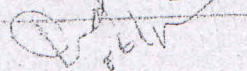


कार्यालय प्रमुख अभियन्ता एवं विभागाध्यक्ष
उत्तराखण्ड लोक निर्माण विभाग
देहरादून।

सू - गभीर निरीक्षण आख्या एसएलजी 480 / सरक / पुल समरेक्षण / गढ़वाल / 2013

Geological assessment of the alignment proposed for Nauli Pond
to Nauli motor road in Jakhoh block Distt. Rudraprayag.

कनिष्ठ अभियन्ता (पुल)



स.प.



06-दिसम्बर-2013

Geological assessment of the alignment proposed for Nauli Bend to Nauli motor road in Jakholi block Dist. Rudraprayag.

Vijay Bangwal

06-12-2013

1- Introduction:- The Provincial Division, Public Works Department Rudraprayag has proposed the construction of 1.00 km long motor road from Nauli Bend to Nauli motor road in Jakholi Block, District Rudraprayag. On the request of Er. Indrajeet Bose, Executive Engineer, P.W.D. Rudraprayag, I carried out the geological/ geotechnical assessment of the proposed alignment on 19.10.13 in presence of Er. Arjun Singh Panwar, Asst. Engineer and Er. Vishwajet Khatri, Jr. Engineer, P.W.D. Rudraprayag.

2- Location:- The alignment of the proposed road originates from km 13 of Tilwara-Bhardar-Sonrakhal motor road and ends at village Nauli in its 1.00 km length, with no HP Bend.

3- Geological Assessment:- Geologically the rock of Damta Group i.e. grey grawacks and metabasic rocks are exposed all along the alignment corridor of Nauli Bend to Nauli motor road. These rocks are exposed as partially weathered in nature and are dissected by numerous joints. These surfaces of all joint sets are smooth and few of them are opened and infilled by the clayey material.

By and large the alignment slope of the proposed road is inclined at moderate angle and it is comprised of rock fragments embedded in clay silty matrix. The soils exposed across the alignment corridor are stabilized by the natural compaction and they exhibit "Stiff" to "Very Stiff" consistency. It has been further observed that these soils along the proposed alignment do not contain any alkali mineral/soft soils prone to frequent deformation. The rock mass exposed along the alignment corridor comes under the "Soft Rock" category as per the ISRM manual tests.

Presently there do not exist any active tectonic plane in the near vicinity of the proposed alignment which may threat the stability of the proposed road. All the joint sets exposed along the alignment corridor do not form any adverse geometry for the slope failure.

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.

4- Recommendations:-

1. Form the road by half cut-half fill technique and compact the fill material properly.
2. The road must have extra large size hill side drain with adequate cross drainage arrangement.
3. Do not dispose the drained water on the weak ground, it is very much essential for the stability of the hill slopes.
4. The entire surface of the road berch must be sealed by black top immediately after the excavation of the hill slope or prior to rainfall, this is so as to check the water ingress into the sub surface material.
5. Construct suitably designed retaining walls, breast walls all along the road.
6. Do not dispose the excavated waste on the lower slopes, otherwise it should be dumped on the pre-identified suitable dump yard.
7. Protect the slopes of the road by bio-engineering methods especially by vetiver grass planted by expert agencies only.
8. All the construction activity must be carried out as per the standards and norms following the BIS codes prescribed for the similar civil construction in Himalayan Zone.

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 100 km long motor road from Nauli Bend to Nauli motor road in Jakholi Block, District- Rudrapur.

Vijay Dangwal
6/12/2017

(Vijay Dangwal)

Sr. Geologist

Office of the Engineer in Chief,
PWD Dehradun.