

प्रारूप-33

परियोजना का नाम :- उत्तराखण्ड राज्य में 126 कि०मी० ऋषिकेश-कर्णप्रयाग नई ब्रॉड गेज रेल लाईन निर्माण ।

भू-वैज्ञानिक की आख्या

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

सम्पूर्ण परियोजना की भू-वैज्ञानिक आख्या पृथक से संलग्न है।



कन्सलटेन्ट (वन)
रेल विकास निगम लि०

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Brief Geological Assessment for Proposed Approach Road from NH58 to T2P1 (16th October 2021)

In the scope of "RVNL New Rail Line Project between Rishikesh and Karanprayag -Package 2", it is planned to relocate Shivpuri Approach Road (Figure-1,2) which is from NH-58 to T2P1 (Tunnel 2 -Portal 1). This approach road, which is adjacent to the river bed, is adversely affected by the rising and spreading of stream bed during the monsoon periods especially when heavy rains occur, which causes disruptions in the tunnel construction. For this reason, this approach road will be rerouted away from the stream towards to the hill slope for approximately 7-8m.

Site observations and evaluations made from a geological point of view are given below.

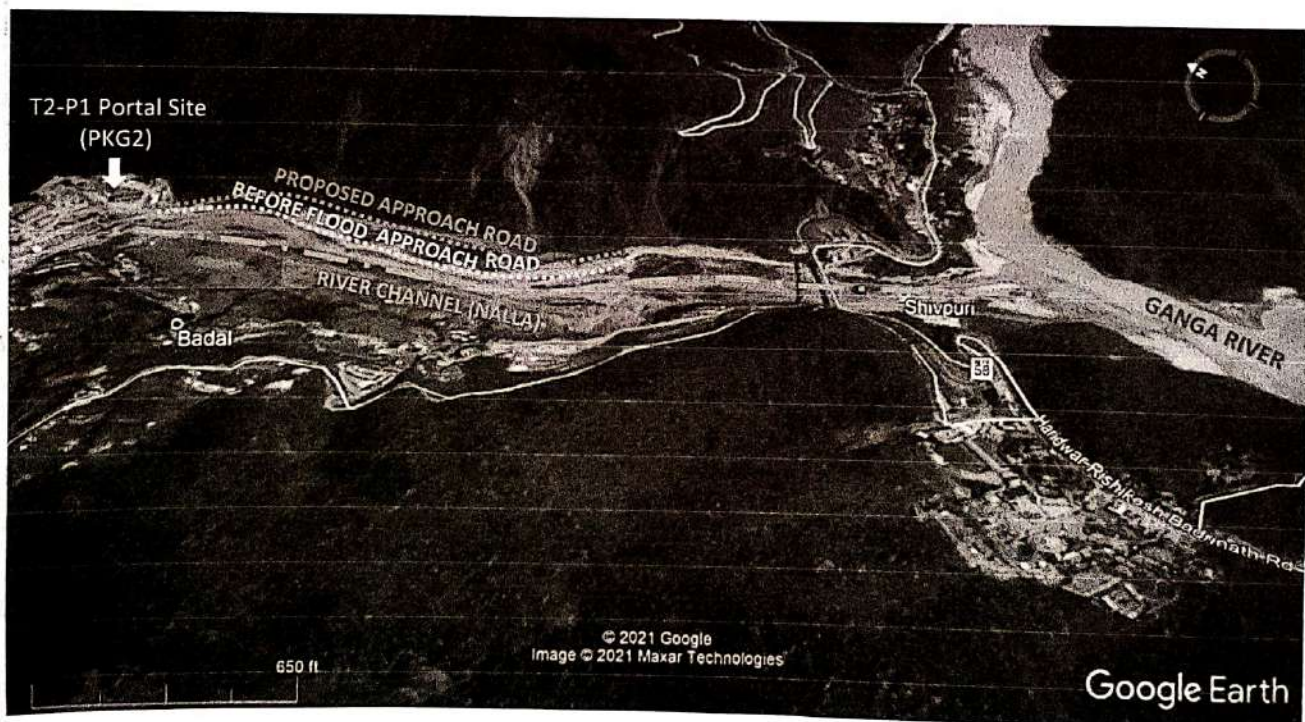




Figure-1 General view of Approach Road from NH-58 to Shivpuri T2P1 Portal Site and its vicinity (Google Earth Photo-20-07-2021).

Construction of Tunnels, Bridges and Formation Works from Chainage 18+444 to 33+097 under Package-2 in Connection with New Single BG Rail Link between Rishikesh and Karanprayag (125Km)	 रेल विकास निगम लिमिटेड Rail Vikas Nigam Limited <small>a Subsidiary of IRCON Corporation</small>
Brief Geological Assessment for Proposed Approach Road from NH58 to T2P1 (16 th October 2021)	

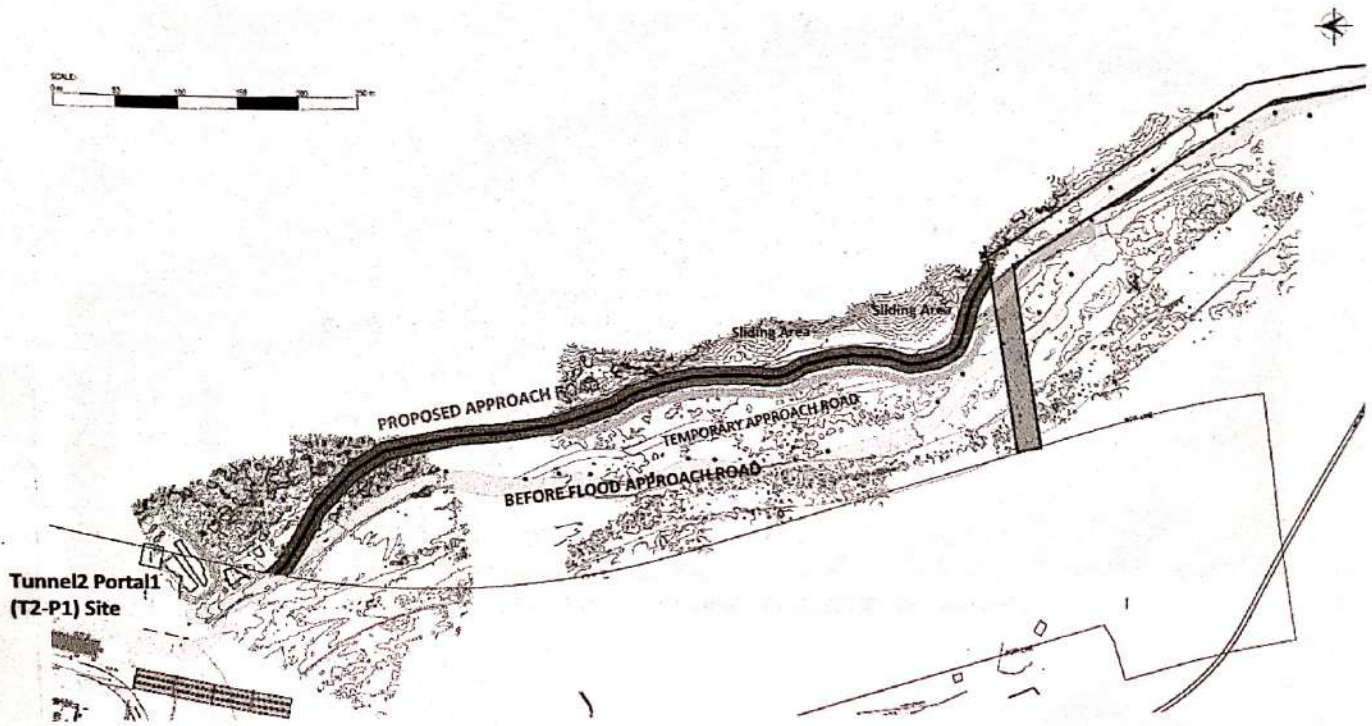


Figure-2 Location Plan of the Proposed Approach Road

Local Geology

The Approach Road location and the near vicinity is characterized by Mandhali formation [(Pt13jm), Quaternary deposits (Colluvium (Qc), Alluvial Fan and Debris (Qafd), Alluvium (Qa)) and Landslide material (Lm)).

The Mandhali Formation (Pt13jm) [=Bijini Formation (Pt13b)] is composed of purple sandstone and siltstone, grey phyllite and shale with sandstone bands with purple greenish grey, greyish white quartz arenite and laminated flaggy quartz arenites and observed at steep slopes under the Quaternary deposits and occasionally gives outcrops.

Alluvial deposit (Qa) is composed of silty sand, sand with gravel, greyish brown silt and clay, boulders and pebbles of fine-grained purple sandstone and white-pink quartz arenite with grey colored phyllite. Colluvium (Qc) is formed from gravel, sand, greyish brown silt and clay materials and occasionally contain boulders and pebbles of fine grained purple sandstone. Alluvial fan and debris (Qafd) and landslide material (Lm) were developed along the approach road at the hillside/slope of valleys and these deposits are characterized by moving mass of complex material composed of loose boulders, cobbles and gravel in sandy silty muddy matrix (Figure-3).



Figure-3 Photo of approach road and near vicinity (with geological formations)

Conclusions

There are three alluvial fan / landslide material deposits and a small stream channel near the hillside/slope where the approach road will be constructed. Because of the steep topography and geological conditions (tectonic disturbed zones, foliated and deformed rock mass types, unconsolidated and weathered soil cover above the flanks of the valley), at the hillsides /slopes next to the approach road is prone to different landslides and gravitational deformations especially due to heavy rains during monsoons.

Considering the situation given above, the proposed approach route can be relocated towards to the hill side (approximately 7-8 m shifting from the previous approach road) based on the judgement of geological and hydrogeological point of view as follows.

The relocated route will be less effected from the flood of existing stream due the distance and natural topography, the new route will be on the newly established embankment and the same will be required engineering execution.

The effect and disturbance of the slope stability will be minimum by keeping the distance from the slope. In case of any requirement of slope stability, gabion walls or any other requirements shall be in place. No slope cutting will be required by arranging the sufficient distance.



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