

परियोजना का नाम : जनपद रुद्रप्रयाग के विकासखण्ड जखोली में जिला योजना के अन्तर्गत तिलवाडा भरदार स्यांरी मोटर मार्ग से स्यांरी गांव तक मोटर मार्ग के निर्माण हेतु लोक निर्माण विभाग को वनभूमि हस्तान्तरण प्रस्ताव, लम्बाई 1 किमी०

भू-वैज्ञानिक की आख्या

संलग्न है।

कार्यालय प्रमुख अभियन्ता एवं विभागाध्यक्ष
उत्तराखण्ड लोक निर्माण विभाग,
देहरादून

भू-गर्भीय निरीक्षण आख्या ए0जी0- 74/सड़क/पुल/सम्प्रेषण/उत्तराखण्ड/गढ़वाल-2017

Geological assessment of the alignment corridor proposed for
the construction of 1 km long motor road joining village Siyaari
to Badiyargad-Dhaudangi-Saurakhal motor road (at ch. km 53)
in Jakholi block, distt. Rudraprayag

17 अगस्त 2017

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Shiv Kumar Rai

17.08.2017

- 1- Introduction:-** The Provincial Division, Public Works Department under the district plan with the D.M. letter no. 95/जिला योजना/अर्थ एवं संख्या (नियोजन विभाग)/2014-15 dated 10.02.2015 has been entrusted for the newly construction of 1 km long motor road comprising of 2 HP Bend joining village Siyaari to Badiyargad-Dhaudangi-Saurakhal motor road (at chainage km 53) in Jakholi block, distt. Rudraprayag. For the above mentioned motor road, two different alignment has been proposed named Alignment 1 and Alignment 2. Both the alignment have the same length of 1 km but initiate from the different point. The Alignment 1 initiate from chainage km 53 of Badiyargad-Dhaudangi-Saurakhal motor road comprising 2 HP bend whole along its length of 1 km on the terrace like hill slope and accepted by the local villagers but Alignment 2 initiate from chainage 54 of the above mentioned motor road comprising 2 HP bend whole along its length of 1 km and it not accepted by the local villagers due to comparatively high percentage of irrigated land. Therefore, Alignment 1 is preferred for geological assessment. On the request made by Er. Indrajeet Bose, Executive Engineer I carried out the geological assessment of the proposed site on 02.07.2017 in presence of Er. Vishwajeet Khatri, Jr. Engineer, Provincial Division, PWD, Rudraprayag.
- 2- Location:-** The proposed alignment originates from chainage km 53 of Badiyargad-Dhaudangi-Saurakhal motor road which onwards follows the upslope direction of the hill slope comprising 2 HP bend whole along its length of 1 km and ultimately ends near village Siyaari, in Jakholi block, distt. Rudraprayag.
- 3- Geological Assessment:-** Geologically, Badiyargad-Saurakhal and its adjoining area falls in the Outer lands of Garhwal Lesser Himalayan Belt and very near to the prominent tectonic lineament and fault zone named Main Central Thrust (MCT). The area as a whole is occupied by the quartzites, Augen gneiss with thin bends of quartz vein and chlorite schist belongs to the Garhwal Group. These basement rocks are mostly massive, highly weathered, fractured, sheared and crushed which shows the effect of thrusting in the adjoining areas. The rock mass exposed in the area has been traversed by four prominent rock defects sets which are mostly tight and infilled by the secondary inclusion of quartz vein and sericite schist. The slopes across which the alignment passes are inclined at gentle angle have terrace like cultivated land and they are mostly enveloped with the overburden material and comprised of angular rock fragments embedded in the silty-clay matrix. The fine content of the slope forming material contains silty clay in abundance and such material loses its shear strength abruptly under moist/wet conditions. The rock mass exposed along the alignment is highly weathered in nature and its "Uniaxial Compressive Strength" has been

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estimated at the site ranging between 15 M Pa to 30 M Pa. These UCS values corresponds to the rock mass rating category under "weak" rock classes respectively. The overburden material deposited on the alignment slopes is mostly comprised of hill wash/slope wash material.

The overburden material deposited on the alignment slope is naturally dense and compact in nature.

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

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 full excavation of the hill slope and compact the fill material properly.
- 2- Construct extra wide hill side drain in order to collect the run-off from the upslope and the road.
- 3- The road must have adequate provision of cross drainage arrangements and the drained water must be disposed on the safe/stable ground preferably through the lined cross drains to avoid water infiltration
- 4- The muck should be disposed on the pre-identified suitable dump yard.
- 5- The road and its either side slopes must be protected by the suitably designed retaining/breast walls having basement on the rock.
- 6- All the constructions activities should be carried out as per the norms and standard laid by the IRC/MORTH, for the similar structure constructed in the Himalayas.

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 comprising 2 HP bend joining village Siyaari to Badiyargad-Dhaudangi-Saurakhal motor road (at chainage km 53), in Jakholi block, distt. Rudraprayag.


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