



East Central Railway

Office of the
General Manager (Engg.),
Hajipur
Tele Ph.-06224-273414

No. W-3/420/09/ROB-RUB/LHS/Policy/Pt-I

Date: - 01.01.2021

RO/NHAI/Patna & Ranchi,
RO/MoRTH/Patna & Ranchi,
MD/BRPNNL/Patna/Bihar,
MD/BSRDCL/RCD/Patna/Bihar,
MD/JSRDCL/RCD/Ranchi/Jharkhand,
GM/RITES/Patna & Ranchi,
CPM/RVNL /Patna & Ranchi,
GM/Co/DFCCIL/DDU

Sub: - Safety precaution and measures to be observed during execution of ROB/RUB works on Indian Railways.

Ref: - Railway Board's letter no.-97/CE-I/BRO/158(Policy)Pt.II, Dated-16.07.2009, 31.07.2009 & 25.09.2009.

It has been observed that various drawing of launching scheme (TAD) for ROB/RUBs are being submitted to this office without proper stage completion certificate from Division or concerned Road Authority as per para 2.4 of letter referred as above, which is essential for safety of railway traffic, road traffic, working personnel at site and also to ensure proper quality control. This is serious lapse on part of Executing agencies and Divisions before taking approval of Temporary Arrangement Drawings from this office or applying for adequacy certificates.

In view of above it is requested for strict compliance of the instruction of above refereed letter in execution of ROB/RUBs and submission of completion certificate by Railway authorities while submitting the TAD drawings for approval or requesting for adequacy certificate from this office.

Sanjay

Kumar

Ojha

Digitally signed
by Sanjay Kumar

(S. K. Ojha)

Date: 2021.01.02
17:50:11 +05'30'

DA: -Copy of Rly Bd referred letter (07 pages).

Copy to: -

1. CE/Plg/CON/MHX/E C Rly for kind information and necessary action please.
2. Sr DEN (Co-ord), E. C. Railway, DHN, DDU, DNR, SEE & SPJ for information and necessary action please.
3. Dy CE/Design/CON/MHX/E C Rly for information and necessary action

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Kind Attn: Gag.

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Space

7 pages

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

No.97/CE-1/BRO/158(Policy)Pt.II

New Delhi, dated 25-09-09.

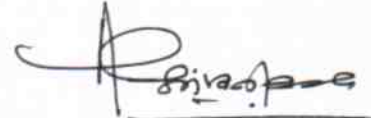
The PCE(s)/CAO(C)s,
All Zonal Railways.

Sub: Safety Precaution and Measures to be observed during
execution of ROB/RUB works on Indian Railways.

Ref: Board's letter of even number dated 31.07.2009.

Board (ME) has directed that instructions issued on the subject matter
should form a part of contract, MOU under the head "Safety Precautions and
Measures".

The same should be complied henceforth.



(Arun Kr. Shrivastava)
Executive Director Civil Engg.(B&S)II
Railway Board.

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GOVERNMENT OF INDIA / BHARAT SARKAR
MINISTRY OF RAILWAYS / RAIL MANTRALAYA
(RAILWAY BOARD)

Dated: 31.07.2009
Rail Bhavan, New Delhi

No. 97/CE-I/BRO/158(Policy)Pt.II

**Sub: Safety Precaution and Measures to be observed during
execution of ROB/RUB Works on Indian Railways**

Enclosed herewith please find copy of "Safety Precaution and Measures to be observed during execution of ROB/RUB Works on Indian Railways", which has been circulated to GMs, All Indian Railways.

[Signature]
31/7/09
(U.S.Sondhi)
EDCE(B&S)-II

For information:

1. PPS/ME for information of ME.
2. Adv.(CE), Adv.(W), Adv.(L&A), Adv.(Infra)
3. ED/W, ED/WP, EDCE/P, EDC/G, EDCE(B&S)

These instructions should form a part of the contract, also under the head 'Safety Precaution and Measures'.

[Signature]
for inform railways accordingly

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EDCE(B&S)-II

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**GOVERNMENT OF INDIA / BHARAT SARKAR
MINISTRY OF RAILWAYS / RAIL MANTRALAYA
(RAILWAY BOARD)**

Dated: 16.07.2009
Rail Bhavan, New Delhi

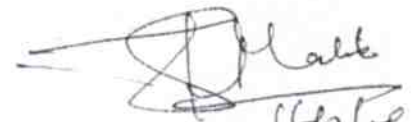
No.97/CE-I/BRO/158(Policy)Pt.II

General Managers,
All Indian Railways.

**Sub.: Safety Precautions and Measures to be observed during
execution of ROB/RUB Works on Indian Railways.**

With a view to ensure safety during construction of ROB/RUBs across Railway tracks under running traffic, Safety precautions and measures to be observed/adopted while working in Railway and adjoining areas are enclosed herewith for adoption on Zonal Railways. This shall be applicable for all ROB/RUB works taken on cost sharing, deposit, PPP/BOT basis, or as NHAI funded works.

These 'Guidelines' should be circulated to Divisions and Construction Units for adoption. Compliance in this regard may be advised to Board.


(S.K. Malik)

Advisor (Civil Engineering)
Railway Board

Encl.: As above (4 pages).

July 2009

**SAFETY PRECAUTIONS AND MEASURES TO BE OBSERVED DURING
EXECUTION OF ROB/RUB WORKS IN RAILWAY AND ADJOINING AREAS**

1.0 ROB/RUB work(s) in Railway area and for the approaches in adjoining area shall be got executed through experienced contractor with proven capabilities. As soon as the work of ROB/RUB is awarded, the Agency or the nominated Concessionaire shall submit the name of Contractor and the Supervision Consultant, if any, appointed to handle the Project under consideration. The Contractor shall nominate the Engineering Person-in-charge and submit the list of personnel to be available at the site along with their contact numbers and address. The contractor shall deploy/appoint only such nominated Engineer as Person-in-charge at site who has experience of execution of similar type of work(s) and should be exclusively assigned at one site at a time.

1.1 From Railways, the nominated 'Project Engineer In-Charge' and 'Engineer at-site' shall be responsible for coordinating various construction activities, and supervision control.

1.2 Personnel of the Supervision Consultant, wherever appointed for supervising ROB/RUB works, shall also be identified and their names along with contact numbers and address shall be forwarded to concerned Railway officials. The Project Management (Supervision) Consultancy Firm shall deploy only nominated 'Supervising Engineers' at site who have got supervision experience for similar type of work.

1.3 (a) Credentials of the Concessionaire/Contractor/Supervising Consultancy Firm and their Engineers/Personnel for execution of work should have been verified and issued by Railway Engineer not below the rank of Dy.Chief Engineer (JA Grade).

(b) Alternatively, the contractor's Engineer and Supervisor Engineer can get training under Railways' Training Institutes and obtain Training Certificate issued by such training organization, for the purpose of having requisite credentials and ensure safety at work site.

1.4 In addition, for Supervision of work(s) for Railways Bridge proper, Railway undertakings such as RITES, IRCON who have got expertise in supervision/execution of such type of work, can be considered and engaged by the sponsoring organization.

2.0 Construction Activities and Safety:

(a) The 'Methodology of Working' shall be incorporated in GAD and Temporary arrangement Drawings.

(b) The activities of work to be taken up during the Railway traffic block/under speed restriction etc. should be clearly mentioned in such drawings.

If at any stage of execution, any discrepancy is found in the drawing with respect to the site condition affecting safety or some new activity of work is required to be done, the same should be brought to the notice of Railway Engineer and such works should be done only after approval by Railways. In such cases, scheme may be modified and if required fresh CRS sanction shall have to be obtained.

2.1 The works required to be done under traffic block protection, are to be carried out only in the presence of Railway Engineering officials. The Railways supervisor has to certify safe conditions for passage of trains before resumption of traffic.

The works to be done under traffic shall be carried out under the provision of banner flag and protection of Engineering flagman. If considered necessary, the Railway flagman may be posted on account of the contractor.

2.2 Following important activities of works shall be carried out under supervision of Railway Engineer or his nominated Supervisor :

- a) Excavation at foundation/Ground level near to Railway track.
- b) Concrete Casting and/or masonry very close to Railway track.
- c) Erection of temporary structures near to running lines.
- d) Casting of structures like girder/slab over railway track.
- e) Stage-Prestressing of girders when placed across Railway tracks properly supported.
- f) Launching of precast/pre-assembled girders across Railway tracks.
- g) Any work of lifting, side shifting and slewing of girders over the Railway track.
- h) Dismantling of temporary structures, shutters, scaffolding, etc. adjacent to and above the Railway track.

For carrying out activities of casting, erection, launching, handling and dismantling as listed above, the Contractor's Engineer shall furnish the Construction Programme in advance to Railway Supervisor engineer. No such work should be taken up in absence of the Supervising Railway Engineer. For the activities which are to be done in presence of the Railway Engineer, prior intimation shall be given in writing and acknowledgement obtained from Railway's representative. Such activities of work shall not be carried without the presence of Railway Engineer.

2.3 To ensure 'Safety' during construction activities, Railway Engineer may direct the Contractor/Supervisor Engineer or their nominated representative for safe working procedures/instructions, notwithstanding the contractual or MoU conditions prevailing between/amongst Railways/other departments like NHAI/Contractors/ Concessionaire.

2.4 All the records of Quality Assurance/Quality Control, testing of the materials and satisfactory completion of an activity shall be maintained at site by the Contractor's Engineer and Supervising Engineers. On the basis of these records, Railways' Engineer shall do **stage-wise clearance** of the works at following stages:

- i) Completion of foundation
- ii) Completion of substructure
- iii) Completion of superstructure

Without such stage clearance, the work in next stage of construction shall not be allowed by the Railway Supervisor, unless proper system of check and exercise is followed at the site.

2.5 Normally, the high beam PSC girders are designed with wider top flange and shorter bottom flange with very high beam which makes the girder unsuitable during lowering, slewing and launching time.

2.6 During launching of girders and subsequent adjustments for placement of bearings special attention and precautions are required at site to be followed rigorously without resorting to shortcut practices or leaving the work at site to untrained or inexperienced engineers. Normally, end diaphragms are not casted for the extreme both side girders. These shall to be casted min. 300 mm. on both sides for all 'I' beam girders to provide temporary supports for ensuring stability.

Or,

For side adjustments and bearing placements below 'I' section girders, end brackets made of steel angles should be provided for all 'I' beams sequentially to avoid side tilting of individual girders. End brackets shall be removed only after placing girders on bearings and casting of diaphragms.

2.7 During lowering, the jacks shall be operated duly keeping wooden packing of various thicknesses fixing the amount of lowering to the bearest minimum, so that even if the jack fails, the wooden packing will take load and further stability of girder is not endangered.

2.8 Temporary crib support staging shall be interlaced with clamps and angles. Adequate base width shall be maintained in proportionate to the height of stage, which is very essential for avoiding the ablong effect during launching of girders. During launching by RH girder method the movement of the PSC girders shall be controlled both from front and rear with wynch mechanism having simultaneous operation, so that the speed of the launching is always under the control. Spare hydraulic jacks shall always be kept at side.

Lowering of girder shall always be carried out at one end only. Further, other end should be adequately secured by wire ropes, end brackets, etc. Thereafter, the alternate process shall be continued.

2.9 As far as possible launching of girders by temporary staging shall be avoided, and launching by heavy capacity cranes, wherever feasible, shall be adopted.

2.10 Steel girder launcher if used for launching of PSC girders, should be pre-tested for the critical loading (likely to be encountered during actual launching) before deployment on the approaches regarding its strength as well as amount of permissible deflection using actual test PSC girder as a testing load. Connections at supports shall be inspected and certified. Prior to actual launching, it shall be adequately secured to the base support system on the pier cap.

3.0 General Construction Safety:

3.1 General Safety Precautions as applicable for bridge/civil works shall be adopted in field.

3.2 Working near running line: Safe practices at site, and at all times non-infringement to moving trains shall be ensured. Road vehicles, material trollies, dollies with any tendency to roll off towards the running lines to be checked by providing chains, locking arrangements, blocks etc. shall be ensured and the Site Incharge of the Contractor shall be primarily responsible, secondary responsibility being of Supervisor's Consultant.

3.3 Testing of cranes, lifting jacks and other equipments: All equipments like cranes, lifting jack shall be tested, duly calibrated and certified prior to use at construction site.

3.4 Construction workers at site shall be provided with personal safety gear like reflective vest, helmet, leather shoes, gloves, eye-wear – approved as per construction industry standards. For persons working at pier top/girder level, temporary supports, hand railing, protection with help of ropes, slings and temporary railings shall be provided.

3.5 Routine Safety Checks, validity of test certificates for load bearing equipments especially for cranes outsourced from third party shall be ensured prior to deployment.

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