



# *Share with Pain*

# *SwP018/16*

*Purley T1649 Points*

*Infrastructure Projects*



# *Background*

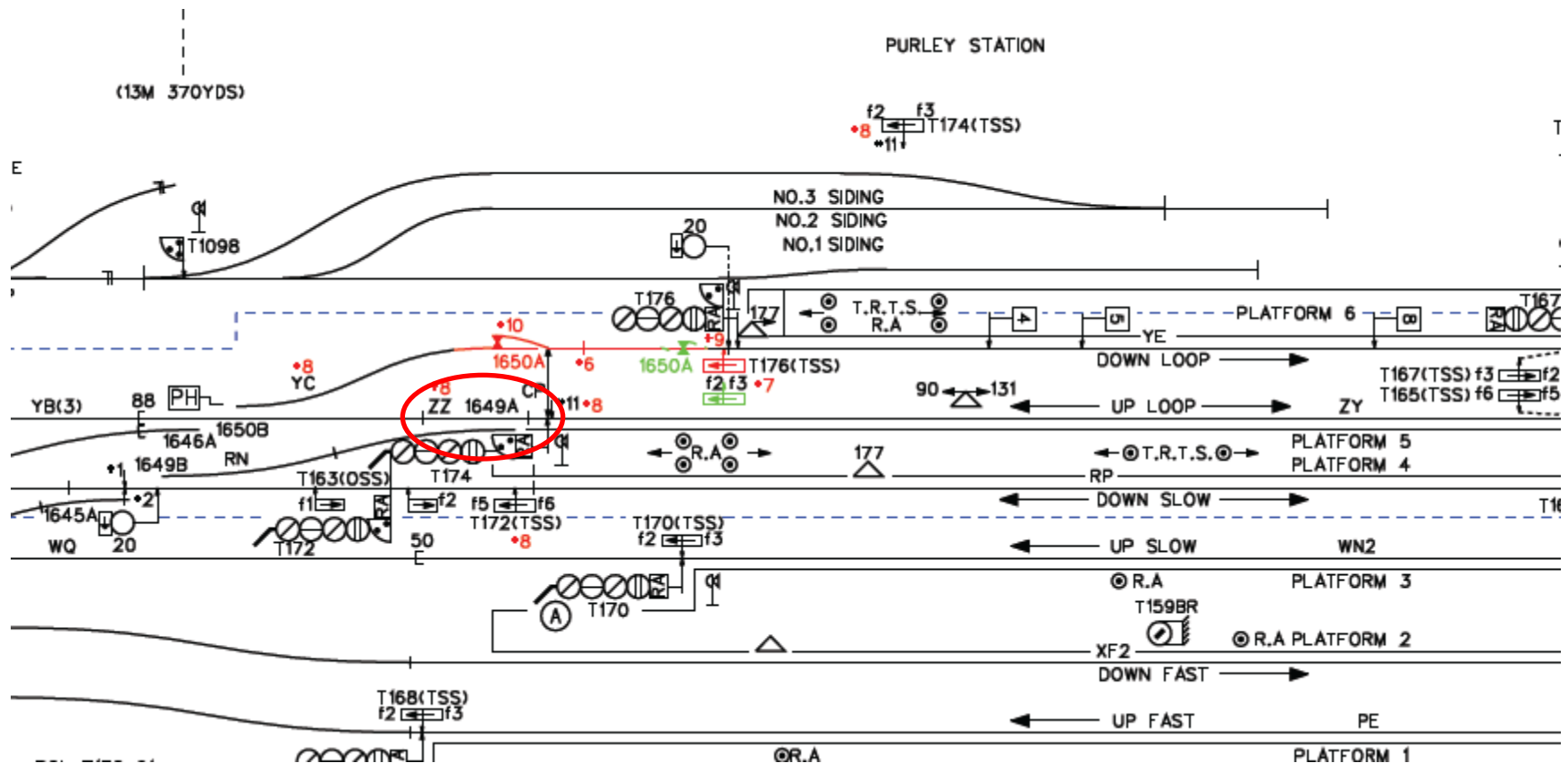
As part of a series of stage works for the Sussex Platform Lengthening Project the cabling to 1649A clamp lock points was removed and re-instated via a different location case, to enable installation of the adjacent trap points 1650A.

During this work, an error was introduced into the circuitry, which meant that on the left hand detection mechanism, the left hand limit switch had a permanent feed on both sides.

Tester incorrectly deduced the error was a faulty micro-switch, and raised a test log, however the points were entered into operational service. The Maintenance faulting team were called and identified the wrong side failure.

# Site Configuration

Scheme plan extract for the work to be undertaken



## *How the error was introduced*

The work to change the position of 1650 trap points was identified late.

Stage-works were revised as design was not available. TIC correctly decided that correlation and design production during the commissioning weekend was not acceptable and postponed the stage.

Revised stage design issued included a copy and paste error, which was identified by the site tester. However the issue of test log was significantly later than the verbal notice to designer.

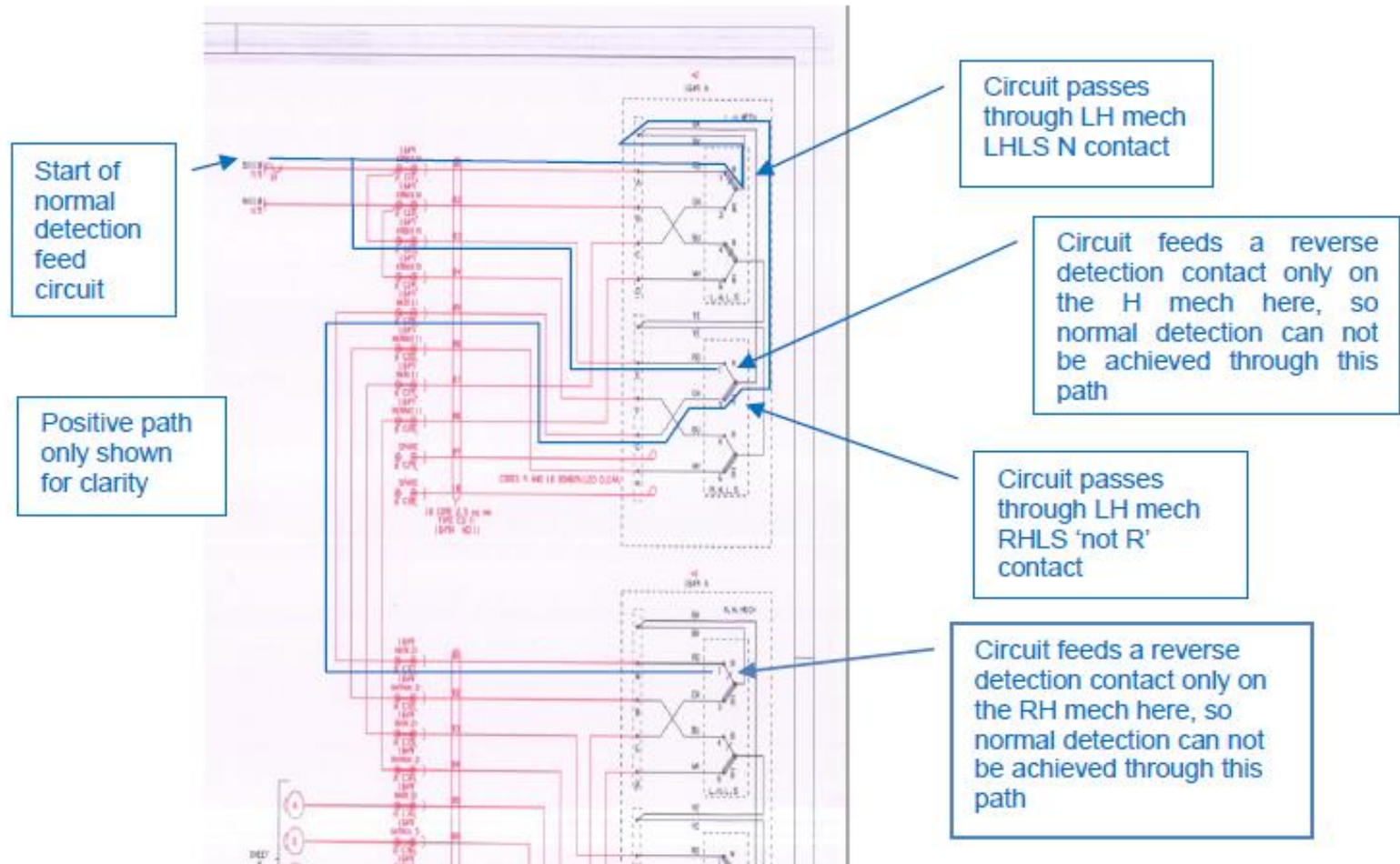
Design modification was not issued until test log received.

In the interim, the site tester produced design modifications from maintenance copy information, and implemented.

Neither maintenance copy nor the issued design showed the existence of dis-box, with cross connections. Therefore tester assumed straight connections in the dis-box.

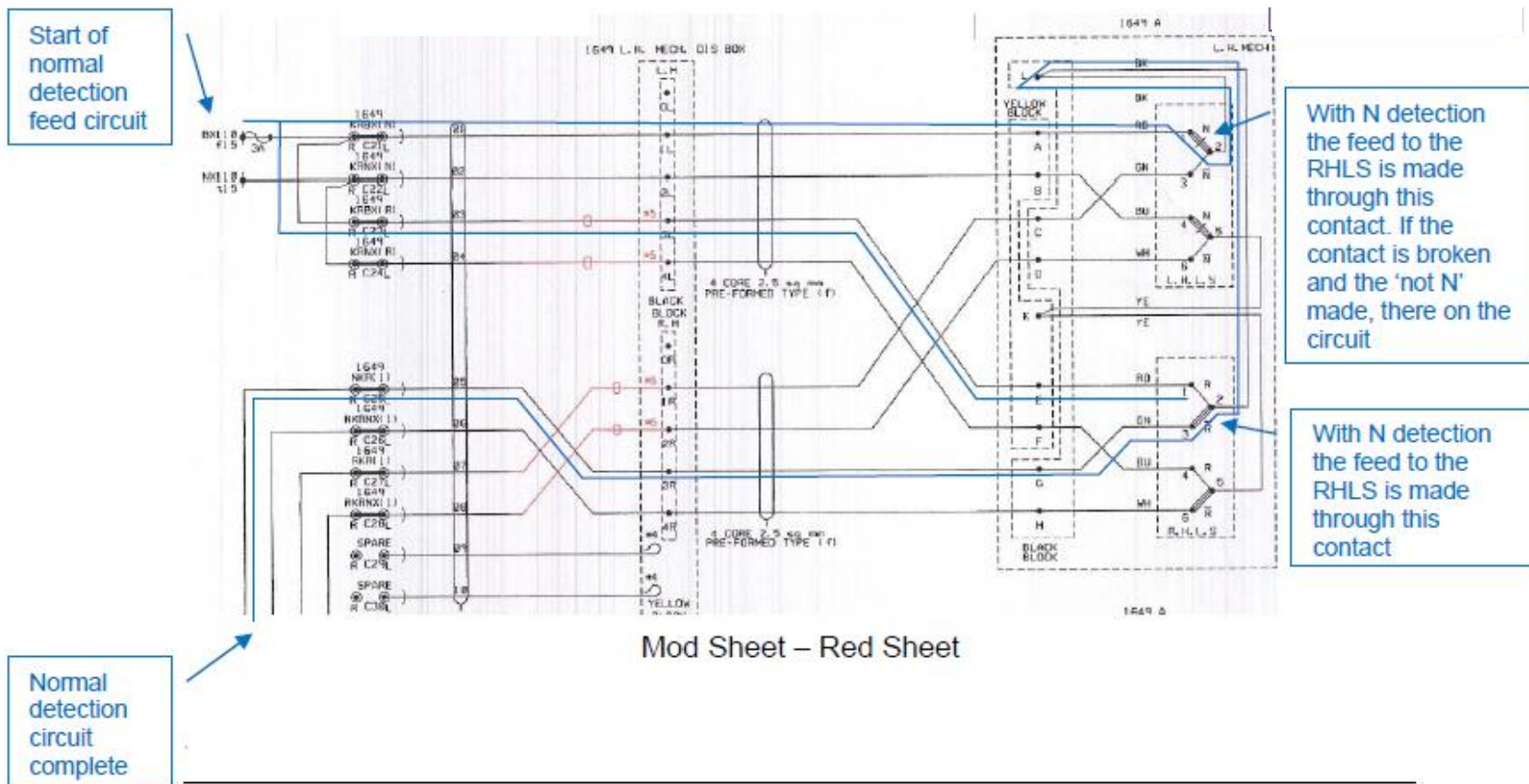
# Extract of issued design

**Error introduces a right side failure (detection not given)**



# Extract of issued design modification

## Error corrects the wrong side failure



## ***Action Required and Taken***

- ▶ Immediate actions were to protect the safe operation of trains by clipping and padlocking the points normal until design modification was implemented and robustly assured.
- ▶ The wrong side failure was subjected to formal investigation.
- ▶ Project implemented an additional level of independent checking for the remainder of work.
- ▶ Competency management actions were taken for testing staff.

## ***Lessons Learnt***

- ▶ A root cause for both designer and tester was the inadequacy of correlation undertaken.
- ▶ The extent of affected circuit was misjudged, and correlation omitted the presence of the dis-box.

## ***Transferrable Lessons***

- Designers and Testers understand and agree the level of correlation required/undertaken before commencing Design or Testing tasks.
  - Correlation of affected equipment or circuits should include all elements of the circuit which have a bearing on the correct function, not just those amended.



## ***Further Information...***

**For any further details or information please contact:**

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