

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

भू-गर्भीय निरीक्षण आख्या एस0जी0-850 / सड़क / पुल / सम्प्रेषण / गढ़वाल / 2015

**Geological Assessment of 8.3 km long alignment corridor
proposed for Sarkot Devsari motor road in Tharali Block,
District-Chamoli**

27-अगस्त-2015

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District-Chamoli**

Vijay Dangwal

27-08-2012

1. Introduction: - The Temporary Division, PWD, Tharali has been entrusted vide Chief Minister's Notification No. 393 / 2015 for the construction of 8.3 km (Sanctioned length 9.00 km) long alignment corridor proposed for Sarkot Devsari motor road in Tharali Block, District-Chamoli. On the request made by Shri. Dhan Singh Kutiyal, Executive Engineer, PWD, Tharali I carried out the surface geological inspection of the proposed alignment corridor on 12.08.2015. Er. G.B. Joshi, Asstt. Engineer and Er. Manoj Kotla, Jr. Engineer, PWD, Tharali was present during the site visit.

2. Location:- The alignment of the proposed road originates from km km 8 of Gwaldam-Nandkeshari motor road and with 02 No's of HP Bends it passes on the upslopes of the motor road upto village Devsari in Tharali Sub Division, Distt. Chamoli Garhwal.

3. Geological Assessment:- Geologically the proposed alignment of the above said motor road lies in a part of Inner Lands of Garhwal Lesser Himalayan Belt comprised of the rock masses belonging to Almora Nappe. The entire terrain is characterized by the rugged and mountaineous terrain with moderate to high relief. This area is a part of the catchment of river Pinder and it is drained by its left bank tributaries. The geology of this area is highly complicated and the rock masses have undergone polyphase deformations. Mostly varieties of schists and granitoid rocks are exposed on and across this alignment corridor and large part of these are overlain by the thick cover of overburden material in the form of residual soils and hill/slope wash material. These rock masses have been traversed by many linear rock defects which are thickly jointed and tight in nature. These rock masses exhibit moderate values of physical competency as per the manual test performed at the time of site visit. According to the estimation the "Uniaxial Compressive Strength" of these rock masses was found ranging between 20 M Pa to 50 M Pa. These rock masses have undergone slight to partial weathering and their corresponding grades range between W₁ to W₂ Grade.

The cross slopes of this alignment are inclined at moderate to steep angle oriented towards the NW and SW directions. These are largely occupied by the thick cover of overburden comprised of the angular rock fragments, rock chips embedded in the silty clay matrix. This material is dense, hard and compact in nature and it contains clay minerals in abundance. According to the assessment made at the site the "Undrained Shear Strength" of this slope forming material was found ranging between 350 K Pa – 450 K Pa and its consistency was found "Stiff" to "Very Stiff".

The entire alignment corridor and its adjoining cross slopes are presently free from ground subsidence and nowhere impressions of pot/sink holes were encountered. The entire ground was visually found free from slush like conditions, presence of marsh land and it is free from the presence of soft soils.

The two HP Bends provided in this alignment are reflected on the firm and stable grounds.

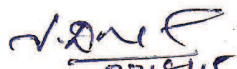
By and large the entire slopes of the proposed road are stable and free from any sliding/ mass wasting activities.

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.

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 of 8.3 km (Sanctioned length 9.00 km) long alignment corridor proposed for Sarkot Devsari motor road in Tharali Block, District-Chamoli.


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