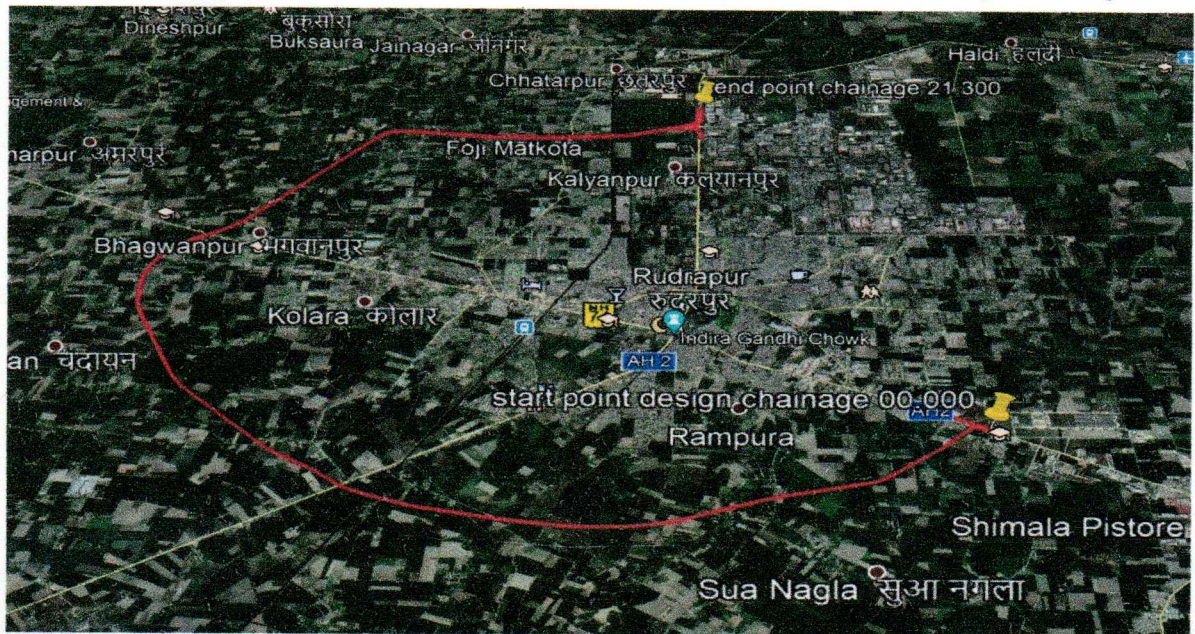


Geological Assessment of Rudrapur Bypass Road of NHAI having the Alignment Corridor between CH0.0 (NH-74) at Rampura and CH 21.476 (NH-87) at Chhattarpur covering 21.246 Km. Agriculture Land and 0.23 Km. Forest Land with total length of the surface road as 21.476Km.

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1. **Introduction:** The National Highways Authority of India(NHAI) is the nodal agency of Ministry of Road Transport and Highways (MORT&H), Government of India and has been entrusted with the Development of Rudrapur Ring Road in the state of Uttarakhand. The project corridor start from Ch. 0.000 km (NH-74) with coordinates (28°57'16.33"N & 79°25'52.88"E) and traverses through mostly government land and paddy fields and circles Rudrapur City. This ring road crosses NH-87 (new NH-09) & NH-74 (new NH-309) and the road ends at Ch. 21.476 Km (NH-87) with coordinates (29° 1'12.67"N & 79°24'1.85"E). The total length of alignment is



21.476 Km.

2. **Location:** The proposed alignment corridor is located in Rudrapur town of Distt. Udham Singh nagar and this motor road as the stretch of Rudrapur Bypass Road originates from Rampura, CH. 0.000 km (NH-74) and bypasses the city mostly through Agriculture and fallow land of the within areas of chandpur, khanpur, Inderpur, Fauzi matkota, bagwala, jafarpur and ends nearby Chhattarpur at Ch 21.476Km at NH-87. In between it also covers 230m long distance of forest areas at two stretches near

3. **Land Use Pattern:**

Land use pattern observed along the road is given in Table 1.1

Table -1.1: Land Use Pattern

S.no	Design length (Km)		Length (Km)	Land use	Terrain
	From	To			
1	0+000	13+490	13+490	Agriculture	Plain
2	13+490	13+720	0+230	Forest	Plain

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3	13+720	21+476	7+756	Agriculture	Plain
	Total Length(Km)		21.476		

TERRAIN

The terrain of the alignment corridor is flat at most of the stretches and it bears moderate gradient. The details of which are given below:

Details of Terrain

Sr. No.	Design Chainage		Length (Km)	Type of Terrain
	Km	Km		
1	0+000	21+476	21+476	Plain

FOREST

Forest land on the project highway as per site inspection is

Details of Forest

Sr. No.	Design Chainage		Length (Km)	Remark
	Km	Km		
1	13+490	13+720	0+230	Forest

4. **Geological Assessment:** Geologically the alignment corridor of the above said motor road is located in the Terai Belt of Indo Gangetic Plain which in the north is limited by the Himalayan Frontal Fault (HFF). This stretch of 21.476 Km. motor road bypassing the city of Rudrapur located in a part of inner land or indogangetic plane which comprised of boulders, cobbles, pebbles and embedded in sandy, silty and clay matrix. The soils exposed along the alignment corridor and its surrounding area are stiff hard and compact in nature. The entire area comprising the site and its surroundings are marked by the flat terrain and broadly it is drained by River Kalyani and River Begul the tributaries of river Ganga. intermittent occurrence of artesian conditions were also observed during the site visit which suggests that the formation of the road must be laid sufficiently thick cope up the water conditions related to water logging related problems. simultaneously adequate drainage arrangements must be incorporated in the construction of NH Road. The alignment corridor and its surrounding ground do not manifest any signature related to ground deformation and nowhere potholes, sinkholes, tension cracks are seen during the site visit. Prima facie the entire ground of the alignment corridor is stable and free from any ground deformation.
5. **Conclusion:** On the basis of the geological studies carried out at the site, the alignment of the Rudrapur Bypass ring Road of total 21.476Km is found geologically suitable for construction of Four Lane Road due presence of the flat Indo-Gangetic Plain topography in and nearby areas and having no adverse effect over the nearby geology.



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