आर॰ के॰ श्रीवास्तव
R. K. Srivastava

कार्यकारी निदेशक/पुल एवं संरचना
Executive Director/B&S

सत्यमेव जयते

भारत सरकार – रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ – 226011
Government of India - Ministry of Railways
Research Designs and Standards Organisation
Lucknow - 226011
Rly. : 032-42120, Phone / Fax : 0522-2450398
Email : edbsrdso@gmail.com

सं.: CBS/DBR/IMP/POLICY **दिनांक:** 11.08.2022

Chief Administrative Officer (Construction), All Zonal Railways

विषय: Guidelines of approval of Design Basis Report for Important Bridges (Rev-1).
संदर्भ : RDSO letter No. CBS/DBR/IMP/Policy dated 27.11.2015.

1. Guidelines of RDSO approval of planning and DBR for Important Bridges were issued to Zonal Railways in November, 2015 vide letter under reference. The Guidelines needed updation in view of the policy directives issued by Board in the intervening period & the changes that have taken place in Codes & Manuals since then. According, it has been revised.

2. “Guidelines of approval of Design Basis Report for Important Bridges (Revision-1)” along with the letters referred in it is enclosed for kind information & necessary action please.

संलग्नक: As above

(आर॰ के॰ श्रीवास्तव)
कार्यकारी निदेशक/पुल एवं संरचना

प्रतिलिपि:

1. Director General, Indian Railway Institute of Civil Engineering (IRICEN), Pune.
2. Principal Executive Director/Bridge, Railway Board, Rail Bhawan, New Delhi.
3. Principal Chief Engineers- All Zonal Railways.
4. CGM/Design, Rail Vikas Nigam Ltd., 1st floor, August Kranti Bhawan, Bhikaji Cama Place, Africa Road, R.K. Puram, New Delhi-110016.

केवल कार्यालय उपयोग हेतु
For official use only

सत्यमेव जयते

भारत सरकार
रेल मंत्रालय

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS

महत्वपूर्ण पुलों के डिजाईन बेसिस रिर्पोट के अनुमोदन हेतु दिशानिर्देश
GUIDELINES FOR APPROVAL OF DESIGN BASIS REPORT FOR IMPORTANT BRIDGES

REPORT NO. BS – 122 (R1)

अगस्त - 2022
AUGUST – 2022

पुल एवं संरचना निदेशालय
अनुसंधान अभिकल्प और मानक संगठन लखनऊ–226011
BRIDGE & STRUCTURES DIRECTORATE
RESEARCH DESIGNS AND STANDARDS ORGANISATION
LUCKNOW - 226011

Table of Contents

Guidelines for approval of DBR for Important Bridges

1.0 Introduction:

1.1 Planning of important bridges is an important activity and needs to be carried out carefully. Guidelines for this are available in various codes, manuals and instructions etc. so that, planning is done properly and decisions taken accordingly. Bridge structures are essential component of any Railway network. Planning of Bridge project involves a chain of activities as relevant to the project such as survey and investigations, selection of site, social and environmental appraisal, fixing of waterways, selection of type of structure, design of structural elements, preparation of drawings and cost estimates, economic and financial evaluation, preparation of contract documents, quality assurance scheme, maintenance manual and time schedule. The structure should have an assured safety and level of performance over its expected life.

1.2 Design Basis Report (DBR) of any bridge is a planning document which contains the major design criteria along with the General Arrangement Drawing (GAD) prepared by Zonal Railway/executing agency based on which the detailed design and drawings of the bridge are prepared. Design Basis Report is prepared by executing agency/Zonal Railway, in case of Important Bridges, for better planning and construction of the bridge.

1.3 The design basis shall include choice of span configuration, choice of materials and methods of construction etc. The basic field data on ecological conditions, environmental conditions etc. shall be enumerated in the design basis note so that the design basis for the bridge can be approved. This will also include waterway planning including choice of location of bridge, computations for waterway and flood etc.

1.4 Design Basis Report for the Important Bridges should be submitted to RDSO, if RDSO association is required as per Railway Board letter No. 2014/CE-III/BR/Bridge Policy dated 10.03.2017. The DBR is meant to serve as a guide to the designer but compliance to the rules therein does not relieve them in any way of their responsibility for the stability and soundness of the structure designed. The DBR shall be self - explanatory, annexure etc. shall be properly indexed wherever required. Geotechnical Investigation Reports need not be sent along with the DBR. Copies of files/correspondences made within Railway and notings not be sent, wherever, approval of higher authorities are obtained etc.

1.5 Guidelines for approval of DBR for Important Bridges are necessary for uniform practice for preparation of DBR to be adopted on all Railways. The DBR shall be prepared as per these guidelines and shall be examined and approved at CBE's level prior to

forwarding it to RDSO. Observations, if any, be also forwarded along with it. GAD as per planning shall also be prepared and enclosed along with it. A checklist for preparation of General Arrangement Drawing (GAD) for Railway Bridges (Revision-1) has also been issued by RDSO on 04.02.2022 for the guidance of field engineers while preparing GAD. In case of doubling/GC or multiple line projects, GAD/Completion plan of existing bridge shall also be sent. Para wise Change sheet should also be provided in case, DBR is resubmitted after observations of RDSO.

2.0 The report shall contain following:

2.1 **Project Brief**: Brief description of the Project, alignment, gradient, curvature etc., basic field data on Geological Conditions and Environmental Conditions etc.

2.2 **Scope of Design Basis Report (DBR):** This document has been prepared for obtaining approval of RDSO or Railway Board as the case may be, in terms of Railway Board's letters No.2013/CE-III/BR/RDSO/Misc. dated 04.06.2014, 2014/CE-III/BR/Bridge Policy dated 10.03.2017, 11.11.2019 & 12.02.2020 for the following:

2.2.1 **Approval of Design Basis:** Design Basis should include Choice of Span Configuration, Choice of Materials regarding Superstructures, Substructures and Foundations, Method of Construction etc.

2.2.2 **Approval of Waterway:** Planning includes Choice of Location of Bridge, computation for Waterway and Floods etc.

2.3 Location of Bridge:

2.3.1 Geological and Geotechnical condition in case of New Line Project (suitability of foundations for abutment, pier and protection works) - Location of proposed piers and abutments should be in line with those of existing bridge as per instruction given in Board's letter No. 2017/29/C EIII/BR/ Br. 588/ECoR dated 03.08.2017.

2.3.2 Land availability consideration in case of doubling/multiple lines.

2.3.3 Speed Potential consideration, in case curves on approaches are to be provided, especially in Gauge Conversion or double/multiple line.

2.3.4 Scour considerations especially, in case of doubling/multiple line (effect of scour on existing bridge).

2.3.5 Distance between existing and proposed bridge should be adequately provided as per RDSO letter No. CBS/DWF dated 15.07.2019.

2.4 **Span configuration & Material for construction:** Techno-economic analysis shall be done to finalise the span configuration and material for construction i.e. Steel/PSC (On all new bridge works being planned for spans more than 24.4m, steel girder should be used as per policy issued vide Railway Board letter No. 2005/CE-I/BR-II/8 dated 28.05.2009). The economic evaluation of different alternatives of the bridge shall be carried out to determine its relative viability. At least two types of spans shall be compared. Generally, most economical span is one for which cost of construction of

superstructure and substructure is almost equal.
For substructures RCC shall be preferred in general and shall be used in case area is falling in Seismic Zone- IV or V.

2.5 River Training Works: These works shall be planned based on technical and site specific requirements.

2.6 Choice of foundation: As per Railway Board's policy letter no. 2014/CE-III/BR/Bridge Policy dated 15.11.2016, Open Foundation to be planned. If Open Foundation is not technically suitable, other type of Foundation shall be planned, in later case approval of SAG officer/CBE shall be obtained, such decision should be based on comparative analysis and techno-economic consideration. Guidelines on Type of Foundations for Railway Bridges (RDSO report no. BS-127 R1) issued by RDSO, may be followed for deciding the type of foundation.

2.7 Salient Features of Bridge- Details be provided as below-

S.N.	**Details of Proposed Bridge**	
1.	Bridge Location (Chainage & Section)	
2.	Latitude, Longitude	
3.	Name of River	
4.	Seismic Zone	
5.	Wind Zone	
6.	Basic Wind Velocity	
7.	Gauge	
8.	Loading Standard	
9.	Catchment Area	
	Hydrometeorological Sub-Zone (Flood Estimation Report)	
10.	Design Discharge	
11.	Velocity of Flow	
12.	HFL	
13.	Minimum Vertical Clearance required (As per IRS Bridge Sub-structures and Foundation Code)	
14.	Vertical Clearance provided	
15.	Minimum Free Board required (As per IRS Bridge Sub-structures and Foundation Code)	
16.	Free Board provided	
17.	Silt factor	
18.	Maximum Scour Depth	
19.	Spanning Arrangement	
20.	Type of Foundation & Founding Level	
21.	Type and details of Substructure	
22.	Type and details of Superstructure	
23.	Type of Bearings	
24.	Exposure Condition	

	Details of Existing Bridge, (if applicable)	
25.	Year of construction of bridge (if existing)	
26.	Spanning Arrangement	
27.	Type of Foundation & Founding Level	
28.	Type and details of Substructure	
29.	Type and details of Superstructure	
30.	Discharge	
31.	Maximum Observed Scour	
32.	Distance & location of Proposed bridge from existing bridge with (UP/DN)	
33.	Completion plan of existing bridge	

2.8 **Design Software:** Any proprietary software can be used for analysis/design provided, the same is validated with manual computation or standard software in multiple scenarios. If Proof Consultant is engaged, any independent software/ manual computation should be used by Proof Consultant.

2.9 Design Criteria is enclosed as Annexure-I

2.10 A Check list for approval of DBR of Important Bridge is enclosed as Annexure-II

Annexure-I

DESIGN CRITERIA

1. For the design of the substructure and foundation of the bridges, loads and effects of forces to be considered are as per following codal provisions (with up to date correction slips)

a. Bridge Rules (Reprint-2014)
b. IRS Bridge Sub-structures & Foundation Code-2013
c. IRS Seismic Code-2020
d. IRS Steel Bridge Code-2017
e. IRS Specification for Fabrication and Erection of Steel Girder Bridges and Locomotive Turn-Tables (IRS B1-2001)

The design criteria shall be revised, if prior to start of designing work, the provisions are changed either due to issue of new/revised code or issue to of further Addendum/Correction slip. Apart from above, designer shall verify the Codal provisions mentioned herein with the detailed description/ procedure given in the referred code before taking up of designing work. In case of discrepancies, information shall also be given to Railway stating discrepancies and correct provisions.

SN	Loads & Forces	Bridge Rules	IRS Bridge Sub-structures & Foundation Code	Remarks
1.	Dead Load (DL)	2.2	5.2	
2.	Super imposed Dead Load (SIDL)			SIDL as per standard RDSO drawings
3.	Live Load (LL)	2.3	5.3	
4.	Live Load Surcharge (LLS)		5.8	
5.	Dynamic Augment (I)	2.4	5.4	
6.	Force Due to Curvature and Eccentricity of Track (CF),	2.5		
7.	Live Load on Walkway/ footpath (LLW)	2.3.2		
8.	Temperature effect	2.6	5.5	
9.	Longitudinal Force (LF) (a) Tractive force, (b) Braking force (c) Resistance to movement of bearings due to change in	2.7 & 2.8	5.5 & 5.6	

SN	Loads & Forces	Bridge Rules	IRS Bridge Sub-structures & Foundation Code	Remarks
	temperature and deformation. (d) Forces due to continuation of LWR/CWR over the Bridges			
10.	Derailment load	2.14		
11.	Wind Loads	2.11	5.11	
12.	Seismic Loads	2.12, 2.8.5	1.2.1 & 5.12.	Shall be calculated as per IRS Seismic Code-2020.
13.	Earth pressure		5.7	
14.	Earth Pressure due to Surcharge		5.8.2 to 5.8.4	
15.	Earth Pressure increase due to Seismic Effect		1.2.1	Shall be calculated as per clause 22 of IRS Seismic Code-2020.
16.	Forces due to Water current (WC)		5.9	
17.	Hydrodynamic Force (HY)		5.16.2.7 (b)	Hydrodynamic Force as per clause10 of IRS Seismic Code - 2020.
18.	Buoyancy Effect		5.10	
19.	PQRS Load	2.15		

Note: The provisions given above are minimum requirement as per IRS codes, however the compliance of all necessary codal provisions need to be ensured by the designer keeping in view the safety and stability of the structures.

1.1 **Combination of Loads:** Combination of loads and forces are to be considered as follows:

1.1.1 Substructure and Foundation- As per clause 5.13 of IRS Bridge Sub-structures and Foundation Code.

1.1.2 Concrete superstructure- As per clause 11 of IRS Concrete Bridge Code.

1.1.3 Steel superstructure- As per clause 3.2 of IRS Steel Bridge Code.

1.2 Permissible stresses: The calculated maximum stresses resulting from the design loading shall not exceed those specified in clause 5.14 and 5.15 of Bridge Sub-structures and Foundation Code.

Note: In case Design by Limit State, limit states of clause 10.2 and 10.3 of IRS Concrete

Bridge Code shall be considered. Consideration of other factors such as deflection, fatigue and durability, will need to be made as referred to in clause 10.4 of the code. Combinations of loads to be taken as per clause 11 with appropriate partial safety factor for loads given in table 12 of IRS Concrete Bridge Code.

2. Computation of Design Discharge & design of waterways:

2.1 Computation of Design Discharge: Hydrological Investigations as indicated in Appendix-I of "IRS Bridge Sub-Structures & Foundation Code" shall be done.

1:50000 topo sheets shall be used to mark the catchment area. More than one topo-sheets shall be joined properly. Alternatively GIS method can also be used for assessment of catchment properties. Three Cross sections together with HFL are required, one on the centre line of the proposed bridge, one upstream and one downstream at 100m to 300m interval.

Design Discharge shall be computed following provisions of clause 4 of "IRS Bridge Sub- Structures & Foundation Code" preferably by three different Rational formulas including SUH method (excluding Area Velocity method). Wherever Stream Flow records are available for the desired recurrence interval or more, the design discharge shall be computed for the desired recurrence interval.

In case there is any Railway Affecting Works (Dam etc.) the spillway discharge shall be taken into consideration. In this regard provisions of clause 106.3.5 of IRC-5 be referred. IRC-SP-13 may also be referred where applicable. Details of RAW are also required to be mentioned in the DBR.

2.2 Design of Waterways: Waterway shall be designed in accordance with provisions of clause 4.5 of "IRS Bridge Sub-Structures & Foundation Code". As per Clause 4.5.7 for gauge conversion and doubling work, where there is no history of past incidents of over-fiow/washout/excessive scour etc. during last 50 years, the waterway of existing bridge may be retained after taking measures of safety as considered necessary by Chief Engineer Incharge. However, as per Railway Board's Policy letter No. 2014/CE-III/BR/Bridge Policy dated 21.04.2015, it is important to consider all relevant parameters like topography, catchment area, run off coefficient etc. prevalent during the time of bridge construction.

Requirements of Vertical Clearance and Free Board shall be fulfilled. Height of Bridge shall be kept as low as possible, keeping adequate clearances and free boards in view. In case bridge is planned as Viaduct, Cost benefit/ technical reasons shall be furnished.

Details of nearby Bridges shall be collected either on Rail or Highway/Other Roads. These shall also be discussed.

If bridge is over national waterway, NOC for navigational clearances both vertical and horizontal should be taken from competent authority based on classification of waterway as per the requirement of Inland Waterway Authority of India (IWAI) or the concerned Port authorities.

3. Geotechnical Design (Foundation):

3.1 Foundation must be designed in accordance with clause 6.0 of IRS Bridge Sub-structures and Foundation Code adequately against any expected failures and following basic requirements should be fulfilled.

3.1.1 Safety against shear strength failure.

3.1.2 Safety against deformation and differential settlement.

3.1.3 Allowable bearing pressure.

3.1.4 In case of open foundation the resultant of all forces on the base of foundation (for rectangular foundation) shall fall within the middle third if the structure is founded on soil.

3.2 The foundation to be checked for minimum & maximum pressure effect up to HFL & LWL due to buoyancy.

3.3 For determination of Allowable bearing capacity clause 6.3, 6.4, 6.5 & 6.6 of IRS Bridge Sub-structures and Foundation Code shall be referred.

3.4 Safety against overturning & Sliding: The followings factors of safety shall be ensured for stability under combination of loads and forces as indicated in clause 5.13 & 6.8 of IRS Bridge Sub-structures and Foundation Code.

3.5 Against Overturning: Combination (I) = 2.00; Combination (II) or (III) = 1.50

3.6 Against Sliding: Combination (I) = 1.50; Combination (II) or (III) = 1.25

3.7 Sub-soil investigation shall be carried out in accordance with clause 6.2 of IRS Bridge Sub-structures and Foundation Code.

4. Material Properties

4.1 **Cement -** As per Clause 4.1 of IRS Concrete Bridge Code.

4.2 **Concrete-**

4.2.1 Density- Density of Concrete- RCC=2.5 T/m3', CC=2.4 T/m3'

4.2.2 Minimum Grade of Concrete- As per clause 5.4.4 of IRS Concrete Bridge Code.

4.2.3 Crack width- As per clause 15.9.8.2 of IRS Concrete Bridge Code.

4.2.4 Clear Cover- As per clause 5.4 of IRS Concrete Bridge Code.

4.3 **Reinforcement and Prestressing steel** - As per Clause 4.5 and 4.6 of IRS Concrete Bridge Code.

4.4 **Grade & Quality of Structural steel** - As per IRS Specification for Fabrication and Erection of Steel Girder Bridges and Locomotive Turn-Tables (IRS B1-2001).

4.5 **Shear studs**- As per RDSO Report No. BS-115 (R-1).

4.6 **Connection bolt including HSFG**- As per IRS Steel Bridge Code & RDSO Report No. BS-111 (R-6).

4.7 **Welds**- As per IRS Steel Bridge Code, IRS Welded Bridge Code.

4.8 **Surface preparation & Painting**- As per IRS Specification for Fabrication and Erection of Steel Girder Bridges and Locomotive Turn-Tables (IRS B1-2001).

4.9 **Construction Tolerances :** For concrete structures, the construction tolerances to be followed shall be as per clause 6.5 of IRS Concrete Bridge Code and the manufacturing tolerances for steel structures shall be followed as per clause 13, 23 & 31 of IRS Specification for Fabrication and Erection of Steel Girder Bridges and Locomotive Turn-Tables (IRS B1-2001) as applicable.

5. Design of Superstructure:

Standard drawings should be used for superstructure proposed as far as feasible. However in case, nonstandard drawings are unavoidable, then the same may be used with the specific approval of CAO(C)/PCE as per Railway Board letter No.2013/CE-III/BR/RDSO/Misc. dated 11.08.2014. In case of Specially Designed Superstructures, Design Criteria to be followed shall be prepared by Railway and enclosed as separate annexure.

6. Side Pathway:

Provision of side pathway on girder bridges should be as per Railway Board letter No. 2017/53/CE-III/BR/Side Pathway dated 27.11.2017 & RDSO letter No. CBS/DPG1 dated 24.04.2019.

7. Rail Structure Interaction:

When LWR/CWR is continued over a bridge, Rail Structure Interaction (RSI) studies shall be carried out as per clause 2.8.1.2 of Bridge Rules. Rail Structure Interaction, RSI studies also includes the effect of Tractive Effort/ Braking Forces. In this regard provision of letter no. CT/IM/LWR/Part dated 19/25.03.2014 issued by ED/Track-I/RDSO should also be followed.

8. Durability, Inspectability and Maintainability:

The structural design and composition of construction materials will ensure sufficient durability, considering the structural details of which they form part as well as the effects of the environment to which they may be exposed. Bridge components such as bearings, expansion joints will be designed such that they can be easily replaced.

9. List of Design Codes and Standards:

The following codes with up-to-date correction slips will be referred in various stages of works.

9.1 IRS Codes:

(i) Bridge Rules — (Reprint-2014)
(ii) IRS Code of Practice for Plain, Reinforced and Pre-stressed Concrete for General Bridge Construction (IRS-CBC)-Concrete Bridge Code- Reprint-2014.
(iii) IRS Code of Practice for the Design of Sub-structures & Foundations of Bridges-2013 (Bridge Sub-structures & Foundation Code)
(iv) IRS Code for Earthquake Resistant Design of Railway Bridges (Seismic Code)-2020
(v) IRS Steel Bridge Code-2017
(vi) Manual on the Design and Construction of Well and Pile Foundations (1985)
(vii) IRS Specification for Fabrication and Erection of Steel Girder Bridges and Locomotive Turn-Tables (IRS B1-2001)
(viii) IRS Welded Bridge Code

9.2 IRC Codes:

(i) IRC-5 Section I Standard Specifications and Code of Practice for Road Bridges
(ii) IRC-6 Section II Loads and Stresses

(iii) IRC-78 Standard Specifications and Code of Practice for Road Bridges section-VII: Foundations and Substructures

(iv) IRC SP 13 - Guidelines for the Design of Small Bridges and Culverts

9.3 Bureau of Indian Standard Codes:

(v) IS 875 (Part-3): 1987 Code of Practice for Design Loads (Other than Earthquake) for Buildings and Structures — Wind Loads

(vi) IS 1893 (part-1):2002 Criteria for Earthquake Resistant Design of Structures.

(vii) IS 2911-2010 Code of Practice for Design and Construction of Pile Foundations (Part-I, II, III)

(viii) SP: 34-1987 Handbook on Concrete Reinforcement & Detailing.

Annexure-II

Check list for approval of DBR of Important Bridge

S.N	Items descriptions	Availability (Y/N/NA)	Remarks
1.	Whether association of RDSO is required as per Railway Board letter No. 2014/CE-III/BR/Bridge Policy dt 10.03.2017?		
2.	Whether Railway Board approval is required as per Railway Board letter No. 2014/CE-III/BR/Bridge Policy dt 10.03.2017?		
3.	Whether DBR has been examined and approved by CBE?		
4.	Whether expert opinion from outside railway is required?		
5.	Whether clearance from Inland Waterways Authority of India/concerned Authority for navigational requirement both vertical and horizontal clearances for proposed bridge is taken, wherever required?		
6.	Whether GAD of proposed bridge and completion plan are submitted with DBR?		
7.	Whether checklist for preparation of GAD for Railway Bridges (Revision-1) issued by RDSO has been followed while preparing GAD?		
8.	Whether computation of waterway design discharge and scour depth submitted?		
9.	Scour considerations especially, in case of doubling/multiple line taken into account.		
10.	Whether RAT/RAW is situated at upstream of bridge. Discharge due to RAT/RAW in upstream has also been taken into account?		
11.	Whether waterway assessed as per Railway Board's Policy letter No. 2014/CE-III/BR/Bridge Policy dated 21.04.2015?		
12.	Whether most economical option has been considered after comparisons of two or more types of span? Proper and adequate justification for selection of span to be mentioned.		
13.	Whether Board's guidelines followed for selecting the type of super-structure as per Railway Board letter No. 2005/CE-I/BR-II/8 dated 28.05.2009? If not, whether Board's approval. has been taken for any deviations?		
14.	Whether RDSO standard drawing is followed? If not, whether approval from PCE/CAO(C) for using nonstandard drawing, has been taken with proper justification as per Railway Board letter No.2013/CE-III/BR/RDSO/Misc. dated 11.08.2014.		
15.	Whether river-training and protection works are required?		
16.	Whether open foundation has been adopted? If not, whether approval of CBE/SAG officer has been obtained?		
17.	Whether side pathway is provided as per RDSO letter No. CBS/DPG1 dated 24.04.2019?		

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

No.2014/CE-III/BR/Bridge Policy New Delhi, dt 09.03.2017

Director General
RDSO/Manak Nagar, Lucknow.

Principal Chief Engineer,
All Zonal Railways.

Chief Administrative Officers(Construction)
All Zonal Railways.

Sub: Approval of design basis of important bridges by RDSO.
Ref: Board's letter No.2013/CE-III/BR/RDSO/Misc dated 4/06/2014.

Vide letter under reference above, the instructions were issued that in future, RDSO shall be associated in planning of all important bridges which include approval of design basis by RDSO and approval of waterway planning.

2. Subsequent to issue of above instructions, a lot of representations are being received from Zonal Railways regarding procedural delay in approvals at various levels resulting in delay in execution of works.

3. In view of above, the matter has been reviewed and in partial modification to the earlier instructions issued vide reference above, it has now been decided that in all such cases of important bridges where standard RDSO spans are proposed and where waterway is being provided following provisions of IRS Sub-structure and Foundation Code and other IRS Codes, RDSO may not be associated. However, in all cases of important bridges where use of special type of span/use of new technology is envisaged or which warrants use of Codes other than Indian Codes due to peculiarity of the bridge, RDSO may be associated in planning of all such important bridges and final approval for the same may be obtained from Railway Board.

RK Singhal 10.3.17

(A.K.Singhal)
Executive Director Civil Engg./B&S
Railway Board

Copy for information and necessary action to:

1. CMD/RVNL, New Delhi
2. CMD/IRCON, Saket, New Delhi
3. CMD/RITES, Gurgaon

वी॰ के॰ श्रीवास्तव
V. K. Srivastava

कार्यकारी निदेशक (संरचना)
Executive Director (Structures)

भारत सरकार - रेल मंत्रालय
अनुसन्धान अभिकल्प और मानक संगठन
लखनऊ - 226011
Government of India - Ministry of Railways
Research Designs & Standards Organisation
Lucknow - 226011

सं.: CBS/DBR/IMP/Policy **दिनांक:** 04.02.2022

1. Principal Chief Engineers All Zonal Railways

2. Chief Administrative Officer (Construction) All Zonal Railways

विषय: Checklist for preparation of GAD of Railway Bridges (Revision-1)
संदर्भ: RDSO letter No. CBS/DBR/IMP/Policy dated 02.11.2017.

1. A 'Checklist for Preparation of GAD of Railway Bridges' was issued to Zonal Railways in November, 2017 vide the letter under reference. The Checklist needed updation in view of the policy directives issued by Board in the intervening period & the changes that have taken place in Codes & Manuals since then. Accordingly, it has been revised.

2. The 'Checklist for Preparation of GAD of Railway Bridges (Revision-1) alongwith the letters referred in it is enclosed for kind information & necessary action please.

3. A soft copy of the revised Checklist has also been uploaded on RDSO's website i.e.

10.100.2.12 → Directorate → Bridge & Structures → RDSO's letters to Rlys.

संलग्नक: As above

(वी॰ के॰ श्रीवास्तव)
(V.K. Srivastava)
कार्यकारी निदेशक (संरचना)
Executive Director (Structures)

प्रतिलिपि:

1. Director General, Indian Railway Institute of Civil Engineering (IRICEN), Pune
2. Principal Executive Director/Bridge, Railway Board, Rail Bhawan, New Delhi

Rly.: 032-42126, Phone / Fax: 0522-2465704

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

No. 2013/CE-III/BR/RDSO/Misc. **New Delhi, dt. 04.06.2014**

1. **Principal Chief Engineers,**
   All Indian Railways.

2. **Chief Administrative Officer (Con.)**
   All Indian Railways.

Sub.: Planning of new important bridges

Planning of important bridges is an important activity and needs to be carried out carefully. Guidelines for this are available in various codes, manuals and instructions etc. However, it has been observed that sometimes planning is not done properly and certain decisions are taken which create difficult situations later on.

2.0 It is, therefore, advised that henceforth RDSO be associated with the planning of all important bridges. This association shall be in two ways:

(i) Approval of design basis for the bridge shall be done by RDSO. The design basis shall include choice of span configuration, choice of materials and methods of construction etc. The basic field date on ecological conditions, environmental conditions etc. shall be enumerated in the design basis note so that the design basis for the bridge can be approved.

(ii) Approval of waterway planning including choice of location of bridge, computations for waterway and flood etc. shall be given by RDSO.

V.Jain 9/6/14.

(V.K. Jain)
Director Civil Engg (B&S)
Railway Board

Copy to:

1. **Chief Bridge Engineers, All Indian Railways** for information and necessary action.
2. **CMD, Rail Vikas Nigam Ltd., New Delhi – 110006,** for information & necessary action.
3. **Executive Director/B&S/RDSO,** for information & necessary action.
4. **Executive Director/Structure/RDSO,** for information & necessary action.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No.2014/CE-III/BR/Bridge Policy New Delhi Dt: 11.11.2019

Director General
RDSO, Manak Nagar
Lucknow

Principal Chief Engineer
Chief Administrative Officer/Const.
All Zonal Railways

Sub: Approval of design basis of important bridges by RDSO.
Ref: This office of even letter no. dated 09.03.2017.

Vide this office letter referred above, following instructions were issued:

"All such cases of important bridges where standard RDSO spans are proposed and where waterway is being provided following provisions of IRS Sub-structure and Foundation Code and other IRS Codes, RDSO may not be associated However, in all cases of important bridges where use of special type of span/use of new technology is envisaged or which warrants use of Codes other than Indian Codes due to peculiarity of the bridge RDSO may be associated in planning of all such important bridges and final approval for the same may be obtained from Railway Board".

It has been observed that above instructions are not being followed and a case has been referred to Board for post facto approval. Such type of cases should be avoided in future. Prior approval should be taken along with consultation of RDSO before calling the tender.

11.11.19
(A.K. Singhal)
Executive Director/B&S
Railway Board

Copy for information and necessary action to:

1. CMD/RVNL, New Delhi
2. CMD/IRCON, Saket New Delhi
3. CMD/RITES, Gurgaon

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2014/CE-III/BR/Bridge Policy **Date-12.02.2020**

Principal Chief Engineer,
All Zonal Railways.

Chief Administrative Officer/Construction
All Zonal Railways.

Sub: Design Basis Report (DBR) and Technical Advisory Group (TAG) for new important bridges.
Ref: Board's letter no. 2014/CE-III/BR/Bridge Policy dt. 10.03.17

RDSO, in Nov-2015 has issued report no. BS-122 "Guidelines of RDSO approval of planning and DBR for important bridges". Board vide ref above thereafter issued guidelines for approval of design basis of important bridges in cases where use of special type of span/use of new technology is envisaged or which warrants use of codes other than Indian Codes due to peculiarity of the bridge.

It is gathered that in case of important bridges being constructed by PSU, the TAG is being formed without ED/RDSO and CBE of concerned railway.

In view of above, the following consolidated guideline has been approved by Board (ME) regarding preparation of DBR, formation of TAG and approval of DBR:-

i. DBR should be prepared (as per BS-122) for important bridges by the executing agency (CAO/C unit or PSU) and should be approved by CBE.

ii. DBR should be submitted to RDSO if RDSO association is required as per Rly Bd letter under reference (i).

iii. RDSO will examine the DBR and clear it.

iv. For few cases where requirement of expert opinion from outside railways is felt, RDSO will recommend formation of TAG.

v. CAO/C or PCE(for PSUs) of the concerned zonal railway will approve formation of TAG, its members and Terms of Reference. ED/RDSO and CBE of concerned zonal railway must be members of the TAG.

vi. Modified DBR including final TAG recommendations should be submitted to Board for approval.

(O.N. Sharma)
Director C E/B&S
Railway Board
Telefax: 011-23388210
Email:dcebsrb@gmail.com

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

No.2017/29/CE-III/BR/Br 588/ECoR New Delhi, dt 03/08/2017

Principal Chief Engineers,
All Zonal Railways.

Chief Administrative Officers (Construction)
All Zonal Railways.

Sub: Construction of bridges during doubling

On Indian Railways, large no. of works of doubling/3rd line etc. are being executed requiring construction of new bridges parallel to existing bridges. Bridges are to be planned, designed and constructed as per prevailing codal provisions and policy instructions issued time to time. While deciding GAD of the bridge being planned for doubling/3rd line etc., the following may be ensured by railways in order to avoid the excessive scour:

(i) The piers of new bridge are in alignment of the piers of existing bridge. The span arrangement should be decided in such a way that there is free flow of water through spans of old bridge and there is no staggering of piers in water flow area.

(ii) There should be adequate distance between new bridge and old bridge.

A.K.Singhal 3.8.17

(A.K.Singhal)
Executive Director Civil Engg./B&S
Railway Board

Copy for information and necessary action to:

1. **CMD/RVNL, RITES, KRCL, IRCON, DFCCIL**
2. **CBEs/All zonal railways**

SN-145

V.K. Srivastava
वी.के.श्रीवास्तव
Executive Director/Structures
कार्यकारी निदेशक/संरचना

सत्यमेव जयते

भारत सरकार – रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ – 226011
Government of India-Ministry of Railways
Research Designs & Standards Organisation
Lucknow- 226011
Rly. : 032-42126Phone / Fax : 0522-2465704
Email : edstructures@gmail.com

No. CBS/DWF

Dated: 15.07.2019

The Chief Bridge Engineer:

1. Eastern Railway, Fairlie Place, Kolkata-700 001
2. East Central Railway, Hajipur - 844101
3. Northern Railway, Baroda House, New Delhi- 110 001
4. North-Central Railway, Allahabad.211 001
5. North Eastern Railway, Gorakhpur-273 001
6. North-Western Railway, Jaipur 302 001
7. Northeast Frontier Railway, Maligaon, Guwahati-781 011
8. Southern Railway, Park Town, Chennai-600 003
9. South Central Railway, Rail Nilayam, Secunderabad-500 371
10. South East Central Railway, Bilaspur 495 004
11. South Eastern Railway, Garden Reach, Kolkata-700 043
12. South-Western Railway, Hubli 580 023
13. Western Railway, Mumbai-400 020
14. West-Central Railway, Jabalpur- 482 001
15. Central Railway, Mumbai CST-400 001
16. East Coast Railway, Bhubaneshwar-751 016

Sub: Centre to Centre distance of deep foundations of existing and new Bridge.

Ref.: Railway Board's letter no. 2017/37/CE-III/BR/BSC /85/Seminar dated 17.05.2019

NCR referred the issue of the minimum clear distance of deep foundations between the existing and proposed bridges vide letter no. 136-W/BR/DFCCIL dated 09.02.2017. Vide letter No. CBS/Imp./Br.427/NCR dated 14/20.03.2017, RDSO suggested criteria for distance between the existing and new foundations based on interaction of their scour regions, pressure bulb zones and other factors.

The matter was discussed as the Item No. 1074 in 85th BSC meeting held in Nov.'2018, as instructed by Board, by keeping the above letter of RDSO in abeyance. During the deliberations in the BSC, it came out that minimum/desirable distance between the well foundations of the existing and new bridge is site specific and it is difficult to lay down criteria with certainty.

Based on the recommendations of the 85th BSC, duly accepted by Board, following guidelines may be considered while finalizing the distance between the well foundations:

a. It is a good practice to propose the piers of new bridge in the same alignment as that of the piers of the existing bridge.

b. The desirable minimum clear distance between the existing and new foundations from the consideration of interaction of scour regions is 6D (where D is diameter of well).

c. There should be no interference in the pressure bulb zone of foundations of existing and proposed bridge.

d. There should be no reduction in passive earth pressure due to excavation of new foundation in close vicinity of the existing foundation.

e. Sufficient space is required for easy operation of machinery and equipment for construction of proposed bridge to avoid any chance of interference to the train movement on the existing bridge.

f. Effect of extra load of excavated material, machinery, equipment etc. on the surrounding soil mass and foundation of existing bridge.

In case, the Railway does not consider carrying out detailed technical studies, the above guidelines may be followed. CBEs should finally decide, only after detailed investigation, whether reduction in distance between the existing and new foundations from the distance as per guidelines prescribed above is required.

Accordingly, CBEs should finally decide the distance between the well foundations keeping in view the above guidelines and site specific requirements.

15/7/19
(V.K. Srivastava)
Executive Director/Structures

Copy to: EDCE/B&S, Railway Board, Room No.-140A, Rail Bhawan, New Delhi-110 001.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAIL MANTRALAYA

....

No.2005/CE-I/BR-II/8

New Delhi, Dt.: 28.5.09

Principal Chief Engineers,
All Indian Railways

General Manager (Con),
N.F. Railway,
Maligaon, Guwahati – 11

CAO (Con)s,
All Indian Railways

Sub: Adoption of steel super structure of bridges for spans more than 24.4m

.....

1.0 Over the years a number of PSC girders for longer spans have been provided on Indian Railways. There are no detailed guidelines for inspection and defects identification of PSC bridges. Further in case of any eventuality on such bridges, particularly long spans, we do not have any immediate temporary restoration measures available other than upto 80 ft. temporary span arrangements. At the same time, steel bridges are known to have longer life than others and on IR we have any number of examples. Thus, even the cost of steel bridges would be comparative particularly when viewed on life cycle basis. Besides this, fractures in concrete bridges are sudden and can be disastrous. For the sake of ballasted deck, if the composite decks are required, say for LWR, these too can be provided. For such like factors on J&K project, it was decided to go for steel construction.

2.0 In view of features brought out in para 1.0, it has been decided by Board (ME) that henceforth on all new bridge works being planned for spans more than 24.4m, steel girders should be used. For any deviations, approval of Railway Board may be taken. However, this would not apply to ongoing projects where planning has already been finalized for use of PSC girders.

(S.K. Malik)
Adviser (Civil Engg.)
Railway Board

Copy for information and necessary action to:

i. ED/B&S, Research Design and Standards Organisation, Lucknow.
ii. ED/Structures, Research Design and Standards Organisation, Lucknow.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

No.2014/CE-III/BR/Bridge Policy **New Delhi, dt. 15 .11.2016**

Principal Chief Engineers
All Zonal Railways.

Chief Administrative Officers (Construction)
All Zonal Railways.

Sub: Type of Foundation for Railway Bridges.
Ref: Board's letter no. 2013/CE-III/BR/RDSO/Misc dated 15.09.2014.

Vide letter under reference above, Railways were advised to adopt Open Foundation for new railway bridges as far as possible. However, in special cases Railways were given a dispensation, **only with the approval of PCE/CAO(C),** to opt for Well/Pile Foundation over Open Foundation taking into account the site conditions and other technical/economic considerations. However, it has been brought to the notice of Board that there have been procedural delays in this system.

In view of the above, it has now been decided that the Zonal Railways may decide the type of foundation to be adopted in case of new bridges at the level of concerned SAG officers/CBE to curtail the procedural delays. However, such decision should be based on comparative analysis and techno-economic considerations of Open/Well/Pile Foundations duly keeping in view the Project timelines.

15.11.16
(A. K. Singhal)
Executive Director Civil Engineering/ B&S
Railway Board.

Copy for information and necessary action to:

1. **Chief Bridge Engineers, All Zonal Railways**
2. **Executive Director (B&S), RDSO, Lucknow**
3. **Executive Director (Structures), RDSO, Lucknow**
4. **CMD, RVNL, New Delhi in ref. to his D.O. no. 2008/RVNL/P/Policy/431/Vol-I dt. 10.10.16 addressed to Member Engineering, Railway Board.**

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

No. 2014/CE-III/BR/Bridge Policy **New Delhi, Dated: 21/04/2015**

Principal Chief Engineers
All Indian Railways.

Chief Administrative Officers (Const.)
All Indian Railways.

Sub: Span arrangement of Railway Bridges.

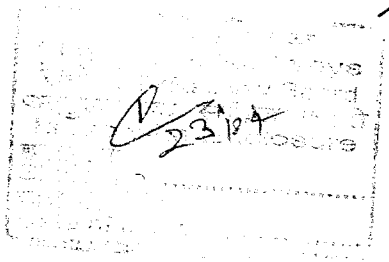
Large number of railway bridges are being constructed during doubling, tripling, gauge conversion, new lines, on replacement account of existing bridges etc. The span arrangement and requisite waterway of these bridges are being decided based on hydrological parameters, economy in design, ease of construction etc. Selection of spans should be carefully planned to ensure that vertical profile is maintained to ensure smooth running of trains. Also, track center to be generally maintained so that reverse curves are not introduced on the bridge approaches. This can be achieved by constructing foundation by adopting adequate safety measures and modern construction methods to enable safe train operation on the adjacent track. Needless to say that adequate waterway is very important parameter in the design of new bridges. Therefore, it is important to consider all the relevant parameters like topography, catchment area, run of coefficient etc prevalent during the time of bridge construction.

You are requested to acknowledge the receipt of this letter.

Sinha
(N.K. Sinha) 21.4.15
Advisor/Bridge
Railway Board
O/C.

Copy to:-
AM(CE)
AM(W), ED(W), ED(WP), EDCE(B&S), DCE(B&S)

Please issue 38 Copy (16 Envelope; 22 Copy)
22.04.15.



Government of India
Ministry of Railways
(Railway Board)

No. 2013/CE-III/BR/RDSO/Misc. **New Delhi, dated 11-08-2014**

Principal Chief Engineer,
All Indian Railways.

Chief Administrative Officer (Con)
All Indian Railways

Sub: Use of Standard drawings on railway system.
Ref: This office letter of even No. dated 4/6/2014.

Vide this office letter under reference above, railways were advised that standard drawings available with RDSO be used as far as feasible while planning any work and in case, non standard drawings are required to be used, specific approval from RDSO may be obtained giving detailed reasons/justification for not using the standard drawings. The intentions was to get benefit of better designs so as to avoid unnecessary duplication of works and wastage of time in designing the non standard drawings.

2.0 On the above issue, many railways have represented to review the instructions stating that they are having large no. of targeted works relating to new line, doubling, ROB, RUB etc. in which using non standard drawings are unavoidable and getting specific approval from RDSO will take time to finalise the plans and may result in delay in execution of targeted works.

3.0 In view of above, the matter has been reviewed and it has been decided that railways should use standard drawings for superstructure as far as feasible. However, in case non standard drawings are unavoidable then railway may use the same with the specific approval of concerned CAO(C)/PCE. While according approval of the same, CAO(C)/PCE should record the specific reasons/justification for using non standard drawing. A copy of the drawing alongwith related design/details may be furnished to RDSO.

11/8/14

(V.K.Jain)
Director Civil Engg./ B&S
Railway Board

Copy for information and necessary action to:

1. **Chief Bridge Engineers, All Indian Railways**
2. **CMD, Rail Vikas Nigam Ltd, New Delhi**
3. **Executive Director/B&S/RDSO, Lucknow**
4. **Executive Director/Structures/RDSO, Lucknow**

SL NO - 1060

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

No. 2017/53/CE-III/BR/Side Pathway

New Delhi, dt. 27.11.17

Executive Director/B&S
RDSO, Manak Nagar
Lucknow.

Dir SBE
Jt dir SB II
Jt dir T&I

28/11/17

Sub: Provision of Side Pathways on Girder Bridges.

Provision of Side Pathways on Girder Bridges has been under consideration from safety point of view of railway personnel. After considering the matter, it has been decided by Board that Side Pathways shall be provided in all new girder bridges to ensure safety of maintenance staff as well as for use in emergency. You are accordingly advised to issue the drawings for standard spans with provision of Side Pathway within one month's time.

2.0 As far as Side Pathways on existing girder bridges are concerned, you are advised to explore how the Side Pathways can be provided in existing girders.

3.0 The action taken on above may be furnished within a week's time for perusal of Board (CRB & ME).

27/11/17

(Piyush Agarwal)
Principal Executive Director/ Bridges
Railway Board.

Copy, for information and necessary action, to:

1. DG, RDSO, Lucknow.
2. PCEs, All Indian Railways in continuation of Board's letter no. 2012/CE-III/BR/Rly Fed. Dt. 23.11.17.

File No.RDSO-BnS0ESTR(BnF)/3/2021-O/o ED/STRUCTURES/RDSO

26/4/19

S.No. 1201/1

Rajeev Verma
राजीव वर्मा
Executive Director/B&S
कार्यकारी निदेशक/पुल एवं संरचना

सत्यमेव जयते

भारत सरकार–रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ– 226011
Government of India-Ministry of Railways
Research Designs & Standards Organisation
Lucknow- 226011
Rly. : 032-42120 Phone / Fax : 0522-2450398
Email : edbsrdso@gmail.com

No.CBS/DPG1

Dated: 24-04-2019

I. General Manager (Con.) N. F. Railway, Maligaon, Guwahati-781011

II.

Railway	Principal Chief Engineer	Chief Administrative Officer (Constn.)
Central	Mumbai CSMT-400001.	New Administrative Building, Mumbai CSMT-400001
Eastern	Fairlie Place, Kolkata-700001.	14, Strand Road, Kolkata-700001.
East Central	Hazipur-844101.(Bihar)	(i) CAO/C/North, Mahendru Ghat, Patna- 800004 (ii) CAO/C/South, Mahendru Ghat, Patna- 800004
East Coast	Rail Vihar, Bhubaneshwar-751016.	Rail Vihar, Bhubaneshwar-751016.
Northern	Baroda House, New Delhi - 110001.	(i) CAO/C-I, Kashmere Gate, Delhi- 110006. (ii) CAO/C-II, Kashmere Gate, Delhi- 110006. (iii)USBRL Project, Satyam Resort Complex, Trikuta Nagar Extn., Jammu Tawi- 180012
North Central	Subedar Ganj, Allahabad-211001.	Subedar Ganj, Allahabad-211001.
North Eastern	Gorakhpur- 273 001.	Gorakhpur- 273001.
Northeast Frontier	Maligaon, Guwahati - 781011.	Maligaon, Guwahati-781011.
North Western	Jaipur- 302017.	Jaipur-302017.
Southern	Park Town, Chennai-600 003	(i) CAO/C, Egmore, Chennai- 600008 (ii) CAO/C/ERS, Ernakulam (Kerala)
South Central	Rail Nilayam,Secunderabad-500371.	Rail Nilayam, Secunderabad-500 371.
South Eastern	Garden Reach, Kolkata-700 043	Garden Reach, Kolkata-700 043
South East Central	Bilaspur-495004	Bilaspur-495004
South Western	Hubli-580023	18, Millers Road, Bangalore-560 046.
Western	Churchgate, Mumbai-400020.	Churchgate, Mumbai-400 020.
West Central	Jabalpur -482001	Jabalpur -482001

Sub: Provision of side pathways on girder bridges.
Ref: (i) Railway Boards letter no. 2017/53/CE-III/BR/Side Pathway dated 27.11.2017
(ii) This office letter no. CBS/DPG/1 dated 01.01.2018.

****

With reference to above subject, Railway Board advised RDSO to issue drawings for standards spans with provision of side pathways vide ref (i). Vide ref (ii), RDSO has issued the drawings for side pathways which are applicable for new as well as existing girder bridges.

Details of typical arrangements for pathways for plate, composite and open web girders are reiterated below for the awareness of field officials for strict compliance:

S. No.	Subject	Drawing No.
1	Side Pathway on Composite girder, parallel to track	CBS-0046
2	Side Pathway on Open web girder, parallel to track	CBS-0045
3	Side Pathway on steel plate girder parallel to track	CBS-0042-0042/3
4	Inspection platform and pedestal for bearing	CBS-0016

File No.RDSO-BnS0ESTR(BnF)/3/2021-O/o ED/STRUCTURES/RDSO

All above mentioned drawings has been uploaded on RDSO website. This can be accessed through rail net at following link:

http://10.100.2.4/drawing/index.aspx ⟶ B&S Drawings ⟶ Side Pathway

This is for your information and giving wide publicity among field officials.

24/4/19

(Rajeev Verma)
Executive Director (B&S)

Copy to:

i) Director, IRICEN, Pune-411001

ii) Executive Director (Civil Engg.) B&S, Railway Board, New Delhi-110001.

iii) Managing Director, RITES Ltd., RITES Bhawan, Plot no. 1, Sect. 29, Gurgaon, Haryana-122001.

iv) Managing Director, IRCON, Palika Bhawan, Sector-XIII, R K Puram, New Delhi-110066.

v) Chairman & Managing Director, KRCL, Belapur Bhavan, Plot no. 6, Sect.-II CBD Belapur, Navi Mumbai-400614.

vi) Managing Director, RVNL, C-2/10, Safdarjang Development Area, Arvindo Marg, New Delhi-110016.

vii) Managing Director, Dedicated Freight Corridor Corporation of India Ltd., 5th Floor, Pragati Maidan, Metro Station Building Complex, New Delhi-110001.

24/4/19

(Rajeev Verma)
Executive Director (B&S)

भारत सरकार - रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ - 226 011
EPBX (0522) 2451200
Fax (0522) 2458500

Government of India-Ministry of Railways
Research Designs & Standards Organisation
Lucknow - 226 011
DID (0522) 2450115
DID (0522) 2465310

No. CT/IM/LWR (Part)

Date 19.03.2014.

To

Principal Chief Engineer,
All Zonal Railways (as per mailing list)

Sub.: Continuation of LWR/CWR over ballasted deck bridges on Indian Railways.
Ref.: Railway Board letter no. 2011/CE-II/TK/LWR, dated 05.02.2014.

1.0 Based on recommendations of Track Standard Committee during 78th meeting, an HAG committee was nominated vide Railway Board letter no. 2007/CE-II/TSC/1 dated 19.08.08. The committee submitted the report vide letter no. CT/IM/LWR/Part dated 08.07.2013. Railway Board vide letter no. 2011/CE-II/TK/LWR dated 24.09.13 have approved the recommendation made by HAG committee for continuation of LWR on ballasted deck bridges with the fulfillment of conditions as mentioned in the report of HAG committee and directed to circulate the approved instructions to all Zonal Railways for compliance.

2.0 "Instructions on continuation of LWR/CWR on ballasted deck bridges with bearings on Indian Railways" as approved by Railway Board vide letter referred above is enclosed as Annexure-I.

3.0 In compliance to instructions contained in letter under reference, the special maintenance instructions for bridges where LWR/CWR is continued as per these provisions has been framed and is enclosed as Annexure-II. These instructions are only indicative and will be reviewed based on results of instrumentation and feedback from Zonal Railways.

4.0 Further necessary action shall be taken by Zonal Railways in this regard.

दिनांक.....
पुल एवं संरचना निदेशालय
कार्य०निदे० / पुल
निदेशक / एस०बी०–I
निदेशक / एस०बी०–II
निदेशक / परी०एवं निरी०
संयु निदेशक / निरी०
वरि०अधि०अभि० / एस०बी०–I
अधि० / पु०सं०

As above.

(Satish Kumar Pandey)
Executive Director/Track-I
for Director General/Track

Copy to: (i) Director/IRICEN, Pune for information.
(ii) Executive Director/Civil Engineering/Planning, Railway Board, New Delhi for information.
(iii) Executive Director/B&S/RDSO for information and necessary action.