2·28

प्रपत्र– 26

परियोजना का नामः– एस.सी.पी. के अन्तर्गत जनपद बागेश्वर में पालड़ीछीना मल्ली ढाना –नैनी मोटर मार्ग का निर्माण।

भू–वैज्ञानिक की आख्या

संलग्न है।

नोट– प्रयोक्ता ऐजेन्सी द्वारा भू–वैज्ञानिक की आख्या प्राप्त कर प्रस्ताव के साथ संलग्न की जायेगी।

228

कार्यालय प्रमुख अभियन्ता ,
लोक निर्माण विभाग, देहरादून।

भू – गर्भीय निरीक्षण आख्या एस0जी0–133 / सड़क समरेखण / कुमाऊँ / 2013

Geological Assessment of the alignment proposed for Paldichina –Mallidhana-Nari-Binsar-Bhojadi-Danuchina-Bhattkheda motor road, Distt-Bageshwar

16–अगस्त–2013

2.28

Geological Assessment of the alignment proposed for the Extension of Paldicheena-Mallidhana-Nari- Binsar-Bhojadi-Danuchina-Bhattkheda motor road, Distt-Bageshwar

Vijay Dangwal
16-08-2013

1- Introduction:- The Provincial Division Public Works Department Bageshwar has proposed the construction of 6 km extension Paldicheena-Mallidhana-Nari-Binsar-Bhojadi-Danuchina-Bhattkheda motor road in Distt Bageshwar. On the request of Er. Mahendra Kumar the Executive Engineer, P.D Bageshwar the undersigned carried out the geological assessment of the proposed alignment corridor on 15.06.2013 in presence of Er.K.K. Tilara, Astt Engineer and Er.G.C. Joshi the concerned Jr. Engineer.

2- Geological Assessment:- Paldichina, Malidhana, Binsar Danuchina and its environs comes under the inner lands of the Kumaon Lesser Himalayan Belt which at the site is occupied by three distinct formation of the rocks of Garhwal group i.e. the quartzites, dolomites, shale and slates. Mostly the quartzite and dolomites rocks are massively bedded while the shale and slate rocks are exclusively thinly foliated in nature. The slopes along which the proposed alignment passes are inclined at moderate angle in N030 to N070 direction and these slopes are drained by small cross drains. The rockmass exposed along the alignment is partially covered by the thick envelope of the residual soils. The residual soils comprising the hill slopes contain clay minerals in abundance and they are rock hard in dry state, while they are mere soft soils in moist/wet condition. Due to its typical nature of swelling in wet condition these soils lose their shear strength substantially in wet state. Therefore, from the stability point of view these soil slopes must rendered dry and in case of the construction of road needs adequated provision of drainage and checking the infiltration of surface water. It has been observed that those part of the alignment comprised of quartzites and dolomites rocks the overburden material is mostly free from the plastic clays. The rockmass exposed along the alignment corridor is dissected by four prominent linear joints which at the site are exposed widely spaced. The slopes through which the alignment passes are inclined at moderate to steep angle and they measures angles ranging between 30^0 to 45^0 oriented in N 030 to N 100 direction. The slopes across which the alignment passes bears moderate relief and it is scantly forested. The rockmass exposed at the site is slightly weathered

(W_0 to W_1 Grade) in nature and exhibits high values of physical competency. The "Uniaxial Compressive Strength" of the rocks has been estimated ranging between 100 M Pa to 150 M Pa and these values false under the Rock Mass Rating category of "Strong Rock". The overburden/composite material deposited on the alignment slopes is comprised of angular rock fragments which are embedded in clay-silt matrix. This slope forming material is naturally well compacted and dense.

The slopes across which the proposed alignment passes are free from any ground subsidence/slides and it looks stable.

The rock defects do not form adverse geometry for wedge /planner failure.

On the basis of the walkover survey, study carried at the site and the facts mentioned the following suggestions are being made for the construction of the above road.

3- *Recommendations:-*

1. Form the road by half cut-half fill technique and compact the fill material properly.
2. Do not blast on the rocks, otherwise excavate the rocky material manually.
3. Construct large size hill side drain in order to collect the run-off from the upslope and the road.
4. The road must have adequate provision of cross drainage arrangements.
5. The drained water must be disposed on the safe/stable ground preferably on the rocky slopes.
6. Do not dispose the excavated waste on the lower slopes. The muck should be disposed on the pre-identified suitable dump yard.
7. All the constructions activities should be carried out as per the norms and standard laid by the IRC/MORTH, for the si
8. milar structure constructed in the Himalyas.
9. The road and its either side slopes must be protected by the suitably designed retaining/breast walls.
10. Seal the entire top surface of the roadway, inner edge to outer so as to check the infiltration of water.

4- 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 6 km extension of Paldichina-Mallidhana-Nari-Binsar-Bhojadi-Danuchina-Bhattkheda motor road in Distt. Bageshwar.

16/05/2013

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

सहायक अभियन्ता
प्रा0 खण्ड लो0 नि0 वि0
बागेश्वर