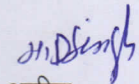



परियोजना का नाम:-

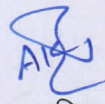
राज्य योजना के अन्तर्गत जनपद चमोली के विधानसभा क्षेत्र कर्णप्रयाग में कर्णप्रयाग-नौटी-पैठाणी मोटर मार्ग से देवलगढसारी तक मोटर मार्ग के नवनिर्माण हेतु 0.350 हे० वनपंचायत भूमि एवं मक डिस्पोजल हेतु 0.020 हे० कुल 0.370 हे० वन पंचायत भूमि का लो०नि०वि० को हस्तान्तरण।

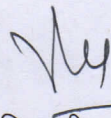
भू-वैज्ञानिक की आख्या

भू-वैज्ञानिक की आख्या संलग्न है।


अमीन


कनिष्ठ अभियन्ता
अस्थाई खण्ड लो०नि०वि०
गौचर


सहायक अभियन्ता
अस्थाई खण्ड लो०नि०वि०
गौचर


अधिशाली अभियन्ता
अस्थाई खण्ड लो०नि०वि०
गौचर

**Geological Assessment of 1.2 Km long Deval-Devalgarhsari Motor Road
Alignment corridor between Chainage 0.0 to 1.2 Km, Gauchar Division,**

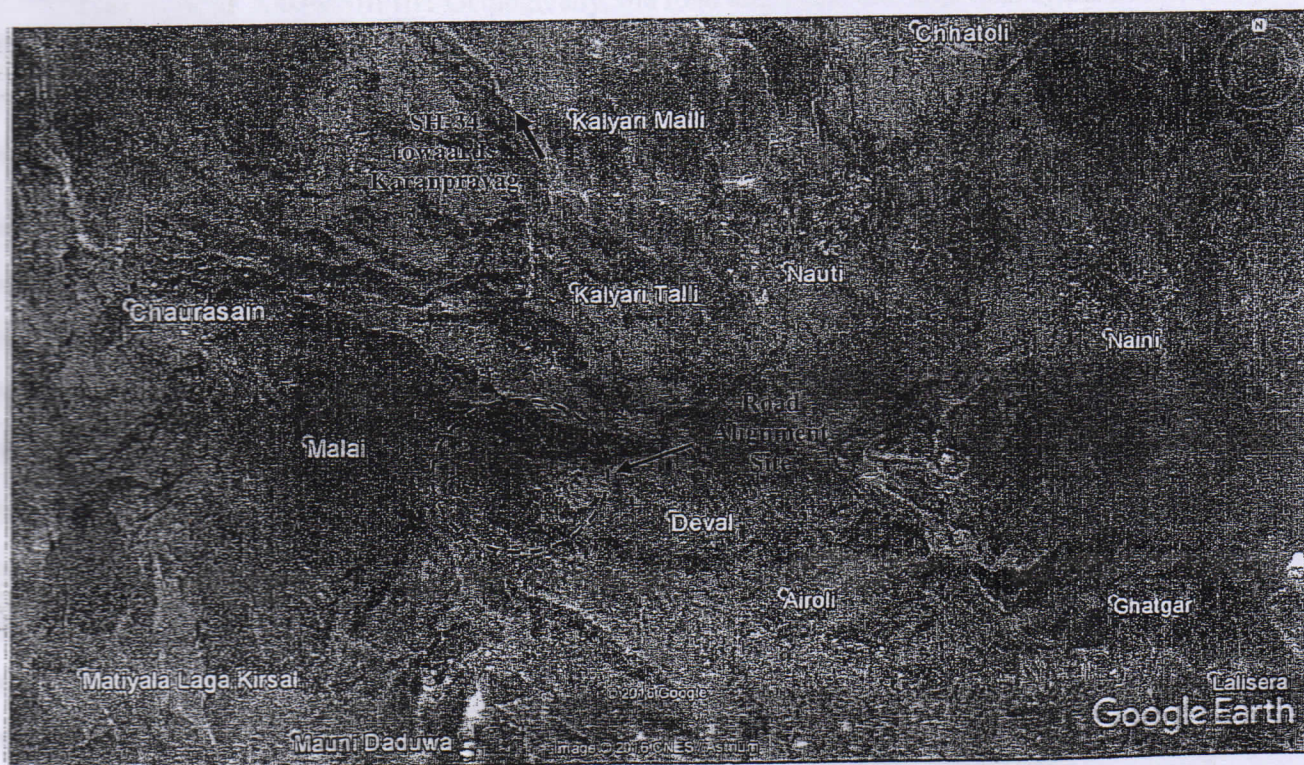
District Chamoli

Tushar Sharma

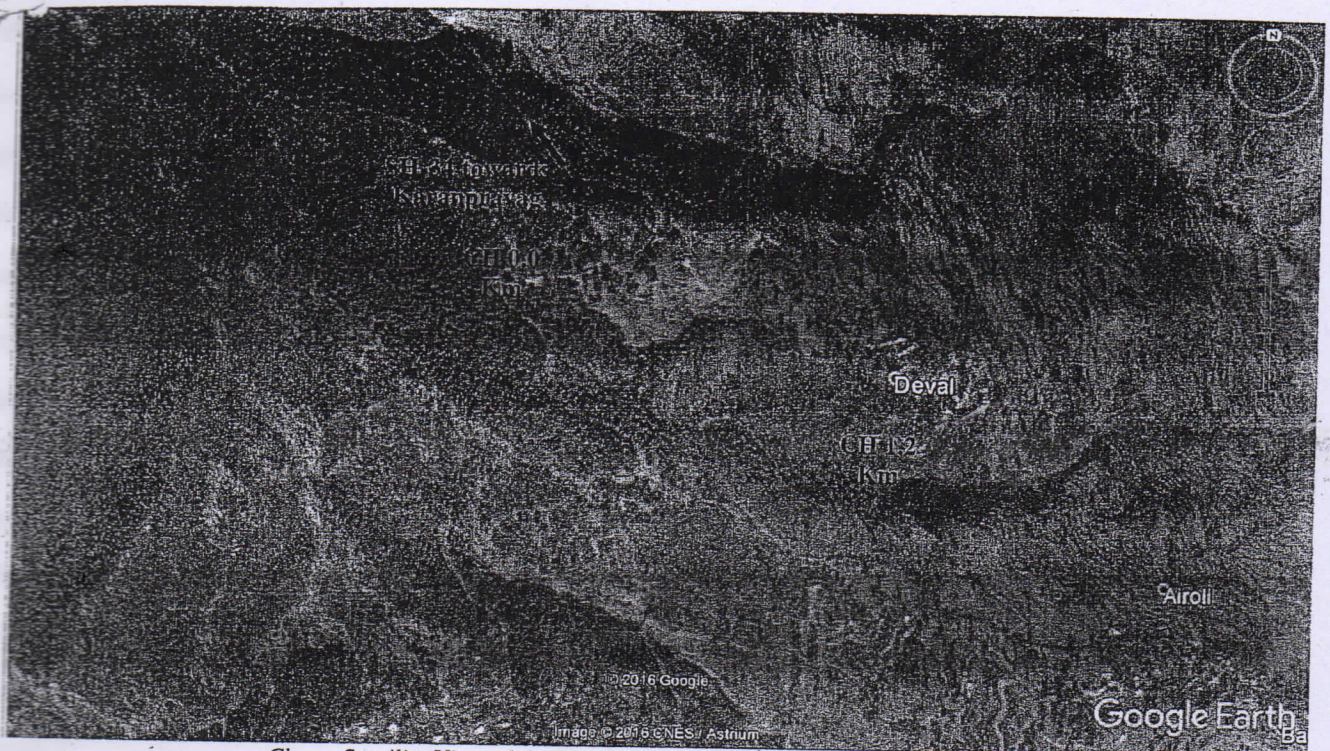
09/11/2016

- 1- **Introduction:** The Temporary Division, PWD Gauchar, has been entrusted for the construction of 1.2 Km long Deval-Devalgarhsari Motor Road between CH 0.0 to 1.2 Km. In order to assess the geological conditions of the road alignment site for its feasibility, Er. K.S. Rana (Executive Engineer) Temporary Division, PWD, Gauchar asked for a geologist to make a site visit. Consequent to his request a visit to the proposed road alignment site was made on 04/11/2016; Er. Anuj Sharma (Junior Engineer) PWD, Gauchar was present during the site visit.
- 2- **Topographical Information/Location:** The alignment site proposed for the construction of 1.2 Km long Deval-Devalgarhsari Motor Road between CH 0.0 to 1.2 Km SH-34 diverts from CH 28.0 Km of (Karanprayag-Nauti-Paithani Motor Road) near village Devalgarhsari. The co-ordinates along with elevation, masl of the site at CH 0.0 Km are as follows-

Latitude : 30° 11' 43.52"
Longitude : 79° 11' 19.24"
Approximate Elevation : 1788 M

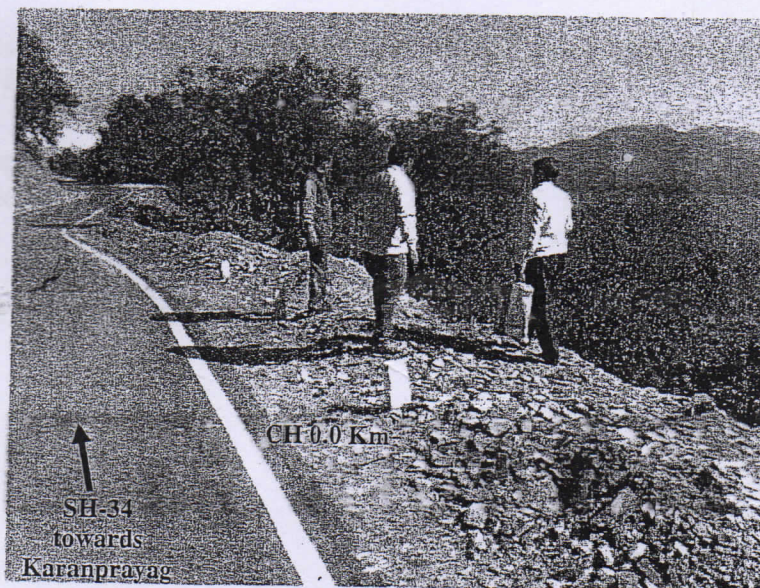


Broader Satellite View of the Site



Closer Satellite View of the Road Alignment Site along with approximate HP bends

Geological Assessment: Geologically, the road alignment site area falls under Lesser Himalaya. The rocks exposed in the area consist of jointed and weathered Hard Quartzite, Quartzitic Phyllite bands which belong to Rautgara Formation of Damtha Group. But on the hill slope of the road alignment site rock outcrop is covered under thin to thick veneers of overburden and slope wash material with a few exposures of bed rock. The hill slope angle in and around the road alignment is $\sim 25-35^\circ$ which declines approximately towards SE direction. The approximate strength of exposed rock mass is around $\sim 50-150$ MPa and has undergone W_1 to W_3 weathering grade. There are two hairpin bends on the road alignment which are at CH 0.250 and 1.775 Km respectively.



View of site at CH 0.0 Km

- 3- **Seismicity of the area:** According to Indian Standard code the site falls in seismic zone V of seismic zoning Map of India (IS 1893, part 1, 2002) which corresponds to intensity IX or above 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 road failing to these recommendations this report will be automatically treated as cancelled.


4- **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 jointed/fractured rock mass and overburden/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.
3. The slopes on either sides of the 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. Construction of longitudinal concrete 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.

- 5- **Conclusion:** On the basis of the geological/geotechnical studies carried at the site and with the above recommendations, the site proposed for 1.2 Km long Deval-Devalgarhsari Motor Road between CH 0.0 to 1.2 Km was found geologically suitable for construction.

Letter No: 2764-B / भू. वै.-07-पौड़ी /2016

Date: 09/11/2016



(Tushar Sharma)
Assistant Geologist
Office of Chief Engineer
PWD (Pauri Zone)