SUBMISSION FOR VOLUME 1, 2 AND 3 DEPARTURE FROM STANDARDS

DEPARTURE FROM STANDARDS

(Bridges and other Highway Structures)

Name of Works:

Strengthening of End Link Brackets For N.E & S.E Towers

Name of Bridge or Structure: Forth Road Bridge

Structure Reference Number: N/A

OVERSEEING ORGANISATION NAME: Transport Scotland

APPLICATION FOR DEPARTURE FROM STANDARDS – DMRB Vol 1 Section 3 Part 14 BD 37/01

APPLICANT: Fairhurst

PROJECT TITLE: Strengthening of End Link Brackets For N.E & S.E Towers

DEPARTURE No: 001 issue 2

STRUCTURE REF: Forth Road Bridge

SUBMISSION DATE: 10/12/15

1. List of supporting documentation

Standards: Design Manual For Roads and Bridges (DMRB) Volume 1 Section 3 Part 14 DB 37/01

Drawings: None

Other: Loading and Structural Integrity Volume III by W. A. Fairhurst & Partners Dated July 1986

2. Description of proposed departure
(Include details of DMRB / Eurocode Standards and Clause numbers which are being departed from)

Departure from Table 1 load factors. Reduced concrete load factor of 1.08 for ULS combinations

3. Designer / Assessor justification
(Include reasons why existing DMRB / Eurocode Standards are inappropriate)

A reduced load factor γ_{fi} of 1.08 for the dead load of the concrete deck will be adopted. The reduced load factor is based on the results of tests undertaken on samples of the concrete deck to determine the thickness and density of the concrete. Details of the testing are given in, Report on Loading and Structural Integrity Volume III by W. A. Fairhurst & Partners Dated July 1986. This is the same load factor adopted by previous bridge management and reflects the uniqueness of the Forth Road Bridge and is consistent with the concept of a Bridge Specific Live Loading.

4. Cost implications
(Include an estimate of cost savings to Transport Scotland as well as the effect on future maintenance costs)

4.1. Construction costs
Adopting standard loading and load factors for the assessment of the bridge and design of strengthening works will lead to significant works across the bridge structure to achieve code compliance. Reducing the load factor for the bridge reduces the extent of interventions required. The approach proposed by this departure is considered a pragmatic response to the assessed structural issues

4.2. Maintenance costs

N/A

5. Applicant design of the Works Team Leader Declaration:

I declare that reasonable professional skill and care have been exercised in the preparation of this Departure submission.

Signed: [redacted]

Name:

Date: 10 DEC '15.

6. Overseeing Organisation Bridges Branch Comments and Recommendation:

I recommend that the above departure should be accepted / rejected

Signed:

Name:

Date:

7. Oveerseeing Organisation Recommendation

The above Departure is approved / rejected.

Signed:

Name:

Date: