19.1.2022

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GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No.2015/CE-III/BR/Structure Code **New Delhi Dt: 19.01.2022**

Principle Chief Engineer,
Chief Administrative Officers (Construction),
All Zonal Railways.

Sub: Construction of RCC Boxes for Railway Bridges
Ref: Board's letter No. 2015/CE-III/BR/Substructure Code dated 03.11.2021

Vide above reference, instructions were issued for construction of RCC boxes for railway bridges on the zonal railways. Recently, some issues have been raised by the project executing agencies in this regard. Accordingly, in supersession of existing instructions, following has been decided:

(i) RCC boxes shall not be constructed for major bridges on new lines/gauge conversion/doubling works. In exceptional cases on feasibility consideration (like insufficient vertical clearance, restricted land availability, to avoid damage to existing wing wall etc), RCC box may be constructed for major bridges with adequate cushion (on replaceability consideration to accommodate suitable temporary girder) duly considering the strata underneath the bridge with approval of CAO(C)/CBE on case to case basis.

(ii) RCC boxes may be constructed for minor bridges on new lines/gauge conversion/doubling works up to a span of 3 m with provision of adequate cushion (on replaceability consideration to accommodate suitable temporary girder) duly considering the strata underneath the bridge with approval of CE(C). In case it is not found feasible to provide desired cushion and/or RCC box of span more than 3 m is to be provided, approval of CAO(C)/CBE shall be taken.

(iii) Use of multiple RCC boxes shall not be permitted. However, standard RDSO design/specially designed multi-cell RCC boxes may be permitted on feasibility consideration with approval of CAO(C)/CBE.

(iv) Segmental RCC boxes for construction of railway bridges (carrying waterway) shall not be generally permitted. However, in exceptional cases on feasibility consideration, segmental RCC boxes may be permitted for railway bridges with approval of CBE. Adequate precautions shall be taken to ensure that there is no seepage through joints.

(v) For construction of RUB/LHS, RCC boxes may be provided. Use of segmental RCC boxes may also be permitted with approval of the CBE.

O/C

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Signature
20-1-22
Date of Issue

(vi) For building/rebuilding of bridges on existing lines, efforts should be made to provide girder/slab bridges as far as possible and RCC boxes shall be provided only as last resort with approval of CBE.

(vii) In all cases where RCC boxes have been constructed or planned to be constructed, properly designed protection works such as drop wall, curtain wall, flooring etc duly considering the scour criteria and approved by CBE or CE/C shall be provided. The provisions shall also be incorporated in the GAD and approved by competent authority.

(viii) Only standard RDSO design RCC boxes shall be constructed at all locations. In exceptional cases where it is not feasible to adopt RDSO designs, specially designed RCC boxes may be constructed with the approval of PCE or CAO/C. It shall be ensured that provisions of para 13.4.1 of "*Concrete Bridge Code – Reprint 2014*" are duly complied while designing the non-RDSO standards RCC boxes.

This issues with the approval of Board (Member/Infra).

19/1/2022

(O. N. Sharma)
Director CE (B&S)

Copy for information and necessary action:

1. **Chief Commissioner of Railway Safety**
2. **CMD/RVNL, IRCON, KRCL, MRVC, RITES**
3. **DG/RDSO & IRICEN**

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Ministry of Railways
Railway Board
ISSUED
20-1-22

Para No.	Provision available in Board's letter issued on 03.11.2021	Provisions kept in proposed Board's letter to be issued from Board now	Highlights of changes in proposed instructions to facilitate field work
1	RCC boxes shall not be constructed for major bridges on new lines/gauge conversion/doubling works. In exceptional cases on feasibility considerations and only in case of doubling works (like insufficient vertical clearance, restricted land availability, to avoid damage to existing wing walls etc.), RCC box may be constructed for major bridges duly considering the strata underneath the bridge with the approval of CBE on case to case basis after recording the reasons.	RCC boxes shall not be constructed for major bridges on new lines/gauge conversion/doubling works. In exceptional cases on feasibility consideration (like insufficient vertical clearance, restricted land availability, to avoid damage to existing wing wall etc), RCC box may be constructed for major bridges with adequate cushion (on replaceability consideration to accommodate suitable temporary girder) duly considering the strata underneath the bridge with approval of CAO(C)/CBE on case to case basis.	Provision of minimum cushion kept to minimise maintenance issues in service and facilitate replacement of boxes in future due to any reason.
2	RCC boxes shall not be constructed for minor bridges on new lines/gauge conversion/doubling works. In exceptional cases, RCC boxes may be constructed for minor bridges duly considering the strata underneath the bridge with the approval of CAO/C on case to case basis after recording the reasons.	RCC boxes may be constructed for minor bridges on new lines/gauge conversion/doubling works up to a span of 3 m with provision of adequate cushion (on replaceability consideration to accommodate suitable temporary girder) duly considering the strata underneath the bridge with approval of CE(C). In case it is not found feasible to provide desired cushion and/or RCC box of span more than 3 m is to be provided, approval of CAO(C)/CBE shall be taken.	For small spans up to 3 m, RCC boxes can now be constructed with approval of CE/C with minimum cushion to minimise maintenance issues in service and facilitate replacement of boxes in future due to any reason. For constructing the boxes more than 3 m span or with less cushion, approval of one level higher authority or CBE made necessary.
3	Use of multiple RCC boxes shall not be permitted. However, standard RDSO design/specially designed multi-cell RCC boxes can be permitted as per the site conditions.	Use of multiple RCC boxes shall not be permitted. However, standard RDSO design/specially designed multi-cell RCC boxes may be permitted on feasibility consideration with approval of CAO(C)/CBE.	Authority to permit the use of multi-cell RCC boxes mentioned.
4	Use of segmental RCC boxes for construction of railway bridges (carrying waterway) shall not be permitted. However, for railway bridges in major yards, segmental boxes may be permitted for openings up to 1.2 m with approval of CBE on case to case basis.	Segmental RCC boxes for construction of railway bridges (carrying waterway) shall not be generally permitted. However, in exceptional cases on feasibility consideration, segmental RCC boxes may be permitted for railway bridges with approval of CBE.	Permission to grant approval of segmental construction delegated to CBE for all cases.

5	In case of construction of RUB/LHS, RCC boxes can be provided. Use of segmental RCC boxes can also be permitted with approval of the CBE on case to case basis.	For construction of RUB/LHS, RCC boxes may be provided. Use of segmental RCC boxes may also be permitted with approval of the CBE.	No major change. Para made more explicit and easy to interpret.
6	In existing lines, efforts should made be to provide girder/slab bridges as far as possible and RCC boxes shall be provided only as last resort with approval of CBE on case to case basis after recording the reasons.	For building/rebuilding of bridges on existing lines, efforts should be made to provide girder/slab bridges as far as possible and RCC boxes shall be provided only as last resort with approval of CBE.	No major change. Para made more explicit and easy to interpret.
7	In all cases where RCC boxes have been constructed or planned to be constructed, properly designed protection works such as drop wall, curtain wall, flooring etc duly considering the scour criteria and approved by CBE or CE/C shall be provided. The same shall also be incorporated in the GAD and approved by competent authority.	In all cases where RCC boxes have been constructed or planned to be constructed, properly designed protection works such as drop wall, curtain wall, flooring etc duly considering the scour criteria and approved by CBE or CE/C shall be provided. The provisions shall also be incorporated in the GAD and approved by competent authority.	No change
8	Only standard RDSO design RCC boxes shall be constructed at all locations. In exceptional cases where it is not feasible to adopt RDSO designs, specially designed RCC boxes may be constructed with the approval of CBE or CE/C on case to case basis after recording the reasons. It shall be ensured that provisions of para 13.4.1 of "*Concrete Bridge Code – Reprint 2014*" are duly complied while designing the non-RDSO standards RCC boxes.	Only standard RDSO design RCC boxes shall be constructed at all locations. In exceptional cases where it is not feasible to adopt RDSO designs, specially designed RCC boxes may be constructed with the approval of PCE or CAO/C. It shall be ensured that provisions of para 13.4.1 of "*Concrete Bridge Code – Reprint 2014*" are duly complied while designing the non-RDSO standards RCC boxes.	Approval for PHOD made mandatory for use of non-standard designs as per standing instructions.