1. INTRODUCTION

1.1. BD 24 implements BS5400: Part 4: 1990, the Design of Concrete Highway Bridges and Structures and sets out the Overseeing Organisation's particular requirements for the use of the British Standard. These are listed in Annex A to BD 24 in the form of technical changes and additional criteria.

1.2 Annex A has been reviewed in the light of recent research and feedback. This Interim Advice Note introduces an amended Annex A which incorporates the Overseeing Organisation's latest requirements.

1.3 This Interim Advice Note should be used forthwith for all schemes currently being prepared provided that, in the opinion of the Overseeing Organisation, this will not result in significant additional expense or delay progress.

2. AMENDMENTS TO BS 5400: PART 4: 1990

2.1 The following amendments supersede the list of amendments to BS 5400: Part 4: 1990 found in Annex A of BD 24/92 (DMRB 1.3.1)

Page 3 Contents, Figure 5. Delete “stress”.

Page 10 Clause 4.2.2. Delete “Where type HB loading is to be taken into account, only 25 units should be considered”, and substitute the following:

“Live loading should generally comprise Type HA only. However, for transverse cantilever slabs, transversely and two-way spanning slabs and central reserves, the loading shall be in accordance with the composite version of BS 5400: Part 2 Clause 6.4.3 (Appendix A of BD 37/88 (DMRB 1.3)) except that only 30 units of HB loading shall be considered in any notional lane.”

Page 12 Clause 4.7. Delete paragraph beginning “For unwelded reinforcement” to end, and substitute:

“For unwelded reinforcing bars, the effective stress range under load combination 1 for the serviceability limit state under HA loading only, shall be limited to the following values:

Spans	bars ≤ 16 mm dia	bars > 16 mm dia
less than 3.5m	280 N/mm²	220 N/mm²
3.5m - 5m	250 N/mm²	190 N/mm²
5m - 10m	195 N/mm²	150 N/mm²
10m -200m	155 N/mm²	120 N/mm²
200m and greater	250 N/mm²	190 N/mm²

Alternatively, the fatigue life may be determined in accordance with BS 5400 Part 10 using the following parameters for the σ_r-N relationship:

bars ≤16 mm dia ; m = 9 $K_2 = 0.75 \times 10^{27}$
bars > 16 mm dia ; m = 9 $K_2 = 0.07 \times 10^{27}$

A fatigue check is not required for the local effects of wheel loads applied directly to a slab spanning between beams or webs provided that the following conditions are met:

(i) the clear span to overall depth ratio of the slab does not exceed 18;

(ii) the slab acts compositely with its supporting beams or webs;

iii) either (a) the slab acts compositely with transverse diaphragms or (b) the width of the slab perpendicular to its span exceeds three times its clear span.

The effective stress range to be used in fatigue assessment should be obtained by adding 60% of the range from zero stress to maximum compressive stress to that part of the range from zero stress to maximum tensile stress.

Page 16 Table 6. Cold reduced steel wire, characteristic strength: delete "485" and substitute "460".

Page 17 Clause 5.3.2.2. Delete clause.

Page 18 Clause 5.3.3.2. Last paragraph: delete "bonding" and substitute "bending".

Page 24 Clause 5.5.3.3. Delete clause.

Page 26 Clause 5.5.6. Add at end of clause:
"In calculating the ultimate shear capacity of a circular column, the area of longitudinal reinforcement A_s to be used to calculate v_c shall be taken as the area of reinforcement which is in the half of the column opposite the extreme compression fibre. The effective depth shall be taken as the distance from the extreme fibre with maximum compression to the centroid of this reinforcement. The web width shall be taken as the column diameter."

Page 28 Clause 5.8.2. 3rd paragraph. After "given in Table 13" add "for precast concrete, and the values given in Table 13 increased by 10mm for cast in-situ concrete,".

Page 31 Clause 5.8.6.6. First paragraph, (e): add "(See 7.3.2.3)". Third paragraph: delete "in (c) and (d)" and substitute, "in (c), (d) and (e)".

Clause 5.8.6.7. First paragraph, reposition last sentence "The length of the lap" to "compression reinforcement" in new paragraph at end of Clause.

Page 38 Clause 6.3.3.2. Delete clause.

Page 48 Clause 7.3.2.1 (d). Delete "threading of bars" and substitute "parallel threading of bars and tapered threads".

Clause 7.3.2.3 (a). Delete "The" and substitute "Parallel".

Before paragraph beginning "Where there is a risk" add "(d) Taper threaded bars may be joined by the use of internally taper threaded couplers".

Delete last paragraph beginning "The structural design of special threaded connections", and substitute,

"The structural design of threaded connections should be based on tests in accordance with 5.8.6.6, including behaviour under fatigue conditions where relevant. Where tests have shown the strength of the threaded connection to be greater than or equal to the characteristic strength of the parent bars, the strength of the joint may be based on the specified characteristic strength of the joined bars divided by the appropriate γ_m factor".

Page 49 Clause 7.3.3. Last Paragraph beginning “For cement mortar joints”: delete “1.5N/mm^2” and substitute “2.5N/mm^2”.

Page 52 Clause 7.5.5. In the definition of n_w delete “load per unit load” and substitute “load per unit length”.