

परियोजना का नाम : जिला योजना के अन्तर्गत टिहरी-घनसाली मोटर मार्ग के फतेहू से रा0इ0का बुढना नगेला-मेंट एकलिंग कण्डवालगांव सुनारगांव धुराणगांव होते हुए धान्यों तक मोटर मार्ग के निर्माण

भू-वैज्ञानिक की आख्या

----- संलग्न है । -----

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

भू-गर्भीय निरीक्षण आख्या एस0जी0-855 / सड़क / पुल / सम्प्रेषण / गढ़वाल / 2015

Geological Assessment of 3 km long alignment corridor
proposed for Fatedu to GIC Budhana Nagela-Bhent-Ekling
Kandwalgaon-Sunargaon-Dhurangaon to Dhani motor road
located in Jakholi Block, Distt. Rudraprayag.

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02-सितम्बर-2015

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02.09.2015

1. Introduction:- The Provincial Division, Public Works Department Rudraprayag vide the DM's Letter No. 95/जि०य०/अर्थ एवं सख्या/नियोजन विभाग/2014-15 दिनांक 10.02.2015 has been entrusted for the construction of 3 km long alignment corridor proposed for Fatedu to GIC Budhana Nagela-Bhent-Ekling Kandwalgaon-Sunargaon-Dhurangaon to Dhani motor road located in Jakholi Block, Distt. Rudraprayag. On the request made by Shri. Indrajeet Bose, Executive Engineer, I carried out the geological assessment of the proposed alignment corridor on 12.08.2015. Er. Alim Akhtar, Asst. Engineer and Er. Manoj Negi, Jr. Engineer, PWD, Rudraprayag was present at the site.

Two alternative alignments i.e Alignment No.1 and Alignment No.2 was suggested by the Division for geological assessment of the above said motor road but on the basis of the various geological, geotechnical, geo-morphological and comparative studies the alignment No.1 was found suitable for the construction. The present report is being generated based on the geological assessment made along the alignment No. 1.

2. Location:- The alignment corridor proposed for the above said road originates from km 64 of Tehri-Ghansali-Tilwara motor road falling within the district boundaries of Distt. Rudraprayag.

3. Geological Assessment:- Geologically, the alignment corridor proposed for the above said motor road lies in a part of Garhwal Lesser Himalayan Belt and it is represented by the rock masses belonging to Bhatwari and Barkot units. The rock masses exposed in this area are largely comprised of augnissies and granitoids. The cross slopes of this alignment corridor are inclined at low to steep angle and large part of these are enveloped by the thick cover of overburden material having soil cover 3-5 m order. These slopes are oriented towards the NE direction and at places are altered in the form of stepped like small terraces. The terrain is characterized by the hill slopes having very high relief and it is drained by the small streams feeding to river Lhastar. The rock masses exposed along this alignment corridor are moderately strong to strong in physical competency according to the field measurements carried out by the manual tests. According to it the "Uniaxial Compressive Strength" of these rocks were found ranging between 50 M Pa to 100 M Pa and these are well interlocked and blocky in nature. All the joint sets are tight and linear and at places these are sealed by the secondary inclusions.

The overburden material deposited on the cross slopes of this alignment is comprised of the residual soils and slope wash material. At places mere pockets of clay are encountered besides the large exposure of the composite soils. This overburden material is naturally dense, hard and compact in nature and the clasts are firmly embedded in the silty clayey matrix. This material do not contain any soft/dispersive soils. According to an assessment made at the site the "Undrained Shear Strength" of these material which is exposed on the cross slopes of this alignment was found ranging between 350 K Pa to 450 K Pa.

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By and large the cross slopes of this alignment looks stable except the scars of historical slides. The entire alignment passes across the hill slopes which do not manifest any signatures related to the ground subsidence and these are free from the presence of any slush like conditions.

By and large the entire slopes of the proposed road are stable and free from any sliding/ mass wasting 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 falling to these this report will stand as cancelled.

4. Recommendations:-

- 1- Form the road by half cut - half fill method and compact the fill material properly by dynamic compaction.
- 2- Do not dispose the excavated waste on the lower slopes, otherwise it will threat the overall stability of the hill slopes.
- 3- Construct suitably designed retaining walls/ brest walls all along the road.
- 4- Construct large size lined long hill side drain all along the road and make adequate cross drainage arrangements.
- 5- Make adequate arrangements to dispose the drained water on the safe/ stable ground.
- 6- The drainage work must be taken up immediately after the excavation of the hill slopes.
- 7- All the construction activity must be carried out as per the standard codes of practice and standards and norms laid by the BIS/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 3 km long alignment corridor proposed for Fatedu to GIC Budhana Nagela-Bhent-Ekling Kandwalgao-Sunargaon-Dhurangaon to Dhani motor road located in Jakholi Block, Distt. Rudraprayag.

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21/9/15

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