

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

भू - गर्भीय निरीक्षण आख्या एस0जी0-769/सड़क/पुल समरेखण/ गढ़वाल/2015

**Geological Assessment of the 1 km long alignment corridor proposed  
for Tolab to Pandi motor road, Distt. Rudraprayag.**

16-अप्रैल-2015



## Geological Assessment of the 1 km long alignment corridor proposed for Tolab to Pandi motor road, Distt. Rudraprayag.

Vijay Dangwal

16.04.2015

**1- Introduction:-** The Provincial Division, Public Works Department, Rudraprayag has been entrusted for the construction of 1 km long motor road namely Tolab to Pandi vide the District Magistrate's letter no. 532/ जिला योजना/अर्थ एवं संख्या/लो0मि0वि0/2012-13 दिनांक 11.09.2012. Consequent upon the request made by Er. Indrajeet Bose, Executive Engineer I carried out the geological assessment of the proposed alignment corridor for this road on 16.03.2015 in presence of Er. Shiv Charan Shah, Astt. Engineer and Er. Arun Singh Rana, Jr. Engineer, PWD, Rudraprayag.

**2- Location:-** The proposed alignment corridor for the above said road originates from km 5 of Malkoti-Dangi-Gaunao light motor vehicle road originating from Tilwara Tolab Mayakoti motor road, Distt. Rudraprayg.

Two alternative alignments i.e. Alignment no.1 and Alignment no.2 were proposed for the construction of this road. Considering the various geological and geotechnical parameters the alignment no.2 was rejected and the present report is being generated on the basis of the study carried at the Alignment no.1.

**3- Geological/Geotechnical Assessment:-** Geologically Tilwara Tolab Pandi and their surrounding environs falls in a part of Inner Lands of Garhwal Lesser Himalaya comprised of the quartzites, metabasic, igneous intrusives and granite gneisses. The entire terrain comprising it is characterized by the rugged and dissected topography characterized by the moderate to steeply inclined hill slopes which are oriented towards the SW direction. The cross slopes of the proposed alignment corridor, by and large are comprised of the overburden material formed of the composite soils containing rock fragments embedded in the silty-clay matrix. The in-situ bed rocks are scantily exposed along this alignment corridor, otherwise these are overlain by the deposited hill/slope wash material. The overburden material deposited on and across this alignment is physically competent, naturally dense, hard and compact in nature and exhibits very high values related to the strength parameters. The soil comprising the hill slopes do not contain any soft/dispersive soils. The entire road needs to be formed of paved shoulders this is so as to check the water percolation into the subsurface material.

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



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 on the hill slopes/full benching.
2. The either side slopes of the entire road must be protected by suitably designed retaining walls/ breast walls, this work shall be carried out simultaneously with the advancement of the road cutting. This is very important for the stability of the hill slopes.
3. 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.
4. Construct extra large lined drain all along the hill side of the road and make adequate cross drainage arrangements. The accumulated rain water run-off from this road and its upslope catchment should not allow to flow freely over the lower hills, otherwise it will severely threat the stability of the hill slopes.
5. Do not dispose the excavated waste on the lower slopes, otherwise it will threat the stability of the many houses and the hill slopes.
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 1 km long motor road namely Tolab to Pandi motor rod, Distt. Rudraprayag.

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16/4/15

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