



Head Quarter Office,
Engineering Branch,

No. W3/Br/CE's Circular/

East Coast Railway



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PCE Circular No.: 2/2024

Sub: - Design, Fabrication, Erection & Maintenance of Foot Over Bridges on East Coast Railway.

APPLICABILITY: - All FOBs being constructed on E.Co. Rly by Open Line, Construction Org and Gati Shakti, RVNL etc.

1. General Layout/ GAD / Design:

- 1.1 As far as possible, standard design issued by RDSO and ECoRas type plans shall be used for construction of new FOBs. In case standard design of ECoR or RDSO are not used, then the designs & drawings shall be prepared in-house by open line/construction organization/Gati Shakti Unit or the like and approved by ECoR HQ office of Open line/Construction. In case designs and drawings are prepared by consultants, it shall be proof checked by 3rd party and thereafter approved by ECoR HQ office of Open line/Construction. In such designs, the Live load on FOB shall be taken as per Clause 2.3.2 of IRS Bridge rules. Further, where Live Load daily peak variations are likely to be very frequent & high, the FOB may be checked for Fatigue failure under relevant provisions of IRS Steel Bridge Code as per design requirement.
- 1.2 FOBs will be designed using Plate Girders only in superstructure, except in exceptional cases other types may be used with prior approval of CBE at GAD stage itself.
- 1.3 Minimum Width of FOB shall be 3.66m, except in suburban section where it shall be 6.0m. Any proposal of lesser width shall be permitted, only with the prior approval of GM as per Rly Bd's letter No. 2018/LM (PA)/03/06 dated 09-04-2018. The maximum clear span of FOB shall be 30.0m as far as possible.
- 1.4 As far as possible, double row columns shall be provided at all locations of FOB for better stability and for providing redundancy to the structure. Single rows of columns, however, may be provided in exceptional circumstances due to space constraint as intermediate support (but not at end supports) to reduce the span length, on practical considerations.
- 1.5 Normally staircases should not be permitted at locations having single row of columns. However, in unavoidable locations, if the staircase does have to be provided at such locations, the stringer of staircase shall not be connected with main girder, and it shall rest on independent columns.
- 1.6 Any other type or configuration, span > 30m or single row of column at end support can be considered in unavoidable conditions, on specific constraints to be clearly brought out by sponsoring organization or executing agency, with prior approval of CBE-ECoR.
- 1.7 The Key plan of FOB at stations will indicate full platform lengths, also showing all other FOBs and entry/exit points of station to appreciate passenger movement through the proposed FOB.
- 1.8 Provision of future lifts, escalator etc. shall be shown in the GAD, if required to be provided at stations, as per extant guidelines for provision of such facilities.
- 1.9 As per Railway Board letter No 2020/20/CE-III/Epoxy coating dated 14-12-2020 & RDSO letter No CBS/Codes/A & C dated 08.04.2019, as per Clause 7.1.5 of IRS: CBC 2014 does not prescribe any coating of the reinforcement bar. (i.e Fusion Bonded Epoxy Coating, Cement Slurry etc.) In areas of extreme corrosion say 30 Km. from coastal Areas & in unavoidable circumstances Stainless

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Steel Reinforcement Bars may be used. Page:2

- 1.10** A methodical statement for execution shall be prepared by the Executing agency indicating Execution Plan, Quality control and Safety measures and approved by Engineer-in charge. It shall also indicate requirement of barricading keeping in view passenger's convenience, signages for passenger movement and safety warnings etc. The executing Agency shall submit a Safety, Health & Environment (SHE) manual which shall contain Hazard identification & Risk assessment (HIRA) with a responsibly matrix & checklist.

2. Foundation/ Substructure/ Superstructure arrangement

2.1 Foundation –

- 2.1.1** The executability of the foundation shall be decided keeping in view of site conditions and constraints of limited working space in platform/yard and should be examined in detail at the time of preparation of General Arrangement Drawing (GAD) itself. The GAD should also indicate the need for speed restriction, if any required for execution.
- 2.1.2** The foundation pedestal shall be minimum 60cm higher than the surrounding ground level. On platforms, foundation pedestal shall be minimum 30cm higher than platform level.
- 2.1.3** No stagnation of water should be allowed over the pedestal or within column base to avoid corrosion.
- 2.1.4** The connection between the bed plate and column base shall be provided with hot dip Galvanized coated bolts and **welded connections should not be used.**
- 2.1.5** The steel column shall not be embedded in concrete pedestal. **No sitting platform** shall be provided around the column base.

2.2 Substructure –

- 2.2.1** **Only submerged arc welding shall be used for Built up sections of main column.**
- 2.2.2** Splicing in columns shall not be permitted. In case it is unavoidable, the same shall be provided as per designed splice with cleat clip galvanized HSFG bolt. **No field splicing with welding shall be permitted.**
- 2.2.3** The bracings provided on the platform for the stability of column shall be suitably designed so as not to cause any obstruction to the movement of passengers, keeping minimum height of bracings from platform level as **2.4m.**

2.3 Main girder arrangement (superstructure)–

- 2.3.1** **Only submerged arc welding shall be used for Built up sections of Main girders.**
- 2.3.2** Splicing of web/ flange will be done with HSFG bolts with DTI washers under the supervision of suitably trained personnel. In case welded splice is to be provided, the same shall be as per approved design and shall be provided with submerged arc welding only. Splicing with field welding will not be permitted.
- 2.3.3** Loads Bearing Welded connections on main members shall not be provided.

2.4 Secondary arrangement:

- 2.4.1** Diaphragm and cross bracing shall be bolted by HSFG bolts with DTI washers under the supervision of suitably trained personnel.
- 2.4.2** The arrangement of end diaphragm and cross bracings shall be so designed that it does not adversely affect the movement of staff during maintenance and inspection.

2.5 Roofing /Roof cladding:

Page:3

- 2.5.1 Typical drawings issued by RDSO for roofing shall normally be used. Wind ties must be used. In exceptional cases, deviation may be done with justification with prior approval of CBE.
- 2.5.2 No other extra loading over the roof structure shall be permitted.
- 2.5.3 The roofing shall be projected/ extended beyond the outer edge of FOB deck by minimum 300mm so that the water does not fall over the edges of deck slab, and corrosion of outer girders is prevented on this account.

3.0 Fabrication of steel work:

- 3.1 All fabrication material & fabrication process must be as per B1-2001 (Indian Railway standard specification for fabrication and erection of steel girders and locomotive turntables).
- 3.2 Steel should be procured from primary manufacturers only, like SAIL, TISCO, JINDAL, RINL and tested/ verified w.r.to manufacture's certificate & test reports.
- 3.3 Fabrication drawings shall be prepared for accuracy of dimensions and preferably using standard software, and same should be approved by the concerned Engineer-in-charge.
- 3.4 For fabrication of each steel structural member, Quality Assurance Plan (QAP) and Welding Procedure Specification Sheet (WPSS) shall be prepared by Executing Agency, which shall be approved by concerned DEN/Sr. DEN for open line & PSU/outside organizations, and by Dy CE for construction organization/Gati Shakti Unit or the like, before starting the work.
- 3.5 Girders shall, preferably, be fabricated in RDSO approved workshop only. It can be fabricated in other workshops which shall have adequate infrastructure and competent staff to carry out such fabrication; however, in such cases, QAP and WPSS for Girder fabrication shall be forwarded to concerned DEN/Sr. DEN for his approval in case of Open line & PSU/outside organizations, and for construction organization/Gati Shakti Unit or the like, Dy CE may approve QAP and WPSS. Field Engineers shall ensure strict compliance of approved QAP and WPSS. Work shall be taken up, only after approval of QAP and WPSS.
- 3.6 No splicing, other than the approved splicing, in the fabrication drawing should be allowed.
- 3.7 All welding should be done in workshop only by Submerged Arc (SAW) Welding process either by fully automatic or semi-automatic machines as approved by designer. Only RDSO approved welders shall be assigned the fabrication work. Any deviation, if required, shall be done with the prior approval of CBE.
- 3.8 **Field welding shall not be permitted.** In special circumstances, however, field welding may be undertaken by competent welder in accordance with Para 26 of B1-2001 for very short runs and members of minor importance. Such locations of field welding shall be provided with proper size of weld and ensuring proper grinding. All field welds shall be tested at site as per QAP and WPSS. **All field welds shall be subjected to third party inspection as per Para 4.0 below.**
- 3.9 Proper record of work done as per QAP and WPSS shall be maintained.
- 3.10 Connections between members should not create pockets for accumulations of water and replacement should be easy.
- 3.11 It should be possible to visually inspect all such welded joints during periodical inspections.
- 4.0 **3rd Party inspection of fabrication and erection:**
- 4.1 The Quality of fabrication and erection including jointing details of steelwork for columns, staircases, bracings, roofings etc., including girders not fabricated in RDSO approved workshop or Railway's Engineering Workshop at Sabarmati, shall be ensured at each stage by employing 3rd party inspection by Agencies like RDSO, RITES or any other expert public undertaking e.g. CEIL etc. The final responsibility for quality work as per specifications, however, shall rest with concerned Railway official executing and approving the work.
- 4.2 While approving QAP and WPSS, consultation with third party Inspecting Agency shall be done by

1

concerned DEN/Sr. DEN/ Dy. CE, wherever deployed. Page:4

- 4.3** Trial assembly of girders shall be done in workshop and passed by inspection agency fixed.
- 4.4** Inspection report should be submitted by third party agency to Division or field construction unit for rectification & follow up action. The rectification report shall be examined and accepted by the concerned Sr. DEN/Co at Divisional level or Dy. CE in construction/ Gati Shakti Unit or the like.
- 4.5** Girders fabricated in RDSO approved workshop shall be checked for specifications, quality and acceptance by concerned Railway officials.
- 5.0 Erection at site:**
- 5.1** The crane deployed for erection shall be of adequate capacity with at least 50% extra margin to lift the girders at specified working radius and boom length as per approved scheme. Crane must have Working Automatic Safe Load Indicator (ASLI) and Crane must be certified fit by TPA. Competency certificate of crane operator must be available.
- 5.2** Provision of standby cranes of adequate capacity at appropriate location shall always be made at erection sites.
- 5.3** Erection shall be done at site as per launching scheme (GAD) approved in presence of sectional Sr.DEN/DEN.
- 5.4** No Gas cut holes shall be allowed to fix diaphragms/cross bracing.
- 5.5** **Joint inspection with RDSO listed third party agency shall be conducted by sectional ADEN after erection to ensure that the joints are properly fitted.** After erection, third party inspection is must, even if the girders are fabricated in RDSO approved workshop. Detailed inspection proforma shall be followed for joint inspection after erection.
- 6.0 Deck slab:**
- 6.1** Cast in-situ deck slab should, generally, be available for visual inspection. Corrosion resistant sheets (e.g. profiled galvalume sheets) may be used as sacrificial shuttering for casting of deck slab as per design and manufacturer's specifications. MS plates should not be used for sacrificial shuttering. Sacrificial shuttering, however, should not be used for staircases and ramps.
- 6.2** The thickness of deck slab (RCC slab) shall be restricted to maximum as specified in the drawing.
- 6.3** The sequence and method statement of casting shall be approved by sectional DEN/Sr.DEN or Dy CE.
- 6.4** Suitable anti-slipage floor finish should be provided on the deck but total thickness of slab and finishing over girder should not be more than **135mm**.
- 6.5** No additional load, beyond the total thickness of 135mm of concrete & floor finish, such as that of pipes, cables, hoardings etc. shall be allowed without prior approval of HQ design cell.
- 6.6** Corrosion resistant, protective screen as per RDSO's drawing and specifications should be provided during construction itself.
- 6.7** A clear gap of minimum 50mm should be kept between FOB deck slab & bottom of protective screen to facilitate its cleaning & painting. The Protective screen shall not be rested on the deck floor.
- 6.8** The edge of the deck slab may be provided with "Drip Course" to avoid water contact with the steel girders.
- 7.0 Staircase:**
- 7.1** No structure shall be allowed under the staircase structure for any purpose. Entire space underneath staircases and ramps should be kept free for inspection and maintenance.
- 7.2** The steps of staircase should be of uniform height & width.
- 7.3** Anti-slipage floor finish with grooved lining, on FOB steps shall be provided.

2

8.0 Metalizing& Painting:

Page:5

- 8.1 All steel members of new FOBs including nuts, bolts, washers etc. shall be metalized as per IRBM para 218 .1
- 8.2 Painting to be done as per IRBM para:216.

9.0 Miscellaneous:

- 9.1 Provision of stainless-steel railing of 40mm dia. pipe as per specification of RDSO for differently able persons should be provided on steps/ ramp during construction itself.
- 9.2 The floor should be provided with suitable Crown at center and drainage arrangement to prevent stagnation of water/ water pockets on floor slab.
- 9.3 Hoarding shall not be provided unless there are special circumstances and the conditions and are approved by CBE-E.Co.R.

10. Inspection & Maintenance:

- 10.1 Periodical inspection of FOB shall be conducted by SSE/JE-(works) & ADENs as per IRWM para:228.
- 10.2 Annual Joint inspection by SSE/JE-Br.(In-Charge)&SSE/JE Works (In-charge): Inspection of all FOB to be done by SSE/JE-Br.(In-Charge)&SSE/JE Works (In-charge)once in a year. SSE/JE-Br.(In-Charge)&SSE/JE Works (In-charge)shall do the annual inspection of all the FOBs in a prescribed proforma (Annexure-I), in a register called "FOB Register" and complete by "May" of the year. All the FOBs shall be given unique number for identification and entered in the registered. These registers shall be submitted to ADEN by 1st week of "June", who shall scrutinize the entries, issue suchorders as deemed necessary and return the register. Any serious issue shall be brought out/highlighted with specific details to the next higher authority. Prompt action shall be taken by the SSE/JE-Works to carry out the repairs required. Wherever required, tower-cars, trolley-based ladders or similar arrangements may be used for inspection of FOBs.
- 10.3 Repair and maintenance of FOBs is solely responsibility of SSE/JE/Works(In-charge) of respective jurisdictions under sectional Sr. DEN/DEN of the Division. However, necessary assistance and supervision of the Bridge Unit official supervisors and staff will be provided as per the request of sectional Sr. DEN/DEN. The concerned sectional Sr. DEN/DEN of the Division has to monitor and organize the inspection and maintenance of the FOBs of their respective section.
- 10.4 Inspection by ADEN: ADEN shall carryout inspection of at least 20% FOBs once a year, as stipulated in Para-228 of IRWM, on prorated basis, in a prescribed proforma (Annexure-I), in the same "FOB Register" of SSE/JE-Works. It will be a Detailed Inspection. It is now decided that the detailed inspection of 20% FOBs to be carried out in the months of December-January every year and the completed FOB Registers should be submitted to Divisional Office for scrutiny of DENs/Sr.DENs by 15th February every year.

Detailed Inspection:

- In 20% of the FOBs, the inspection shall be further detailed, in which the floor beams and their connections and other critical locations shall be inspected and checked physically for their soundness.

FOBs should be selected for detailed inspection in the order of their age i.e. oldest FOB shall be inspected first. DEN/Sr. DEN, in consultation, with the ADENs, shall prepare and issue a schedule of detailed inspection of FOBs as above for next 5 years covering all FOBs and Overhead structures (including RCC or PSC FOB, if any) and shall be used as roster for

2

subsequent years. Any new FOB constructed during a year shall be inserted in the roster in the suitable year. However, if condition warrants, a FOB can be scheduled earlier also. A comprehensive schedule of all FOBs (N-type as well as Plate Girders and other) and overhead structures (excluding ROBs) shall be prepared by respective ADEN in his jurisdiction and same to be updated based on new constructions and dismantling regularly. In corrosion prone areas inspection of FOBs must be done once in a year.

- FOBs having age more than 60 years in East Coast Railway suburban area to be inspected in detailed every year. FOBs having age more than 60 years in other areas to be inspected in detailed every alternate year (once in two years) and in corrosion prone areas once in a year.
- FOBs, the condition of which warrant special attention, shall be inspected more frequently.
- In this detailed inspection entire steel work shall be thoroughly inspected, including all joints and connections. Joints shall be exposed/scrapped, if so, required for the purpose. Thickness shall be measured by Calipers or Ultrasonic thickness gauge.
- During the detailed inspection, following aspects should be examined and inspected physically in detail.
 - (i) The underneath area - i.e. condition of floor beams and its connection with the bottom chords of the main girder, particularly over OHE area, where a close examination is not feasible every year, for want of power/traffic blocks. Similarly, condition of concrete slabs to be examined from bottom side, over the tracks and OHE. Maintenance and repairs for such locations of FOB should be planned in advance.
 - (ii) Condition of main girders/truss, columns, floor beams, joints and nodes of the girders - to be thoroughly inspected. In case of any inadequacy/weakness/signs of over stressing noticed in members or junction arrangements of FOB, structure should be repaired and strengthened on priority. For this purpose, slab over the junction may be cut for 450mmx450mm and removed for thorough inspection and attention to the joint welds and members. After requisite attention, the gap may be covered by easily removable precast slab for future inspections and attention. While attending, the welding of the connection should invariably be seen, and fresh welding shall be done for all the joints if required.
 - (iii) Bottom of steel columns of public FOBs at both ends generally remains covered with excavated muck, garbage dumped by public etc. Special attention should be given for keeping the bottom of Steel columns in clean and sound conditions.
- Single Ladder, Track Mounted Trolleys and Ladder, Tower Wagons or any other Departmental Material Train MUST be used for effective inspection of underneath portions of these overhead bridges.
- In this detailed inspection, each and every node underneath the FOB as well as other locations to be given an identification number and condition of that node or joints to be recorded in details, with photographs, if needed, in the Appendix-A of the inspection report. Similarly, condition of Floor Beams, Bottom Bracings, Racker Angles/Beams, etc. to be inspected and recorded in Appendix-B. Diagrams and sketches to be drawn marking nodes, joints, members, etc. as per Appendix-C of the proforma given in Annexure-I.
- Recording of Inspections: The inspection shall be recorded in the FOB Register by SSE/Works, as per the format given in Annexure-I. The detailed inspection by ADEN shall also be recorded

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in the same register, which shall include the details as per Appendix-A, B & C as given in Annexure-I.

- Entries in columns of 'condition of structure' shall be in the nature of statement. The extent of corrosion of the various components of steel FOBS shall be recorded as Blistering/Traces/Mild/Moderate/Severe and not simply "corroded" or "corrosion found".

10.5 Assigning ORN as per IRBM:

- System of assigning ORN for FOBs shall be for -
- Concrete work such as foundation, deck slab, flooring in steps etc.
- Condition of Main girders, beam, roof, railing & protective screens etc.
- Connections, junctions, pins & areas clearly not visible from a distance, etc.
- Any other location/part of FOB.
- Each FOB shall be assigned an ORN number based on its overall condition.
- A brief reason shall also be recorded for while assigning ORN 1, 2 and 3.
- FOBs with ORN 1, 2 and 3 to be inspected by ADEN every year.
- All the FOB Registers shall be submitted to divisional HQ and to be scrutinized by respective Sectional DEN/Sr. DEN.
- FOBs, which are assigned ORN-1, 2 & 3 shall be submitted promptly by 15th March every year with corrective measures to be taken and action plan with TDC to respective Territorial HODs for their scrutiny and direction.
- Along with FOB Registers, DEN/Sr. DEN shall also submit action- plan and timelines, for completion of repairs of the defects observed during the inspections. Action-plan submitted by Divisions for ORN-3 FOBS, shall be finalized/concluded by respective Territorial HOD, while for ORN-1 & 2 FOBs, it shall be finalized by CBE in HQ. Any FOB having ORN 3, based on merit, can also be referred to CBE by Territorial HOD.
- FOBs having being assigned ORN 1 & 2 (or as referred by Territorial HOD) to be referred to CBE, with their comments and corrective measures to be taken and action plan with TDC.

10.6 Sr. DEN/Br in Division shall co-ordinate for FOB registers on similar lines as for Hydraulic bridges and monitor inspection being carried out by divisional officials and receipt, movement and return of FOBs register in HQ.

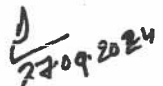
10.7 High-Definition High-zoom DSLR cameras, mounted with a lens with focal length 300 mm or more may be procured and used for regular inspections for assessing the condition of FOB components which are otherwise inaccessible in normal annual inspection. Alternatively, an external agency may be hired, as and when required, and deployed for this purpose.

10.8 In the inspection kit, a good quality probe type Ultrasonic Thickness measure Gauge, Binocular like Binocular Falcon 10 x 50 or similar with at least 10X zooming feature, shall be kept and used for the inspection purpose, beside other equipment viz. scrapper, light hammer, calipers, probe type thickness measure gauge etc.

10.9 A defect, once noticed and mentioned, should not be omitted in future years, until it has been eliminated through repairs, in which case a note should be made to this effect, in the FOB Register.

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- 10.11 Painting of FOBS: Generally painting of FOBS is done as per prescribed frequency, which is mentioned in IRBM-1998 in Para No.217 (Incorporated up to ACS -44). SSE/Works should ensure that the painting is done only after proper surface preparation. The durability and effectiveness of the protective coating largely the outcome of the quality of the surface preparation. Henceforth, Painting shall be carried out only after ADEN issues a certificate in writing regarding "I have personally inspected the surface preparation for scrapping & cleaning (particularly for the hidden parts/junctions/connections) of all steel components of FOB". This shall form a part of Measurement Register.
- 10.12 Replacement, rehabilitation and major repairs of FOBS may be proposed in PH-53.
- 10.13 Every component of the FOB should remain inspectable to the extent possible. Hence structure, temporary or permanent, should not be allowed to be erected below the FOB. If any structure is already constructed, it should be removed.
- 10.14 Abandoned FOBS or any other crossings, where new FOBS or OHS have been constructed on replacement account and commissioned, should be dismantled as soon as possible but not later than three months after the commissioning of new FOB. Even if the FOB is not in use, regular inspection and attention shall be ensured.
- 10.15 FOBS, the condition of which warrant special attention, shall be inspected more frequently.
- 10.16 In exceptional circumstances, an external inspection and testing agency or reputed Institute may be engaged and deployed for a detailed safety audit of a FOB. The decision to be taken not below the level of Sr. DEN(Co). The report and recommendations of the agency should be supported and substantiated by instrumentations and NDT and not barely visual inspection. While going for third party Safety Audit, Terms of Reference to be made very clearly in definite terms.
- 10.17 Above instructions are applicable for pipeline and other overhead crossings also, but excluding ROB and RORs.
- This issues with the approval of PCE.


 27.09.2024
 Ashok Kumar
 CBE/E. Co. R.

File No: W 4/374/ C. E.'s Circulars/ Pt. II/ 6819

Date: 27.09.2024

Copy forwarded for information and necessary action to:

1. Secy to GM for kind information of GM.
2. Secy to PCE for kind information of PCE.
3. Secy to CAO (Con) for kind information of CAO (Con).
4. All HODs of Engineering Dept Open Line and Construction.
5. DRM/KUR, SBP & WAT.
6. Sr. DEN/CO/KUR, SBP & WAT.

PROFORMA FOR DETAILED INSPECTION OF FOB
STATIC DATA

A. GENERAL DATA		
1	Bridge No /Bridge Name (if any)"	
2	Section	
3	Kms	
4	Station/ Location	
5	Year of construction	
6	No & Length of span	
7	No. and width of stair case / Ramps	
8	Total length FOB including staircase	
9	Cover sheet provided (Yes/ No)	
10	FOB provided for (Railway/ Municipality/Pvt. Body etc.)	
11	FOB maintained by (Railway/Municipality/State bodied/others)	
12	History of FOB extension/ Structural Repair in FOB	
B. TECHNICAL DATA		
1	Type of covering GI/AC sheet or others	
2	Girder Type (Truss/Plate Girder etc.)	
3	Centre to centre of main girders	
4	Clear wudth of FOB	
5	Design (Standard/ Non std.)	
6	GAD no. & details	
7	Details of reference Structural drawings	
8	Distance from Rail Level to underside of Floor/Beam/ Bottom most member— (a) Actual: (b) (b) Minimum required as per SOD:	

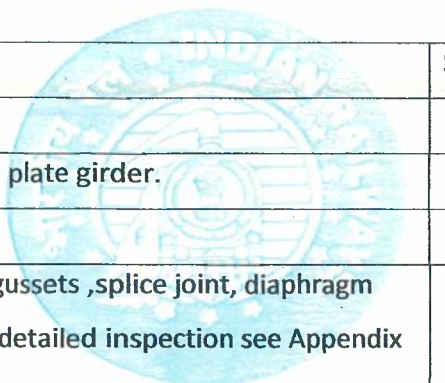
INSPECTION REPORT

1. GENERAL

	a) Date of Inspection	
	b) Last Technical Inspection on	
	c) Date of Last Painting	
	d) Overall condition of painting	

2. Condition of Steel work

A	N Type Truss	
1	Condition of Bottom chord (LHS/RHS)	
2	Condition of Top Chord (LHS/RHS)	
3	Condition of Verticals & Diagonal members in truss (LHS/RHS)	
4	Condition of connection, gussets ,splice joint, diaphragm and cross bracing etc {for detaled inspection see Appendix A)*	
5	Inspection of Floor System {for detailed inspection see Appendix B)*	
A	Condition of Floor Beam	
B	Condition of bottom bracings	
C	Racker angle / Racker Beam condition	
d	Condition of deck slab	
i	Spalling of concrete, If any (To be seen from under side)	
ii	a. Thickness of deck slab as per drawing b. Thickness of deck slab measured during inspection: c. Overburden :	
iii	Cracks on slab concrete near sides/edges	
G	Condition of junction with skywalk etc	
6	a. Camber of each span as per Drg.(If given) b. Actual camber recorded at the time of Inspection	

B	Plate Girder	Span-1	Span-2
1	Number of Main Girders		
a	Condition of verticals with plate girder.		
2	Condition of roof truss.		
3	Condition of connection, gussets ,splice joint, diaphragm and cross bracing etc {for detailed inspection see Appendix A}* 		
4	Inspection of Floor System {for detailed inspection see Appendix B) *		
a	Condition of Main Girder (To be seen from under side)		
b	Condition of Diaphragm & Cross bracing.		
c	Condition of deck slab		
i	Spalling of concrete, If any (To be seen from under side)		
ii	a. Thickness of deck slab as per drawing: b. Thickness of deck slab measured during inspection: c. Overburden:		
iii	Cracks on slab concrete near sides/edges		
5	Condition of junction with skywalk etc.		
6	a. Camber of each span as per Drg.(If given) b. Actual camber recorded at the time of Inspection		
3. Condition of Deck floor			
a	Type of flooring on deck.		
b	Condition of floor.		
c	Condition of Protective screen provided.		
d	Hoarding provided, any to be removed:		
4. Columns		Column-1	Column-2
a	Condition of Main & landing column		
b	Condition of column connection with Plate girder / N-Type		
c	Condition of Column base		
d	Connection & condition of Bracing angles with column		

e	Condition of Holding Down bolts		
f	Connection of column to foundation is visible (Yes/No)		
5. Condition of staircase			
a	Stair case steps		
b	Side Railing.		
c	Nosing angle		
d	Valley gutter connection/condition		
e	Rain water drain pipe & its connections		
6. Covering and side shed condition			
a	Condition of supporting structure		
b	Condition of PPGI sheet/Asbestos sheet etc.		
c	Locations of Leakage		
7.Extra load of cable pipe lines, water pipeline etc required to be removed.			
8.Obstruction of branches of trees etc, if found in the vicinity of FOB to be removed.			
9. Obstruction like offices space/shops etc if any for inspection of Joint/Member to be removed (Yes/No)			
10.Condition of Drainage arrangement			
11.Any other observation.			
12.Photos of defective members/joints requiring attention			
13.Compliance of previous inspections.			
14.Name & Signature of Inspecting official with designation.			
15.Remarks of ADEN with Name and Signature			
16.Remarks of Higher officials			

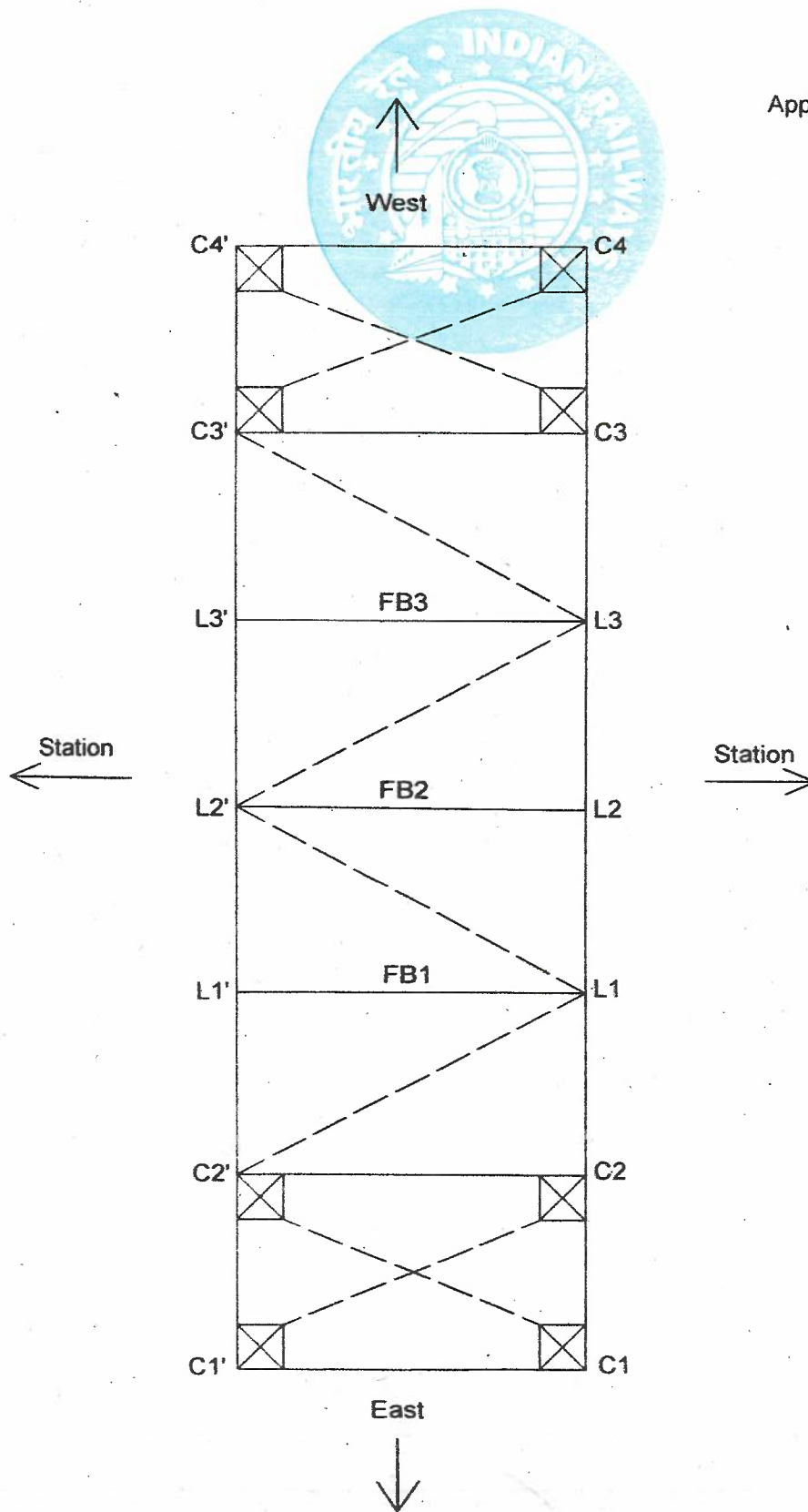
These items shall be inspected in detail by ADEN and observations to be recorded in respective Appendix. These items shall also be inspected by SSE/Works during his/her inspection - visual or otherwise and record his/her observation in the table. If the condition of the structure and its components is not sound and warrants detailed inspection, then SSE/Works shall inform ADEN in writing and call him for detailed inspection.

Appendix-A

Joint Identification Mark	Total no of Rivets/Bolts	Condition of member(Span Wise)			Inspected through LadderTower wagon/Moving Rail Ladder
		Looselcorroded/Missing rivet or Bolts	Weld Joint	Cleat	

Appendix-B

[illegible]



Members & Joints Identification mark