

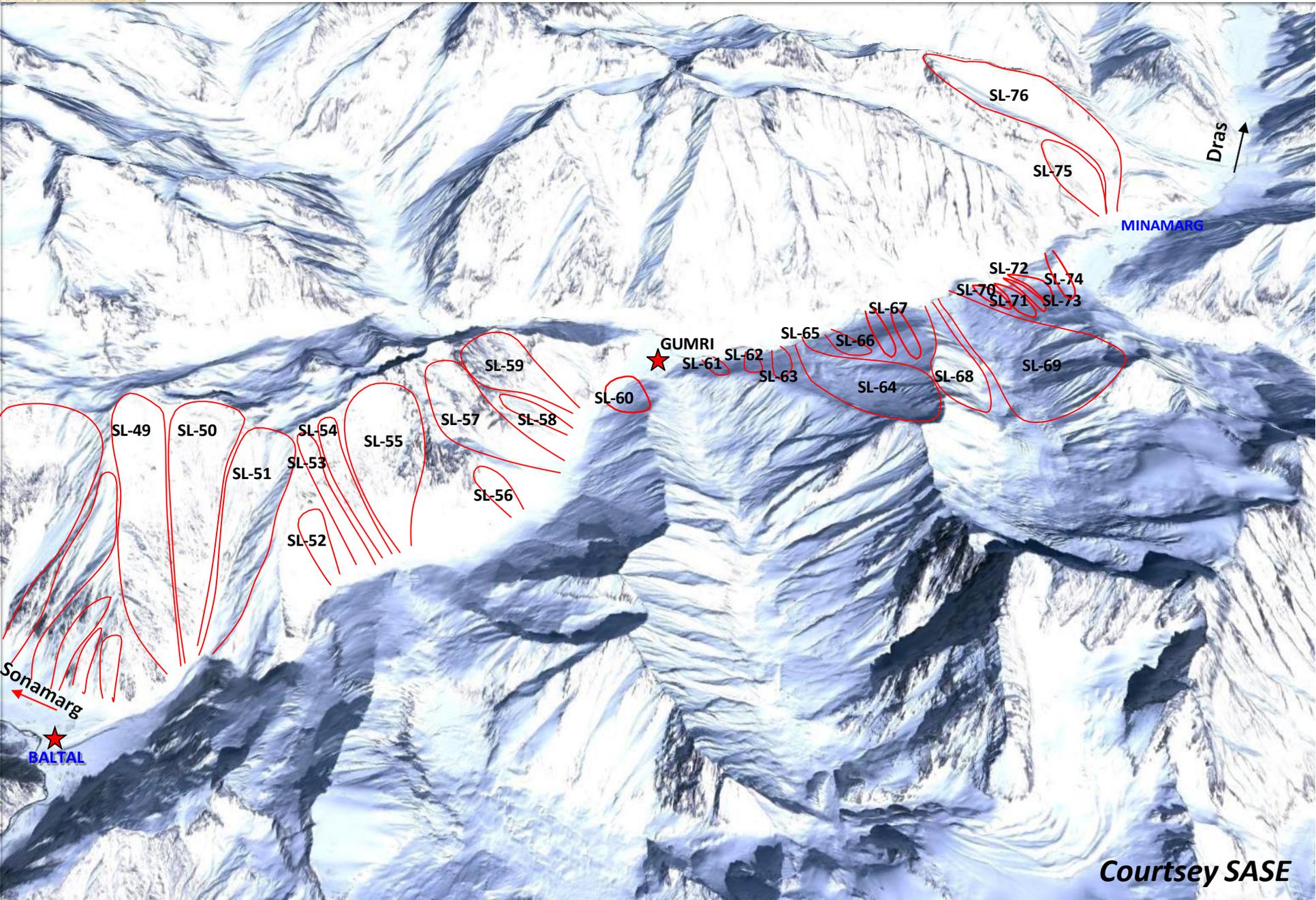


# Zozila Tunnel Project

(Jammu & Kashmir)

**Dated: 10.08.2016**

# Registered Avalanche Sites Between Baltal and Minamarg



Courtesy SASE



# TUNNEL CHARACTERISTICS

- A 14.083 long tunnel(Mined Tunnel Length) proposed on NH 1 to facilitate all weather connectivity between Srinagar and Leh.
- Western (Srinagar side) Portal: At Baltal (Km 100) ➔
- Eastern Portal: At Minamarg (Km 117) ➔
- Single tube two way tunnel with parallel egress tunnel.
- Three ventilation shafts. Two ventilation shafts will be used as construction shafts.
- Six working faces proposed.
- Estimated time for construction: 84 Months
- Total Project Cost: 9090 Crore
- Concession Period 22 Years
- Only eastern portal face available for working round the year. Work not possible at rest of the faces for four months during the winter period.





## FEATURES

- Design speed: 80 Kmph
- Gradient west to east :2.9% (1 in 35)
- Total no. of curves: 9
- Parallel Escape Tunnel: 14.200 km length

# Approach road to Western Portal (Srinagar side)

- Portal elevation = 2900 m
- Cut and covered tunnel length= 37m
- Ventilation building = above C&C tunnel, 2 axial fan, electrical supply installation
- Service and control buildings (800sqm)
- Approach road to Portal = 5025 m
- Minor Bridge = 60m
- Snow Galleries

# Approach road on Eastern Portal (Leh Side)

- Portal elevation = 3310 m
- Cut and covered tunnel length=30m
- Service and control buildings (800sqm)
- Approach road to Portal = 0.803 km

# Snow Galleries

- At Km 2.850 (approach road to western Portal - 150m long snow gallery)
- At Sl. 40, umbrella type new structure
- SL-41 & SL-42 – Retarding mounds of suitable geometry
- **SL-43**
  - A combination of mounds and catch dam
  - A catch dam of 350 m length and three rounds of mounds
  - Height of mound = 7m
  - Height of Catch dam = 8m
- **SL-44**

Combination of Mounds and catch dam

# Construction/Ventilation Shafts

Shaft no. 1 (Ventilation cum Construction Shaft)

[Depth = 484 m][Dia. = 14m]

Shaft no. 2 (Ventilation cum Construction Shaft)

[Depth = 365m][Dia. = 14m]

Shaft no. 3 (Ventilation Shaft)

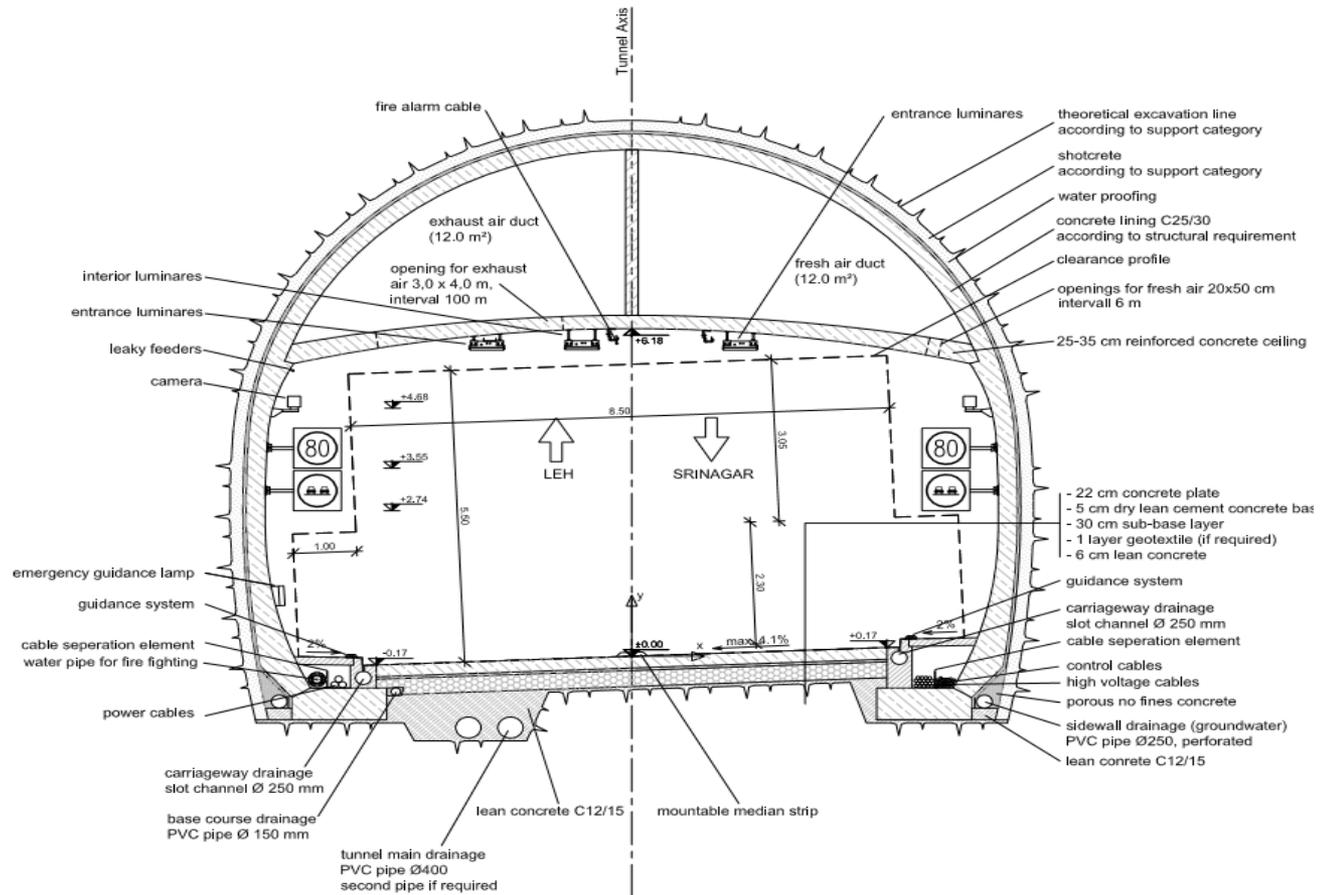
[Depth = 208m] [Dia. = 6m]

# Facilities & Safety Features

Pedestrian Cross Passages	At every 250m (Length as per concessionaire design)
Vehicular Cross Passages	At every 750m (Length as per concessionaire design)
Lay-bys (Both highway side)(BHS)	At every 750m Width = 3m Length = 40m Hydrant Cabinet and Emergency Telephone Cabinet
Jet Fan Cabinets	On BHS at an interval of 400 to 600 m with a length of 30m
Emergency Telephone & Communication System	Location: AT emergency exits with an interval of 125 m on one side of the tunnel
Electrical supply cabinet	Each 700m

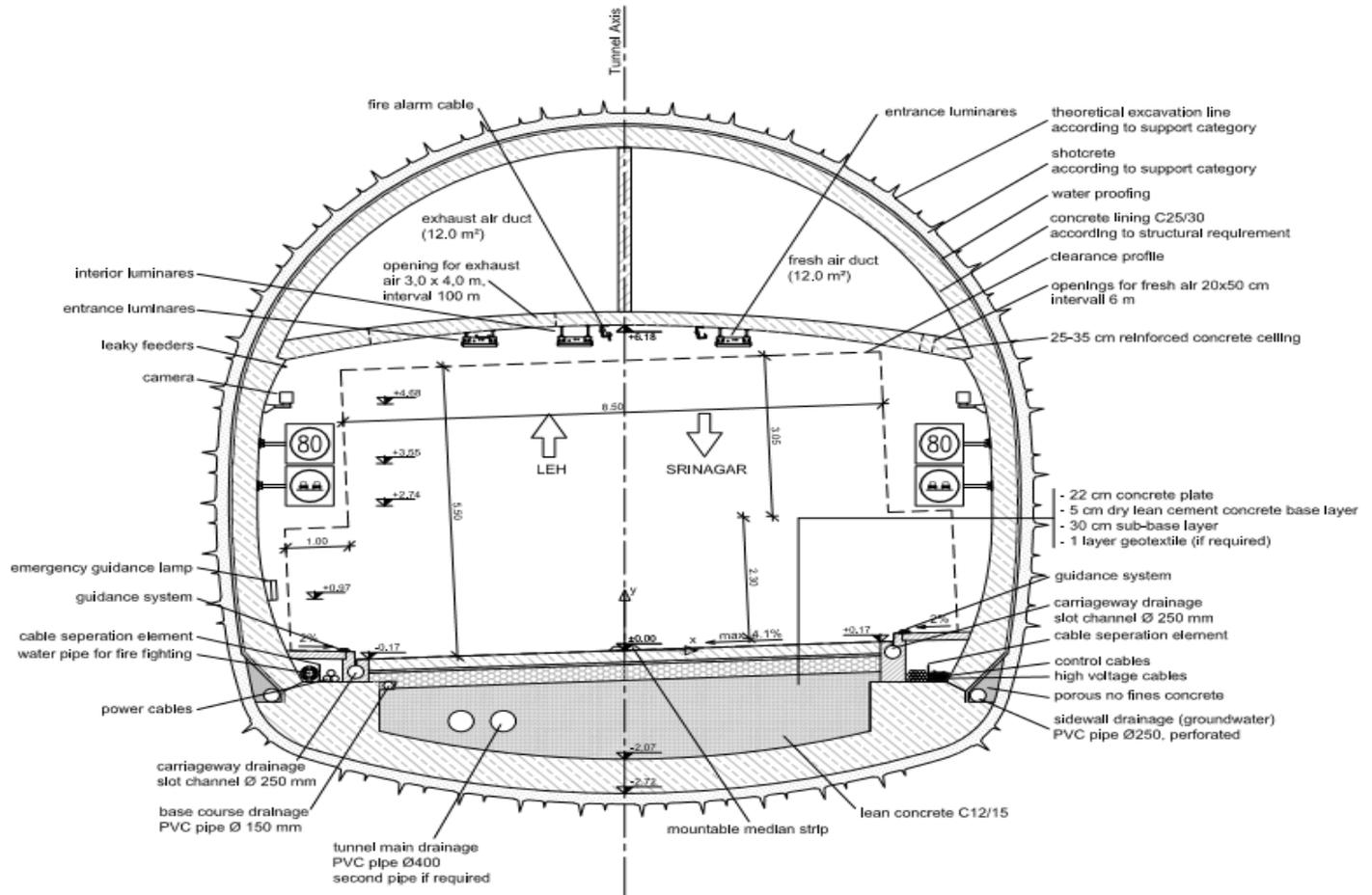
# Tunnel Cross Sections (Main Tunnel)-1

TYPICAL CROSS SECTION, MAIN TUNNEL  
CLEARANCE PROFILE AND  
INSTALLATIONS WITHOUT INVERT SLAB



# Tunnel Cross Sections (Main Tunnel)-2

TYPICAL CROSS SECTION, MAIN TUNNEL  
CLEARANCE PROFILE AND  
INSTALLATIONS WITH INVERT SLAB



# Land Acquisition & Forest Diversion (Zozila Approach Road Requirement)

- Forest Land = 208.88 HA  
Area Required = 97.82%  
Payment = 16.92 Cr paid on march 2014 to PCCF
- Revenue Land = 4.60 HA  
Area Required = 2.18  
Payment = 3.94 Cr 31<sup>st</sup> March 2014, DC Ganderbal
- Service Road: (Amarnath)  
Length = 2.3 Km  
Link road to Amarnath base = 0.40 Km  
Area = 6.84 HA dated 09.10.2014  
(Final alignment is yet to be finalised)

# Tunnel Zojila with separate parallel egress tunnel

Single tunnel tube, bi-directional; no works in winter (4 months) at all excavation faces except eastern portal; western portal accessible after completion of Z-Morh Tunnel (5 years)

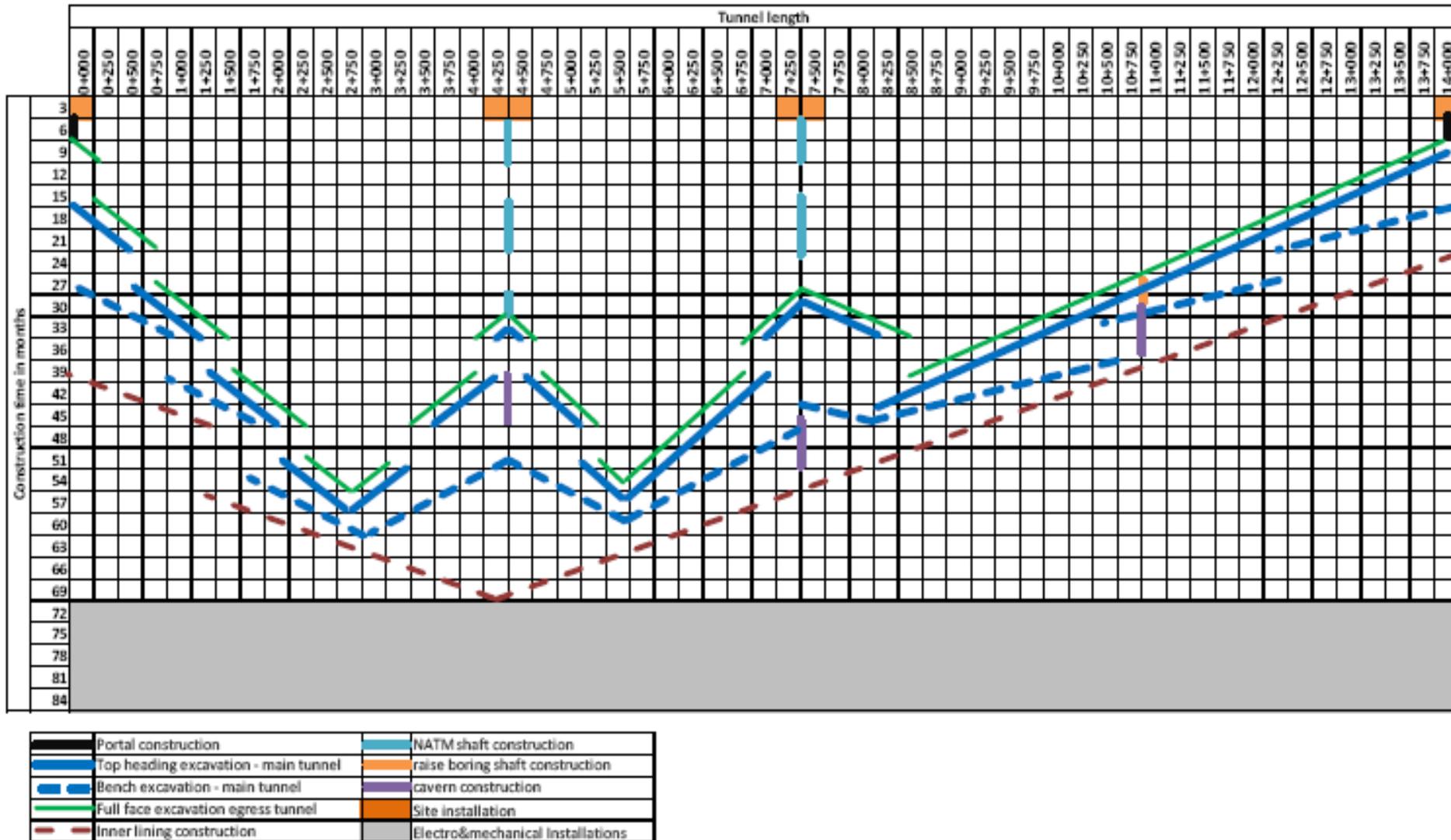


Fig. 2 Construction time evaluation with two construction shaft (shaft #1 & #2) and continuously accessible eastern portal



**THANK YOU**