

प्रारूप-34

परियोजना का नाम :- मुछियाली-चराकोट मोटर मार्ग से कमरगढ़ होते हुये देहलचौरी तक मोटर मार्ग का निर्माण कार्य। (लम्बाई 4.500 किमी०)

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।

K. M. S.
JE

सहायक अभियन्ता
निर्माण खण्ड, लो०नि०वि०
पौड़ी गढ़वाल

अभिभाषी अभियन्ता
निर्माण खण्ड, लो०नि०वि०
(प्रयत्न एजेंसी)
पौड़ी गढ़वाल

To,
The Executive Engineer
(Construction Division)
PWD, Pauri

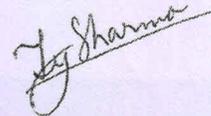
Subject: Submission of Geological Site assessment report of 4.50 km long Muchyali-Charakot motor road to Kamarkot-Dehalchauri motor road.

Dear Sir,

In response to your request of making a site visit for the assessment of for 4.50 km long Muchyali-Charakot motor road to Kamarkot-Dehalchauri motor road, in district Pauri (Garhwal), a site visit was made on 25/12/2020 of which a report has been prepared. Therefore it is requested to please find report of the above mentioned site attached with this letter.

Date: 26/12/2020

Yours Faithfully



Dr. Tushar Sharma
(Assistant Geologist)
Office of the Chief Engineer
PWD Pauri Garhwal (Zone)

Kamargadh

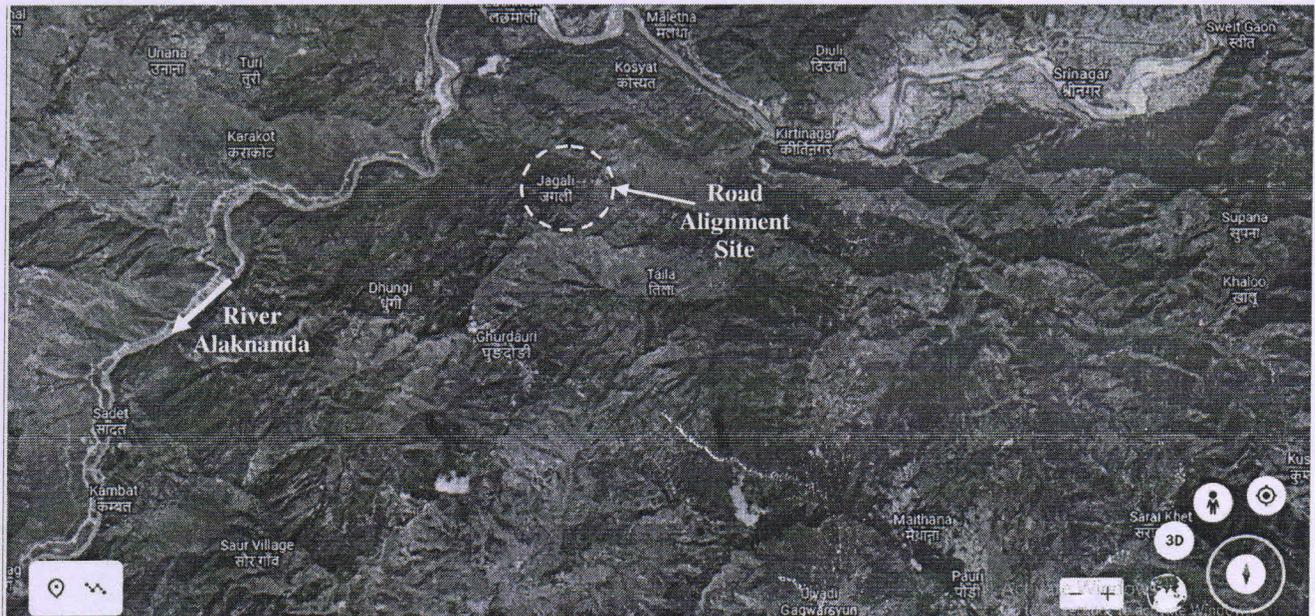
Geological Assessment of 4.50 Km long Muchyali-Charakot Motor Road to Kamarkot-Dehalchauri Motor Road Alignment corridor between CH 0.0 & 4.50 Km, in Pauri Block, District Pauri (Garhwal)

Dr. Tushar Sharma

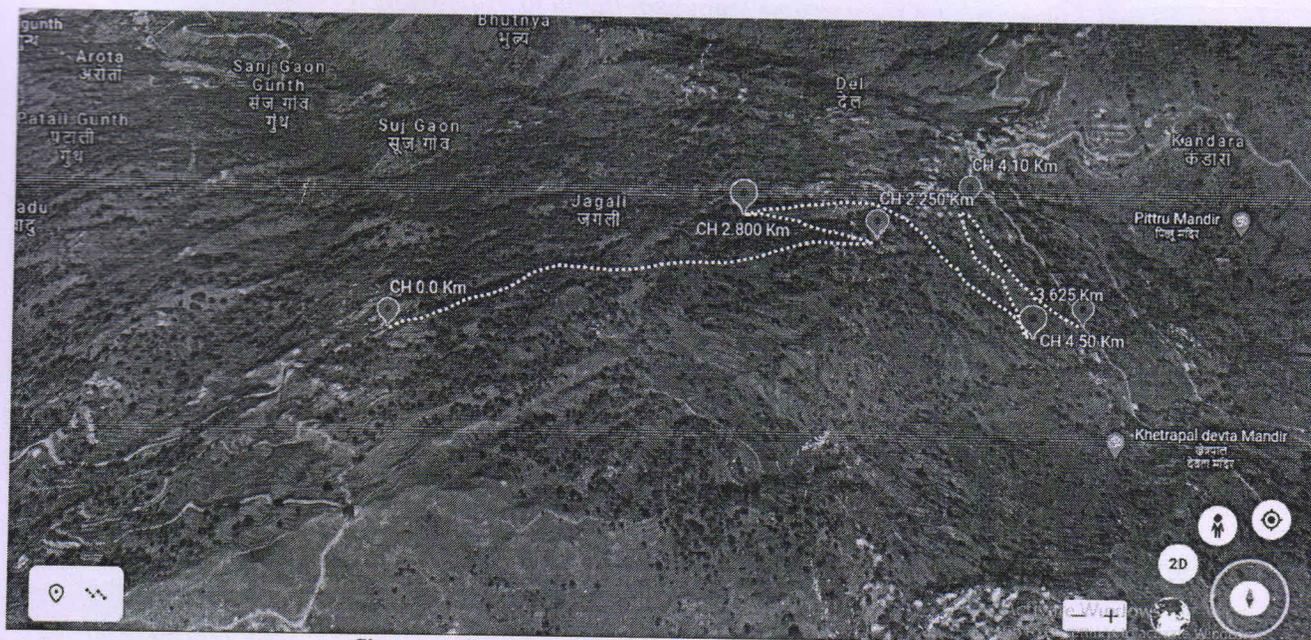
26/12/2020

- 1- **Introduction:** The Construction Division, Pauri, has been entrusted for 4.50 Km long Muchyali-Charakot motor road to Kamarkot-Dehalchauri motor road alignment corridor between CH 0.0 & 4.50 Km. In order to assess the geological conditions of the road alignment site for its feasibility, Er. Pratiyush (Executive Engineer) Construction Division, PWD, Pauri asked for a geologist to make a site visit. Consequent to his request a visit to the proposed road alignment site was made on 25/12/2020; Er. Kiran Devi (Junior Engineer) CD, PWD, Pauri was present during the site visit.
- 2- **Topographical Information/Location:** The above mentioned motor road alignment site diverts from Km 5.0 (end point) of Muchyali-Charakot-Panchur motor road terminating at Km 7.0 of Srinagar-Dehalchauri-Satyakhal motor road. The motor road will connect Charakot, Panchur, Kamargarh & Del villages of Pauri block, in district Pauri (Garhwal). The co-ordinates along with elevation, masl of the site at CH 0.0 Km are as follows:-

Latitude : 30°12'12.80"
 Longitude : 78°41'57.00"
 Approximate Elevation : 1255 M



Broader satellite view of the site



Closer satellite view of the site along with approximate hairpin bends

- 3- **Geological Assessment:** Geologically, the site falls under the Meta-sedimentaries of Garhwal Himalayas (Lesser Himalaya). Folded Phyllite to Quartzitic Phyllite rocks which belong to Chandpur formation are exposed in and around the site. However, the road alignment runs through cultivation land and trees (Naap khet and Forest land) covered with overburden and slope wash material along with a few patches of Phyllitic bed rock. The approximate strength of exposed rock mass is around 50 to 80 MPa and has undergone W_0 to W_3 weathering grade. The hill slope of the site area is gentle to moderate which declines at $\sim 20-30^\circ$ more or less towards North to North-East direction. There are four hair pin bends on the alignment which are at CH 2.250, 2.800, 3.625 and 4.100 Km respectively. The road alignment has level to 1:20 of rising and 1:20-1:30 of falling gradient with 1:60 gradient at the hairpin bends.
- 4- **Seismicity of the area:** According to Indian Standard code the site falls in seismic zone IV of seismic zoning Map of India (IS 1893, part 1, 2002) which corresponds to intensity VIII on MM scale.

On the basis of the geological inspection of the site studies carried and the facts given above, the following recommendations are being made for the construction of the proposed motor road failing to these recommendations this report will be automatically treated as cancelled.

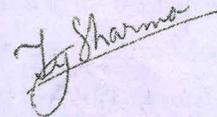
5- **Recommendations:**

1. Blasting by explosives for the road construction is to be avoided as far as it is possible. Use of explosives will render the slope highly unstable as the generally slope consists of overburden and slope wash material.
2. Excavation work must be carried out by skilled manual workers as the rock slopes might slide down in case of rapid disturbance.

- 6
3. The slopes on either sides of entire road must be protected by the construction of suitably designed retaining wall/ breast wall with proper weep holes, this work shall be carried out simultaneously with the advancement of the road cutting.
 4. Construct longitudinal concrete lined drain all along the hill side of the road with adequate provision of cross drains is necessary. Doing so will help in decreasing the chances of subsidence/slide during rainy season.
 5. Construct the road by half cut and half fill techniques and compact the fill material properly by dynamic compaction.
 6. Disposal of muck and excavated waste on the lower slopes of this road is to be strictly avoided; failing to which will increase the weight of the lower slope resulting in the increase in driving forces. It is advised to dispose the muck on the identified site for muck disposal.
 7. All the construction activities ought to be carried out as per the standard codes of practice laid by the BIS and MORTH.
- 6- **Conclusion:** On the basis of the geological / geotechnical studies carried at the site and with the above recommendations, the site proposed for 4.50 km long Muchyali-Charakot motor road to Kamarkot-Dehalchauri motor road alignment corridor between CH 0.0 & 4.50 Km was found geologically suitable for construction.

Letter No: 4125/भू० वै०-12 -पौड़ी/2020

Date: 26/12/200



Dr. Tushar Sharma
(Assistant Geologist)
Office of the Chief Engineer
PWD, Pauri Garhwal (Zone)