Share with Pain SwP004/13

Bromfield Level Crossing

everyone home safe every day

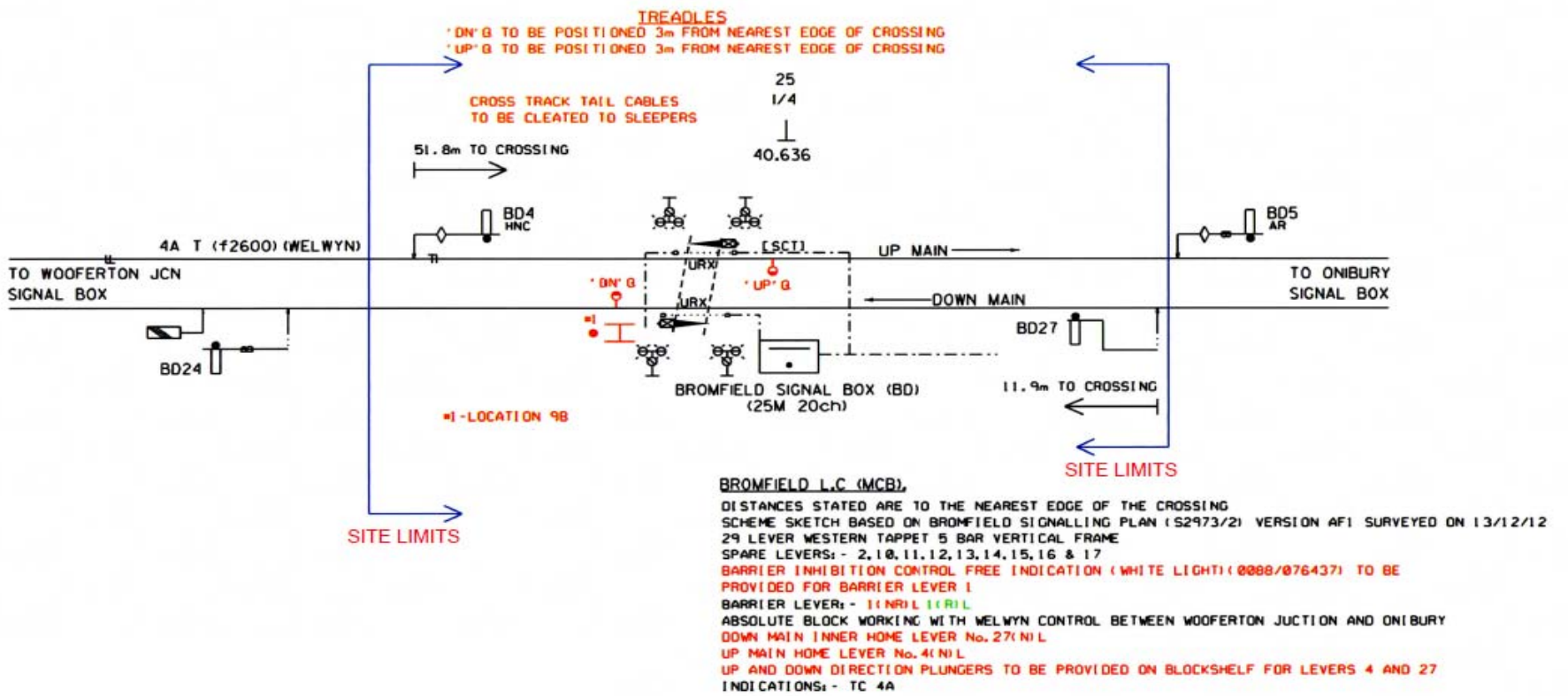
Background

Bromfield LX had 'Moreton-on-Lugg' controls fitted 18/19th May 2013.

The circuitry did not operate as expected on the night of the commissioning and an alteration was made to the circuitry in the electro-mechanical interlocking by the testers, without referring to the design office.

Site Configuration

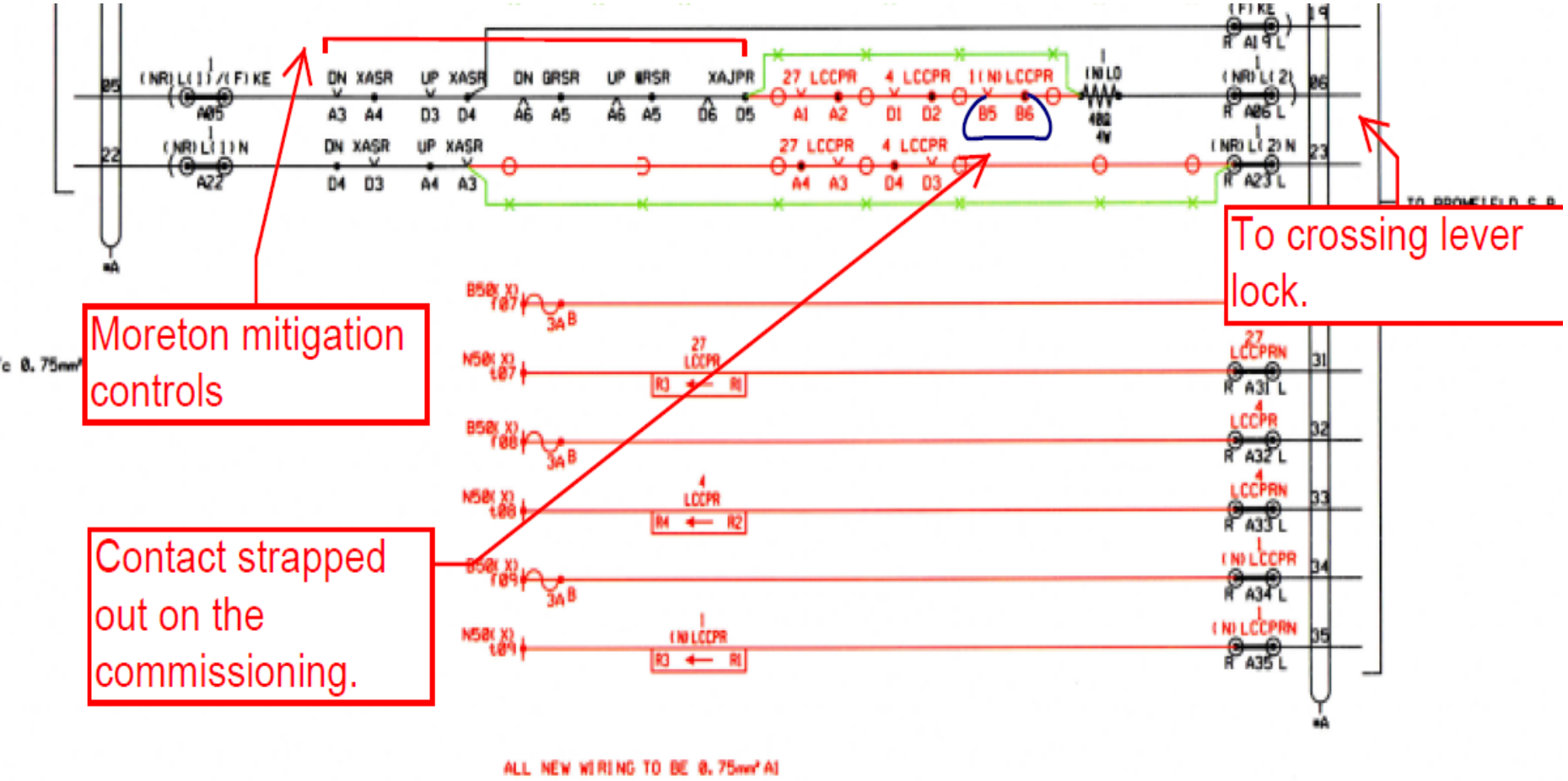
Bromfield Signal Box / MCB crossing is located at 25 ¼ miles on the line from Wooferton Junction to Onibury. It is an Electro-mechanical signal box with a Western Tappet 5 Bar Vertical frame.



Bromfield Incident

- Following commissioning, whilst reviewing the test copy returns, the designers identified a latent wrong side failure in the tester altered circuitry
- The testers had strapped out 1 (N) LCCPR contact from level crossing number 1 lever lock, which meant that the crossing lever could be moved from the reverse position and put back in the frame. The protecting signals were then released and could be cleared with the crossing barriers raised
- An incident did not occur and the project team reported immediately the risk to the Local Operations Staff who were able to mitigate with instructions

Circuitry affected, lock ‘throw down’ modification and strapped out contact



Bromfield Incident

- The original issued circuitry had an emailed design office modification issued to include a ‘throw down’ feature and this didn’t operate as expected
- No test log was written to the design office during the commissioning period for this unexpected operation, and subsequently no design modification was issued to remove 1 (N) LCCPR contact, or alter the circuitry. On that basis independence between design alteration and testing was compromised
- The Principles Tester did not adequately re-test the affected area post alteration. A test of the reverse lock had been undertaken earlier in the shift. The Principles Tester did not think the alteration affected the reverse lock so no further testing was undertaken on the ‘reverse side’

Action Taken / Lessons Learnt

- All staff involved were restricted and have been re-briefed on the requirement to follow the correct process when errors are indentified during commissioning including production of test logs and design modifications if required.
- Where email is used to issue design office modifications, the tester-in-charge shall ensure that copies are issued to principles and functional testers
- All alterations to controls shall be identified by the design office on the issued control tables. Existing deficiencies shall be identified to project teams
- Appropriate non changeover critical mechanical installation works shall be completed prior to commissioning shift

Further information…

For any further details or information please contact:

Darren Nock, Engineering Process and Assurance Manager, IP SPC

07920 277380

Darren.Nock@networkrail.co.uk