DEPARTMENT FOR INFRASTRUCTURE – ROADS

**TECHNICAL APPROVAL OF HIGHWAY AND ASSOCIATED STRUCTURES**

**APPROVAL IN PRINCIPLE FOR THE DESIGN OF BRIDGES AND OTHER STRUCTURES**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name of Project** |  |  | Division |  |
| **Name of Structure** |  |  | TAA Ref No |  |
| **Structure Ref No** |  |  | **DIV Ref No** |  |
|  |  |  |  |  |
| **Design Organisation** |  |  |  |  |
| **On Behalf of** |  |  |  |  |

Insert the relevant details.

# ROAD DETAILS

## Type and Class of road.

## Permitted traffic speed.*1*

## Existing weight restriction.*2*

# SITE DETAILS

## Obstacle crossed/retained.

# PROPOSED STRUCTURE

## Description of Structure and design working life.*3*

## Is it proposed that DfI Roads adopt/maintain this structure.*4*

## Structural type.

## Foundation type.

## Span arrangements/retained height.*5*

## Articulation arrangements.

## Classes and levels:*6*

### Consequence class.

### Reliability class.

### Inspection level.

## Parapet/road restraint system type.*7*

## Proposed arrangements for maintenance and inspection:

### Traffic management.

### Arrangements for access to structure.

## Environment and Sustainability.

## Durability, materials and finishes:

### Materials.

### Finishes.

### Exposure Classes*.8*

##  Details of Waterproofing.

##  Details of Drainage.

## Confirmation that risks and hazards considered for design, execution, maintenance and inspection. Consultation with and agreement from Principal Designer.*9*

## Estimated cost of proposed structure and cost of other structural forms considered, including where appropriate proprietary/manufactured systems, and the reasons for their rejection including comparative whole life costs with dates of estimates.

##

## Proposed arrangements for construction:

### Construction of Structure.

### Traffic management.

### Service diversions.

### Interface with existing structures.

# DESIGN CRITERIA

## Actions:

### Permanent actions.

### Snow, Wind and Thermal actions.

### Actions relating to normal traffic under AW regulations and C&U regulations.*10*

### Actions relating to General Order traffic under STGO regulations.*11*

### Footway or footbridge actions.

### Provision for exceptional abnormal loading.

### Accidental actions.

### Actions during construction.

### Any special action not covered above.

## Heavy or high load route requirements and arrangements being made to preserve the route, including any provision for future heavier loads or future widening.

## Minimum headroom/freeboard provided.*12*

## Authorities consulted and any special conditions required.

## Standards and documents.

### Technical Approval Schedule (TAS).

### Additional relevant standards and publications.

## Proposed departures from Standard given in 4.5.

## Proposed methods for dealing with aspects not covered by standards in 4.5.

# STRUCTURAL ANALYSIS

## Methods of analysis proposed for superstructure, substructure and foundations.*13*

## Description and diagram of idealised structure to be used for analysis.

## Assumptions intended for calculation of structural element stiffness.

## Proposed range of soil parameters to be used in the design of earth retaining elements.

## Any other comments.

# GEOTECHNICAL CONDITIONS *14*

## Acceptance of recommendations of the Geotechnical Design Report to be used in the design and the reasons for any departures.

## Geotechnical Design Report Highway Structure Summary Information sheet.

## Describe foundations fully including the reasons for adoption of allowable and proposed bearing pressures/pile loads, strata in which foundations are located, provisions for skin friction effects on piles and for lateral pressures due to compression of underlying strata

##  etc.

## Anticipated ground movements or settlement due to embankment loading, mineral extraction, flowing water, and measures proposed to deal with these effects as far as they affect the structure.

## Results of tests of ground water (pH value, chloride content, sulphate content) and any counteracting measures proposed.

## Differential settlement to be allowed for in the design of the structure.

## If the Geotechnical Design Report is not yet available, state when the results are expected and list the sources of information used to justify the preliminary choice of foundations. *15*

# CHECKING

## Proposed category of structure and design supervision level.

## If Category 3, name of proposed independent Checking organisation.

## Erection proposals or temporary works for which Types S and P proposals will be required, listing structural parts of the permanent structure affected with reasons.

# DRAWINGS AND DOCUMENTS

## List of drawings (including numbers) and documents accompanying the Submission.*16*

# THE ABOVE IS SUBMITTED FOR ACCEPTANCE

We confirm that details of the temporary works design will be/have been*17* passed to the permanent works designer for review.*18*

|  |  |  |
| --- | --- | --- |
|  | Signed |  |
|  | Name |  | Design Team Leader |
|  | Engineering Qualifications *19* |  |  |
|  | Date |  |

#

# THE ABOVE IS RECORDED BY DFI ROADS…..……….………… DIVISION

|  |  |  |
| --- | --- | --- |
|  | Signed |  |
|  | Name |  | Divisional Roads Manager |
|  | Date |  |

# THE ABOVE IS AGREED SUBJECT TO THE AMENDMENTS AND CONDITIONS SHOWN BELOW

|  |  |  |
| --- | --- | --- |
|  | Signed |  |
|  | Name |  | Director of Engineering, DfI Roads |
|  | Date |  |

This AIP is valid for three years after the date of agreement by the TAA. If the construction has not yet commenced within this period, the AIP must be re-submitted to the TAA for review.

*Notes:*

1. *For a bridge, give over and/or under.*
2. *Include restrictions at or adjacent to the bridge and any environmental restrictions.*
3. *Design working life of the structure, including temporary structure and replaceable structural parts to be given. To be expressed as a number of years rather than a range of years. Design working life must be based on the DMRB if stated. Otherwise it must be based on the guidance given in the Overseeing Organisation’s current requirements for the use of Eurocodes for the design of highway structures and / or agreed with the TAA.*
4. *To be completed for non-DfI Roads Developments.*
5. *Delete as appropriate.*
6. *State the classes and levels for the whole structure, as well as those for the individual structural elements if higher or lower. See the Overseeing Organisation’s current requirements for the use of Eurocodes for the design of highway structures.*
7. *Specify the proposed containment level, working width and clearly identify extent and position of system on the relevant drawing in accordance with BS EN 1317 and TD 19.*
8. *For all material strengths given, list the relevant codes/standards. For concrete structures, declare applicable exposure classes and fixing tolerance for particular structural elements in accordance with BS 8500-1 (used to establish the correct concrete covers).*
9. *List only risks and hazards that would not be apparent to an experienced and competent Contractor or are likely to require special attention to manage them effectively. Where possible and practicable, the identified potential risks and hazards should be eliminated or minimised during the design stage. Designers should name the Principal Designer and confirm that the Principal Designer has/will review the risks and hazards identified in the AIP and is satisfied.*

### *e.g. Load Models 1 and 2, BS EN 1991-2.*

1. *e.g. SV model vehicle in Load Model 3, NA to BS EN 1991-2 (refer to the Overseeing Organisation’s current requirements for the use of Eurocodes for the design of highway structures).*
2. *Delete as appropriate.*
3. *List the main structural elements for superstructure, substructure and foundation. If the designs of the superstructure, substructure and/or foundation are carried out by different teams, refer to cl. 2.22 and 2.41.*
4. *For structures subject to HD 22 AIP sections 6.3 to 6.5 are not required. AIP section 6.2 is not required if project is exempt from HD 22.*
5. *When the Geotechnical Design Report becomes available, an addendum to the AIP covering section 6 may be required to be submitted to the TAA. The addendum must have its own sections 8, 9 ,10 and 11 to provide a list of drawings, documents and signatures*
6. *Include, without limitation:*
7. *Technical Approval Schedule (TAS).*
8. *General Arrangement Drawing and location plan.*
9. *Relevant extracts from the Geotechnical Design Report.*
10. *Proposed Departures from Standard.*
11. *Relevant correspondence and documents from consultations.*
12. *Delete as appropriate.*
13. *This statement is applicable to temporary works design AIP only.*
14. *CEng, MICE, MIStructE or equivalent.*

**Appendix A:**

**Technical Approval Schedule**

**Appendix B:**

**Record of Options and Choices [**refer to DEM 134/11, ie draft IAN for BD 100**]**

This information is declared to ensure Checker is aware of the design approach proposed by the Designer.