परियोजना का नाम :– जनपद टिहरी के विधान सभा क्षेत्र प्रतापनगर में राज्य योजना के अन्तर्गत तेलुंगा (माजफ) से घोलडानी तक सड़क निर्माण।

भू–वैज्ञानिक की आख्या

प्रमाणित किया जाता है कि प्रस्तावित परियोजना की भू–वैज्ञानिक की आख्या अग्र पृष्ठों पर संलग्न है।

अधिशासी अभियन्ता
प्रान्तीय प्रयोक्ता एजेन्सी वि०
नई टिहरी (उत्तराखंड)

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

भू – गर्भीय निरीक्षण आख्या एस0जी0– 638/सड़क/पुल समरेखण/ गढ़वाल/2014

Geological assessment of the alignment corridor proposed for Majaf to Goldani motor road, Distt.Tehri Garhwal.

15–दिसम्बर–2014

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Geological assessment of the alignment corridor proposed for Majaf to Goldani motor road, Distt.Tehri Garhwal.

Vijay Dangwal

15.12.2014

1- Introduction:- The Provincial Division ,Public works Department,New Tehri has proposed the new construction 7.625 Km long motor road namely Majaf to Goldani motor road in Pratapnagar Block Distt.Tehri Garhwal. On the request made by Shri Jagmohan Singh Chauhan, Executive Engineer, I carried out the geological assessment of the proposed alignment corridor of this road on 3.12.2014 in presense of Er. Lalit Mohan Khatri, Jr. Engineer, PWD New Tehri.

2- Location:- The alignment corridor proposed for the above said road originates from km 12 of Lambgaon-Pratapnagar motor road located in Pratapnagar Block Distt.Tehri Garhwal. In all 9 HP Bends has been provided in this alignment.

3- Geological Assessment:- Majaf–Goldani and it's surrounding environs including Pratapnagar and Lambgaon, geologically falls in the Garhwal Lesser Himalayan Geotectonic Block bounded by the Main Central Thrust(MCT) and Main Boundry Thrust(MBT) located in it's north and south directions respectively.Most of the alignment corridor of this road is comprised of the overburden material which are of considerable thickness and overrides the bed rocks i.e. the quartzits belonging to Garhwal Group. The land form of the cross slopes along the alignment corridor is mostly formed of low to moderately inclined slopy terrace followed by the hillocks on its upslopes. The slopy ground has been altered in the step like fields. The soils comprising the ground are almost residual soils which contains very high percentage of plastic clays which are stiff and hard under dry state. Presently and these are naturally well compacted and dense and their "Undrained Shear Strength" has been assessed ranging between 400 K Pa to 500 K Pa. As the slope forming soils contain high percentage of clay minerals which are highly susceptible for water absorption, adequate arrangements for rainwater run off needs to be made along and across of this proposed road. Though the large part of the alignment is exposed with the thick envelope of the overburden material but scanty outcrops of in situ quartztzites have

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seen at the site which have undergone polyphase deformation and are sheared, shattered, tectonized.

The cross slopes above village Majaf of this alignment are inclined at moderate to steep angle and the walls constructed on the either side fields not bear any signature of deformation like settlement/bulding etc.

The scanty outcrops of the rock mass exposed along the alignment corridor have been traversed by four prominent joint sets. The jont sets dissecting the rock mass are almost linear, tight, rough and infilled by the secondary inclusion.

The slope forming overburden material beyond the village Majaf is comprised of angular rock fragments which are embedded in clay silt matrix. This composite material is well compacted in nature and it is dense and heavy soil i.e. soil mixed with boulders for engineering purposes.

The overburden material do not contain any soft and dispersive soils.

All the HP Bends proposed for the construction of this road falls on the stable ground.

By and large the alignment slopes are stable and presently free from any mass waisting activities and the slope across it bears moderate relief.

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. Any type of loose filling will allow the rain water to percolate inside and aggravate the road and slope to fail.
2. The hill side slopes of the entire road must be protected by suitably designed retaining walls/ breast walls, this work shall be carried out immediately after 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.

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4. Adequate arrangements for diversion of rain water away from the over looking slopes of village Majaf must be made, otherwise it will erode the ground forming soils of village Majaf and will threat the stablitly of the village.
5. Construct extra large lined drain all along the hill side of the road and make adequate cross drainage arrangements. The rain water run-off from the upslope catchment should not allow to flow free on or along the lower slopes.
6. Do not dispose the excavated waste on the down hill slopes.
7. The HP Bends must be constructed on flatter and stable grounds and arrangements for disposal of run-off water around it must be made properly.
8. 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 7.625 Km long motor road namely Majaf to Goldani motor road in Pratapnagar Block Distt.Tehri Garhwal.

15/12/14

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

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