

## प्रारूप-2.28

परियोजना का नाम :-राज्य योजना के अन्तर्गत ठेला-थार्ती-चिरबिटियामोटर मार्ग का नव निर्माण कार्य। (मार्ग के नव निर्माण हेतु वन भूमि हस्तानान्तरण प्रस्ताव।(लम्बाई-6.75 कि०मी०)

## भू-वैज्ञानिक की आख्या

(प्रस्तावित स्थल की भू-वैज्ञानिक द्वारा निर्गत अद्यतन निरीक्षण आख्या प्राप्त कर संलग्न की जाय।)

संलग्न है

J.P.  
J.F.



वन क्षेत्र अधिकारी  
भिलगा राज पतसली  
विहरी वन प्रभाग



सहायक अभियन्ता  
अस्थायी खण्ड लोक निर्माण विभाग  
घाना, १, डि. रा.

H0/n1

प्रयोक्ता एजेन्सी आग  
अस्थायी  
घाना, १, डि. रा.

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

भू - गर्भीय निरीक्षण आख्या एस0जी0- 569/सड़क/पुल समरेखण/गढ़वाल/2014

**Geological Assessment of the alignment  
corridore proposed for Tharti to Chirbitya  
motor road in Bhilangana Block, Distt.  
Tehri Garhwal, U.K.**

07-अगस्त-2014

**Geological Assessment of the alignment corridor  
proposed for Tharti to Chirbitva motor road in  
Bhilangana Block, Distt. Tehri Garhwal, U.K.**

**Vijay Dangwal**  
**07.08.2014**

**1- Introduction:-** The Temporary Division, Public Works Department, Ghansali has proposed the new construction of 6.750 km long motor road namely Tharali-Chirbitva motor road in Bhilangana Block Distt. Tehri Garhwal. On the request made by Er.Madan Mohan Kala, Executive Engineer, I carried out the geological assessment of the proposed alignment corridor of Tharti to Chirbitva motor road on 6.6.2014. Er.Satya Prakash, Asst. Engineer and Er.Sunil Kumar, Jr. Engineer was present during the site visit.

**2- Location:-** The alignment corridor of the proposed Tharti-Chirbitva motor road originates from km 9.00 cross section 8/28 of Mulgarh-Thela-Tharti motor road located in Bhilangana Block of Distt. Tehri Garhwal.

**3- Geological Assessment:-** Tharti-Chirbitva and its surrounding environs geologically lies in the Higher Himalayan Belt. Closely located to the north of Main Central Thrust (MCT) which separates the rocks of Garhwal Group from the rocks belonging to the Central Crystallines respectively exposed to its south and north directions. By and large the proposed alignment passes across the slopes which are inclined at moderate angle in N 280 to N 300 direction and are largely covered by the thick envelope of overburden material overlain to the in-situ rocks. Mostly the rocks mass is exposed at the ending chainages of the alignment otherwise these are absent along the remaining part. Mostly massive, fresh, hard, and compact outcrops of augen gneisses are seen little exposed along the alignment slopes. These rock masses are widely spaced jointed and exhibits very high values of physical competencies. According to the manual tests performed on the exposures of these rocks their "Uniaxial Compressive Strength" has been estimated ranging between 200 MPa to 250 MPa which corresponds to the general description "Very Strong" and "Extremely Strong" rock mass classifications. Likewise the Rock Quality Designation (RQD) values of these rocks were calculated at the site ranging between 50% to 100% and these rocks were grouped as Exceptionally Good rocks. The weathering grades of the scanty



outcrops of in-situ rocks exposed on the alignment has been assessed to almost fresh ( $W_0$ ) Grades. The soil/overburden material exposed on the alignment slope facets is fully compacted and dense in nature and it looks non dispersive and dense. The "Undrained Shear Strength" of the slope forming the overburden material has been assessed ranging between 450 k Pa to 500 k Pa and it's consistencies has been found "Very High". It has been observed that near the end chainages of this road near Chirbitya side the rock masses are fractured and openly jointed in nature. In case of the construction of road these loose, overhangs and protrusions must be removed prior to the construction of road at this site.

By and large the alignment slopes are stable and free from any sliding/ 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 construction of the proposed road failing to these report will be automatically treated as cancelled.

#### 4- Recommendations:-

1. Form the road by walling at the end chainages and the rest by half cut-half fill technique. The fill material must be properly compacted by dynamic compaction.
2. Avoid any cut on the slope facets, otherwise cut the hill side slope by maintaining suitable angle.
3. Remove all overhangs/protrusions from the upslope of existing road where the end chainages will merge to it.
4. Do not dispose the excavated waste on the lower slopes, otherwise dump it on the suitable dump yards.
5. The entire surface of the road must be sealed by black top this is so as to check the infiltration of water into sub surface material.
6. The road must have suitable designed retaining /breast walls.
7. Construct large size lined long drain with the adequate cross drainage arrangements and dispose the drained water properly with the gabion channels plastered inside.

8. The drainage work must be taken up immediately after the excavation of hill slopes.
9. The excavated surface of the road bench should not be left exposed uncovered for long period; otherwise, it may threat the hill slope stability.
10. All the construction activities should be carried out as per the guidelines and Standard codes of practice, laid by the MORTH/IRC for the construction similar structures.

**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 new construction of 6.750 km long motor road namely Tharali-Chirbitya motor road in Bhilangana Block Distt. Tehri Garhwal.

*V. Dangwal*  
21/8/14  
(Vijay Dangwal)

Sr. Geologist  
Office of the Engineer in Chief,  
PWD, Dehradun.