

Geological Assessment of 2.0 Km long Sauri Motor Road Alignment
Between CH 0.0 and 2.0 Km, Ukhimath Division,
District Rudraprayag
Tushar Sharma
09/11/2016

roduction: The Construction Division, Ukhimath has been entrusted for the construction of 2.0 Km long Sauri Motor Road, District Rudraprayag. In order to assess the alignment site for construction, Er. Manoj Das (Executive Engineer) Construction Division, Ukhimath asked for a geologist to make a site visit. Consequent to his request a site visit was made on 05/11/2016; Er. Addeep Semwal (Junior Engineer) CD, Ukhimath was present during the site visit.

Topographical Information/Location: The above said stretch of 2.0 Km long Sauri Motor Road diverts from Ch 1.40 Km of Bedubagar-Jagoth Motor Road near Bedubagar, District Rudraprayag. The co-ordinates along with elevation, masl of the site at CH 0.0 Km are as follows-

Latitude:	30° 24' 6.75"
Longitude:	79° 02' 16"
Approximate Elevation:	825 M



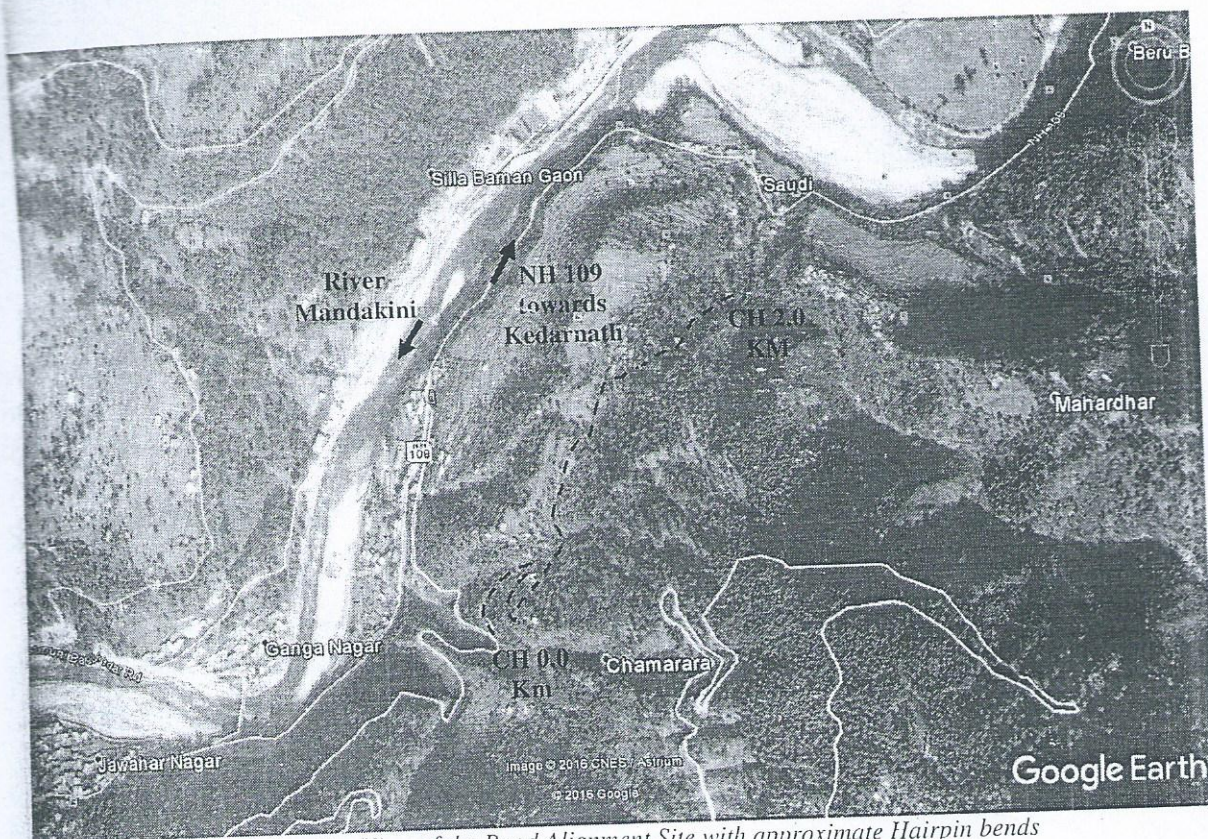
Broader Satellite View of the Site

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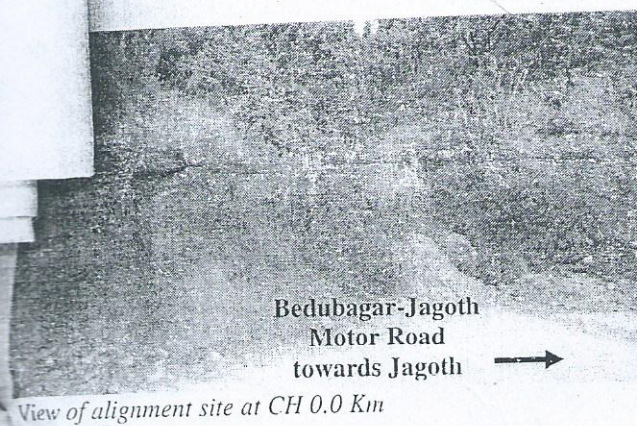
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Closer Satellite View of the Road Alignment Site with approximate Hairpin bends

Geological Assessment: Geologically, the area falls under Lesser Himalayan zone. The rocks exposed around the site belong to the Ramgarh group/Barkot unit. The area lies in the proximity of a prominent regional tectonic structure Ramgarh Thrust. The rocks exposed in and around the site are quartzite, schist and schistose quartzite. However, the road alignment runs through agricultural land covered with overburden and slope wash material with vegetation with one or two patches of bed rock. The approximate strength of exposed rock mass is around ~50-120 MPa and has undergone W_0 to W_3 weathering grade. The hill slope of the road alignment is moderately steep which roughly declines towards West direction which is susceptible to subsidence/slide during rainy season protection measures are to be taken for the construction of road.



View of alignment site at CH 0.0 Km



View of gentle slope of the alignment site near village Sauri

There are two hair pin bends on the alignment which are at CH 0.300 and 0.525 Km respectively.

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

commendations:

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 are prone to 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 large U-shaped 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.


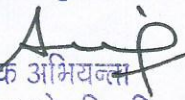

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Conclusion: On the basis of the geological/geotechnical studies carried at the site and with above recommendations, the site proposed for 2.0 Km long Sauri Motor Road alignment between CH 0.0 to 2.0 Km was found geologically suitable for construction.

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Date: 09/11/2016

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