



प्रपत्र-26


परियोजना का नाम :- जनपद पौड़ी गढ़वाल में मा0 मुख्यमंत्री जी की घोषणा सं0 -1196/2016 के अन्तर्गत यमकेश्वर विधान सभा दुगड़डा ब्लाक के पुलिण्डा -तच्छाली - स्यालिंगा मोटर मार्ग का नव निर्माण।(5.00कि0मी0)


भू-वैज्ञानिक की आख्या

प्रस्तावित स्थल की भू-वैज्ञानिक द्वारा निर्गत अद्यतन निरीक्षण आख्या प्राप्त कर संलग्न की गई है।

  
अपर सहायक अभियन्ता  
नि0खण्ड, लो0नि0वि0  
दुगड़डा गढ़वाल।

  
सहायक अभियन्ता  
नि0खण्ड, लो0नि0वि0  
दुगड़डा गढ़वाल।

  
अधिशाली अभियन्ता  
नि0खण्ड, लो0नि0वि0,  
दुगड़डा गढ़वाल।

  
प्रभागिय वनाधिकारी  
लैन्सडौन वन प्रभाग  
कोटद्वार (गढ़वाल)

To,  
The Executive Engineer  
(Construction Division)  
PWD Dugadda

Subject: Submission of Geological Site assessment report of 5.0 Km long Pulinda-Tachyali-Syalinga motor road.

Dear Sir,

In response to your request of making a site visit for the assessment of 5.0 Km long Pulinda-Tachyali-Syalinga motor road between CH 0.0 to 5.0 Km, a site visit was made on 18/11/2020 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: 18/11/2020

Yours Faithfully



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

Photo copy attached  
SE



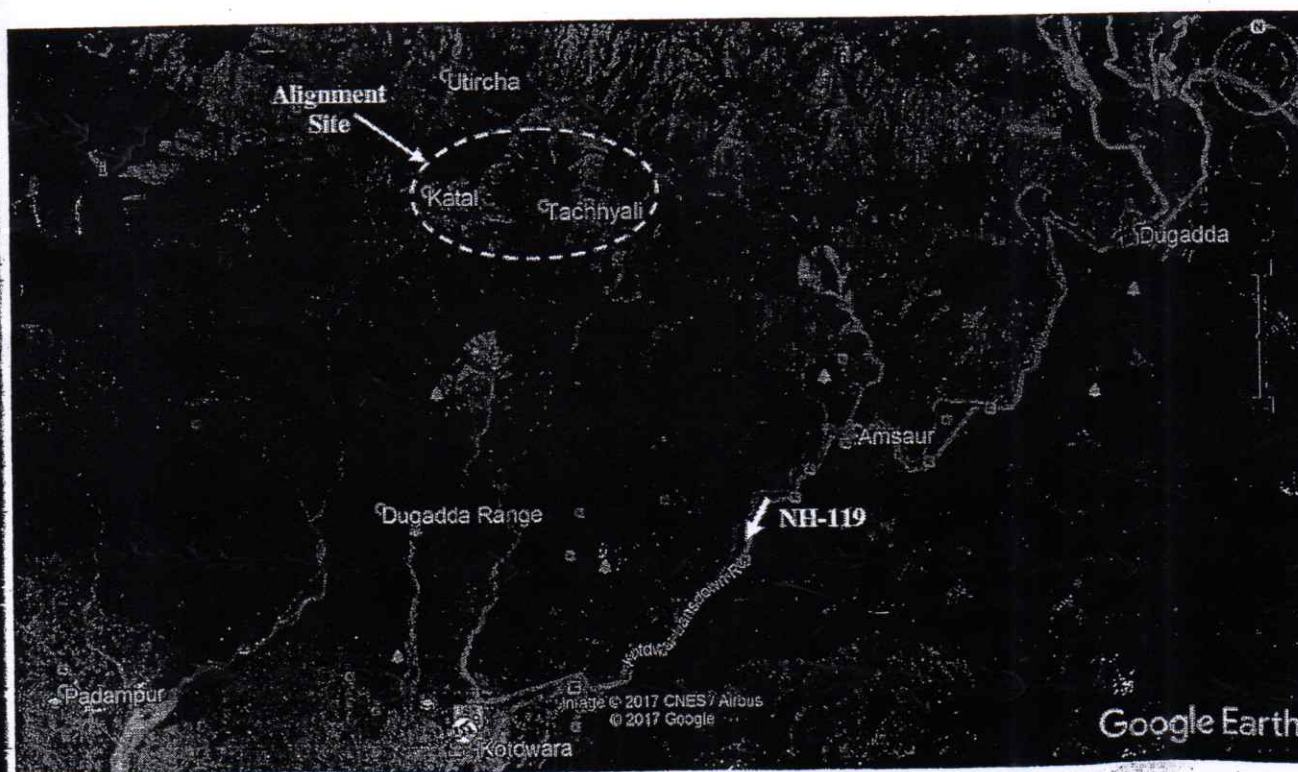
**Geological Assessment of 5.0 Km long Pulinda-Tachyali-Syalinga Motor Road**  
**Alignment corridor between CH 0.0 to 5.0 Km.**  
**Dugadda Block, District Pauri (Garhwal)**

**Dr. Tushar Sharma**

**18/11/2020**

- 1- **Introduction:** The Construction Division, Dugadda, has been entrusted for the construction of 5.0 Km long Pulinda-Tachyali-Syalinga Motor Road between CH 0.0 to 5.0 Km. In order to assess the geological conditions of the alignment site for its feasibility, Er. Nirbhay Singh (Executive Engineer) Construction Division, PWD, Dugadda asked for a geologist to make a site visit. Consequent to his request a visit to the proposed site was made on 18/11/2020; Er. Sudheer Naithani (Assistant Engineer) and Er. Pradeep Mangain (Junior Engineer) CD, PWD, Dugadda were present during the site visit.
- 2- **Topographical Information/Location:** The above mentioned proposed motor road alignment site diverts from Km 17.0 of Kotdwar-Pulinda-Ramri motor road and will connect Tachyali, Syalinga and Ginthala villages terminating near village Syalinga in Dugadda block, district Pauri (Garhwal). The coordinates along with elevation, masl of the site at CH 0.0 Km are as follows-

Latitude	: 29°48'42.50"
Longitude	: 78°32'25.25"
Approximate Elevation	: 1165 M

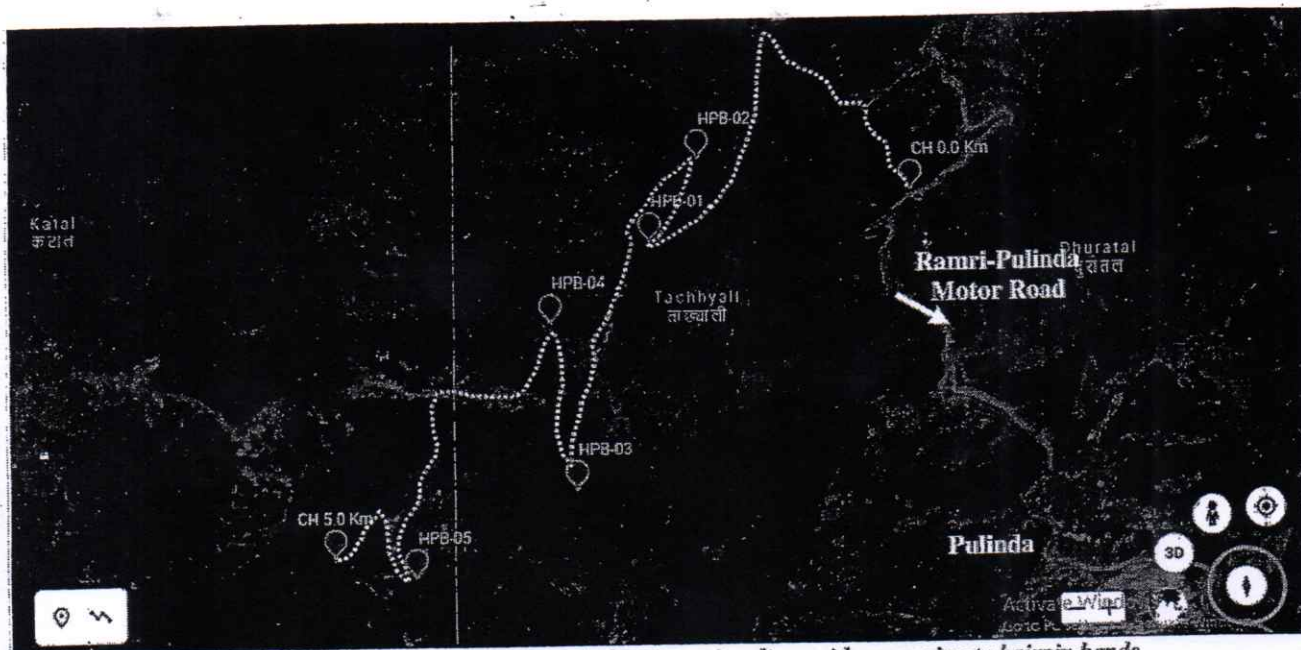


*Broader Satellite View of the Site*

*Photo copy attached*  
*JS*

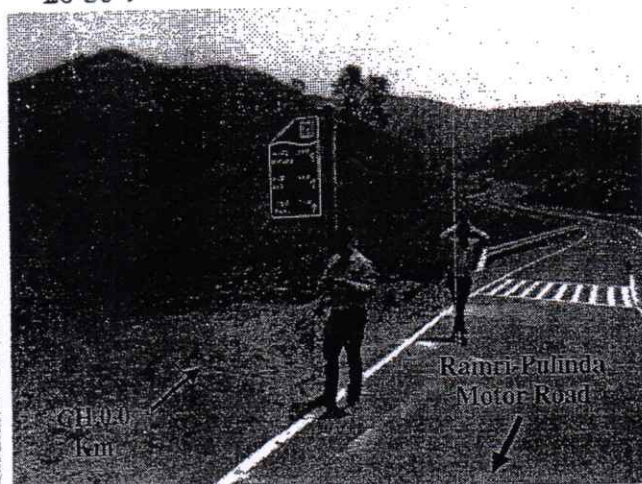


67



Closer satellite view of the road alignment site along with approximate hairpin bends

**3- Geological Assessment:** Geologically, the road alignment site area falls in the southern flank of Garhwal Syncline in the vicinity of thrust contact between Ramgarh group and Tal Formation of Lesser Himalaya. The rocks exposed in the area consist of Quartzite and Quartzitic Shale belonging to Tal Formation of Mussoorie group. However, the road alignment passes through over burden and slope wash material over which there is cultivation land (Naap Khet, Van Panchayat & Forest Land) with patches of fractured Quartzitic bed rock exposure. The approximate strength of exposed rock mass ranges from around 50 to 100 MPa and has undergone  $W_1$  to  $W_3$  weathering grade. The hill slope at the road alignment site is gentle to moderately steep  $20-30^\circ$ .



View of the road alignment site at CH 0.0 Km



View of hill slope of the road alignment site

There is five hairpin bends on the alignment which are at CH 1.750, 1.950, 2.750, 3.425 and 4.375 Km respectively. The alignment has 1:24 of both rising and falling gradient with 1:40 gradient on the hair pin 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.

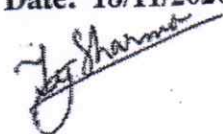
5- **Recommendations:**

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 slope consists of both rock and slope wash material.
2. Rock excavation must be carried out by the skilled manual workers as the rock slopes are prone to slide down in case of rapid disturbance.
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. This is very important for the stability of the hill side slopes.
4. Construction of large U-shaped longitudinal lined drain all along the hill side of the road with adequate provision of cross drains is necessary.
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 5.0 Km long Pulinda-Tachyali-Syalinga motor road between CH 0.0 to 5.0 Km was found geologically suitable for road construction.

Place: Construction Division PWD Dugadda

Date: 18/11/2020



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