

**Technical Approval of Highway Structures (BD2/05)**

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**Revision 1 – Amendments**

Summary of non editorial amendments introduced by Revision 1 of this Memorandum:

- Revised procedures for Construction Compliance Certification.
- References updated to reflect current version of BD 2.
- Guidance for Contractor Design / Design and Build.

**Purpose**

The purpose of this Memorandum is to provide guidance on the Technical Approval procedures set out in the current version of BD 2, Technical Approval of Highway Structures. Model Approval in Principle (AIP) Forms and certificates to be used for the Technical Approval of most structure types within the scope of BD 2 may be downloaded from the RoadsNet, see Appendix 2.

**Background**

BD 2/02 Technical Approval of Highway Structures, Design Manual for Roads and Bridges (DMRB) Volume 1 was implemented in May 2002. It superseded NIRS 7/82 Roads Service Technical Approval Scheme (6<sup>th</sup> Revision).

BD 2/05 updated and superseded BD 2/02 in August 2005.

**Scope**

The scope is as defined in BD 2.

**Implementation**

The revised procedures in this Memorandum take effect from the date of issue.

**Policy****(i) Introduction**

This Memorandum is intended to provide guidance on Roads Service's implementation of the Technical Approval procedures in BD 2. It is not a stand-alone document and shall be read in conjunction with BD 2. Where particular reference in this DEM is made to a clause etc. of BD 2, this is denoted by brackets, ie. (Cl 3.4). These references are not intended to be exhaustive.

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**Definitions:**

1. **Checking Team Leader:** The person responsible for overseeing and co-ordinating the work of the checking team and having authority to sign on behalf of the team. In Roads Service this person will generally be a Chartered Engineer of Principal PTO grade with suitable experience. However, for the purpose of Category 2 checks undertaken by Highways Structures Unit, a suitably experienced chartered SPTO from an independent team may be acceptable to the Technical Approval Authority (TAA).
2. **Design Team Leader:** The person responsible for overseeing and co-ordinating the work of the design team and having authority to sign on behalf of the team. In Roads Service this person will be a Chartered Engineer of Principal PTO grade with suitable experience.
3. **Technical Approval Authority (TAA):** The Director of Engineering.

For all other definitions reference shall be made to BD 2 (Cl 1.16).

For the purpose of this DEM, the terms Design / Design Organisation are deemed to include Assessment / Assessor as appropriate.

**(ii) Design Requirements**

The technical requirements for the design, construction, maintenance etc of Highway Structures normally includes the DMRB, Manual of Contract Documents for Highway Works (MCHW) and other relevant supplementary Standards. These shall be referred to in the Technical Approval Schedule (TAS) which forms part of the AIP.

For all proposals, a single organisation shall assume overall responsibility for the whole of each activity i.e. the Design, Assessment or Checking etc.

**(iii) Categories and Proposals**

Proposals shall be placed in one of four Categories: 0, 1, 2 or 3, according to the criteria defined in BD 2 (Cl 2.3). These range from Category 0 for the least significant structures to Category 3 for the most complex structures.

Proposals in all Categories shall be submitted initially through the Client Division to the TAA for agreement of the Category. In all cases the Client Division should attempt to screen out clearly deficient proposals.

Category 0 Proposals do not require formal AIP. The proposal submission shall include sufficient details to allow the TAA to agree the Category.

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Category 1, 2 and 3 Proposals. The proposal submission shall provide sufficient information and evidence to demonstrate compliance with Roads Service requirements and to justify their viability. It shall include in the TAS the proposed list of relevant documents for use in the design and also provide evidence that appropriate consultation has taken place with all relevant parties (Rivers Agency, Translink etc).

**(iv) Operation of the Technical Approval procedures within Roads Service**

Consultation on Roads Service proposals (whether designed by Roads Service or external consultants) shall generally take place directly between the Design Organisation and the TAA. The TAA shall liaise as necessary with the Client Division and copy it all correspondences for record purposes.

With developers' proposals the TAA shall generally provide technical comments to the Client Division. The Client Division shall then consult directly with the Design Organisation.

Exceptionally, following agreement between the TAA and the Client Division, direct consultation between the Design Organisation and the TAA may be facilitated for non-routine and / or more complex structures, eg bridges.

**Consultation on Category 0 Proposals:**

The TAA shall reply confirming the Category and assigning a reference number. The Design and Check Certificate must include a schedule of standards as used in the design, a location and site plan, general arrangement drawing and a summary of the geotechnical investigation.

Roads Service permits no departures from Standard for Category 0 structures.

**Consultation on Category 1, 2 and 3 Proposals:**

Approval in Principle:

The Design Organisation's proposal submission to the TAA should include a draft AIP. This proposal is developed via discussion into the agreed AIP.

The AIP shall be a record of all the criteria and issues agreed at the proposal stage. This shall generally include the TAS, location and site plan, general arrangement drawing, relevant parts of the geotechnical report, documents relating to consultation and any other relevant information or reports. On confirmation from the TAA that it is content with the AIP an original copy, signed by the Design Team Leader and countersigned by the Divisional Roads Manager (DRM), shall be forwarded to the TAA. The AIP shall be endorsed by the TAA and copied to the Client Divisions for record purposes and onward distribution to the Design Organisation etc.

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It should be noted that the TAA will not endorse an AIP submission until it is content with the information / criteria recorded therein and it is recommended that no substantial design work should be undertaken prior to the AIP being agreed.

Variations during the design render the AIP subject to re-approval (Cl 2.12).

**Design and Checking Certification:**

The Design and Check Certificates shall be signed by the Design Organisation to declare satisfactory completion of the work involved etc. and shall be submitted to the TAA. Category 1, 2 and 3 certificates shall refer to the relevant AIP by TAA reference number and the date of agreement of the AIP and any addenda (Cl 2.29).

Category 0 certificates shall include the TAA reference number and shall be submitted through the Client Division to the TAA, as countersigning by the DRM is required.

Category 0 and 1 structures require a combined Design and Check Certificate. Category 2 and 3 structures require separate Design and Check Certificates.

Calculations shall not be submitted to the TAA.

**Technical Approval:**

This shall entail the acceptance of the Design and Check Certificate(s), schedules and drawings etc. by the TAA. Accepted Design and Check Certificate(s) shall be copied to the Client Divisions for record purposes and onward distribution to the Design Organisation etc.

Category 0 structures: the completed Design and Check Certificate will only be accepted by the TAA when all the necessary information is submitted with it, i.e. standards schedule and drawing(s) etc.

Category 1, 2 and 3 structures: completed Design and Check Certificate(s) will only be accepted by the TAA following agreement of the relevant AIP.

**Construction Compliance Certificate:**

Roads Service requires a Construction Compliance Certificate to be completed for all developers' structures proposed for adoption. These shall be submitted by the Design Organisation along with the Health and Safety File and Maintenance Manual to the Client Divisions for retention.

A requirement for Construction Compliance Certification may be invoked elsewhere at the request of the Client Divisions.

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**(v) Outline Approval in Principle**

Where a structure is to be procured through a contractor design process, or where a proposal is at a very preliminary stage, an application for Outline Approval in Principle may be made to the TAA. Applications should be made on an AIP Form, clearly marked 'Outline'.

The Outline AIP is basically a generic AIP and will be superseded by a specific AIP compliant with the requirements of the agreed Outline AIP. Design organisations shall liaise with the TAA with regard to the approach to be taken for specific proposals.

**Contractor Design**

At this time it is recommended the guidance in DEM 26/01 forms the basis of procedures for Roads Service projects involving contractor design, including Design & Build and DBFO. In all cases, including where alternative procedures are proposed, it is important the Project Manager agrees procedures with the TAA to ensure Roads Service's interests are protected.

The requirement in DEM 26/01 regarding the Category for checking purposes may be relaxed subject to the agreement of the TAA. It is recommended proposals complying with Category 0, 1 and 2 as defined in BD 2 be increased by 1 Category ie. a Category 1 becomes Category 2.

**Forms and Certificates**

The TAA shall retain the original copies of AIP Forms and all associated certificates.

Model Roads Service AIP Form, Category 0 and 1 Design/Check Certificate, Category 2 and 3 Design and Check Certificates and Construction Compliance Certificate may be downloaded from the RoadsNet under "Downloads and Forms" and from the Roads Service web site, under "Publications", see Appendix 2.

Certificates for certain types of specialist structures e.g., road and service tunnels, M&E installations and temporary works (Design and Check Certificates) have not been included. Model forms and certificates are given in BD 2 and shall be amended and agreed, as necessary, with Roads Service TAA to suit specific contract requirements.

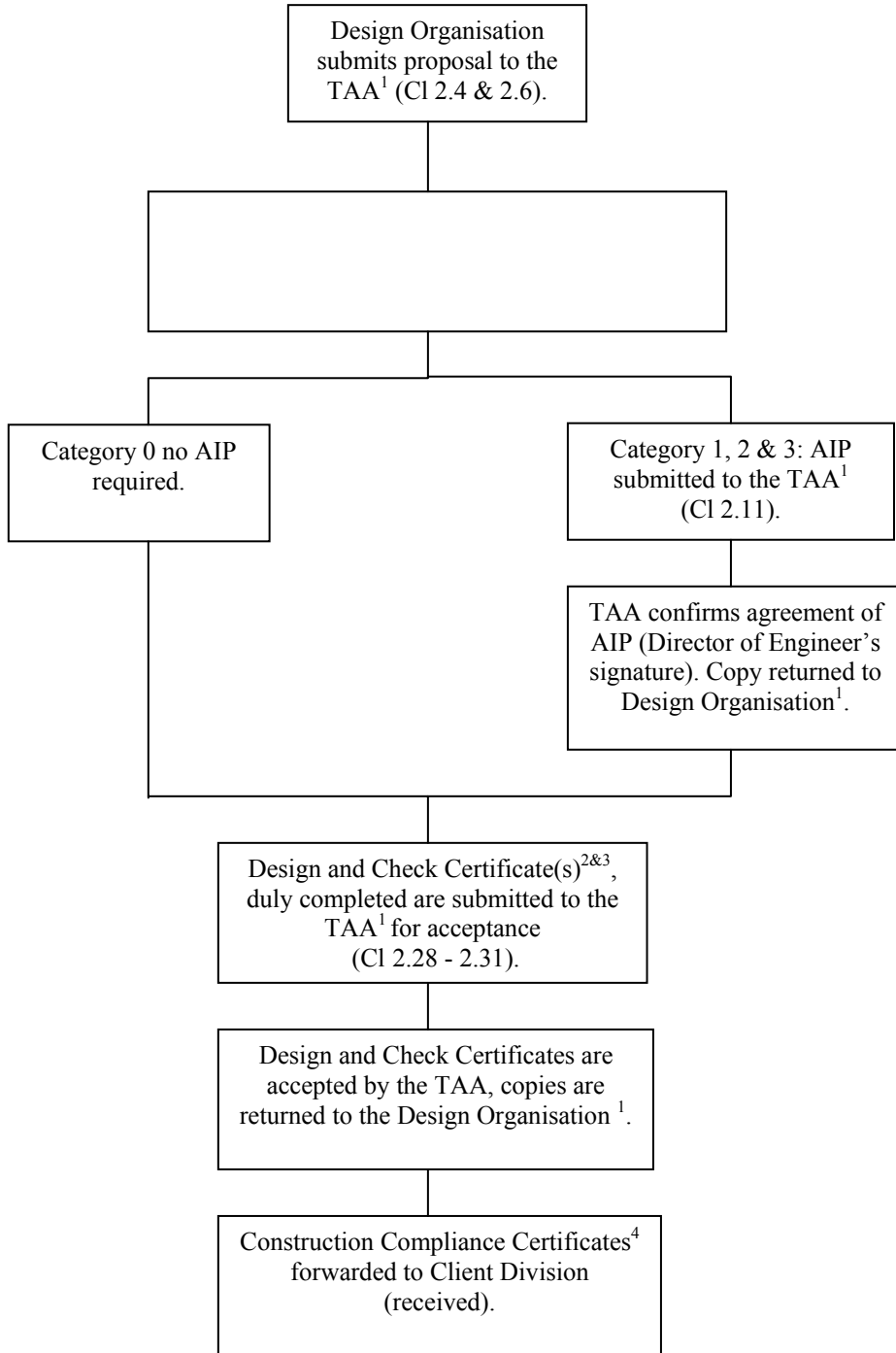
**RJM Cairns**

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July 2007

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## APPENDIX 1: Summary of TA Procedures



### Notes:

1. Through Client Division.
2. Category 0 and 1 – combined certificate, Category 2 and 3 – separate certificates.
3. Relevant standards and GA drawing to be included with Category 0 Design and Check certificate.
4. Construction Compliance Certificates; for developers' structures proposed for adoption or when requested by a Client Division.

## **APPENDIX 2:**

Forms/certificates for the design and checking of bridges and other highway structures:

- Approval in Principle Form template.
- Design and Check Certificate – Category 0.
- Design and Check Certificate – Category 1.
- Design Certificate – Category 2 and 3.
- Check Certificate – Category 2 & 3.
- Construction Compliance Certificate.

The above forms/certificates may be downloaded:

1. RoadsNet: [click here](#)
2. DRD web site: <http://www.drdni.gov.uk/index/publications.htm>

For specialist structures, e.g. road and service tunnels, and M&E installations please consult with the TAA.