

NETWORK RAIL (Civil Engineering Standard Designs & Details)
FORM B: CERTIFICATE OF DESIGN AND CHECKING

(Page 1 of 5)

Title of Scheme:		Standard Design Details – D Types (Floor)	
Location		Site Specific – details to be provided	
ELR	Mileage	OS grid ref.	Structure No.

(Note: where different Designers and/or Checkers are responsible for different parts of a single Structure, suitable wording shall be added to identify the Lead Designer and/or Lead Checker in accordance with Clause 7.6.)

Part 1: Design Design organisation: Mott MacDonald Ltd

I certify that reasonable professional skill and care have been used in the Design of the Scheme (or part of Scheme) identified above, with the objective of ensuring that the Design:

- (a) complies with the Approval in Principle recorded on Form A Addendum revision A signed by Alan Dray on 29th January 2010, including associated comments by the Professional Head of Civil Engineering in giving endorsement;
- ((b) complies with the Design standards, codes and methods stated on the above Form A (including any stated departures or dispensations), with the following amendments and/or additions:

The calculation of restraint forces to the compression flange provided by discrete U frames used the rules derived from first principles by Dr. Flint, and included in the design standards current in 1982.

The design requires an Execution Class EXC3 in accordance with BS EN 1090-2.

The alpha factor, $\alpha=1,21$ is used in checking deformations in accordance with BS EN 1990.

- (c) is accurately described by the following drawings, schedules, performance, materials and workmanship specifications and other documents:

NR/CIV/SD/1400-B Index of Drawings
 NR/CIV/SD/1401-B Key to Types - Filler Beam Floor
 NR/CIV/SD/1402-B Key to Types - Composite Floor
 NR/CIV/SD/1403-B Key to Types - Steel Floor
 NR/CIV/SD/1404-B General Notes and H&S Risk Register

NR/CIV/SD/1410-B Steelwork General Assembly - Notes
 NR/CIV/SD/1411-B Steelwork General Assembly Details Single Track Square Filler Beam Floor
 NR/CIV/SD/1412-B Steelwork General Assembly Details Single Track 0° to 25° Filler Beam Floor
 NR/CIV/SD/1413-B Steelwork General Assembly Details Single Track 25° to 50° Filler Beam Floor
 NR/CIV/SD/1414-B Steelwork General Assembly Details Single Track Square Composite Floor
 NR/CIV/SD/1415-B Steelwork General Assembly Details Single Track 0° to 25° Composite Floor
 NR/CIV/SD/1416-B Steelwork General Assembly Details Single Track 25° to 50° Composite Floor
 NR/CIV/SD/1417-B Steelwork General Assembly Details Single Track Square Steel Floor
 NR/CIV/SD/1418-B Steelwork General Assembly Details Single Track 0° to 25° Steel Floor Sheet 1 of 2
 NR/CIV/SD/1419-B Steelwork General Assembly Details Single Track 0° to 25° Steel Floor Sheet 2 of 2
 NR/CIV/SD/1420-B Steelwork General Assembly Details Single Track 25° to 50° Steel Floor
 NR/CIV/SD/1425-B Main Girder Details - Notes

NR/CIV/SD/1426-B Main Girder Steelwork Details Single Track Filler Beam Floor
 NR/CIV/SD/1427-B Main Girder Steelwork Details Single Track Composite Floor
 NR/CIV/SD/1428-B Main Girder Steelwork Details Single Track Steel Floor ~~Square & 0° to 25° Skew~~
~~NR/CIV/SD/1429-B Main Girder Steelwork Details Single Track Steel Floor 25° to 50° Skew [deleted]~~

NR/CIV/SD/1430-B Cross Girder and Trimmer Details - Notes
 NR/CIV/SD/1431-B Single Track Square Filler Beam Floor Cross Girder Details
 NR/CIV/SD/1432-B Single Track Square Filler Beam Floor Trimmer Details
 NR/CIV/SD/1433-B Single Track 0° to 25° Filler Beam Floor Cross Girder Details
 NR/CIV/SD/1434-B Single Track 0° to 25° Filler Beam Floor Trimmer Details
 NR/CIV/SD/1435-B Single Track 25° to 50° Filler Beam Floor Cross Girder Details
 NR/CIV/SD/1436-B Single Track 25° to 50° Filler Beam Floor Trimmer Details
 NR/CIV/SD/1437-B Single Track Square Composite Floor Cross Girder Details
 NR/CIV/SD/1438-B Single Track Square Composite Floor Trimmer Details
 NR/CIV/SD/1439-B Single Track 0° to 25° Composite Floor Cross Girder Details
 NR/CIV/SD/1440-B Single Track 0° to 25° Composite Floor Trimmer Details
 NR/CIV/SD/1441-B Single Track 25° to 50° Composite Floor Cross Girder Details
 NR/CIV/SD/1442-B Single Track 25° to 50° Composite Floor Trimmer Details
 NR/CIV/SD/1443-B Single Track Square Steel Floor Transverse Rib Details
 NR/CIV/SD/1444-B Single Track Square Steel Floor Transverse Rib Details
 NR/CIV/SD/1445-B Single Track 0° to 25° Steel Floor Transverse Rib Details
 NR/CIV/SD/1446-B Single Track 0° to 25° Steel Floor Transverse Rib Details
 NR/CIV/SD/1447-B Single Track 25° to 50° Steel Floor Transverse Rib Details
 NR/CIV/SD/1448-B Single Track 25° to 50° Steel Floor Trimmer Girder Details

NR/CIV/SD/1450-B Notes and Bearing Schedule for Standard Filler Beam Floor Bearings
 NR/CIV/SD/1451-B Notes and Bearing Schedule for Standard Composite Floor Bearings
 NR/CIV/SD/1452-B Notes and Bearing Schedule for Standard Steel Floor Bearings

NR/CIV/SD/1453-B Steelwork Protective Treatment - Notes
 NR/CIV/SD/1454-B Filler Beam Floor Protective Treatment Details
 NR/CIV/SD/1455-B Composite Floor Protective Treatment Details
 NR/CIV/SD/1456-B Steel Floor Protective Treatment Details Sheet 1 of 2
 NR/CIV/SD/1457-B Steel Floor Protective Treatment Details Sheet 2 of 2

NR/CIV/SD/1460-B Concrete and Reinforcement Details - Notes
 NR/CIV/SD/1461-B Concrete Details Single Track Square Filler Beam Bridge Floor
 NR/CIV/SD/1462-B Concrete Details Single Track 0° to 25° Filler Beam Bridge Floor
 NR/CIV/SD/1463-B Concrete Details Single Track 25° to 50° Filler Beam Bridge Floor
 NR/CIV/SD/1464-B Reinforcement Details Single Track Square Filler Beam Bridge Floor
 NR/CIV/SD/1465-B Reinforcement Details Single Track 0° to 25° Filler Beam Bridge Floor
 NR/CIV/SD/1466-B Reinforcement Details Single Track 25° to 50° Filler Beam Bridge Floor
 NR/CIV/SD/1467-B Concrete Details Single Track Square Composite Bridge Floor
 NR/CIV/SD/1468-B Concrete Details Single Track 0° to 25° Composite Bridge Floor
 NR/CIV/SD/1469-B Concrete Details Single Track 25° to 50° Composite Bridge Floor
 NR/CIV/SD/1470-B Reinforcement Details Single Track Square Composite Bridge Floor
 NR/CIV/SD/1471-B Reinforcement Details Single Track 0° to 25° Composite Bridge Floor
 NR/CIV/SD/1472-B Reinforcement Details Single Track 25° to 50° Composite Bridge Floor
 NR/CIV/SD/1473-B Concrete Details Single Track Steel Bridge Floor
 NR/CIV/SD/1474-B Reinforcement Details Single Track Steel Bridge Floor

NR/CIV/SD/1480-B Waterproofing Details - Notes
 NR/CIV/SD/1481-B Waterproofing Details for Filler Beam Floor
 NR/CIV/SD/1482-B Waterproofing Details for Composite Floor
 NR/CIV/SD/1483-B Waterproofing Details for Steel Floor
 NR/CIV/SD/1491-B Ballast Plate and Filler Rail Details

NR/CIV/SD/TUM/1400-C Technical User Manual For Standard Half Through
 Underbridges D-Type. Standard Detail and Design Drawings