

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

भू-गर्भीय निरीक्षण आख्या एस0जी0-845 / सडक / पुल सम्बन्ध / गढ़वाल / 2015

Geological Assessment of 7 km long alignment corridor
proposed for Dadua-Sirola to Mayali-Patakhal motor road,
Distt. Tehri Garhwal

19-अगस्त-2015

71

**Geological Assessment of 7 km long alignment corridor
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Distt. Tehri Garhwal**

Vijay Dangwal
19.08.2015

1. Introduction:- The Temporary Division, Public Works Department, Kirtinagar has been entrusted for the construction of 7 km long motor road namely Dadua-Sirola to Mayali-Patakhal motor road, located in Devprayag Block, Distt. Tehri Garhwal vide G.O. No. 54/111(2)/14-49(2000)/2013 दिनांक 29.01.2013. In response to the request made by Shri. B.P Nautiyal, Executive Engineer PWD, Kirtinagar I carried out the geological assessment of the proposed road on 30.05.2015. Er. Harshwardhan Maithani, Asstt. Engineer and Er. Asha Lata, Jr. Engineer, PWD, Kirtinagar was present during the site visit.

2. Location:- The proposed alignment corridor originates from km 3 HM 8-10 of Lachmoli-Jamnikhil motor road located in Devprayag Block, Distt. Tehri Garhwal.

3. Geological Assessment:- The alignment proposed for the above said motor road and their surrounding environs geologically falls in a part of Garhwal Lesser Himalayan Belt. Mostly the rock masses belonging to Chandpur Formation are exposed in this area. The terrain containing this alignment corridor is rugged and dissected and it is characterized by the topography containing moderate to steeply inclined hill slopes and deeply dissected stream channels. Most of this alignment passes across the cross slopes enveloped with the thick cover of overburden material largely generated by the weathering of the parent rocks i.e, schistose, phyllites. The bed rocks are scantily exposed along this alignment and the sequence of the bed rock and the overburden material is erratic. The phyllites exposed on and across the alignment slopes are thinly foliated schistose and slight to partially weathered in nature. These rock masses are traversed by many linear discontinuities and these are puckered and foliated in nature. A tectonic feature namely Srinagar Thrust (ST) in the North vicinity of the alignment corridor and its affect is clearly marked on the outcrops of rock masses. Therefore, these are sheared, shattered and deformed in nature.

The rock masses exposed along the alignment corridor exhibits moderate to low values of physical competency and according to an estimation made at the site the "Uniaxial Compressive Strength" of these rock masses was found ranging between 20 M Pa – 40 M Pa.

Most of this alignment passes across the slopes containing thick overburden material of 1-5 m order, as estimated across slopes. This material is comprised of the angular rock fragments and chips of the phyllites which are firmly embedded in the silty-clayey matrix. This overburden material contains good amount of plastic clays and silts. Therefore, on the one hand these are good and on the other hand these are semi-dispersive especially on the reaches where the percentage of the fine silts increased abruptly.

The cross slopes of this alignment are inclined at places. The geometry of the slopes is altered in the form of stepped like fields. The entire ground does not bear any slush like conditions and signatures related to the ground deformation.

By and large the alignment slopes are stable and presently free from any sliding/mass wasting activities.

Photo G/L Attached
सहायक अभियन्ता
अ० ख०. लो० नि० पिन श्रीनगर
मु० कीर्तिनगर

4. Recommendations:-

1. Form the road by half cut-half fill method and compact the fill material properly by dynamic compaction.
2. Do not blast the rock slopes by explosives.
3. Do not dispose the excavated waste on the lower slopes.
4. Construct suitably designed retaining walls/brest walls all along the road.
5. Construct large size lined long drain all along the hill side of the road and make adequate cross drainage arrangements.
6. Make adequate arrangements to dispose the drained water on the safe/stable ground.
7. The drainage work must be taken up immediately after the excavation of the hill slopes.
8. All the construction activity must be carried out as per the standard codes of practice and standards and norms laid by the BIS/MORTH.

19/8/15

Vijay Dangwal
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Uttarakhand Public Works Department
Dehradun

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मु. कीर्तिनगर