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

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Geological Assessment of 3 km long alignment corridor proposed for Maniguh motor road to Khali Khamoli motor road via Syal Dobha in Agastyamuni Block , Distt. Rudraprayag.

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Vijay Dangwal
02.09.2015

1. **Introduction:-** The Provincial Division, Public Works Department Rudraprayag vide G.O No. 488 / III(2) / 15–10(मु0मं0घो0) / 2015 दिनांक 19.08.2015 has been entrusted for the construction of 3 km long alignment corridor proposed for Maniguh motor road to Khali Khamoli motor road via Syal Dobha in Agastyamuni 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. Shiv Charan Singh Shah, Astt. Engineer andz Er. Kamini Dhyani, 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 8 of Dudadhar-Ganeshnagar motor road constructed by PMGSY in Agastyamuni Block, Kedarnath Constituency, Distt. Rudraprayag.

3. **Geological Assessment:-** Geologically, the alignment corridor proposed for the above said motor road lies in the Inner Lands of Garhwal Lesser Himalayan Belt which is characterized by the rugged and dissected terrain. Mostly the rock masses belonging to Ramgarh Group are exposed in the vicinity of this alignment corridor which along this section are represented by the porphoroides named as Devguru porphoroids. The cross slopes of this alignment are inclined at moderate to steep angle which are exposed by the overburden material in large and very little by the bed rocks. These fields do not manifest any signatures related to9the ground deformations. Part of this alignment corridor passes across the hill slopes which are geometrically altered in the form of stepped like fields protected by the handpick masonary retaining wall. The rock masses exposed along this alignment corridor are slight to partially weathered in nature. Thinly foliated and dissected by the four prominent joint sets. These rock mass exhibits moderate values of physical competency.

The bed rocks along this alignment corridor are by and large overlained by the thick cover of overburden material which is dense, hard, compact in nature and exhibits very stiff consistency. This overburden material is comprised of the hill/slope wash material and the rock fragments present in it are firmly embedded in the silty-clay matrix.

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 failing to these this report will stand as cancelled.

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4. Reccomendations:-

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 t he 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 of 3 km long alignment corridor proposed for Maniguh motor road to Khali Khamoli motor road via Syal Dobha in Agastyamuni Block, Distt. Rudraprayag.

2/9/15

(Vijay Dangwal)
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