



## O-BAHN CITY ACCESS PROJECT

### Jet Grouting and Ground Anchors

## AUSTRALIA



Night works at Hackney Road and Botanic Road Intersection

#### Owner

Department of Planning, Transport and Infrastructure

#### Engineer

Golder Associates

#### General contractor

McConnell Dowell

#### Period of works

September 2016-October 2016

### Main figures

#### Temporary anchors

36 anchors

#### Jet grouting

58 columns



Jet Grout works at First Creek Culvert Opening



11-10-2016 11:19

### Project description

The O’Bahn City Access Project is to provide at-grade priority bus lanes along Hackney Road and a guided busway tunnel from Hackney Road (just north of Botanic Road) to Grenfell Street in Adelaide CBD.

Working closely with head contractor McConnell Dowell, Menard developed a design and construct solution in order to support the existing road and structures at ground level, consisting of jet grouting columns within a sheet pile culvert as well as ground anchors.

### Ground conditions

Quite challenging with stiff clay overlying large gravels and dense sand.

In addition to that, the team had to face abnormal rainfalls during their period of works as well as a cyclone with destructive wind (up to 140km/h!) Works inside the culvert could only be carried out when the water level inside the culvert was under coffer dam (1m high). This culvert is the catchment of other 16 creeks around Adelaide Hills so the flow can go for 3 -4 days after a rain event.

### Solution

Menard Oceania's scope included the design & construct of:

- 14 JG columns of diameter ranging from 1.2m to 1.6m to replace sheet piles at Sewer Crossing and Optic Fiber crossing.
- 24 JG columns of 1.2m diameter at toe of sheet piles supporting the existing culvert structure
- 20 JG columns of 1.4m diameter used to form a temporary retaining structure for future stormwater tank pits at 3m below the base of tunnel excavation (i.e. 9.6m below ground level).
- 36 ground anchors at Rundle Park and Rymill Park - to compensate the absence of opposite sheet pile wall for horizontal strut support

The project was successfully completed within 7 weeks and demonstrates the ongoing commitment of Menard Oceania’s crew to work safely and efficiently when handling ground engineering challenges.



### Sustainable development

Working near traffic and managing the 70m3 of slurry spoil generated on the road level each shift was challenging, but the team did well with environmental control and protection to prevent grout splashing to cars and spill on the road. The spoil was removed with vacuum trucks.