# HOW WE'LL BUILD THE RAIL BRIDGE





An example of pier and headstock installation during construction at the Reservoir Level Crossing Removal Project

### The Victorian Government is removing the level crossing at Mt Derrimut Road by elevating the rail line over the road and building a brand-new Deer Park Station.

Removing this level crossing will ease delays for the 23,000 vehicles that pass through every day. Pedestrians, cyclists and drivers will no longer be delayed waiting for the boom gates, which can be down for 60% of the morning peak.

At Mt Derrimut Road, the rail bridge will be built using concrete U-trough structures with a 44 metre long steel girder for the section over the road. The steel girder will be fabricated on the ground and lifted into place. Early works start in early 2022, and major construction will begin in mid 2022, while works continue at the nearby Fitzgerald Road and Robinsons Road level crossings. When all three level crossings are removed by 2024, the Geelong and Ballarat lines will be level crossing free between Deer Park and the city.

Read on for more information on how we'll build the new rail bridge and what to expect.



The steel girder section of the rail bridge that will take trains over Mt Derrimut Road – artists impression, subject to change

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# MONOPILING

The monopiling technique will be used for laying down the foundations of the new rail bridge. Monopiling is ideal for the ground conditions in Deer Park.

Traditional rail bridge foundations consist of a cluster of small diameter piles below ground, topped with a larger concrete 'pile cap' to support each bridge column. Monopiling is a single pile, and no pile cap – which reduces time and labour.

There are two different sized piles to be installed for the foundations of the rail bridge at Mt Derrimut Road.

- 26 piles at 2.1 metres in diameter and approximately 8 metres deep
- 4 piles at 2.5 metres in diameter and approximately 9 metres deep

When piling ends, the rest of the bridge and elevated station structure will take shape above ground for everyone to see.

### **Piers**

Bridge piers are the upright supports for a structure. At Mt Derrimut Road you will see 30 piers installed to support the structure of the rail bridge.

### **U-troughs**

The bridge sections, known as U-troughs, are made up of two L-shaped beams installed on top of the headstocks. The two beams are joined with concrete to form a U-shape. At Mt Derrimut Road, 60 individual L-shaped beams will be joined to form 30 U-troughs – this will become the base where we lay the train tracks and ballast. The graphic on the next page shows how we will build the rail bridge.

### What to expect

Safety is our number one priority, therefore during the construction of the rail bridge and new station, at times we'll need to close the rail line. During this time, coaches will replace trains.

We'll keep the community informed with timely updates about construction and impacts you may notice.

To view our disruptions online visit levelcrossings.vic.gov.au/disruptions

### **More Information**

While construction is underway, at times there will be changes to the way you travel. Sign up for regular project updates at levelcrossings.vic.gov.au/ **subscribe** or register for SMS updates by texting **Derrimut** to 0427 840 967

## Bridge construction at Mt Derrimut Road

- Foundation works, known as piling, start by drilling holes up to 9 metres deep.
- A cylindrical, steel reinforcement 2 cage is inserted into the hole.

The hole is filled with concrete 3 to form a pile.

The piers, or bridge columns, are 4 built on top of the piles, starting with a steel reinforcement cage.

- A steel mould is placed around the cage.
- and cured to create the pier.
- to site and installed on top of each pier. Headstocks support the bridge spans and transfer





L-Beam installation on the Reservoir Level Crossing Removal Project

9

Concrete is poured into the mould

Pre-cast headstocks are delivered the bridge load to the pier below.

8 Crushed rock ballast and train tracks are laid.

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# FAQS

### Will the works be noisy?

To build the rail bridge, specialised machinery is needed. As with any major construction, this can result in noise and vibration.

Prior to works starting, we undertake noise monitoring at different locations in the project area. This allows us to identify potential noise impacts of our works, and proactively work with affected residents to minimise noise impacts.

During construction, we continue to monitor noise levels to assess the impact to residents and respond to concerns.

#### Will there be 24 hours works during construction?

Yes. At times we'll need to work during the night. When 24-hour work is scheduled, we'll provide you with plenty of notice.

### What are the respite and relocation options?

Our relocation team will work individually with impacted residents to provide detailed information about the relocation process and to discuss their needs.

The new rail bridge and bus exchange entrance, viewed from Deer Park Station – artists impression, subject to change If you believe the works are too noisy and affecting your ability to sleep, please call a member of the project team on **1800 105 105**.

## Will the Ballarat and Geelong lines be closed during construction?

At times we will close sections of the train line, with coaches replacing trains. We'll provide you with plenty of notice before any closures.

## Will there be any further refinements of the rail bridge design?

Yes. There are some elements of the rail bridge that are being finalised. We will share this information with the community as soon as it is confirmed.

Piling rig at Robinsons Road rail bridge works, Deer Park

### **CONTACT US**

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