

Geological Assessment of the 2.00 Km long Alignment Corridor Proposed for the Construction of Kyark - Barsudi - Bhairon Bend to Jamethi motor road, Distt. Rudraprayag

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30.07.2016

1-Introduction :- The Construction Division, Public Works Department Ukhimath, vide G.O. No. 553/2015 (C. M's Notification) has been entrusted for the construction of 2.00 km long motor road namely Kyark- barsudi - Bhairon Bend to Jamethi motor road in Agastyamuni Block, Kedarnath Constituency, Distt. Rudraprayag. On the request made by Shri Manoj Das, Executive Engineer I carried out the geological assessment of the alignment corridor proposed for the construction of this road on 27.07.2016. Shri Sandeep Samwal, Asst. Engineer and Shri Arun Prakash, Jr. Engineer accompanied the site visit.

2-Location :- The proposed alignment of the above said motor road originates from the Km 54 of Jakholi- Guptakashi State Highway No. 37 located in Agastyamuni Block, Kedarnath Constituency, Distt. Rudraprayag.

3-Geological Assessment:- Geologically the 2.00 km long alignment corridor proposed for the construction of the above said motor road lies in a part of Inner Lands of Garhwal Lesser Himalaya. The terrain containing this alignment corridor and its surrounding areas, cross slopes are characterized by steeply inclined, rugged and dissected hills slopes. This area is bounded by the Main Boundary Thrust (MBT) in the south and Main Central Thrust (MCT) to the north. The area containing this alignment is sandwiched between the MCT and the Srinagar Thrust (ST) which is another prominent tectonic lineament in this region of North -West Himalaya. Augen gneisses, schists and Quartzites belonging to Ramgarh Group are exposed in this area which are largely compact and hard in nature and have been dissected by many linear discontinuities. The quartzites exposed along the alignment are massive, hard and compact in nature and have attained weathering up to 1st Grade. The cross slopes of this alignment are inclined at moderate to steep angle and directly forms the up slopes of State Highway No. 37. Part of this alignment passes across the steep slopes and partly it passes on the slopes formed of soils comprising boulders

mixed with soils of sandy silty matrix. This overburden material is naturally dense, hard and compact in nature and it do not contain any soft /dispersive soils. The construction of this road involves the safety of State Highway If excavated unscientifically, therefore It is recommended to excavate this road by safe excavation means and for this a separate provision of excavation and dumping of excavated waste shall be incorporated in the DPR.

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

Nowhere, signatures of ground subsidence, presence of pot/sink holes were encountered during the site visit.

In the case of road construction along this alignment adequate arrangements as discussed above shall be made to safeguard the State Highway.

On the basis of the study carried at the site and the facts given above, the following recommendations are being made for the construction of the proposed road failing to these this report will be treated as cancel automatically.

4 Recommendations:-

- Form the road by half cut and half fill method and compact the fill material by dynamic compaction.
- In any case do not dispose the excavated waste directly on the lower slopes otherwise it will threat the stability of SH-37. It is advised to dispose the waste on the suitably pre-identified dump yards.
- Construct suitably designed retaining and breast walls all along the road in order to strengthen the road and protect the hill slope.
- Make sufficient drainage arrangements all along the road and ensure to develop a network for safe disposal of surface run off i.e. cascading gablon channels or any other engineered structure.
- Make a provision to seal the entire surface of the road. Ede to edge sealing will check the water infiltration into the subsurface material and help retaining the soil properties intact especially in the rains.

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- All the construction activities shall be carried out in the line of Standard Codes of Practice and the guide lines issued by MoRTH.

5-Conclusion:- On the basis of the geological/ geotechnical studies carried at the site and with the above recommendations the proposed 2.00 km long alignment corridor was found suitable for the construction of Kyark- Barsudi-Bhairon Bend to Jamethi motor road, In Agastyamuni Block, Kedarnath Constituency, Distt. Rudraprayag

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30/01/2016

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P.C. Attested



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