

## SECTION - 1

### INTRODUCTION

#### 1.1 INTRODUCTION:

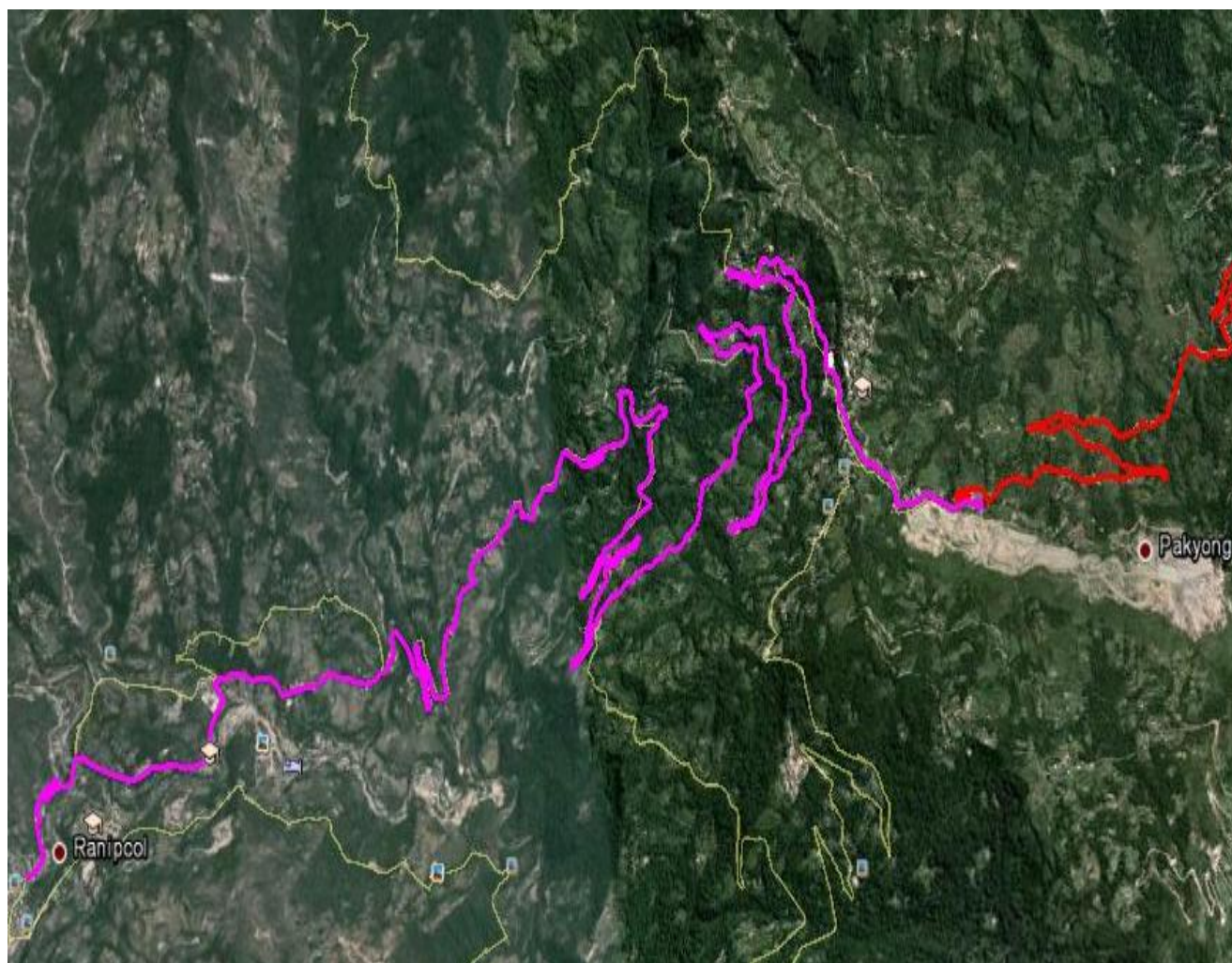
Sikkim, the Himalayan state has been merged in the Indian Union to become 22nd state in 1975. It is one of the most picturesque regions of Asia. The bowl like, mountain girdled state in the eastern Himalayas bordered on the west by Nepal, on the north by Tibet, on the east by Bhutan and the south by Darjeeling district of the West Bengal, lies between 27° to 28° north latitude and 88° to 89° east longitudes. The Sikkim is the youngest and small hill state of India having an area of 7096 Sqkm. Sikkim is surrounded by important mountain ranges. The Chola range of mountains on its east forms the watershed between it and Bhutan on one side and Chumbi valley of Tibet on the other. The well-known Singalila ridge is of the great Himalayas peaks. Sikkim is divided into four districts. The most populated area is the Eastern district, which contains the capital town Gangtok followed by Southern and Western districts. The northern district is sparsely populated because of its inhospitable climate and steep ridges. Lying along the slopes of Himalayas between Tibet and plain of India, cut off from the rest of the world by mighty mountains, Sikkim's scenic beauty has no parallel in the East, Sikkim's historic past, mystic religion, sublime monasteries and age old rituals have an attraction hardly to be found anywhere else in the world. Sikkim is mountainous terrain with cliffs and valleys. Dominating both legend and landscape is the mighty massif of Khangchendzonga known to the outside world as Kanchenjunga; it is the third highest peak in the world, towering at 8550 meters. Sikkim is drained by number of Perennial Rivers. However, the two main river systems are Teesta and Rangit. The other entire stream eventually joins one or the other. Rangit also joins the Teesta just near the border between Sikkim and West Bengal at Melli. Besides the river, there are number of lakes and hot springs which add to the beauty of the region. The important hot springs are Phut sachu, Raeong sachu, Yumthang and Momay.



The Ministry of Roads Transport and Highway, Govt. of India has prioritized to take up for up gradation and improvement of NH 717 (A) from Km 0/00 to Km 19/100 to 2-lane NH Standard in Sikkim. The existing road has steep gradient and sharp curves/zigs at various stretches. It is of single lane road with formation width of 6.00 m to 6.50 m without conforming any standard / specification. As a result, the heavily loaded trucks and large sized vehicles find it difficult to pass through these stretches safely.

The Project Corridor take-off point at km 78/100 (i.e. located at out skirt of Ranipool town toward Singtam) on Sevok-Gangtok section of NH-10 and runs towards North to South direction passing through a number of towns/villages like Ranipool - Aho - Yangtam - Panchwati - Pakyong within East District.

The existing highway NH 717 (A) has steep gradient and sharp curves / zigs at various stretches. It is of intermediate lane standard / specification. As a result, the heavily loaded trucks and large sized vehicles find it difficult to pass through these stretches safely. Since this road is the lifeline and main route of the east Sikkim, it is very essential to construct NH 717 A highway conforming to National Highway Standards (Fig.1).



**Fig. 1: Location MAP showing existing and proposed Highway**

## **1.2 PROJECT BACKGROUND**

The initial stretch of existing / present NH-717 A passes through heavily built-up areas which shall involve costly Land Acquisition and serious resettlement problems for improvement. Due to these reasons, it was felt absolutely necessary to re-align the existing initial stretch of the NH 717 A between km 0/00 - 2/45 by shifting the existing take-off point at km 80/60 to a proposed new take-off point at km 78/100 (i.e. located at out skirt of Ranipool town toward Singtam) on Sevok-Gangtok section of NH-10. The proposed alignment is realigned from the existing road from Km 7/250 to Km 12/520 to bypass the Sinking & Sliding Portion. The proposed realignment take off points are very near due to which, it will not affect and deprive the connectivity with villages and hence, the villagers would be the beneficiaries with the proposed alignment. The proposed re-alignment does not pass through heavily built-up area and would involve much less L.A cost as well as resettlement problem as compared to the existing alignment. The re-alignment also passes through an area with a much better topographical as well as soil conditions. The re-alignment also passes through an area with a much better topographical as well as soil conditions. Hence, apart from the reduction in distance between Pakyong Airport and Capital City Gangtok by Km 2.5, which would greatly

benefit for the public in terms of vehicle operating cost and travel time, the proposed re-alignment is technically far better and financially cost effective in the long run.

The existing NH717 (A) was constructed during the reign of Chogyal, the then King of Sikkim and has a total length of 19.10 Kms. The road alignment passes through frequently cultivated land, Forest plantation & habitation etc. The road was constructed to provide connectivity to East Districts of Sikkim. **The road was upgraded to the status of National Highway in the year 2016.** No substantial improvement of the road other than routine normal repairing works have been carried out since the road was declared a National Highway. The pavement work and the permanent works of retaining wall and cross drainage structures were done at the time of construction as per ODR standards and the width of the cross drainage structures are also only 6.0 m. Most of the retaining wall /wing wall had been collapsed and the road formation width also breaches at many stretches.

### 1.3 SCOPE OF THE PROJECT

Up-gradation of the existing road, having formation width of about 6.50m, to a formation width of 12.0m, construction of pavement work for the entire length, culverts and permanent works at essential places, widening and improvement of blind curve portion, realignments at the portions where steep gradients have to be avoided, construction of pucca side drains at needy stretches, and installation of traffic/informatory sign and Kilometre.

### 1.4 PROJECT ROAD

The stretches of the road under this report is between 00/00 Km to 19/10 Km of NH 717-A as per existing chainage required for up gradation & improvement to standard 2 lane. In this portion of proposed highway, about 88.80 % length of road passes through heavily built-up areas & private land which involve costly Land Acquisition and serious resettlement problems in the existing road. The existing alignment also passes through steep terrains which are unstable and landslide prone area at many locations which could also posed serious problems in future.

### 1.5 THE NAME OF VILLAGE ALONG PROJECT ROAD:

The name of the villages, located nearby the project road corridor, which will be directly influenced by the project road are listed below –

Sr.No.	Existing Chainage		Village Name	Design Chainage		District
	From	To		From	To	
1	0	3000	Ranipool	0	1950	East
2	3440	4500	Aho	2350	3350	East
3	5000	6200	Yangtam	3850	5000	East
4	12550	13200	Panchwati	9000	9650	East
5	14460	19100	Pakyong	10900	16359	East

## 1.1 REPORT STRUCTURE

The Detail Project Report is presented in the following format

### VOLUME I - MAIN REPORT

		Executive Summary
Section 1	:	Introduction
Section 2	:	Socio-Economic Profile
Section 3	:	Engineering Surveys and Investigations
Section 4	:	Geology of the Project Area
Section 5	:	Design Standards and Specifications
Section 6	:	Engineering Designs and Construction Proposals
Section 7	:	Environmental Impact Assessment
Section 8	:	Materials, Labours and Equipments
Section 9	:	Quantities and Project Costs.
Section 10	:	Implementation Programme.
Section 11	:	Maintenance of Existing Road

### VOLUME II - DESIGN REPORT

Section -1	:	Design of Road Features, Pavement Composition, Cross Drainage Structures and Slope Protection Works.
Section 2	:	Hydrology and Drainage Study
Section 3	:	Soil Investigation Report
Section 4	:	Traffic Study and Survey
Section 5	:	Inventory Survey

### VOLUME III - DETAIL ESTIMATES

### VOLUME IV - PROJECT DRAWINGS

### VOLUME V - LAND ACQUISITION AND UTILITY RELOCATION DETAILED