FLEURIEU CONNECTIONS ALLIANCE

# Piling Fact Sheet

**The Australian and South Australian governments have committed a total of $685 million to fund the Fleurieu Connections Main South Road and Victor Harbor Road duplication projects. These projects will result in safer and faster journeys for motorists and provide a vital boost for local tourism, communities and support hundreds of jobs each year during construction.**

As part of the Main South Road Duplication project, piling works will occur to construct the overpass at the intersection of Tatachilla Road and Maslin Beach Road; the Pedler Creek Bridge; and the underpass at Port Road and Main South Road, Aldinga.

## What is piling?

Piling is the construction of columns in the ground that provide vertical and horizontal support to a structure, such as a bridge or retaining wall, by connecting to stable soil or rock.

Piles are installed vertically into the ground and can be made from reinforced concrete, steel or timber. There are various piling methods used in construction, but generally it involves boring or driving them into the ground.

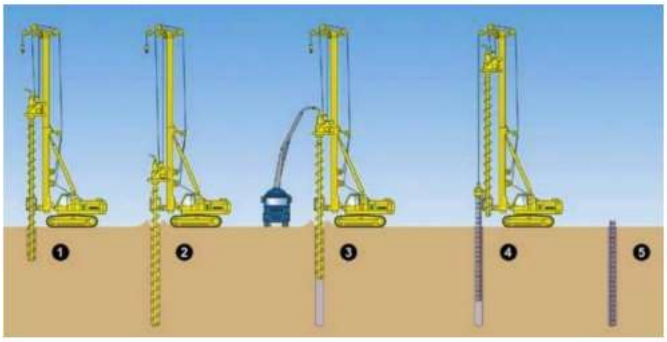
The number of piles and depth is unique to each structure and depends on the size of the structure and the type of soil. Geotechnical investigations, including coring are undertaken to understand the condition of the soil before the detailed design and construction starts.

## The type of piling used on this project

The most common method of piling used for this project is Continuous Flight Auger (CFA) piling, where a pile is formed by drilling a shaft into the ground with an auger (a drill resembling a large corkscrew) that is attached to a piling rig.

CFA piling is an efficient method that is **one of the least intrusive forms of piling and has low vibration and low noise.** This means that construction impacts are reduced for the community and local wildlife.

## Building from the ground up




Concrete is injected under pressure through the hollow stem of the auger as the auger is removed. On completion of concreting, a steel reinforcing cage is inserted into the concrete to complete the pile.

1300 896 826

info@fcalliance.com.au

www.fcalliance.com.au

Australian Government

Government of South Australia

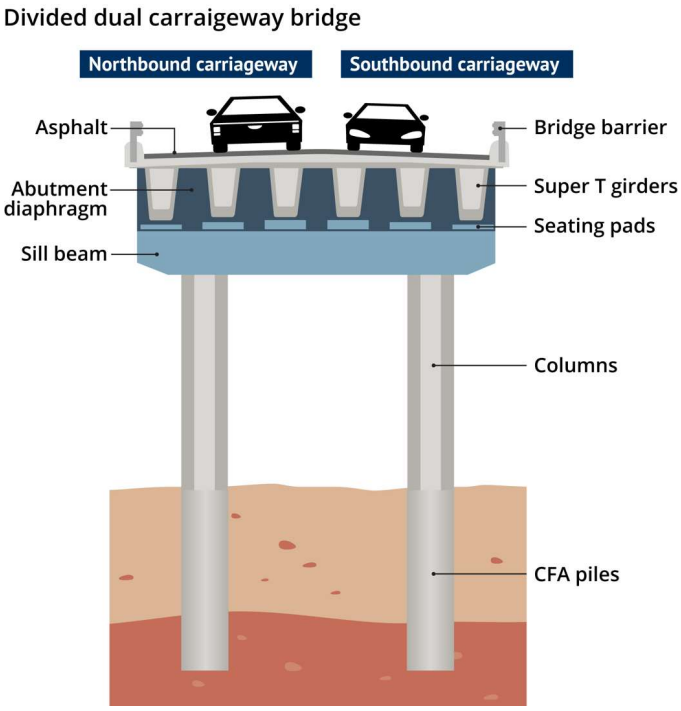
When the concrete has set, the pile is trimmed by breaking away the top section of concrete down to the required level. This leaves the reinforced steel cages exposed to make an effective bond to the column, pile cap or base slab, which is a reinforced concrete structure placed on top of the piles.

Columns/piers can then be constructed on top of the pile (or pile cap), securely held in place by the CFA pile foundation.

- A *column* or *abutment wall* is the vertical connection between the piles and the bridge platform.

The bridge is built on top of the columns by laying sill beams, seating pads, girders, and abutment diaphragms on top of the sill beams.

- a *sill beam* is a horizontal structure that supports the bridge superstructure and transfers load to the substructure.
- *girders are the bridge's primary support system and span between the bridge supports.*
- *a Super T girder is the type of girder used on this project. These girders are made of precast prestressed concrete and are hollow inside to form an efficient structural shape.*
- *seating pads are hard rubber bearings that rest on the sill beam and support the Super T girders.*
- *the abutment diaphragm is a concrete crossbeam that holds the ends of the Super T girders together and connects to the sill beam.*
- *the bridge barrier is a concrete and steel barrier erected on either side of the bridge to ensure the safety of vehicles, pedestrians and cyclists travelling across the bridge.*




*An example of an overpass showing columns, girders and sill beams on top of CFA piles*

Piling works for the Main South Road Duplication project are expected to be completed mid-2023.