Tender Designs of Major Infrastructure Highway Projects

Pre-bid Engineering & Tender Design for "Zojila" Tunnel in Jammu & Kashmir

India

Project

Prebid engineering and tender design for tunnels, shafts, ventilation caverns, portals and structures for connecting NH-1 with the state of Jammu & Kashmir in India

Construction Cost

Total Cost approx. € 1.00 Billion

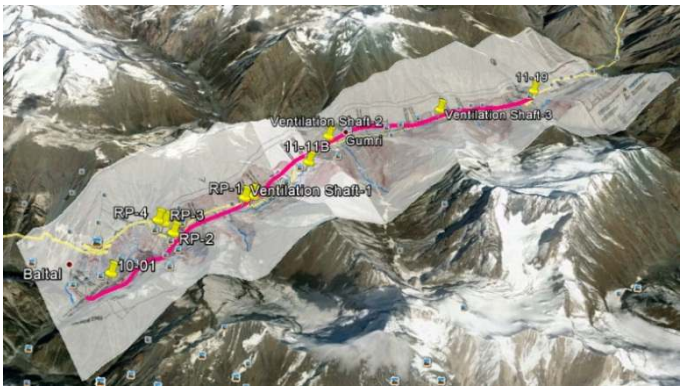
Project Schedule

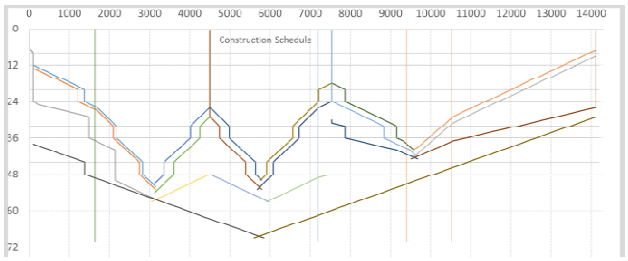
Tender Design: 2017

Project Description

Zojila single tube tunnel:	14.083m
(two lanes in bi-directional traffic)	
Egress parallel escape tunnel:	14.053m
Two (2) intermediate shafts	dia=14 m, depth=850 m
Intermediate shaft	dia=6 m, depth=210 m
Three (3) ventilation caverns	Aexcav=185 m^2, L=35 m
Main tunnel portals	L= 37m & 29,5 m
	elevation approx. 3,000 m

Thirty seven (37) Pedestrian Cross Passages
Eighteen (18) Vehicular Cross Passages
Eighteen (18) Lay-Bys, 50m long each
Portal structures, shaft ventilation structures





Construction Schedule / Time-Chainage Programme

Excavation Method

NATM – Mechanical excavation, drilling and blasting for tunnels
Shafts – Drill and blast construction & "Raise boring"

Final Lining

Reinforced concrete

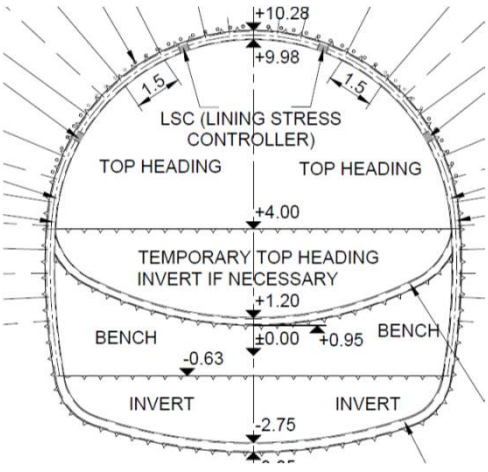
Geology

Metamorphic rocks with sedimentary and magmatic origin
Max. overburden at the tunnels: 650m

Our Services

Preparation of the technical offer and tender design of:

- Single tube road tunnel & Egress parallel escape tunnel
- Three (3) intermediate shafts & three (3) ventilation caverns
- Thirty seven (37) pedestrian cross passages
- Eighteen (18) vehicular cross passages
- Eighteen (18) lay-bys
- Portals & portal structures
- Shaft ventilation structures
- Techno-economical evaluation of tunnel construction activities
- BOQs and cost estimate (rate analysis)
- Risk assessment
- Design and construction specifications
- Construction schedule for seasonal work due to weather conditions
- Designs provided in common with INDUS CONSULTRANS Pvt. Ltd. India



Typical tunnels cross section

Client

Reliance Infra. Ltd – Dogus Construction

Highway Tunnels

Engineering Services for Tunnels T2, T3, T4 & T5 on Kiratpur - Ner Chowk section of NH21 in the states of Punjab and Himachal Pradesh (HP) Concession project

India

Project

Geological mapping & other site services for the concession project: "Tunnels T2, T3, T4, T5 on Kiratpur - Ner Chowk section of NH21 in the states of Punjab and Himachal Pradesh (HP), India

Project Description

- Single tube two lane bi-directional highway tunnel T2 650m, excav. cross section ~ 105m^2
- Single tube two lane bi-directional highway tunnel T3 400m, excav. cross section ~105m^2
- Single tube two lane bi-directional highway tunnel T4 1410m, excav. cross section ~105m^2
- Single tube two lane bi-directional highway tunnel T5 860m, excav. cross section ~105m^2

Excavation Method

NATM – Mechanical excavation

Geology

Lower Siwalik formation of the frontal folded belt of the Himalaya consisting of alterations of sandstones & siltstones, poor to very poor encountered geology, shear zones

Max. overburden ranging from 70m to 140m

Our Services

- Review of the available reports and drawings
- Geological mapping of the tunnels alignment (T2, T3, T4, T5) for a corridor of 100m around the centre line of alignment
- Establishment of the geotechnical investigations program
- Preliminary geological model of tunnels as per NATM classification
- Contribution to the highway alignment refinement
- On site consultancy services
- The designs and services provided in common with INDUS CONSULTRANS Pvt. Ltd, India

Client

IL&FS TRANSPORTATION LTD, India

T2 tunnel – Location of portal P1

Shear zone in the area of the west portal P1 of tunnel T4

Geological plan view of tunnel T3