

Client: J Murphy & Sons / Network Rail
Site: FTN/GSMR Node Site
Location: Eggesford Barton, Devon

Project Description

GTL Partnership were employed by Murphy's to design, supply and supervise the installation and testing of helical (screw) piles for Network Rail FTN/GSMR node site at Eggesford Barton in Devon.



Geotechnical Ground Conditions

The site investigation of a borehole with SPT and Dynamic Probes Super Heavy were used for the design of the piles. The boreholes indicated made ground to depth of 3.0 m over a weathered mudstone/siltstone.

The geotechnical conditions on soft soil layers overlaying a weathered rock meant that tension loads could have been a potential problem.



Helical Pile Design and Testing

GTL designed the helical piles for a RDS narrow base, with loads of 70kN in compression and 37kN in Tension.

GTL proposed a balanced ballasted pile solution using a combination of end bearing piles with concrete blocks to eliminate the tension loads. 4 number 250mm thick concrete ballast blocks were thread over the top of each pile and retained by a supporting plate and top cap detail to ensure the mobilisation of the ballast under tension loads.

The lateral loads were resisted by raking the piles in both directions. This was required due to the soft soil layers to 3m providing insufficient capacity.

