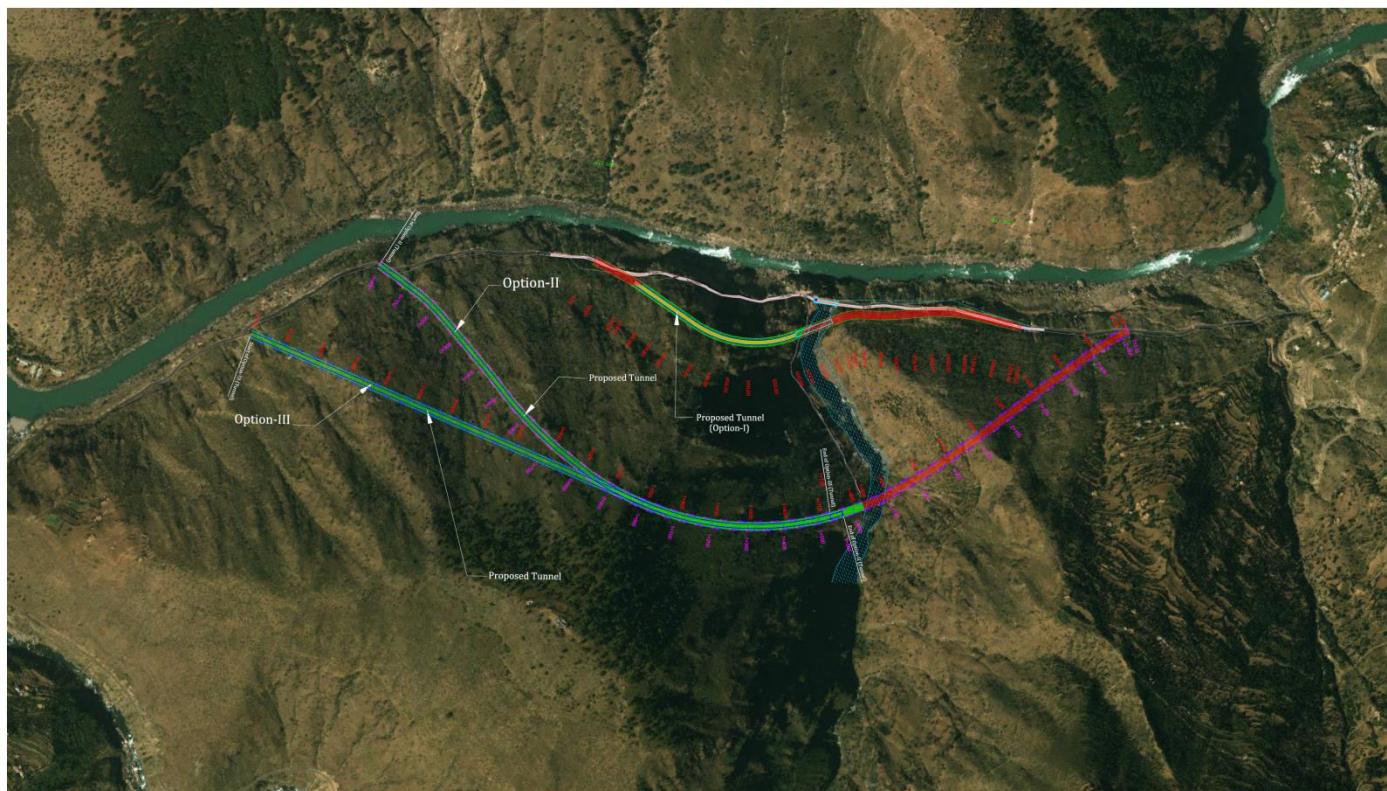


**CHAINAGE 83<sup>rd</sup> TUNNEL NH-244 ON BATOTE KISTWAR ROAD SECTION OF NH-244 OF DISTRICT KISTWAR IN THE UNION TERRITORY OF JAMMU AND KASHMIR**

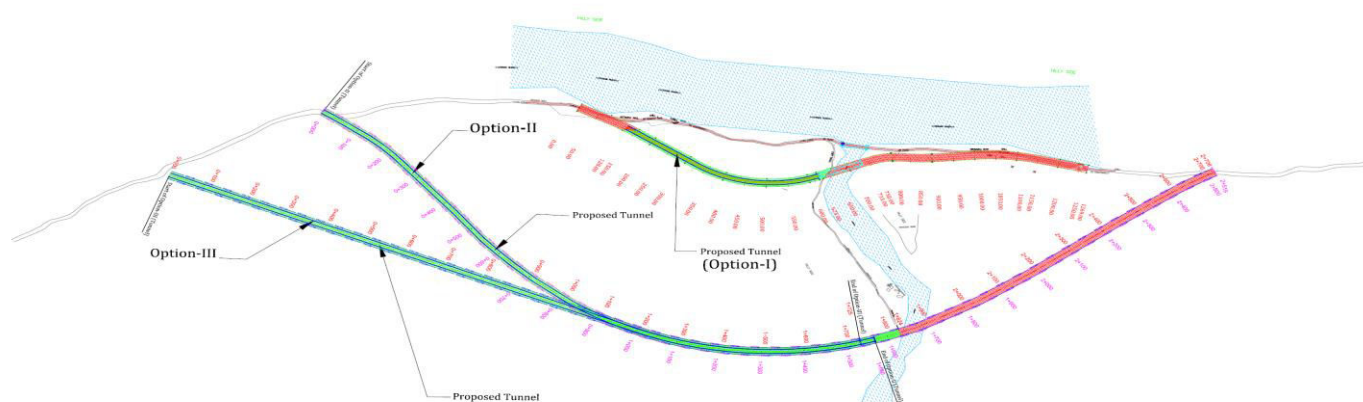
**PROJECT NAME: CONSTRUCTION ROAD PORTION FROM 82.675 TO 82.925 AT KM 83 ON BATOTE - KISHTWAR ROAD SECTION OF NH-244 OF DISTRICT KISTWAR IN THE UNION TERRITORY OF JAMMU AND KASHMIR.**

**SUMMARY OF ALTERNATIVE ALIGNMENT**

**ANALYSIS OF ALTERNATIVES**



**Alternative Alignment for Construction Road Portion from 82.675 Km to 82.925 km at Chainage 83<sup>rd</sup> on Batote -Kishtwar road section of NH-244 of district Kishtwar the Union Territory of Jammu and Kashmir.**



*Saurav*



## **SELECTION OF ALTERNATIVES**

This section describes the standards and principles based on which the alignment designs has been carried out. These proposed standards are consistent with the parameters recommended in the relevant standards of the Indian Roads Congress (IRC). The aim of this chapter is to evolve Design Standards and Material Specifications for the study primarily based on IRC publications and MORT&H circulars and relevant recommendations from the international standards and to recommend the same for concurrence/approval of Authority. For geometric design of the road in open area, tunnels and viaducts hilly terrain guidelines are given in IRC: SP 73-2015 'Manual of Specifications & Standards for Two Laning Of Highways with Paved Shoulder', IRC – SP – 91 – 2010: Tunnel Design Manual, IRC – SP – 48: Hill Road Manual have been followed . The term alternatives in this context refer to the reasonable and potentially viable alternatives for the proposed project activities. Selection of appropriate highway design decisions, specifically from the environment point of view, Time Shortening and all-weather connectivity with minimum accident, Maximum comfort to road users, Least social & environmental adverse impact, Least displacement & loss of public property, Restricting adverse impact on religious structures, Protection of tree species, Restricting tree felling is considered with different alternatives. The major issues where alternative proposals need to be considered are discussed below

### **1.1 ALIGNMENT SELECTION**

The alignment selection is the first issue in selection of alternatives. Different alignment selection can have different impacts. There can be three options.

#### **Option 1:**

Construction of tunnel length 495 m including approach road from km 82+675 to km 82+925 on NH – 244( **total Length of project 1.269 Km**)

#### **Option 2:**

Construction of tunnel length 1560 m including approach road from km 82+675 to km 82+925 on NH – 244(**total Length of Project 2.519 km**)

#### **Option 3:**

Construction of length 1725 m including approach road from km 82+675 to km 82+925 on NH – 244 (**total Length 2.708 km.**)

The comparison between these three alternatives are given in **Table 1**

*Saurav*



**CHAINAGE 83<sup>rd</sup> TUNNEL NH-244 ON BATOTE KISTWAR ROAD SECTION OF NH-244 OF NH-244 OF DISTRICT KISTWAR IN THE UNION TERRITORY OF JAMMU AND KASHMIR**

**CHAINAGE 83<sup>rd</sup> TUNNEL NH-244**

**Table. I: Comparison of Alternatives**

<b>Details of Parameters</b>	<b>Option 1 Construction of tunnel length 495 m including approach road from km 82+675 to km 82+925 on NH – 244( total Length of project 1.269 Km)</b>	<b>Option 2 Construction of tunnel length 1560 m including approach road from km 82+675 to km 82+925 on NH – 244 (total Length of Project 2.519 km)</b>	<b>Option 3 Construction of length 1725 m including approach road from km 82+675 to km 82+925 on NH – 244 (total Length 2.708 km.)</b>
<b>1-Engineering Parameters</b>			
<b>1.-Length</b>	<b>1.269 km</b>	<b>2.519 km</b>	<b>2.708 km</b>
1.1 -Traffic Speed	Construction of Tunnel will provide all weather connectivity between Doda and Kistwar	Construction of Tunnel will provide all weather connectivity between Doda and Kistwar	Construction of Tunnel will provide all weather connectivity between Doda and Kistwar
1,2-Removing Bottlenecks	But construction of Tunnel will ease traffic flow and provide smooth passage to destination	But construction of Tunnel will ease traffic flow and provide smooth passage to destination.	But construction of Tunnel will ease traffic flow and provide smooth passage to destination
1.3-Traffic safety	There are no blind and sharp curves. HP bends and steep slopes in the tunnel alignment. Therefore, it reduces the chances of accident and provides safety to the traffic.	There are no blind and sharp curves. HP bends and steep slopes in the tunnel alignment. Therefore, it reduces the chances of accident and provides safety to the traffic.	There are no blind and sharp curves. HP bends and steep slopes in the tunnel alignment. Therefore, it reduces the chances of accident and provides safety to the traffic.
<b>2- Environment Consideration</b>			
<b>2.1- Forest Area</b>	<b>Total 3.5 Ha(1.2 Ha Forest land Involved)</b>	<b>Total 6.45 Ha.(3.9 Ha Forest land Involved)</b>	<b>Total 6.49 Ha.(4.3 Ha Forest land Involved)</b>
2.2-Wild life Sanctuary	NA	NA	NA
2.3-Ecological Impact (Flora and Fauna)	There is only one stream/nallah near the Approach road of tunnel which will not be affected by widening of this approach road.	There is only one stream/nallah near the Approach road of tunnel which will not be affected by widening of this approach road.	There is only one stream/nallah near the Approach road of tunnel which will not be affected by widening of this approach road.
2.4-National Park	NA	NA	NA
2.5-Eco Sensitive Zone	NA	NA	NA
2.7-Travel Time	This will significantly reduce travel time	Travel time will be more with Comparison to Option 1.	Travel time will be more with Comparison to Option 2.
2.8-Pollution	During tunnel construction it will be	During tunnel construction it will be	During tunnel construction it will be



**CHAINAGE 83<sup>rd</sup> TUNNEL NH-244 ON BATOTE KISTWAR ROAD SECTION OF NH-244 OF NH-244 OF DISTRICT KISTWAR IN THE UNION TERRITORY OF JAMMU AND KASHMIR**

<b>Details of Parameters</b>	<b>Option 1 Construction of tunnel length 495 m including approach road from km 82+675 to km 82+925 on NH – 244( total Length of project 1.269 Km)</b>	<b>Option 2 Construction of tunnel length 1560 m including approach road from km 82+675 to km 82+925 on NH – 244 (total Length of Project 2.519 km)</b>	<b>Option 3 Construction of length 1725 m including approach road from km 82+675 to km 82+925 on NH – 244 (total Length 2.708 km.)</b>
	<p>around 1 nr per meter of tunnel construction. After Construction of tunnel travel time will reduce significantly and hence there will be huge reduction in long term CO<sub>2</sub> emission, (emission will be less by 4000 Cum /day).</p> <p>Tunnel construction will reduce habitat fragmentation and mortality rate of human/animals.</p> <p>Due to flow of traffic in closed tunnel noise pollution can be significantly controlled.</p>	<p>around 1 nr per meter of tunnel construction. After Construction of tunnel travel time will reduce significantly and hence there will be huge reduction in long term CO<sub>2</sub> emission, (emission will be less by 4000 Cum /day).</p> <p>Tunnel construction will reduce habitat fragmentation and mortality rate of human/animals.</p> <p>Due to flow of traffic in closed tunnel noise pollution can be significantly controlled.</p>	<p>around 1 nr per meter of tunnel construction. After Construction of tunnel travel time will reduce significantly and hence there will be huge reduction in long term CO<sub>2</sub> emission, (emission will be less by 4000 Cum /day).</p> <p>Tunnel construction will reduce habitat fragmentation and mortality rate of human/animals.</p> <p>Due to flow of traffic in closed tunnel noise pollution can be significantly controlled.</p>
<b>3-Social Impact</b>			
3.1-Affected of Towns/Cities/Village	2 Nos.	2 Nos.	2 Nos.
<b>3.2-Land Acquisition</b>	<b>Total 3.5 Ha. (1.2 Ha Forest land and 1.8 Ha. State land Involved)</b>	<b>Total 6.45 Ha.(3.9 Ha.Forest land and 2.55 Ha. State land Involved)</b>	<b>Total 6.49 Ha.(4.3 Ha. Forest land and 2.19 Ha. State land Involved)</b>
<b>4-Cost and Financial</b>			
4.1-Total Project cost	Approx. 95.53 Cr	Approx.189.64 Cr	Approx. 203.87 Cr
4.2-LA,Pre-Construction Cost	Approx. 1.55 Cr	Approx. 3.09 Cr	Approx. 3.32 Cr
<b>Rank</b>	<b>01</b>	<b>02</b>	<b>03</b>

*Saurav*





**CHAINAGE 83<sup>rd</sup> TUNNEL NH-244 ON BATOTE KISTWAR ROAD SECTION OF NH-244 OF NH-244 OF DISTRICT KISTWAR IN THE UNION TERRITORY OF JAMMU AND KASHMIR**

**The above comparison shows that Option 1 will be more suitable for the proper road design and future traffic requirement.**

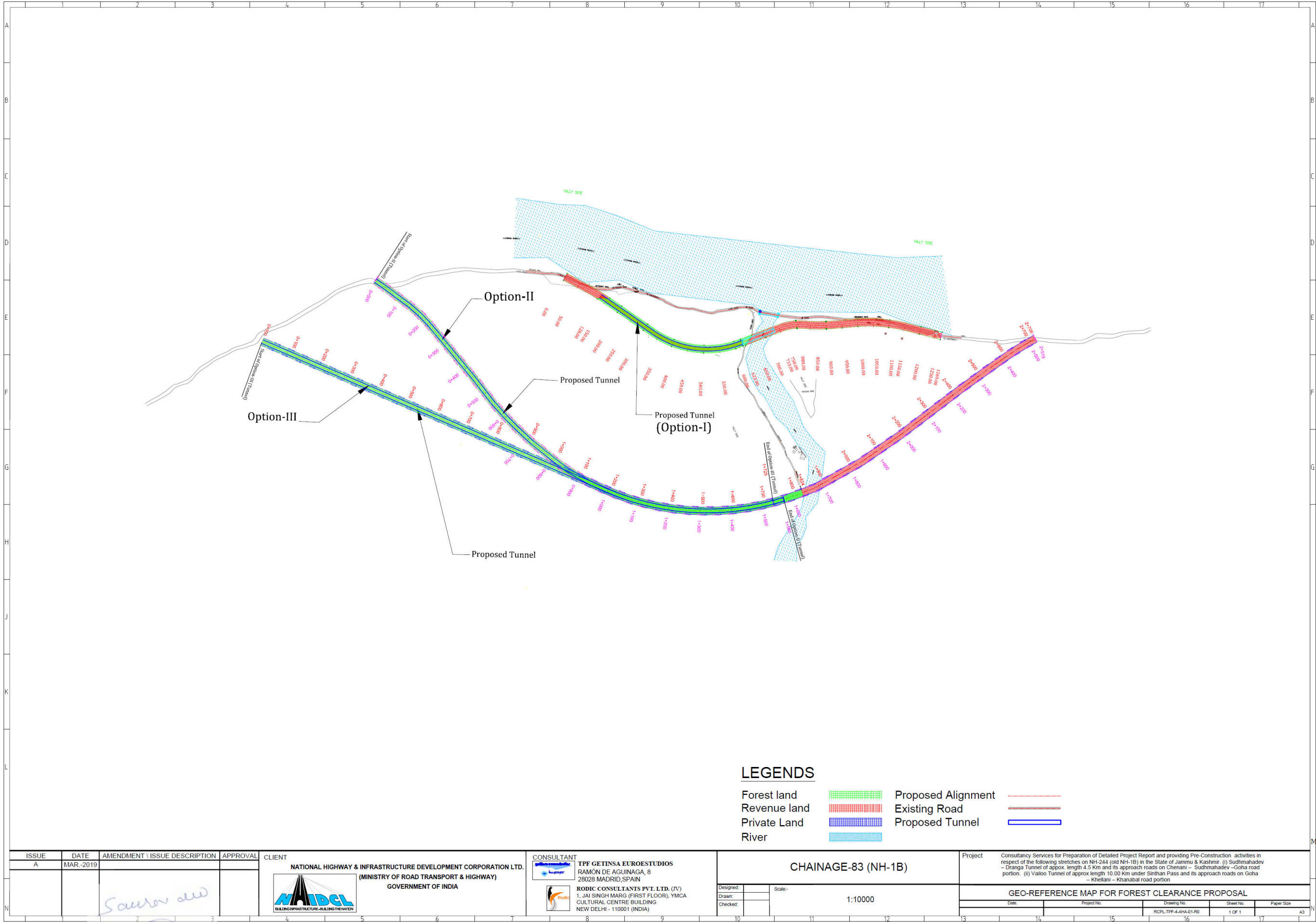
- **Option 1: Will be viable from geological point view and geometric standards for construction of this tunnel.**
- **Option 1: Land Acquisition total 3.05 Hectare Required for Construction of above Proposed Tunnel and Approach ( 1.2 Ha Forest Land and 1.85 Ha State Land.) Comparison to Option 2, and Option 3. Barest Minimum land required in Option-1.**

Hence any tunnel exceeding 500 m length shall require fire and ventilation provisions as per IRC Provision. Option-2 and 3 tunnel alignment would result in exceeding the tunnel length of 500 m. therefore, Option-2 and 3 alignment would result in extra forest land requirement and Civil construction cost.

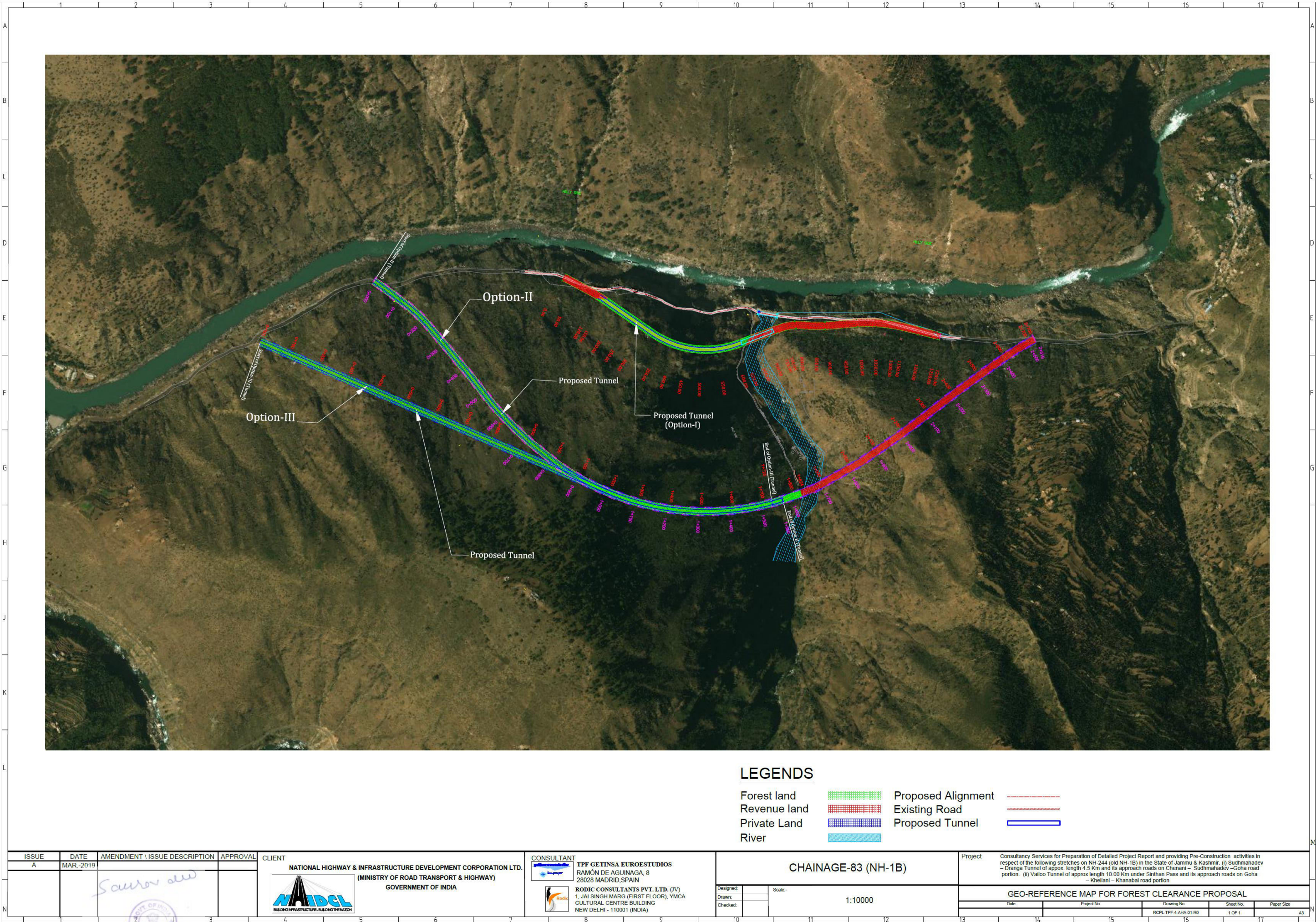
**However, Alignment approval Committee recommended option -1 for Construction of tunnel length 495 m including approach road from km 82+675 to km 82+925 on NH – 244(total length of project 1.269 Km) on grounds of Technical as well as Financial point of view.**

*Saurav*











**UNDERTAKING FOR NO OTHER FEASIBLE ALTERNATIVE OF ALIGNMENT**

I/We Saurav Deo, Resident Engineer Cum A.E.E, Project Implementation Unit, Khellani, NHIDCL, Jammu Division hereby, on behalf of National highway infrastructure development corporation (NHIDCL) Undertake that there is no other technical and financial feasible alternative of alignment for the purpose of Construction Road Portion from 82.675 to 82.925 at Km 83 on Batote - Kishtwar Road Section of NH-244 The road stretch of NH 244 between Thatri-Kishtwar near Darabshala village about Km 83 from Batote is a land slide prone area and black spot. There stretch has been frequently ravaged by landslides and rockfalls. A major landslide had occurred last year in this area, several people were killed and many injured after huge boulders and debris suddenly came down from the hill burying a bus and a car plying on the Doda-Kishtwar road. The new alignment of Road and Tunnel has to pass through forest and State land to avoid this land slide area and black spot area since no other alternative route is available due geological condition of the area. It is further stated that the forest area of 1.2 Ha, (1.15 Ha Underground Tunnel and 0.05 Ha Open Area) involved in the proposal is unavoidable and barest minimum in the proposed diversion.

Forest Proposal No: FP/JK/ROAD/44916/2020

*Saurav Deo*

Signature of User Agency Office with Seal

