Kuthiran Site Visit Report

March 2017

Site visit of M.Tech Case (2015)

Submitted by : S4 students

DEPARTMENT OF CIVIL ENGINEERING

SCMS School of Engineering and Technology, Karukutty

Kerala Technological University

GENERAL DETAILS

The Department of Civil engineering of SCMS School of Engineering and Technology (SSET) organized a one day site visit to Kuthiran. The visit was in accordance with our curriculum . The continuous guidance of faculty members made the site visit a grand success. The list of students are attached at the end of the report.

- LOCATION : KUTHIRAN
- SITE VISITED : KUTHIRAN TUNNEL, NH 47
- DAY AND DATE :FRIDAY , 03-03-2017
- CLASS AND BRANCH : M.Tech CASE
- NUMBER OF STUDENTS : 18
- ACCOMPANYING FACULTY : SANDEEP T.N., AIRIN M.G.
- DEPARTURE : 9:30 AM (FROM SSET)
- ARRIVAL : 5:00 PM (AT KARUKUTTY)
- OBSERVATION ON SITE : SOUTH INDIA'S FIRST TUNNEL

INTRODUCTION

Kuthiran Tunnel is an under construction tunnel in the Indian state of Kerala State at Kuthiran in Thrissur_District. When finished, it will be Kerala's first-ever tunnel for road transport.

DETAILS STUDIED

Kuthiran gradient is situated in the Kuthiran Hills, which falls in the notified Wild Life Sanctuary. Presently, Kuthiran gradient is a major traffic bottleneck and accident spot on the crowded Thrissur-Palakkad stretch of the National Highway 544 (India). Once the works are completed, both the tunnels would reduce the distance between Thrissur to Palakkad up to 3 kilometres (1.86 mi). The tunnel through the Kuthiran will also avoid vehicular congestions while traversing the hills.

DIMENSION

The twin tube tunnels will have length of almost 1 kilometer (915 m or 3,002 ft), while the width and height would be 14 and 10 metres (46 and 33 ft), respectively. The tunnels would be located in a gap of 20 metres (66 ft). Two emergency crossovers inside the tunnel are there inside the tunnel.

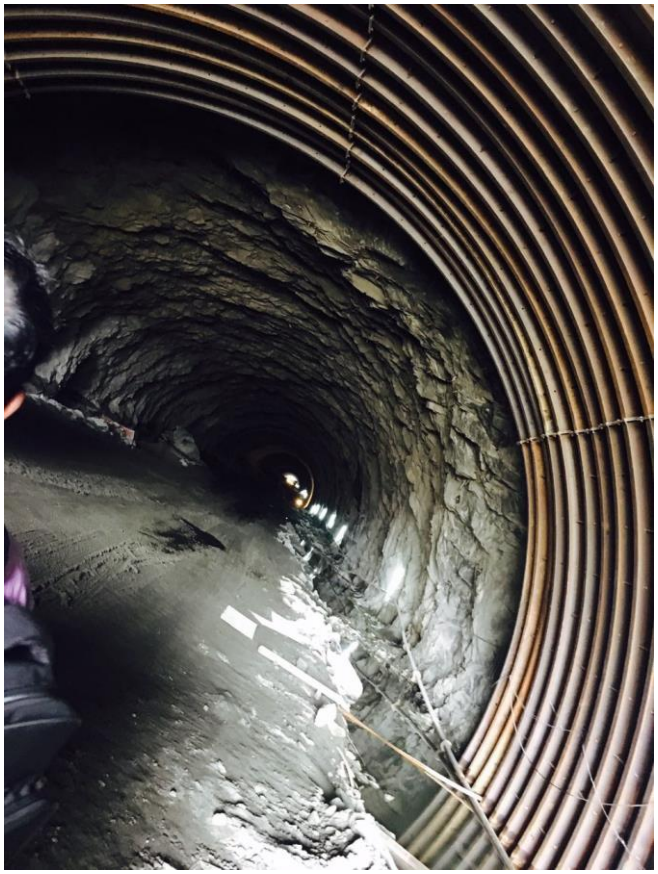
Inside view of tunnel

CONSTRUCTION PROCESS

Explosion is conducted for breaking the rock and boomer machine is used for drilling works of both the left and the right tunnel from the Palakkad side near Irumbupalam. Both the tunnels will be more than one kilometre long and have a width of 14.3 and 10 metres of height. The right tunnel for which the blasting stared in June has completed 158 metres. Within a week by fixing the coordinates as mentioned in the project plan, the blasting for the tunnel began from the Thrissur side as well.

This tunnel at Kuthiran is the first of its kind in the state and will help save two-km distance compared to the highway road presently laid around the mountain at Kuthiran climb with several rising and falling steeps.

For all the drilled portions, steel frames called 'ribs' are placed in an arch shape for support and concrete is sprayed on the periphery of the rock with 5 cm thickness (known as shotcreting) so that it does not come in touch with the atmosphere and develop crack. A total of four lakh tonnes of rocks taken out of the tunnel will be used for the highway works by the main contractor.



Supporting Steel frames

Shotcrete at periphery of tunnel

Reinforcement mesh for shotcreting

COST

Pragathi Engineering and Rail Project Private Limited has bagged the sub-contract for the Kuthiran tunnel construction at a cost of Rs 200 crore.

M.Tech students and faculty at the tunnel entrance

LIST OF STUDENTS

1. Acxa Kuriakose
2. Aparna M. V.
3. Aswathy Devika
4. Chanchal Mary Peter
5. Gayathri Krishnakumar
6. Krishnaveni S
7. Merlin Mary Vilson
8. Paul Wilson P.
9. Reshma C.