A5 Ty Nant Rock Cutting Stabilisation

Client :
Welsh Assembly Government

Engineer :
Mott MacDonald
Hyder Consulting

Main Contractor :
Jones Brothers Ltd

Location :
Ty Nant to Dinmael, N Wales

Date :
2007

Following the closure of the A5 at Ty Nant in north Wales in 2006, the Welsh Assembly Government commissioned work to ensure the stability of the rock cutting. BAM Ritchies was asked by main contractor, Jones Brothers Ltd., to install anchors and rock dowels on the south face of the cutting. The north face had been previously reprofiled by blasting.

Using a specialist high reach excavator mounted feed beam prepared by BAM Ritchies own plant department, the work involved installation of 27 40mm and 50mm diameter double corrosion anchors with a maximum length of 15m within five 'rock 'wedges' located along the cutting face.

The holes were drilled using DTH Hammers fitted with 150mm and 125mm ballistic drill bits, and flushed with an air-mist flush. Prior to installation, water tests were carried out in all boreholes, with two boreholes requiring pre -grouting.

The anchors were installed using a bespoke carrier beam lifted by a crane so anchors could be installed in long sections and coupled together on the ground. This allowed the operation to be carried out safely and ensured quality of the assembled anchors. The anchors were grouted in place with neat cement grout which underwent a suite of on-site tests. All anchors were acceptance tested over a period of three days using three 110T stressing jacks simultaneously.

A drifter feed beam mounted to BAM Ritchies own 20T excavator was used to drill a total of 90 27mm diameter stainless steel rock and netting dowels 3m and 2m long. A further 13 holes were drilled using handheld rock drills by operatives working from cherry pickers for the highest dowels.

The rock dowels were installed using resin capsules.

Finally 300 square metres of rockfall netting was fixed to the face by two metre long stainless steel dowels.

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