NORTHLINK STAGE 3

Roads & Motorways

Mixed abutments, Retaining walls, Others

Australia, Western Australia, Perth

Bridge 1793 - TerraTilt Abutments and Precast Parapet Barriers

Owner / Client :
Main Roads WA

Engineer :
BG&E Engineering

Main contractor :
CPB Contractors

Terre Armée entity :
Reinforced Earth Pty Ltd (Australia)

Date :
2020

Activity :
Reinforced Earth

System :
TA "Classic"

Reinforcement :
HA / HAR steel strips

Key figures :
Area : 10,800 m2
Rise: 10 m

Bridge 1802 - TerraTilt panels propped and ready for backfill

The Project

The final stage of Main Roads WA's $1.02b Northlink project consisted of 22km of new dual carriageway between Ellenbrook and Muchea including the construction of 9 grade separated interchanges (bridges).

Reinforced Earth were successful in carrying out design, manufacture and supply of TerraTilt® abutment walls for all 9 of these bridges as well as manufacture and supply of precast parapet barriers and column formers for the same structures.

The 10,800m2 of Terratilt® walls, along with the 21,800m2 already completed in the first 2 stages of Northlink WA bring the total area of walls supplied to 32,600m2.

This final stage of the Northlink WA project was opened to the public in April 2020.

The Solution

Laser cut steel plate was welded to casting beds in order to achieve a uniform, high quality architectural finish across all panels.

REhas® soil reinforcement strips were relocated from groundwater zones to higher locations in the TerraTilt® abutment walls. This created a cantilever affect at the base of the walls which was countered by the addition of extra reinforcement in the panels as well as additional thickness of concrete.

The use of additional precast facilities to manufacture abutment panels as well as early deliveries and storage on site of the precast parapet barriers enabled the tight program to be achieved and all parties satisfied with the outcome of the project.

The Advantages

Architectural finish on the TerraTilt® panels was again a key aspect of the final product as it was with Northlink Stage 1 and 2.

A number of the structures also had groundwater levels above the base of the Reinforced Earth® walls, causing potential durability issues with our galvanized steel REhas soil reinforcement.

Program and delivery constraints played a significant part in how the project was carried out from a manufacturing perspective. This affected both the RE walls, as well as the general precast items.