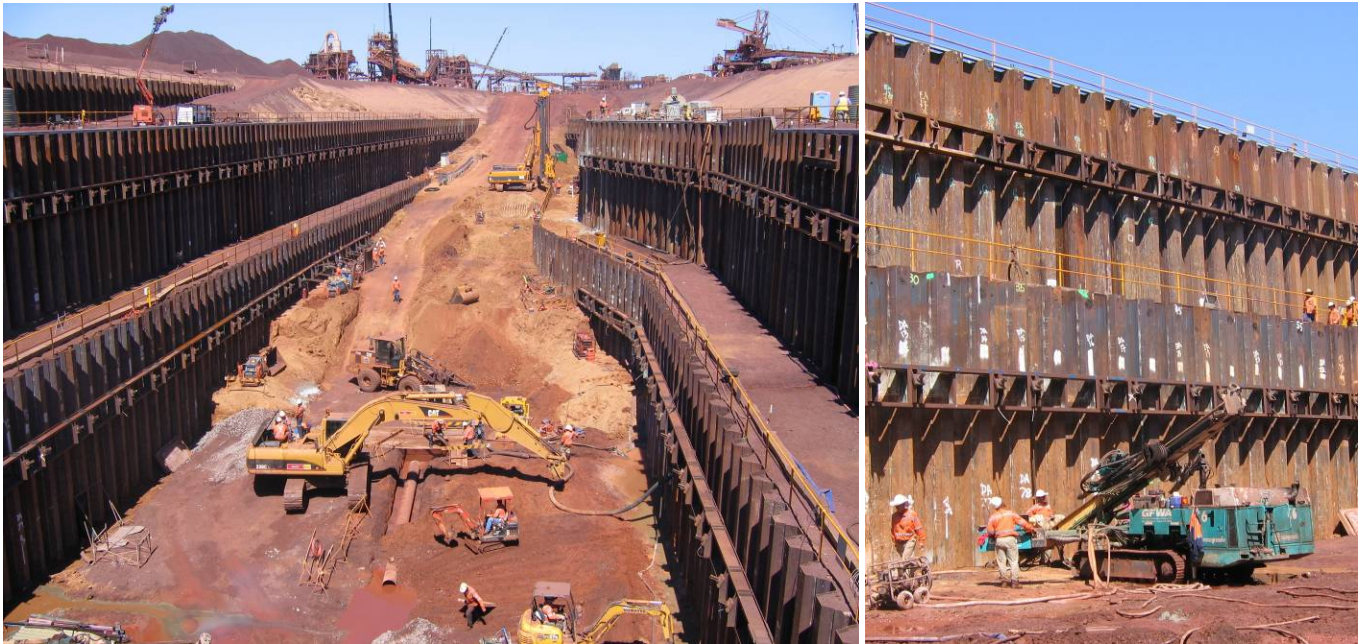


Finucane Island Rail Car Dumper No 4

Sheet Piles & Anchors



Owner: BHP
Main Contractor: Thiess

Specialist Contractor: GFWA

THE PROJECT

Finucane Island is located near Port Hedland and approximately 1300 km north of Perth, WA. Three rail car dumpers were already constructed and increase in export necessitate the construction of a fourth car dumper.

Car Dumper No 4 is a mechanical unit that lifts the iron ore carriages off the rail tracks and dumps the contents of each carriage into a hopper. The carriage is placed back on the tracks and the train shunts forward. The contents of the carriage are conveyed from the bottom of the pit to stock pile and thereafter into ships waiting at the Port of Finucane Island.

The main contract was for the construction of new rail links, upgrade of conveyor and haulage roads and the construction of the Car Dumper facility.

The construction of the facility included excavation of a 30 m deep open cut pit, 200x50 m², and the construction of hoppers, conveyors and upper floor structures

The site was located in an area where groundwater level was very high and in the proximity of the ocean. The soil was initially very soft mangrove mud followed by a thick layer of fine material.

THE ROLE OF GFWA

GFWA was appointed by the main contractor to install the sheet piles and anchors. This was done in three different levels on the two sides of the pit.

1200 m² of single row sheet piles, up to 10 m deep, with two rows of single strand mechanical anchors (up to 10 m long) were installed adjacent to the existing Haul Road. Two rows of mechanical anchors were installed using an Airtrac Drill rig.

Another 1200 m² of single row of sheet piles in cantilever (up to 8 m deep) were installed adjacent to the existing railway, stock pile area and the existing process area.

The installation of the upper row of sheet piles, 12 m deep, was done for the main pit included 218 grouted anchors in a single row. The anchors were 8 strand and 32 m long in very poor ground conditions. Anchors had to be cased during installation and a specialised duplex drilling system was utilised.

Installation of the lower bench sheet piles, 12 m deep, was carried out for the continuation of the main pit with 241 grouted anchors spread over 2 rows. These anchors were also 8 strand and 33 m long.

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