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Recd. in R & D Dt. 28/11
Sent to PG Sectt Dt. 28/11
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GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

DG	
ADG	
St. ED/ED	
DATE	28/11

No. 2013/CE-III/BR/IRBM

New Delhi, dt. 25.11.2014.

General Manager (Const.), N.F. Railway, Guwahati.
Principal Chief Engineer, All Indian Railways
CAO/Const., All Indian Railways.
FA & CAO, All Indian Railways.

✓ Director General, RDSO/Alambagh, Lucknow
General Manager (Engg)- ICF/Chennai, RCF/Kapurthala, DLW/Varanasi,
CLW/Chittranjan, W&AP/Yelahanka, Bangalore & DMW/Patiala
Chief Commissioner of Railway Safety, Lucknow.

Managing Director, Konkan Railway Corporation Ltd, Navi Mumbai.
Managing Director, IRCON, New Delhi.
Managing Director, RITES, New Delhi.
Managing Director, DMRC, Metro Bhawan, Barakhamba Road, New Delhi
Managing Director, CONCOR, New Delhi.
Managing Director, RVNL, New Delhi.
Managing Director, DFCCIL, New Delhi.
Managing Director, Pipavav rail corporation ltd, New Delhi.
Managing Director, MRVC, Mumbai
Vice Chairman, RLDA, New Delhi

Director, IRICEN, Pune.
Director, IRIEEN, Nasik.
Director, IRISSET, Secunderabad.
Director, IRIMEE, Jamalpur.
Director, IRITM, Manak Nagar, Lucknow.
Director General, National Academy of Indian Railways, Vadodara.

Genl. Secy., AIRF, NFIR, IRPOF, FROA, AIRPFA, DAI (Railways) Rail Bhawan,
New Delhi.

Sub: Advance Correction Slip No.30 to Indian Railways Bridge Manual.

Ministry of Railways (Railway Board) have decided that correction/addition
as indicated in the enclosed Advance Correction Slip No.30 dated 25.11.2014 to
relevant paras of the IRBM be made.

Receipt of this letter may please be acknowledged.

05/12/14
पुल एवं संरचना निदेशालय
कार्यनिदेश/पुल
निदेशक/एस०वी०-1
निदेशक/एस०वी०-11
निदेशक/परी० एवं निरी०
संयु निदेशक/निरी०
जटा०अधि०अ०/एस०वी०-1
पु०स०

DA: As above
Dix/18015
AS
05/12
SSE/Library
05/12/14

Vyas
(V.K. Jain)
25/11/14
Director Civil Engg.(B&S),
Railway Board

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)
INDIANA RAILWAYS BRIDGE MANUAL – 1998

ADVANCE CORRECTION SLIP NO 30 DATED 25-11-2014

The existing paras 102 (b), 504, 505, 506, 507, 508, 509 and Annexure 5/1 may be deleted.

Para 503 may be replaced by the following para:

503 Repair/Maintenance/Rehabilitation/Rebuilding of bridges is to be planned/carried out in accordance with unique rating number assigned to each bridge to represent its physical condition in periodic inspections. When in the course of inspection of bridge, defects are noticed, the inspecting official should examine the bridge thoroughly. Based on the detailed inspection, the inspecting official may impose a suitable speed restriction as appropriate. It is not possible to lay down definite guidelines for imposing speed restrictions on such bridges. Each case has to be judged and decided on its merits by the inspecting officer, keeping in view the nature and severity of defect noticed. Every such bridge may not require speed restriction. The inspecting official may suspend traffic if the bridge is considered unsafe; restoration of traffic shall either be after a further detailed examination or after adequate relieving measures are undertaken.

Para 1104(3) may be replaced as under:

1104(3) The Divisional Engineer shall inspect all those bridges for which the ORN is 1, 2 or 3 and revise/confirm the rating given by the ADEN. Bridges having ORN 1 or 2 after review shall be inspected more frequently at various levels and to be placed under close watch. The schedule and level of inspection of such bridges shall be decided by the Chief Bridge Engineer depending upon severity of the defects noticed.

Heading of Para 515 may be changed to "Arch bridges"


25/11/14

Sent to Mr. D. D. -
Back to Mr. D. D. -
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RECEIVED B&S
DATE 12/2

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2013/CE-III/BR/IRBM

New Delhi, dt. 09.02.2015.

General Manager (Const.), N.F. Railway, Guwahati.
Principal Chief Engineer, All Indian Railways
CAO/Const., All Indian Railways.
FA & CAO, All Indian Railways.

✓ Director General, RDSO/Alambagh, Lucknow
General Manager (Engg)- ICF/Chennai, RCF/Kapurthala, DLW/Varanasi,
CLW/Chittranjan, W&AP/Yelahanka, Bangalore & DMW/Patiala
Chief Commissioner of Railway Safety, Lucknow.

Managing Director, Konkan Railway Corporation Ltd, Navi Mumbai.
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Managing Director, DMRC, Metro Bhawan, Barakhamba Road, New Delhi
Managing Director, CONCOR, New Delhi.
Managing Director, RVNL, New Delhi.
Managing Director, DFCCIL, New Delhi.
Managing Director, Pipavav rail corporation ltd, New Delhi.
Managing Director, MRVC, Mumbai
Vice Chairman, RLDA, New Delhi

Director, IRICEN, Pune.
Director, IRIEEN, Nasik.
Director, IRISSET, Secunderabad.
Director, IRIMEE, Jamalpur.
Director, IRITM, Manak Nagar, Lucknow.
Director General, National Academy of Indian Railways, Vadodara.

Genl. Secy., AIRF, NFIR, IRPOF, FROA, AIRPFA, DAI (Railways) Rail Bhawan,
New Delhi.

Sub: Advance Correction Slip No.31 to Indian Railways Bridge Manual.

Ministry of Railways (Railway Board) have decided that correction/addition
as indicated in the enclosed Advance Correction Slip No.31 dated 09.02.2015 to
relevant paras of the IRBM be made.

12/2/15 Receipt of this letter may please be acknowledged.

DA: As above

13/2
V.K. Jain
12/2/15
Director Civil Engg.(B&S),
Railway Board

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)
INDIA RAILWAYS BRIDGE MANUAL – 1998

ADVANCE CORRECTION SLIP NO 31 DATED 09-02-2015

Para 617 may be replaced by the following para:

Welded Girders

All fillet and butt welds for the fabrication of welded I- Section, are required to be made by submerged arc welding process, either fully automatic or semi automatic type. The entire length of fillet welds is checked by NDT methods and all the butt welds in flanges and web are required to be radiographed and cleared. In the case of composite girders, the top flange plate with channel shear connectors, welded in staggered arrangement, should be made first, before the I-section is made. Suitable jigs and fixtures are needed for fabricating the members by welding, to reduce the extent of warping and distortion.

Site welding is generally prohibited. However, in certain unavoidable cases such as repair/ maintenance work for girders in service it can be permitted by Chief Bridge Engineer/ officer equivalent to the rank of SAG officer and above. During construction, it can be permitted on case to case basis by an officer equivalent to the rank of Chief Administrative Officer/Construction and is confined to connections having low stresses, secondary members, bracings etc. The suitability of parent metal to take welding, should, however, be tested first.

AS
13/2

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Recd. in R & D Dt. 17/3
Sent to DG Sectt Dt. 17/3
Back to R & D Sec Dt. 17/3
Sent to Con. Officer Dt. 17/3

Sc. ED/ED 045
DATE 17/3

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2012/CE-III/BR/BSC/82/Seminar/pt

New Delhi, dt. 12.03.2015.

General Manager (Const.), N.F. Railway, Guwahati.
Principal Chief Engineer, All Indian Railways
CAO/Const., All Indian Railways.
FA & CAO, All Indian Railways.

✓ Director General, RDSO/Alambagh, Lucknow
General Manager (Engg)- ICF/Chennai, RCF/Kapurthala, DLW/Varanasi,
CLW/Chittranjan, W&AP/Yelahanka, Bangalore & DMW/Patiala
Chief Commissioner of Railway Safety, Lucknow.

Managing Director, Konkan Railway Corporation Ltd, Navi Mumbai.
Managing Director, IRCON, New Delhi.
Managing Director, RITES, New Delhi.
Managing Director, DMRC, Metro Bhawan, Barakhamba Road, New Delhi
Managing Director, CONCOR, New Delhi.
Managing Director, RVNL, New Delhi.
Managing Director, DFCCIL, New Delhi.
Managing Director, Pipavav rail corporation ltd, New Delhi.
Managing Director, MRVC, Mumbai
Vice Chairman, RLDA, New Delhi

Director, IRICEN, Pune.
Director, IRIEEN, Nasik.
Director, IRISSET, Secunderabad.
Director, IRIMEE, Jamalpur.
Director, IRITM, Manak Nagar, Lucknow.
Director General, National Academy of Indian Railways, Vadodara.

Genl. Secy., AIRF, NFIR, IRPOF, FROA, AIRPFA, DAI (Railways) Rail Bhawan,
New Delhi.

Sub: Advance Correction Slip No.32 to Indian Railways Bridge Manual.

Ministry of Railways (Railway Board) have decided that correction/addition as indicated in the enclosed Advance Correction Slip No.32 dated 12.03.2015 to relevant para of the IRBM be made.

Receipt of this letter may please be acknowledged.

DA: As above

दिनांक 20/3/15
पुल एवं ढरचना निदेशालय
कार्यनिदेश/पुल एवं ढरचना
निदेशक/एल.डी.सी.
20/3

Dir/CE-III
20/3

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

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)
INDIA RAILWAYS BRIDGE MANUAL – 1998

ADVANCE CORRECTION SLIP NO 32 DATED 12-03-2015

Para 222 2(f) may be replaced by the following para:

"In the case of roller bearings with oil bath, dust covers should invariably be provided to keep the oil free from dirt. Wherever oil bath bearings are provided, inspection of the bearings, after removal of the casings to the extent necessary, should be carried out at least once in 5 years. Checking of oil level, draining out as necessary to detect and remove any water collected at the bottom and replenishing the oil, should be done annually. The oil in oil bath bearing must be changed completely once in every 5 years."

SV

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

2014/CE-III/BR/BSC/83/Seminar/pt

New Delhi, dt. 21.03.2016.

General Manager (Const.), N.F.Railway, Guwahati.

Principal Chief Engineer, All Indian Railways

CAO/Const., All Indian Railways.

FA & CAO, All Indian Railways.

Director General, RDSO/Alambagh, Lucknow

General Manager (Engg)- ICF/Chennai, RCF/Kapurthala, DLW/Varanasi,

CLW/Chittranjan, W&AP/Yelahanka, Bangalore & DMW/Patiala

Chief Commissioner of Railway Safety, Lucknow.

Chairman Cum Managing Director, Konkan Railway Corporation Ltd, Navi Mumbai.

Chairman Cum Managing Director, IRCON, New Delhi.

Chairman Cum Managing Director, RITES, New Delhi.

Managing Director, DMRC, Metro Bhawan, Barakhamba Road, New Delhi

Managing Director, CONCOR, New Delhi.

Chairman Cum Managing Director, RVNL, New Delhi.

Managing Director, DFCCIL, New Delhi.

Managing Director, Pipavav rail corporation ltd, New Delhi.

Managing Director, MRVC, Mumbai

Vice Chairman, RLDA, New Delhi

Director, IRICEN, Pune.

Director, IRIEEN, Nasik.

Director, IRISSET, Secunderabad.

Director, IRIMEE, Jamalpur.

Director, IRITM, Manak Nagar, Lucknow.

Director General, National Academy of Indian Railways, Vadodara.

Genl. Secy., AIRF, NFIR, IRPOF, FROA, AIRPFA, DAI (Railways) Rail Bhawan, New Delhi.

Sub: Advance Correction Slip No.33 to Indian Railways Bridge Manual.

Ministry of Railways (Railway Board) have decided that correction/addition/modification as indicated in the enclosed Advance Correction Slip No.33 dated 21.03.2016 to relevant para of the IRBM be made.

Receipt of this letter may please be acknowledged.

DA: As above

V.K. Jain
21/3/16
(V.K. Jain)
Director Civil Engg.(B&S),
Railway Board

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(Railway Board)**

INDIAN RAILWAYS BRIDGE MANUAL

EDITION - 1998

ADVANCE CORRECTION SLIP NO. 33 Dated 21.03.2016

1. Para 107(1) (a) is amended and 107 (1) (f) is added as follows:-

107(1) (a)	All welded, RCC, PSC and Composite Girders within one year of installation.
107 (1) (f)	Proper installation of Bearings before allowing traffic on any Bridge.
2. Para 222 (3) is amended by adding sub para (c), (d) and (e) as follows:-

222 (3) (c) -	Whenever problems such as excessive bulging, tearing, off-loading, vibrations etc. are noticed, suitable action for repair/rectification shall be taken. If repair/ rectification is not feasible, action for replacement of such bearings shall be initiated.
222 (3) (d)	If results of inspection are not conclusive to warrant replacement of bearings but doubts arise regarding performance of bearings, two representative bearings shall be taken out from service and tested. The result of tests shall be compared with codal provisions to take further decision.
222 (3) (e)	When replacing any Elastomeric Bearing, then all bearings in one line of support (in transverse direction to traffic) of a span to be replaced so as to maintain same stiffness level.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

2014/CE-III/BR/BSC/83/Seminar/pt

New Delhi, dt. 04.10.2016.

General Manager (Const.), N.F.Railway, Guwahati.
Principal Chief Engineer, All Indian Railways
CAO/Const., All Indian Railways.
FA & CAO, All Indian Railways.

Director General, RDSO/Alambagh, Lucknow
General Manager (Engg)- ICF/Chennai, RCF/Kapurthala, DLW/Varanasi,
CLW/Chittranjan, W&AP/Yelahanka, Bangalore & DMW/Patiala
Chief Commissioner of Railway Safety, Lucknow.

Chairman Cum Managing Director, Konkan Railway Corporation Ltd, Navi Mumbai.
Chairman Cum Managing Director, IRCON, New Delhi.
Chairman Cum Managing Director, RITES, New Delhi.
Managing Director, DMRC, Metro Bhawan, Barakhamba Road, New Delhi
Managing Director, CONCOR, New Delhi.
Chairman Cum Managing Director, RVNL, New Delhi.
Managing Director, DFCCIL, New Delhi.
Managing Director, Pipavav rail corporation ltd, New Delhi.
Managing Director, MRVC, Mumbai
Vice Chairman, RLDA, New Delhi

Director, IRICEN, Pune.
Director, IRIEEN, Nasik.
Director, IRISSET, Secunderabad.
Director, IRIMEE, Jamalpur.
Director, IRITM, Manak Nagar, Lucknow.
Director General, National Academy of Indian Railways, Vadodara.

Genl. Secy., AIRF, NFIR, IRPOF, FROA, AIRPFA, DAI (Railways) Rail Bhawan, New Delhi.

Sub: Advance Correction Slip No.34 to Indian Railways Bridge Manual.

Ministry of Railways (Railway Board) have decided that correction/addition/modification as indicated in the enclosed Advance Correction Slip No.34 dated 04.10.2016 to relevant para of the IRBM be made.

Receipt of this letter may please be acknowledged.

DA: As above

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

2014/CE-III/BR/BSC/83/Seminar/pt

New Delhi, dt. 04.10.2016

Copy to: CRB, ME, ML, MS, MM, MT, FC, Secretary

AM/CE, AM(W), AM(Budget), AM(Elect.), AM(Fin.), AM(Sig.), AM(Pig.), AM(RS),
AM(Mech.), AM(PU), AM(Tele.), AM(Traffic), Adv.(Vig.), Adv.(L&A), Adv (Bridges),
Adv(Safety)

EDCE(P), ED(Works), ED(PM), EDV(E), EDTK(M), EDTK(MC), EDTK(P), EDCE(G),
ED(L&A), ED(L&A-II), ED(L&A-III), EDCE(B&S), EDCE(B&S-II), ED(WP), ED(PSU),
EDF(X), EDFX-II & OSD/ME

DTK(MC), DTK(M), Dir(Works) I & II, Dir.(L&A), DVE-I & DVE-II, DCE(P), DTK(P),
Dir(WCS), DCE(B&S-II), Dir(WP), DCE(G), Dir (PSU), Dir Infra (PPP)

✓

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(Railway Board)**

INDIAN RAILWAYS BRIDGE MANUAL

EDITION

- 1998

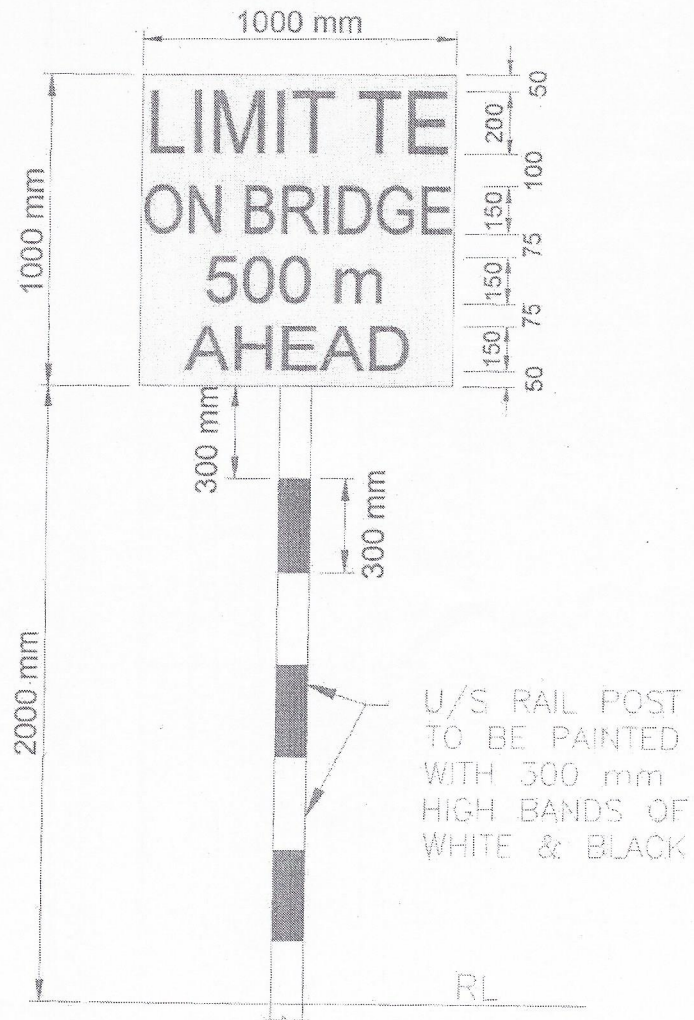
ADDENDUM & CORRIGENDUM SLIP NO. 34 Dated 04.10.2016

Following Para may be added

Para 224 TRACTIVE EFFORT LIMITATION-

1. For allowing higher powered locomotives on old bridges, the Tractive Effort (TE) may have to be limited for multiple loco operation. Such bridges shall be identified by Chief Bridge Engineer. A list of such bridges, where Tractive Effort is limited to 30t per Loco in Double and Multi-headed operations is to be notified in the working Time Table.
2. Locomotive which are thus restricted shall as far as possible be fitted with a "Tractive Effort Limiting Switch" (TELS) which, when operated, shall limit the tractive effort generated by each locomotive to 30T maximum. In Locomotive, where TELS is not provided, Tractive Effort shall be limited to 30T by controlling current (Amperage) of Traction Motor, which is indicated in the current/load meter on the control desk/panel of the locomotive.
3. To indicate the location where Tractive Effort Limiting Switch (TELS) is to be operated or where Tractive Effort is to be limited by controlling current of traction motors, caution indicator for TE Limitation, indicator for TE Limit operation and termination indicator for TE Limitation shall be provided as per the details and distances shown in Annexure-2/13 to 2/16. All the indicators shall be of retro-reflective type.
4. If locos are not able to haul the train, which gets stuck near or on the bridges where TE is limited and required tractive effort is more than 30t per Loco, the driver should not apply more tractive effort and should ask for assisting engine for clearing the train. This instruction should be incorporated in the Working Time Table so that all operating staff is aware of the instructions.
5. Operation of TE Limitation on such bridges as given above is to be made part of Learning of Loco Pilots and Astd. Loco Pilots. This item should be monitored by Loco Inspectors and Safety Counselors during their routine inspection.

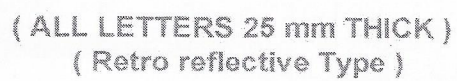
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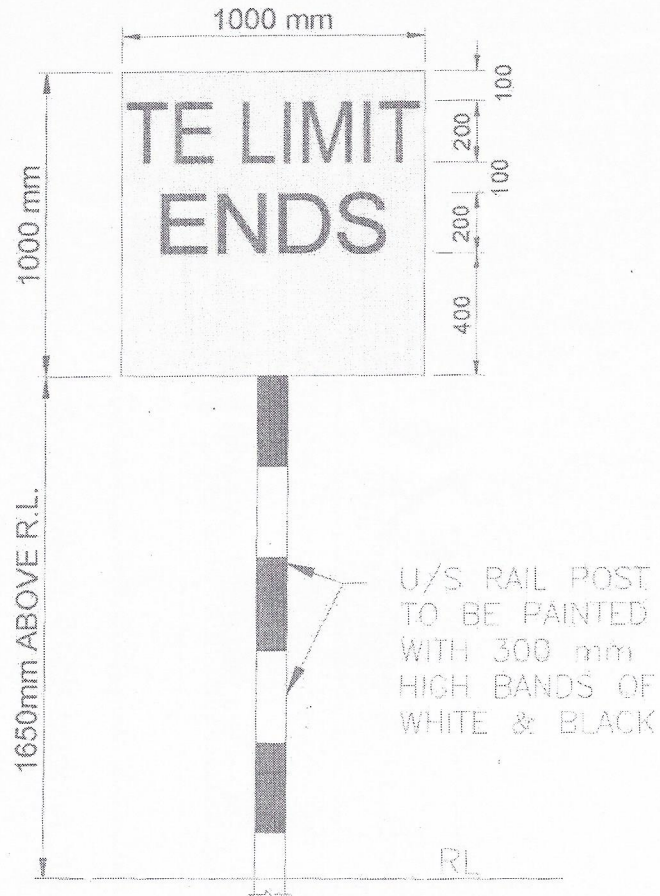


CAUTION INDICATOR FOR TE LIMITATION

(ALL LETTERS 25 mm THICK)
(Retro reflective Type)

Q

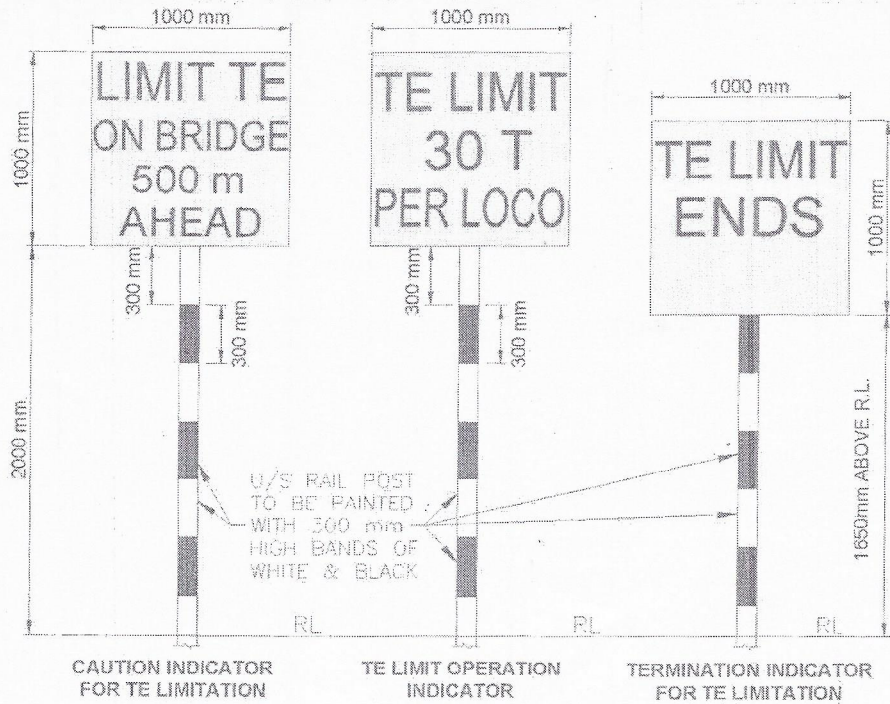




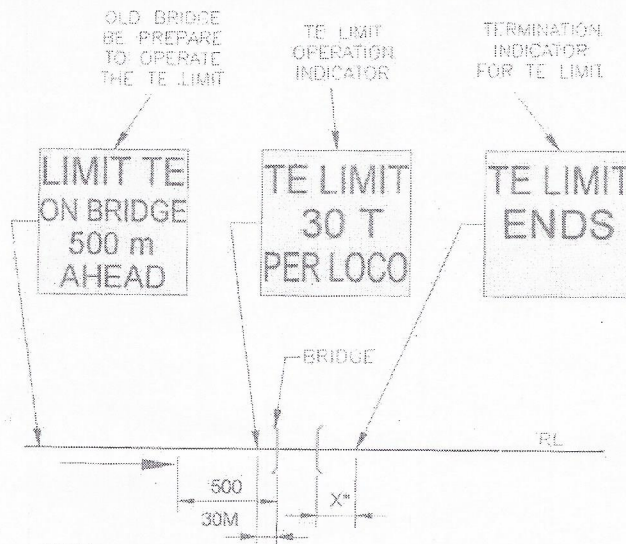
TERMINATION INDICATOR FOR TE LIMITATION

(ALL LETTERS 25 mm THICK)
(Retro reflective Type)

ENGINEERING INDICATORS FOR TE LIMIT OPERATION



POSITION OF TE LIMIT OPERATION INDICATORS



Note-I :-

Case-I:- In case of multiple locos in front only $X^* = 100m$

Case-II:- In case where multiple locos are provided in mid or rear of train.

$X^* = \text{Train length upto last Engine} + 30m$

62

Copy to: CRB, ME, ML, MS, MM, MT, FC, Secretary

AM/CE, AM(W), AM(Budget), AM(Elect.), AM(Fin.), AM(Sig.), AM(Plg.), AM(RS), AM(Mech.), AM(PU), AM(Tele.), AM(Traffic), Adv.(Vig.), Adv.(L&A), Adv (Bridges), Adv(Safety)

EDCE(P), ED(Works), ED(PM), EDV(E), EDTK(M), EDTK(MC), EDTK(P), EDCE(G), ED(L&A), ED(L&A-II), ED(L&A-III), EDCE(B&S), EDCE(B&S-II), ED(WP), ED(PSU), EDF(X), EDFX-II & OSD/ME

DTK(MC), DTK(M), Dir(Works) I & II, Dir.(L&A), DVE-I & DVE-II, DCE(P), DTK(P), Dir(WCS), DCE(B&S-II), Dir(WP), DCE(G), Dir (PSU), Dir(PPP)



INDIAN RAILWAYS BRIDGE MANUAL

EDITION – 1998

ADVANCE CORRECTION SLIP NO. 35 Dated 31.07.2017

Existing Para 313 (2) & 313 (3) is to be replaced as below:

313 (2) In special circumstances, where the free-board can be safely reduced and where adoption of the prescribed values would result in heavy expenditure and / or serious difficulties in construction, the free-board may be relaxed at the discretion of the Principal Chief Engineer / Chief Bridge Engineer as indicated below after taking measures for safety as considered necessary by Principal Chief Engineer / Chief Bridge Engineer:

Discharge(Cumecs)	Minimum Free Board (mm)
Less than 3	600
3 to 30	750
More than 30	No relaxation is permissible

313 (3) After taking measures for safety as considered necessary by Principal Chief Engineer / Chief Bridge Engineer, existing free board may be retained in following cases:

(i) Works other than rebuilding a bridge such as regirdering, strengthening/rehabilitation of substructure / superstructure, changing of bed blocks/bearings etc.

(ii) Extension of existing bridge for doubling purposes.

✓

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

INDIAN RAILWAYS BRIDGE MANUAL

EDITION – 1998

ADVANCE CORRECTION SLIP NO. 36 Dated 27.03.2018

Existing Paras 317 & 318 are to be replaced as below:

317: Approval of bridge drawing for doublings, gauge conversions, new lines and other bridge works:

- (i) In case of new lines/doublings/gauge conversions, General Arrangement Drawings (GADs) for railway bridges where linear waterway is being reduced or vertical clearances are inadequate and where construction is likely to affect any of the existing bridges (during construction or during service) shall be approved by Chief Bridge Engineer (CBE) of the concerned zonal railway. GADs of all other railway bridges shall be approved by concerned Chief Engineer/Construction.
- (ii) General Arrangement Drawings for all railway bridges on open line shall require approval of Chief Bridge Engineer of the concerned zonal railway.
- (iii) General Arrangement Drawings and Launching schemes of all ROBs/RUBs/FOBs/Rail flyovers shall require approval of Chief Bridge Engineer of the concerned zonal railway.
- (iv) The structural design and drawing work for the bridge works (railway bridges /ROBs/RUBs/FOBs/Rail flyovers etc.) being executed by Open line organisation shall be carried out by Bridge branch at HQ level of the concerned zonal railway.
- (v) The structural design and drawing work for the bridge works (railway bridges /ROBs/RUBs/FOBs/Rail flyovers etc.) being executed by Construction organisation shall be carried out and approved by Construction organisation.

318: Approval of bridge drawings for Dedicated Freight Corridor lines:

- (i) General Arrangement Drawings for railway bridges where linear waterway is being reduced or vertical clearances are inadequate and where new bridge (during construction or during service) is likely to affect any of existing bridges, shall be approved by Chief Bridge Engineer of concerned zonal railway. GADs of all other bridges shall be approved by the officer nominated to work as CBE by DFCCIL.
- (ii) General Arrangement Drawings and Launching schemes of all ROBs/RUBs/FOBs/Rail flyovers shall require approval of Chief Bridge Engineer of concerned zonal railway.
- (iii) The structural design and drawing work for the bridge works (railway bridges /ROBs/RUBs/FOBs/Rail flyovers etc.) shall be prepared and approved by the officer nominated to work as CBE by DFCCIL. However, in case of Rail flyovers, proof checking of the designs by IIT is mandatory.



Recd. in R & D DL 14/10
Sent to DG Sectt DL
Back to R & D Sec DL
Sent to Gen. Officer DL

29

DG	
ADG	
ST. ED/ED	BSS
DATE	

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

2017/37/CE-III/BR/BSC/85/Seminar

New Delhi, dt.09.10.2019

General Manager (Const.), N.F.Railway, Guwahati.
Principal Chief Engineer, All Indian Railways
CAO/Const., All Indian Railways.
FA & CAO, All Indian Railways.

Director General, RDSO/Alambagh, Lucknow
General Manager (Engg)- ICF/Chennai, RCF/Kapurthala, DLW/Varanasi,
CLW/Chittranjan, W&AP/Yelahanka, Bangalore & DMW/Patiala
Chief Commissioner of Railway Safety, Lucknow.

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Chairman & Managing Director, IRCON, New Delhi.
Chairman & Managing Director, RITES, New Delhi.
Managing Director, DMRC, Metro Bhawan, Barakhamba Road, New Delhi
Managing Director, CONCOR, New Delhi.
Chairman & Managing Director, RVNL, New Delhi.
Managing Director, DFCCIL, New Delhi.
Managing Director, Pipavav rail corporation ltd, New Delhi.
Managing Director, MRVC, Mumbai
Vice Chairman, RLDA, New Delhi

Director, IRICEN, Pune.
Director, IRIEN, Nasik.
Director, IRISSET, Secunderabad.
Director, IRIMEE, Jamalpur.
Director, IRITM, Manak Nagar, Lucknow.
Director General, National Academy of Indian Railways, Vadodara.

Genl. Secy., AIRF, NFIR, IRPOF, FROA, AIRPFA, DAI (Railways) Rail Bhawan, New Delhi.

Sub: Advance Correction Slip No.37 to Indian Railways Bridge Manual.

Ministry of Railways (Railway Board) have decided that correction/addition/modification as indicated in the enclosed Advance Correction Slip No.37 dated 09.10.2019 to relevant paras of the IRBM be made.

Receipt of this letter may please be acknowledged.

DA: As above

कार्यो निदेशक (प्र० एवं सं०)
निदेशक-I
निदेशक-II
निदेशक-III
निदेशक-IV

Prady
23/10/19

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

18/10

कार्यो निदेशक

Copy to: CRB, ME, ML, MS, MM, MT, FC, Secretary

AM/CE, AM(W), AM(Budget), AM(Elect.), AM(Fin.), AM(Sig.), AM(Plg.), AM(RS), AM(Mech.), AM(PU), AM(Tele.), AM(Traffic), Adv.(Vig.), Adv.(L&A), Adv (Bridges), Adv(Safety)

EDCE(P), ED(Works), ED(PM), EDV(E), EDTK(M), EDTK(MC), EDCE(G), ED(L&A), ED(L&A-II), ED(L&A-III), EDCE(B&S), ED(WP), ED(PSU), EDF(X), EDFX-II & OSD/ME,

EDTK(P) for incorporating in BMS through CRIS.

DTK(MC), DTK(M), Dir(Works) I & II, Dir.(L&A), DVE-I & DVE-II, DCE(P), DTK(P), DSDE, DCE(B&S-II), Dir(MTP), DCE(G), Dir (PSU), Dir(PPP)

Computer Cell / Railway Board for uploading on webiste

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
INDIAN RAILWAY BRIDGE MANUAL**

EDITION – 1998

ADVANCE CORRECTION SLIP NO. 37 Dated 09.10.2019

1. Existing Clause 1102.2(iv) to be replaced as under:-

“PSC Bridge / Composite Girder Bridges Inspection Register (Annexure 11/2a)

2. Insert “11/2a Performa for Inspection of PSC Bridge / Composite Girder Bridges 1102.2” in the list of Annexures at Page xiii.
3. Existing Clause 1107(15) (b) (i) and 1107 (15) (b) (ii) modified and renamed as 1107 (15) (b) as under:-

“ The camber of prestressed concrete girder should be checked by BRI within one year of installation and once in 5 years afterwards by any reliable method and recorded in Annexure 11/2a. One method which can be adopted for spans upto 30 meters is indicated in Annexure 11/14. Alternatively the camber can be recorded by using a leveling instrument or theodolite. The points where the camber is measured should be clearly marked on the underside of the girders so that the readings taken on different years are comparable. While recording camber, temperature should also be recorded and successive readings should be recorded at about the same temperature. Progressive loss of camber is an important indication of deterioration in the condition of bridge.”

4. New Annexure 11/2a is inserted as below:-

**(ANNEXURE-11/2a)
Para 1102.2**

PROFORMA FOR INSPECTION OF PSC BRIDGE / COMPOSITE GIRDERS

Bridge No.chainage..... Block Section..... In
Section..... UP/DN/SL/No. of Multiple Line..... Sub
Division.....Division.....Name of Stream/River..... Completion
Drawing Nos:.....

(All relevant Completion Drawing of Girder, Bearings & Expansion Joints are to be attached at the beginning of PSC Inspection Register and Inspection of Steel Work in Composite Girder Bridges to be continued as per Annexure 11/1 & 11/2



(A) GENERAL DETAILS

1.	Type of Bridge	
2.	Details of Spans a) Number of Spans b) Clear Spans c) Effective Spans	
3.	Overall Length of Girders	
4.	Skew Angle, if any	
5.	Gradient on bridge, if any	
6.	Curve on bridge, if any	
7.	Super elevation on bridge a) In rail b) In bed block	
8.	a) Details of Track b) Eccentricity of track w.r.t. girders i. End of Girder ii. Centre of Girder	
9.	Details of Bearings alongwith Drawings	
10.	Details of Bed Block	
11.	Details of Seismic Restraint Arrangement, if any	
12.	Details of Corrosion Protection Measures taken, if any i. Details of Reinforcement Steel Coating if any ii. Details of Structural Steel Coating if any iii. Details of Concrete Coating if any	
13.	Loading Standard of Design	
14.	Details of Drainage Arrangement of (Girder / Slab)	
15.	a. Catchment Area b. Design Discharge c. Any RAW/RAT up to 50 km on u/s d. Rail Level e. Top of Bed Block Level f. Danger Level g. Design HFL h. Vertical Clearance i. Free board j. Design Scour Level k. Top Of Foundation Level l. Bottom of Foundation Level	

Over

16.	Details of jacking points of Girders				
17.	Girder Weight (per Span and total)				
18.	Original Camber in mm for each type of Span				
		Section	L/4	L/2	3L/4
	Camber				
	Span Type-I				
	Span Type-II				
	Span Type-III				
19.	Details of a. Trolley refuges b. Safety refuges c. Foot Path d. Railing e. Sand Bins				
20.	Permanent / Temporary Speed restriction, if any and reasons of imposition				
21.	Additions and alterations to original design, if any				
22.	Year of Construction				
23.	Expansion Joints/Arrangements				
24.	Wearing Coat, type and thickness etc.				
25.	Additional details in case of ROB/RUB like Kerb, Crash Barrier etc.				
26.	History of Bridge Repairs etc.				

Arif

(E) INSPECTION DETAILS

SPAN No. _____

1. General Inspection (i.e. Crack, Bulging, Spalling, Disintegration, Scaling, Rust Streak, Crushing, Dampness, Leaching, Exposure of Reinforcement etc.)

(Suitable Arrangement to facilitate proper inspection of all the parts of Girder shall be made/arranged)

(a) For PSC Girder:

Item	Date of Inspection					
Deck						
Sides/Webs						
Bottom						
Ends/Anchorage Zones						
Anchorage Zones of Cross Prestressing if any						
Inside/Openings if any						
Diaphragms/Cross Girders						
Lifting Arrangements						
Bearings						
Expansion Arrangement/Joints						
Seismic Restrainers						

(b) For Composite Girder:

Item	Date of Inspection			
Deck Slab	Sign of stagnation of water on Deck Slab, if any			
	Details of Crack, Concrete disintegration, crushing, spalling, exposure of reinforcement etc. with sketch, if any			
Condition of Steel Components	Details of Distortion in Steel members with sketch, if any			
	Details of Cracks in Steel members with sketch, if any			
	Details of Corrosion in Steel members with sketch, if any			
	Condition of Weld/Bolts/Rivets in Steel Part			
Junction of Steel part with Deck Slab	Any sign of separation of Deck Slab with Steel Girder			
	Details of Separation of Deck Slab from Steel Girder with Sketch, if any			

Neel

2. Deflection/Camber Readings (Applicable in case of PSC Girders)

Section	L/4	L/2	3L/4
Item			
Date			
Measured Camber in mm			
Temperature			

NOTE: Camber to be measured at the Centre of Girder (L/2) only. However, if the length of girder is more than 20 m, camber to be measured at 3 locations.

3. Condition of Expansion Joints & Expansion Gaps

Pier No. _____

Date of Inspection						
Item						
i. Cracks if any						
ii. Bulging of Polymers if any						
iii. Whether Gap is free and Clear of Dust etc.						
iv. Any other item as prescribed by Manufacturer						

4. Condition of Bearing with Date of Cleaning and Defects, if any

Pier/Abutment No. _____ Bearing No. _____

Date of Inspection						
Item						
i. Condition of Stoppers						
ii. Flattening of Elastomers						
iii. Separation of Layers of Elastomer						
iv. Splitting of Layers of Elastomer						
v. Tearing of Layers of Elastomer						
vi. Bulging of Elastomer						
vii. Tilt in Elastomeric Bearing						
viii. Height of Elastomeric Bearing						
ix. Any Corner Lifting						
x. Condition of Holding Down Bolts						

Geef

xi. Condition of Seals in POT PTFE						
xii. Bulging out of Elastomer from POT PTFE						
xiii. Minimum gap between upper & lower part of POT PTFE to be not less than 5 mm						
xiv. Whether Entirely supported on Bed Block						
xv. Cracks in any component of POT-PTFE						
xvi. Bending of any Component of POT PTFE						
xvii. Longitudinal Displacement w.r.t mean position						
xviii. Transverse Displacement w.r.t mean position						
xix. Rotation in Longitudinal Direction						
xx. Rotation in Transvers Direction						

5. Condition of Bed Block and Defects If any
Pier/Abutment No. _____ Bearing No. _____

Date of Inspection						
Item						
i. Whether Surroundings of Bed Block is clean.						
ii. Cracks in Bed Block if any						
iii. Whether Bed Block is Shaken						

6. Condition of Surface Protection

Date of Inspection						
Item						
i. Year of painting of Steel						
ii. Type of paint of Steel						
iii. Defects like fading /discoloration/Scaling etc in Steel Painting if any						
iv. Year of Coating of Concrete						

Handwritten signature

v. Type of Coating of Concrete						
vi. Defects like fading /discoloration/Scaling etc in Concrete Coating if any						

7. Condition of Drainage Arrangements & Defects if any

Date of Inspection						
Item						
Whether Drainage is Clear or Chocked						

8. Condition of Seismic Restrainers if any

Date of Inspection						
Item						
Any Cracks, Spalling etc in Seismic Restrainers						

9. Condition of ladders, railings, inspection arrangements etc.

Date of Inspection						
Item						
i. Signs of Corrosion						
ii. Condition of Repairs if any						
iii. Condition of Connections						

10. Condition of Cracks & Tell tales if any

Date of Inspection						
Item						
i. Location						
ii. Crack Pattern (Sketch to be attached)						
iii. Crack Width						
iv. Crack Length						
v. Crack Depth etc.						
vi. Whether Cracks require Grouting						
vii. Condition of previous repairs if any						

Ans

11. Gap between Girders

Date of Inspection						
Item						
i.Gap between Girders						
ii.Gap at End of Girders						

12. Details of experimental and trial observations if any

13. Defects Noted & Actions Taken

S.No.,	Date of Inspection	Brief Description of Defect	Details of action taken on previous years orders with date and details of repairs	Remarks on condition of defect

14. Name and Signature of Inspecting Officials/BRI

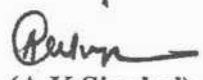
15. Remarks of AEN (Bridges) with Name and Signature

16. Orders of XEN (Bridges) with Name and Signature

17. Orders of Dy. CE (Bridges) with Name and Signature

18. Orders of CBE with Name and Signature

NEW DELHI
Dated 09.10.2019


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

Recd. in R & D Dt. 20.1.2020
Sent to DG Sectt Dt. 27/1/20
Back to R & D Sec Dt. 27/1/20
Sent to Con. Officer Dt. 27/1/20

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

DG	Bridge
ADG	
Sr ED/ED	
DATE	

No. 2017/CE-I/CT/13/Procedure Simplification

New Delhi, dt. 14.01.2020.

Principal Chief Engineer,
All Indian Railways. and Metro Railway/Kolkata.
The General Manager (Const.), N.F.Railway, Guwahati.
The CAO/Const. All Indian Railways.
The CAO/Const., Metro Railway, Mumbai & Chennai.
PFA, All Indian Railways.

Director General, RDSO, Manak Nagar, Alambagh, Lucknow, 226011, UP.
General Manager (Engg.) ICF/Chennai, RCF/ Kapurthala, DLW / Varanasi,
CLW/ Chittranjan, W&AP/ Yelahanka, Bengaluru & DMW / Patiala.
Chief Commissioner of Railway Safety, Ashok Marg, NE Railway Compound, Lucknow, Uttar Pradesh 226001.

Managing Director, Konkan Railway Corporation Ltd, (KRCL), Post Box No:-9, Belapur Bhawan, Sector-11, CBD Belapur, Navi Mumbai - 400614, Maharashtra.

Chairman & Managing Director, IRCON, C-4, District Centre, Saket New Delhi - 100017.

Chairman & Managing Director, RITES, RITES Bhavan, Plot No-1, Sector - 29, Gurgaon Harayana.

Chairman, DMRC, Metro Bhawan, 13, Fire Bridge Lane, Barakhamba Road New Delhi - 110001,

Chairman & Managing Director, CONCOR, Concor Bhawan, C-3, Mathura Road, Opp. Appolo Hospital New Delhi - 110076.

Chairman & Managing Director, RVNL, 1st Floor, August Kranti Bhavan, Bhikaji Cama Place, R.K.Puram, New Delhi.

Chairman, DFCCIL, 5th Floor, Pragati Maidan, Metro Station Building Complex New Delhi - 110001.

Chairman & Managing Director, (MRVC), 2nd Floor, Churchgate Station Building, Churchgate, Mumbai - 400020.

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Director, IRICEN, 11 A South Main Road, Koregaon Park, Pune 411001

Director, IRIEN, Post Box 233, Nasik Road - 422 101, Nasik, Maharashtra.

Director General, NAIR, Lalbaug, Vadodara - 390004, Gujarat.

Director, IRITM, Manak Nagar, Lucknow.

Director, IRISSET, Secunderabad.

Director, IRIMEE, Jamalpur.

Genl. Secy., AIRF, NFIR, IRPOF, FROA, AIRPFA, DAI (Railways) Rail Bhawan, New Delhi.

Sub: Advance Correction Slip No.38 to Indian Railways Bridge Manual.

Ministry of Railways (Railway Board) have decided that correction/addition as indicated in the enclosed Advance Correction Slip No.38 dated 14.01.2020 to relevant paras of the IRBM, be made.

Receipt of this letter may please be acknowledged.

DA: As above

PTO

(Signature)
14/1/2020
(O.N. Sharma)
Director Civil Engg.(B&S),
Railway Board

INDIAN RAILWAYS BRIDGE MANUAL
EDITION -1998
ADVANCE CORRECTION SLIP NO. 38 Dated: 14.01.2020

Existing Para 317 is to be replaced as below:

317: Approval of Bridge drawing for doublings, gauge conversions, new lines and other bridge works:

- (i) In case of new lines/doublings/gauge conversions, General Arrangement Drawings (GADs) for Railway Bridges where linear waterway is being reduced or vertical clearances are inadequate and where construction is likely to affect any of the existing Bridges (during construction or during service), **after clearance of concerned divisional branch officers and DRM**, shall be approved by Chief Bridge Engineer (CBE) of the concerned Zonal Railway. GADs of all other Railway Bridges shall be approved by concerned Chief Engineer/Construction.
- (ii) General Arrangement Drawings for all Railway Bridges on open line shall require approval of Chief Bridge Engineer of the concerned Zonal Railway.
- (iii) General Arrangement Drawings and Launching schemes of all ROB/RUBs/FOB/Rail flyovers, **which shall affect the existing lines, after clearance of concerned divisional branch officers and DRM**, shall require approval of Chief Bridge Engineer of the concerned Zonal Railway. **GADs and Launching schemes of all other ROB/RUBs/FOB/Rail flyovers shall be approved by concerned Chief Engineer/Construction.**
- (iv) The structural design and drawing work for the Bridge works (Railway Bridges/ROBs/RUBs/FOB/Rail flyovers etc.) being executed by Open line organisation shall be carried out by Bridge branch at HQ level of the concerned Zonal Railway.
- (v) The structural design and drawing work for the Bridge works (Railway Bridges/ROBs/RUBs/FOB/Rail flyovers etc.) being executed by Construction organisation shall be carried out and approved by Construction organisation.

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