

Project Name: Ardley Tunnel North Drainage

Customer Organisation: J. Murphy & Sons LTD.

Date: 14.01.2019 – 24.04.2019

Value: £280,000



The contractor was commissioned to carry out drainage renewal works on the NAJ3 between 15m 1480yds and 15m 1640yds, as a result of frequent flooding, which was reportedly originating from the 6 foot drainage at the mouth of Ardley Tunnel. There was evidence of damage and calcite build-up in the existing system. The failing drainage was negatively affecting the track quality in the area, with the imposition of a speed restriction becoming likely.

#### **Schedule of works:-**

- Establish drainage setting out points
- Install track and structure monitoring equipment
- Carry out jetting, cleaning and CCTV survey of existing system
- Re-profile and line existing outfall ditch
- Install new drainage headwall to outfall ditch
- Incorporate existing under-track crossing into 1500mm dia. Circular chamber installed in Up Cess and install 600mm dia. Pipe from Cess chamber to outfall headwall
- Remove existing Up Cess drainage North of Ardley Tunnel
- Install new catchpits, catchpit covers and 400mm dia. pipe as per AFC design

#### **Standards adhered to:-**

- Track and structure movement NR/L2/CIV/177
- Manage critical rail temperature in accordance with NR/L2/TRK/001/mod14
- Works were checked and documented by competent and experienced track handback engineers in accordance with NR/L3/TRK/1016 and NR/L2/TRK/001/mod13.
- Carry out stressing of rails in accordance with NR/L2/TRK/3011
- Carry out as-built survey to confirm installation was compliant with NR/L2/TRK/2102
- Technical Approval in the Design of Track Infrastructure - NR/L2/TRK/2500
- Management of tight clearances and track position - NR/L2/TRK/3201
- Permanent Way Standard drawings (RE/PW series) NR/L2/TRK/7004
- Waterproofing Underline Bridge Decks - NR/GN/ICIV/001
- Track Design Handbook - NR/L2/TRK/2049
- Design and Construction of Undertrack Crossings - NR/SP/CIV/044
- Wood Sleepers, Bearers and Longitudinal Timbers - NR/SP/TRK/029
- Management of Gauging and Clearances - NR/SP/TRK/036
- Long Timbers - Design, Installation & maintenance - NR/L2/TRK/3038
- Installation & Maintenance of Longitudinal Timbers - NR/SP/TRK/9003

### **Risk reduction measures taken during works:-**

- Mobilise on site and prepare suitable compound and working area
- Track and structures were monitored before, during and after works to detect any movement introduced by civil engineering works
- Reducing excavation lengths to avoid destabilising the track or cutting slope
- Establishing the position of structural elements prior to excavation to mitigate against damage to bridge abutments when installing drainage through overbridges
- Safe manual handling was achieved by identifying the weights of items at the planning stage and procuring adequate plant.
- S&T cables were identified and protected prior to works to prevent damage.

The scheme had many challenges but the “can do” attitude of the GBR staff working closely with our client resulted in the safe delivery of the works and as such GBR were able to deliver the completed worked ahead of the initial programme