


परियोजना का नाम:-


राज्य योजना के अन्तर्गत मा० मुख्यमंत्री घोषणा में जनपद चमोली के विधानसभा क्षेत्र कर्णप्रयाग में नौटी-छातोली मोटर मार्ग का जखेट तक विस्तार हेतु।


भू-वैज्ञानिक की आख्या

भू-वैज्ञानिक की आख्या संलग्न है।

  
अमीन

  
कनिष्ठा अभियन्ता  
अस्थाई खण्ड लो०नि०वि०  
गौचर

  
सहायक अभियन्ता  
अस्थाई खण्ड लो०नि०वि०  
गौचर

  
अधिशाली अभियन्ता  
अस्थाई खण्ड लो०नि०वि०  
गौचर

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

भू – गर्भीय निरीक्षण आख्या एस0जी0-745 / सड़क / पुल समरेखण / गढ़वाल / 2015

**Geological assessment of the 1.00 km long  
extenstion proposed for Nauti-Chatoli motor road  
uptpo Jakhet, Distt. Chamoli.**

03-मार्च-2015

# Geological assessment of the 1.00 km long extension proposed for Nauti-Chatoli motor road upto Jakhet , Distt. Chamoli.

Vijay Dangwal

03.03.2015

**1- Introduction:-** The Temporary Division, Public Works Department Gauchar has been entrusted for the 1.00 km long extension of Nauti-Chatoli motor road upto Jakhet vide G.O No.- 4305/ (1)III(2)/11-16(मु०म०घ०) dated 16.09.2011. On the request made by Er. M.K. Bhatt, Executive Engineer, I carried out the geological assessment of this alignment corridor on 14.02.2015 in presence of Er. Amit Patel Asstt. Engineer and Er. Anuj Kumar Sharma, Jr.Engineer, T.D, PWD, Gauchar.

**2- Location:-** Two alternative alignments i.e Alignment No.1 and Alignment No.2 was investigated for the proposed extension. On the basis of the geological, geotechnical, geomorphological and comperative studies carried out the alignment No.1 originating from village Chaurasain located on km 7.00 of Nauti-Chatoli-Chaurasain motor road was found suitable for the construction. This alignment connects village Bhatg wali within its 1 km length. The present report bears the details of the study carried out along the alignment No.1.

**3- Geological Assessment:-** Geologically the alignment corridor proposed for the 1.00 km long extension of this road lies in a part of Inner Belt of Garhwal Lesser Himalaya. Mostly the rocks belonging to Damta Group and quartzites of Garhwal Group are exposed in and around this alignment corridor. The rock masses along the alignment corridor are almost overlain by the thick cover of overburden material. The terrain bearing this alignment is characterized by the low to moderately inclined hill slopes lying in between the steeply inclined slopes. The cross slopes of this alignment are inclined at  $25^{\circ}$  to  $35^{\circ}$  angle oriented in N 170- N 220. By and large the cross slopes are geometrically altered in the form of stepped like fields.

The rock masses exposed around this alignment are comprised of thinly foliated quartzarenites, quartzites, phyllites and shales and these are highly distressed jointed and sheared in nature. The overburden material deposited on these rock masses contains a good percentage of the fragments generated by these.

Most of this alignment corridor is exposed with the thick cover of overburden material comprised of angular rock fragments embedded in silty-clay matrix. This material is naturally dense, hard in dry condition and compacted in nature. This material is prone to water absorption and incase of the construction of this road needs a lot of remedial measures to avoid the direct infiltration of surface run-off. It is apprehended that water infiltration will increase the unit weight and reduce the effective shear stresses present in this material, resulting in the formation of frequent slip circles. Therefore, it is advised to seal the entire surface of the road bench so that the water infiltration can be checked. The soils containing this overburden material falls within the category of heavy soils and these exhibits moderate values of physical competency.



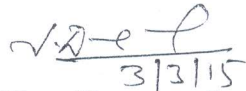
By and large the alignment slopes are stable and presently free from any landslide/ mass wasting activities.

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 extension of the proposed road failing to these this report will be automatically treated as cancelled.

#### **4- Recommendations:-**

1. Construct the road by half cut and half fill techniques and compact the fill material properly by dynamic compaction and preferably form the road by cement-concrete.
2. The either side slopes of the entire road must be protected by suitably designed retaining walls/ breast walls, as per site specific. 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.
3. 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.
4. 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 lower hills.
5. Do not dispose the excavated waste on the lower slopes, it will damage the Highway and obstruct the communication.
6. 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 alignment was found geologically suitable for the 1.00 km long extension of Nauti-Chatoli motor road upto Jakhet, Distt. Chamoli.

  
3/3/15  
(Vijay Dangwal)  
Sr. Geologist  
Office of the Engineer in Chief,  
PWD, Dehradun.

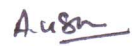
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भू-वैज्ञानिक की संस्तुतियों/ सुझावों का अनुपालन किये जाने का प्रमाण-पत्र।

प्रमाणित किया जाता है कि विषयगत परियोजना के निर्माण हेतु भू-वैज्ञानिक द्वारा दिये गये सुझावों/संस्तुतियों का अनुपालन सुनिश्चित किया जायेगा।

  
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