियन्ता
प्रान्तीय खण्ड लो० नि० डि०
रानीखेत

The alignment passes across the slopes inclined at low to moderate angle in N 045 to N 100 direction and the entire area is drained by the cross drains (vinod nadi) a perennial stream of river Ramganga.

The alignment slopes are free from landslides/ ground deformation.

By and large the slopes of the proposed alignment are stable.

On the basis of the studies carried at the site and the facts mentioned above the following remedial measures need to be incorporated in the present construction which are very important for the safety of the proposed structure.

4. Recommendation:-

1. Do not dispose the cut/ excavated material into valley side otherwise dispose the waste on topographically suitable dump yards.
2. Excavate the hill side slope from top to bottom in order to maintain overall stability of the slope.
3. Way out for cut and fill wherever it is possible this is so as to render the slope stable.
4. The road must have adequate lined road side/ cross drainage.
5. Construct suitably designed retaining /brest walls.
6. Do not blast heavily on the rocks.
7. Either side plantation on the slope will enhance the natural stability.
8. Design standards and specification laid down by IRC for similar category roads should be strictly followed.

5. Conclusion:- On the basis of the geological studies carried at the site and with the above recommendations, the proposed alignment was found geologically suitable for the construction 6/10 km long Ghughuti- Kailani to Masmoli motor road in District Almora, Uttarakhand.

Copy to Asstt. Engr. in P.D. P.W.D.
Ranikhet for information & further
necessary action.

Sp. Engr
28/7/12

Vijay Dangwal
25/6/2012
(Vijay Dangwal)
Sr. Geologist

Office of the Engineer in Chief,
PWD Dehradun

आयाप्रति सत्यापित
सहायक अभियन्ता
प्रान्तीय खण्ड लो. नि. 11
रानीखेत