Pass of Birnam to Tay Crossing

Proposed Construction Sequence



Construction Sequence of 1.5 kilometre Cut and Cover Tunnel

- Construction of cut and cover tunnel is likely to be divided into 4 sections • (3no. 450 metre sections and 1no. 250 metre section).
- Construction of the sections will be undertaken at the same time, with six piling rigs assumed, and other associated plant, in operation throughout the site.
- Section 1, 2 and 4 follow the same construction sequence, shown in the indicative cross-sections below.
- Sections 1 and 2 are constrained and require the southbound carriageway



to be temporarily widened in these sections.

• Section 3 is more complex as it involves lowering Inchewan Burn and is in close proximity to Dunkeld & Birnam Station, Category A listed building. Construction in this section can be seen in the constructability app.

Construction Sections of 1.5 kilometre Cut and Cover Tunnel

Construction Stages of Sections 1, 2 and 4







Stage 3 – Excavate and Cast Northbound Carriageway Permanent Concrete Roof Slab

Stage 2 – Install Central Reserve Piles



Stage 4 – Excavate Material to form Northbound Tunnel and Lay Foundation Slab



Stage 5 – Install Internal Fittings and Mechanical and Electrical (M&E) Equipment



Stage 6 – Install Southbound Carriageway Edge Piles.







Stage 7 – Excavate and Cast Southbound Carriageway Permanent Concrete Roof Slab

Stage 8 – Excavate Material to form Southbound Tunnel and Lay Foundation Slab Stage 9 – Install Emergency Evacuation Tunnel, Internal Fittings and M&E Equipment

Construction Key Facts

- Construction duration is expected to be between 4 ½ and 5 years based on having 6 piling rigs on site and working 6 days per week. This would increase to between 5¹/₂ and 6 years based on working 5 days a week. Perth and Kinross Council (Environmental Health) will decide permissible working days and hours. Piling works is expected to be between 12 to 18 months depending on number of rigs and working days and hours.
- In total, approximately 3,700 bored piles, with 1.2 metre diameter are required.
- Disposal of approximately 698,000m³ of material is required.
- Approximately 180,000 m³ (430,000 tonnes) of concrete is required.
- Land is required for construction plant including mud plant and concrete batching plant.
- Total scheme cost approximately £1 Billion to £1.6 billion.

