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

पत्रांक/भौगर्भीय निरीक्षण आख्या एस0जी0– 676 / सड़क / पुल सम्परेखण / गढ़वाल / 2014

Geological assessment of the alignment corridor proposed for Sauda Dwara to Chameli Chowk motor road Distt. Dehradun

सहायक अभियन्ता
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30–दिसम्बर–2014

(17A)

Geological assessment of the alignment corridor proposed for Sauda Dwara to Chameli Chowk motor road Distt. Dehradun

Vijay Dangwal
30.12.2014

1- Introduction:- The Temporary Division, Public Works Department Rishikesh has proposed for the construction of 5.8 km long motor road namely Sauda Dwara to Chameli Chowk under the Chief Minister notification. On the request made by by Er. Praveen Bahukhandi, Executive Engineer I carried out the geological assessment of the proposed alignment corridor of this road on 30.12.2014 in presence of Er. B.C Pant, Astt. Engineer and Er. Dharamveer, Jr. Engineer PWD, Rishikesh.

2- Location:- The alignment originates from km 20 of Bhaniyawala to Thano Raipur motor road and it ends at Dwara Hamlet with its length 5.8 km.

3- Geological Assessment:- Geologically the alignment corridor of the proposed road lies in the sub Himalayan Belt in the close vicinity of the Main Boundary Thrust (MBT). The entire area of this alignment and its surroundings are bounded by the Maion Boundary Thrust to the north and Himalayan Frontal Fault (HFF) to south direction. The hillocks ranging upto 600 m high named as Shivaliks constitutes the foothill ranges to either direction of Doon Valley. The entire area containing the alignment corridore and its environs are comprised of the Doon gravels whicha are well rounded and embedded in silty clay matrix forms the ground and slope forming material. The Shivalik Silt stones, sand stones and clay stones are buried underneath this slope forming material. This overburden material comes under the heavy soil category i.e soils mixed with boulder and it is dense, semi consolidated and semi dispersive in nature.

The rock mass exposed along the alignment corridor is subjected to very high stress rezime as it lies in the close vicinity of the measure tectonic dislocation. According to an estimation made the "Uniaxial Compressive Strength" of these rock masses have been assessed ranging between 10 M Pa to 20 M Pa. The rock masses are highly sheared, shatterd and highly deformed in nature.

By and large the alignment slopes are stable and presently free form any landslide/mass wasting activities but if engineered unscientifically may generate landslips/slides.

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 be automatically treated as cancelled.

4- Reccomendations:-

1- Construct the road by half cut and half fill techniques and compact the fill material properly by dynamic compaction.

2- The entire streatch of the road located on the upslopes of villages be constructed by cement concrete laid shoulder to shoulder and make large arrangements for the disposal of rain water from the road to the small streams located on the either side of this village.

3- The hill side slopes of the entire road must be protected by suitably designed retaining walls/ breast walls, this work shall be carried out simultaneously with the advancement of the road cutting. This is very important for the stability of the hill side slopes.

4- The entire surface of the road from outer edge to inner edge must be sealed immediately after the excavation, this is so as to check the water infiltration into the sub soil, otherwise the slope will fail and threat the safety of the village on its lower slopes.

5- Construct extra large lined drain all along the hill side of the road and make adequate cross drainage arrangements. The accumulated rain water run-off from this road and its upslope catchment should not allow to flow freely over the villages located in its downhill slopes.

6- Do not dispose the excavated waste on the lower slopes.

7- All the construction activity must be carried out as per the standard codes of practice laid by the BIS and 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 5.8 km.long motor road nmanly Sauda Dwara to Chameli Chowk under the Chief Minister notification, Distt. Dehradun

Photocopy Attested

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30/12/14

(Vijay Dangwal)
Sr. Geologist
Office of the Engineer in Chief,
PWD, Dehradun.