

NORTHERN RAILWAY

No. 308-W/0/3/Genl./Br./S&D/Part-II
Dated 18.12.2024

Headquarters office,
Baroda House, New Delhi.

**CAO/C/NR, CAO/C-II/NR, CAO/C/RSP/NR
DRM/DLI, FZR, LKO, MB, UMB**

Sub: Regarding approval of General Arrangement Drawing of ROB works.

Ref: (i) Rly Bd letter no. 2015/CE-IV/ROB/78 (Pt.) New Delhi dated 04.06.2019.

(ii) Rly Bd letter no. 2015/CE-IV/ROB-RUB/Misc New Delhi dated 15.02.2023.

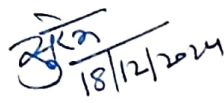
(iii) Rly Bd letter no. 2017/CE-IV/RUB/88 New Delhi dated 30.10.2023.

During scrutiny of GADs of ROB works in HQ, it has been noticed that non-standard spans (i.e. non-RDSO spans) in Railway portion (of ROB) are being proposed (in routine manner, without exploring all possible alternatives). Similarly, location of common piers/abutments (of ROB) is also required to be decided judiciously, keeping in view all (foreseeable) future operational requirements. In this regard, Guidelines/Instructions from Railway Board have already been circulated time to time.

Following instructions are being reiterated for necessary action by concerned agencies/units/Divisions:

- (i) Only standard spans shall be provided in Railway portion of ROB as far as possible. In exceptional cases where standard spans are not feasible due to site constraints, non-standard span can be permitted by CBE with the approval of PCE (**Authority: Railway Board letter under reference 'iii' as above**). However, in such cases (where non-standard span is proposed), CPS shall be got approved from CBE before initiating GAD for signature of Divisional officers.
- (ii) Pier/abutment of ROB in yards should be kept outside Railway boundary, to the extent possible. At other locations, if future requirement of track is not justified, the location of pier/abutment can be accommodated within 45m, road span of track can be up to 45m (**Authority: Railway Board letter under reference-'ii' as above**). However, cases of exception to these instructions, CPS should be got approved from CBE before initiating GAD for signature of Divisional officers.
- (iii) In Railway portion, bow string girder should be used very judiciously and only RDSO standard span shall be proposed in Railway portion, to the extent possible (**Authority: Railway Board letter reference-'i' as above**). At locations where bow string girder is necessitated due to site constants, CPS should be got approved from CBE before initiating GAD for signature of Divisional officers.
- (iv) No tender of ROB/RUB work should be invited before approval of GAD by CBE.

This is issued with approval of PCE/NR.


(S K Sapra)
CBE/NR

CC: Secy to Pr.CE/NR for kind information of Pr.CE/NR.

CC: SrDEN/C/ DLI, FZR, LKO, MB, UMB for information & necessary action.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

Instruction No.18 /2019

No. 2015/CE-IV/ROB/78 (Pt.)

New Delhi Dt: 04.06.2019

Principal Chief Engineer,
& Chief Administrative Officer (Con.),
All Zonal Railways,
MD, DFCCIL,
CMD, RVNL,
CMD, IRCON.

Sub: Failure of non-standard Bow string girder bridge (ROB).
Ref: (i) Board's letter of even number dated 21.05.2018
(ii) Board's letter of even number dated 04.06.2018

Failure of Bow string girder bridge (ROB) has been reported by North Central Railway. The approval of bow string girder (non standard) was given by Railway in 2015. The design of the ROB was proof-checked by IISc/Bangalore and the construction of the ROB was completed & commissioned in 2018.

The said bridge has now failed at joints within 4-6 months of its service. This puts a big question mark on the system of proof checking from outside agencies (even from premier institutes of India). In this particular case, non standard girder has been adopted, whereas, drawing of RDSO standard girder of nearest span was already available. As such, the standard girder could have been adopted with minor modification in pier location at site. Similar failure has also been reported by Northern Railway. Both CBEs had confirmed telephonically of having adequately protected the track at these 2 locations. Detailed report be submitted by CBE/NCR & NR towards these failures.

Instructions were already issued to Zonal Railways (ref. (i) & (ii)) that "only RDSO standard span" will be used. It was expected that Zonal Railways are following the instructions.

Para A(6), B(2) & B(3) of MoU between MoR and MoRTH dated 10.11.2014 also stipulates regarding use of RDSO standard spans:

"Para A (6): MORTH/NHAI should construct only viaduct in Railway Portion and pier/abutment should be located just out-side/at the railway boundaries to the extent possible based on available standard RDSO's span.

Para B (2): Ministry of Railways has developed a web-based programme for online submission for getting expeditious approval of various drawings related to

ROBs/RUBs within 60 days. This programme includes all the RDSO standard span drawings, check list to be followed for preparation of GAD and standard MoU.

Para B (3): To avoid unusual occurrence during launching of railway spans, Railway will supervise and facilitate launching of girders across railway bridge portion, without any supervision charges."

However, while position has been taken from different Zonal Railways through Whatsapp, it is observed that number of non standard bow string girders exists in Railway system. The position of girder as conveyed by Zonal Railways is as under:

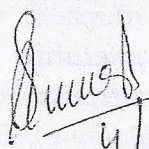
Rly.	CR	ER	ECR	ECOR	NR	NCR	NER	NFR	NWR	SR	SCR	SER	SECR	SWR	WR	WCR
Nos	0	1	2	0	1	2	2	0	0	0	0	0	0	0	0	0

Zonal Railway to recheck/re-verify the above position and these girders are to be immediately checked from safety point of view & remedial action taken. Status be informed to this office latest by 15.06.2019.

Following decisions are reiterated for immediate implementation:

- Only RDSO approved standard span bow string girder will be adopted.
- In rare to rare case, if it is unavoidable to use non standard span, then the design should be finally cleared by RDSO only. Railway Board should be intimated for use of this non standard design.

The above can be easily implemented at the initial stage of approval of GAD (by CBEs of your Railway).


4/6/19
(Subodh Kumar)
Director CE/B&S-II

Copy to: GMs of Zonal Railways for information.

By-Spec post (17)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2015/CE-IV/ROB-RUB/Misc

New Delhi, dated 15.02.2023

Principal Chief Engineer,
All Indian Railways.

Chief Administrative Officer
All Indian Railways.

Sub: - Issues related to MoRTH/NHA.

Ref: -This office letter of even no dated 29.10.2019.

On the issue of the length of span of ROB within Railway boundary instructions were issued vide letter dated 29.10.2019 are re-iterated and elaborated further as under based on decisions taken on the matter during meeting held on 22.01.2023 between Ministry of Railways and MoRTH;

- "For ROB being constructed in Railway yard or near yards, pier/abutment should be located just out-side/at the railway boundaries to the extent possible.
- At other locations, if future requirement of track is not justified/ can be accommodated within 45 m, road span of track can be up to 45 meter.
- Provision of pier location at boundary need not to be blindly insisted upon at all locations. As far as possible large span should be adopted considering future requirements.
- In case of dispute matter shall be decided by GM of Zonal Railway considering the future requirement and site feasibility.
- To speed up the approval process preference should be given to already available standard spans of RDSO/ spans included in "Compendium for Road over Bridges on Indian Railway (Report BS-132)" amended time to time in Railway portion. However, NHA/MoRTH may come up with new designs for superstructures for larger span in consultation with RDSO (Research Design and Standard Organization).

Zonal railways are advised to ensure finalization of drawings as per above guideline. No delay on this account should occur.

This issues with the approval of PED/Bridges.


15-02-23
(L. L. Meena)
Director CE (B&S)
Railway Board

- Copy to:
- 1). DG/MoRTH for information please.
 - 2). Chairman/NHA for information please.
 - 3). PED/Infra-II/RDSO for information please.



भारतसरकार GOVERNMENT OF INDIA
रेल मंत्रालय MINISTRY OF RAILWAYS
(रेलवे बोर्ड RAILWAY BOARD)

No. 2017/CE-IV/RUB/88

New Delhi, dated 30.10.2023

Principal Chief Engineers,
All Zonal Railways

Sub: Regarding approval of General Arrangement Drawings, Structural Design & Drawing and Launching Scheme of NHAI/ MoRTH etc.

Ref :- i. RB letter no. 2016/54/CE-III/BR/RDSO/Misc. dated 12.02.2021

ii. RB letter no. 2015/CE-IV/ROB/78Pt.I dated 26.05.21

iii. RDSO letter no. letter no. CBS/ROB/Arch dated 19.02.2021

Elimination of LC Gates is one of the most prioritised items for Indian Railways. Different authorities of MoRTH/ NHAI are executing Road crossing works in lieu of LCs as well as on other NH corridor. Many other agencies are also executing overhead track crossing works for their projects. This has generated additional work load on existing design cells of Zonal Railways where detailed scrutiny of GADs, designs drawings and Launching Schemes (TADs) etc. is being done for the schemes submitted by various agencies for approval of CBE. Various instructions have been issued in past to enable the railways to expedite the approvals. In order to streamline the process for approval of NHAI/ MoRTH cases following instructions are issued to supplement:-

1. Standard designs only for ROB's shall be used as far as possible. Only in exceptional cases of ROB's etc. where site constraints are such that standard spans are not feasible, non-standard span can be permitted by CBE with the approval of PCE.
2. Progress of approval of GADs/Drawings/Designs should be periodically reviewed in the monthly /Bi-monthly meetings with concerned unit of MoRTH/ NHAI. The meeting shall be attended by Senior Executing officer of concerned Road Authority with competent design staff/Consultant so as to resolve technical issues involved. Separate '*one to one*' meeting in specific case may be called, if required. The minutes of all such meetings shall be issued and progress made shall be recorded.
3. While approving the GAD, the reference of RDSO standard drawing is generally given. RDSO may issue alterations /revisions in the Standard Drawing in due course as per feedback from field. It is implied that the latest version of standard drawing as available at the time of approval is to be used. The executing agency can adopt the latest version during fabrication/execution if feasible. No revision of approved GADs on such grounds should normally be warranted.
4. In cases, where non-standard Structures in ROB's are provided, the designs are to be got done by reputed prime consultants, having professional engineers and proof checked by

competent independent consultant or Professor of IIT/NIT or any other Govt. institution of repute, chosen with the consent of CBE. The proof consultant shall conduct independent analysis & submit report on the adequacy of sections adopted in the design drawings. CBE may issue detailed guidelines for proof checking of designs by independent consultants.

5. Requisite certificates regarding adequacy of design shall be taken from concerned consultant / proof consultant/ contractor/ executing authority involved in the non-standard design & execution. CBE may accept the design submitted by prime consultant, with or without modification, based on the recommendations of proof consultant.

6. Zonal Railways are advised to take further steps to strengthen the design cells and improve the skills of the design staff by organising frequent trainings as per the need.

7. GAD & structural design and drawing submitted by NHAI/ MoRTH should be given due priority and their proposals need to be proactively disposed off.

This has approval of PED/Bridge/RB


30/11/23

(Anupum Singh)
Executive Director (B&S)-II
Railway Board

- Copy to:
- 1). GM all Zonal Railways for kind information and necessary action please.
 - 2). Secy./ MoRTH for kind information please.
 - 3). Chairman NHAI for kind information and necessary action please.
 - 4). DG/MoRTH for kind information and necessary action please.
 - 5). PED/Infra-II/RDSO for kind information and necessary action please.



