

Work Notice

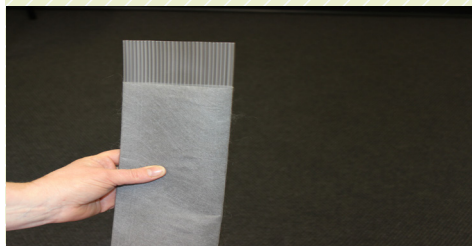
27 March 2017

Wick Drains

- * Installation of wick drains on site between Winters Road, QEII Drive and Prestons Road
- * Construction of the motorway

Wick Drains

When a structure or embankment is built on soft ground, the load on the soft soil is initially supported by the incompressible water in the soil. Over time water slowly drains out from within the soil, the load is then transferred to the soil, the soil consolidates and settlement occurs. For this reason the process of settlement takes a long time. To reduce the settlement time we are using two techniques: we temporarily weigh down the embankments with an extra 1 to 3 metre layer of fill material called a surcharge and we use wick drains. The time required for this surcharge to compress the ground can be shortened by installing wick drains. The drains give the water a shorter drainage path and allow the consolidation to take place in months instead of years. Wick drains are installed vertically into soft ground. The drains are around 10cm wide by 5mm thick and consist of a corrugated plastic strip wrapped in a filter fabric.



A closer look at a piece of wick drain.



Design and landscaping Prestons Road underpass (for illustration purposes only)

Installation of wick drains

From late March/early April we will start installing wick drains within our project alignment between Winters Road and QEII Drive and between QEII Drive and Prestons Road. In total we will install over 100km of wick drains into the ground.

WHAT WE ARE DOING

From November 2016 we have been building a working platform, which involves bringing in gravel to create a 0.5m thick layer. After this we start installing wick drains.

Wick drains, like a flattened drinking straw, relieve groundwater pressure that increases when you put more fill (weight) on top of the ground. The drains are pushed vertically into the ground to a depth of about seven metres. In total we will be installing just over 100km of wick drain material for the new motorway between Winters Road, QEII Drive and Prestons Road.

CONSTRUCTION IMPACTS

The noise, dust and vibration impact of this work is low.

Installing wick drains will have little impact. We are going to use a double mandrel rig that can install two vertical wick drains at a time.

Wick drains are pushed into the ground spaced between 1.5 and 2 metres apart. A small crew is involved with the installation: an operator and two ground staff who place the rolls on the rig, cut the wick drain strips once installed and then reset the rig.

This work will take around three months to complete.

Work starts between Winters Road and QEII Drive. Once the installation of all drains is complete the rig moves to install wick drains on our work site between QEII Drive and Prestons Road. The wick drains will significantly reduce the settlement time for the main motorway alignment by allowing water to escape faster from the ground below. After the wick drains we will continue with importing and placing more material fill.



Image on the left: installation of wick drains using a twin mandrel rig. Image below: a closer look at the wick drain installation. Map below: the motorway work site area between Winters Road, QEII Drive and Prestons Road.



What's next?

Construction of the new motorway is ramping up in 2017; we will have crews working in many locations along the project.

EARTHWORKS - WHY ARE WE NOT DIGGING?

The earthworks for the motorway have started. This means you will generally see more trucks coming to and from the entire project site.

These trucks will be bringing in material for the motorway embankments.

The new motorway needs around 1.2 million cubic metres of fill. That is enough to fill 480 Olympic swimming pools!

We will not be excavating for the new road as such; rather we will build it on top of the existing ground. Making the motorway slightly raised about ground level.

Bulk fill material for the embankments will be delivered using the accesses at: Main North Road, Belfast Road, Prestons Road, Radcliffe Road, QEII Drive, Winters Road and Cranford Street.

The embankments and bridges will rise to around eight metres where one road goes over another.

Letting it all settle

We need to allow the ground to settle. The embankments take a long time to build because we need to wait for them to settle.

So, for a long period of time after the embankments have been constructed, you will not see any diggers, trucks or other heavy machinery on this part of the project.

GENERAL INFORMATION

- Our standard construction work hours are Monday to Saturday between the hours of 7.00am to 7.00pm.
- There will be increased noise and vibrations associated with most of the construction work. We will do what we can to lessen this.
- Keep yourself and your children, as well as pets and stock at a safe distance from the work site: please stay behind the construction fences at all times.
- All work sites are subject to weather and other unforeseen conditions. Some jobs will be finishing early while others may be delayed or need to be rescheduled.

Need more information? We will stay in touch. The project team will keep you informed and further updates will be provided when work may affect you. General project information will be available on our website and here you can also sign up to receive our newsletters and updates: www.nzta.govt.nz/cnc

You can call or email us on 0800 262 200 and at info@cncalliance.co.nz or visit our office at 145 Winters Road, accessed only from QEII Drive.