

**PROJECT - Long thin survey grids**

## Project Summary

**Client** Network Rail

### Project scope

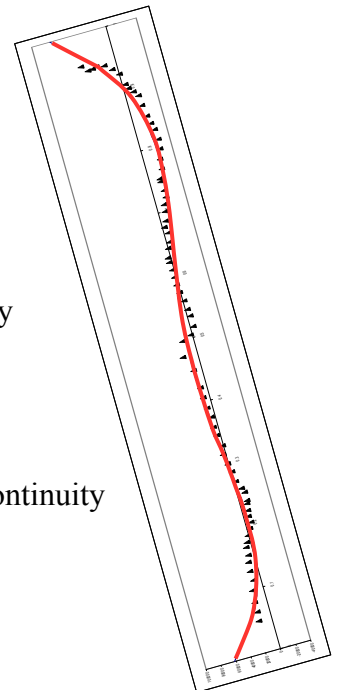
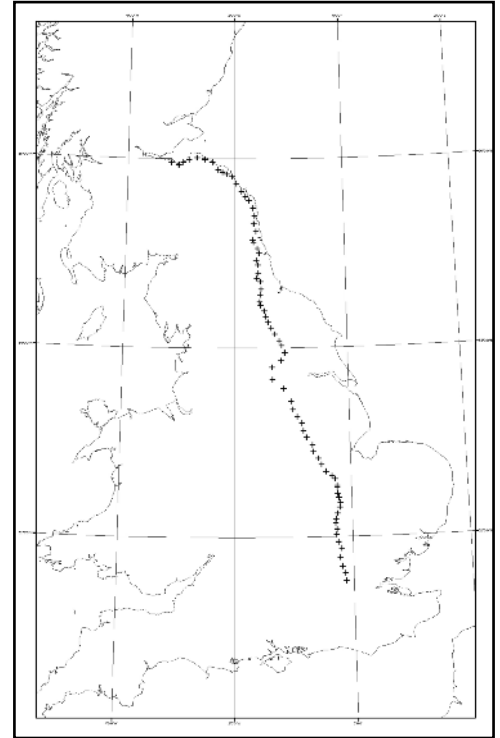
Design a coordinate grid (**ECML05**) for the East Coast Main Line from London to Edinburgh, with a maximum scale factor of 20ppm (20m per 1000km).

### Equipment

Leica GPS  
Trimble S6 Robotic Total Station  
Bespoke survey grid software

### Creating a survey grid

The program used to compute a projection following a trend line (below). This technique is applicable worldwide for any long, thin engineering projects such as rail routes, pipelines or transmission routes



## Benefits to Client

- Project planning looking at the bigger picture, collaborating with experts in the field of geodesy & the theory of survey errors.
- Maximum scale factor distortion achieved was 10.8ppm
- Project grid was set up for the whole of the East Coast line to provide continuity on future survey projects along the route
- Smooth running of trains.

