GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)
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No.2017/50/CE-III/BR/FOB

New Delhi, Dt. 26.04.2024

Principal Chief Engineers,
All Indian Railways

Sub: Comprehensive Inspection & Maintenance of FOBs.
Ref: (i) CR letter No.-CE/Circular/Correspondence dated 13.05.2020 (Copy Enclosed)
(ii) CR Letter No.- W.294.BR.FOB.Circulars dated 28.12.2022 (Copy Enclosed)

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Incidence of excessive deflection of FOB due to corrosion on junction line of deck slab with truss has been reported by one of the railway. While, it shall be ensured that all critical connections are accessible for easy inspection, the system also needs to be reviewed.

2. It is observed that some of the railways have already issued comprehensive guidelines for design, fabrication, erection, inspection & maintenance of FOBs. Such guidelines as issued by Central Railway are attached herewith for ready reference. All railways may go through the same and issue similar instruction after careful review and incorporating local good practices already in place in their railway.

3. It is further noted that painting of FOBs is being done as per the specified frequency laid down by IRBM. This is the stage when all the members of FOB are getting attention from a close distance. There may be cases of loose bolts/rivets or other structural damages which may warrant urgent intervention at higher level. It may therefore help if, detailed inspection all the members/ connections is done at this stage.

4. For comprehensive inspection and maintenance, cleaning along the junction line of deck & truss or railing is necessary. Patch painting with anti corrosive paint may be required to prevent further corrosion till next cycle of painting become due. The existing contract schedules of painting therefore, need to be reviewed to include all aspects of comprehensive maintenance. This shall also include periodical cleaning of FOB at the junction line of deck slab and other locations likely to accumulate dirt and doing patch painting wherever required.

5. New FOBs should be designed, fabricated, inspected, erected and maintained following the specific guidelines as instructed above.

DA : As above

26/04/2024

(Ravindra Kumar Goel)
Principal Executive Director (Bridge)
Railway Board

C/- (i) DG/IRICEN, Pune for kind information
(ii) PED/Infra-II, RDSO for information pl.

Central Railway

Head Quarter Office,
Engineering Branch,
CSMT

No. CE/Circular/Correspondence

Date: 13-05-2020

PCE Circular No.: 202 (Revision R2)

Sub: - Design, Fabrication, Erection & Maintenance of Foot Over Bridges on C. Rly

[Supersedes earlier PCE Circular No. 202 (revised) issued vide Letter No. CE/Circular/Correspondence dtd 20/06/2019)

***APPLICABILITY**: - All FOBs being constructed on CRly by Open Line, Construction Organisation, MRVC, RVNL etc.*

1. General Layout/ GAD / Design:

1.1 Following standard designs are available on date

i. Central Rly

a) GM (W)BB/6664-R2, GM (W)BB/6667-R2 – for 3.66m wide FOB

b) GM (W)BB/6671-R2, GM (W)BB/6672-R2 – for 4.5 to 5.0m wide FOB

ii. RDSO

a) RDSO/B-10402, RDSO/B-10405 – for 3.00m wide FOB

b) RDSO/B-10401, RDSO/B-10403, RDSO/B-10404 – for 6.00m wide FOB

1.2 In case standard design of CR or RDSO are not used, then the designs & drawings shall be prepared inhouse by open line/construction organisation and approved by CR 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 CR 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.

1.3 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.

1.4 Minimum Width of FOB shall be **3.0m**, 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. Maximum clear span of FOB shall be **30.0m**.

1.5 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 row 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.

1.6 Normally staircase should not be permitted at the 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.

1.7 Any other type or configuration, span > 30m or single row of column at end support can be considered in unavoidable condition, on specific constraints to be clearly brought out by sponsoring organisation or executing agency, with prior approval of CPD/BW.

1.8 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.

1.9 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.

1.10 As per RDSO's letter No. CBS/Stainless Steel/FOB dated 29/07/2019, Stainless steel reinforcement bars, in coastal areas, shall preferably be used or alternatively, Fusion Bonded Epoxy Coating (FBCE) on MS/HYSD reinforcement bars shall be used. At places other than coastal area, any other suitable anti-corrosive coating shall be applied.

1.11 A method statement for execution shall be prepared by Executing agency indicating Execution Plan, Quality control and Safety issues 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 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 need of 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 Zinc aluminium flake coated bolts and **welded connections should not be used**.

2.1.5 The steel column shall not be embedded in concrete pedetal. **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 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 affects the movement of staff during maintenance and inspection.

2.5 Roofing /Roof cladding:

2.5.1 Typical drawings issued by Central Railway open line for roofing shall normally 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 minumum 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 turn-tables).

3.2 Steel should be procured from primary manufacturer 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 organisations, and by Dy CE(C) for construction organisation, before starting the work.

3.5 Girders shall, preferably, be fabricated in RDSO approved workshop or Railway's Engineering Workshop at Manmad only. In exceptional cases, where it is not possible to fabricate girder in RDSO approved workshop or Railway's Engineering Workshop at Manmad, 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 by concerned DEN/Sr. DEN to CWM/Manmad for his approval in case of Open line & PSU/outside organisations, and for construction organisation, Dy CE(C) 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 welds should be done in workshop only by Submerged Arc Welding process either by fully automatic or semi-automatic machines as approved by designer. Only 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 weld shall be tested at site as per QAP and WPSS. **All field welds shall be subjected to 3rd 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 of 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 Manmad, shall be ensured at each stage by employing 3rd party inspection by Agencies like RDSO, RITES, WRI or any other expert public undertaking *e.g*. CEIL. The final responsibility for quality work as per specifications, however, shall rest with concerned Railway official approving the work.

4.2 While approving QAP and WPSS, consultation with 3rd party Inspecting Agency shall be done by concerned DEN/Sr. DEN/ Dy CE (C), wherever deployed.

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 3rd party agency to Division or field construction unit for rectification & follow up action. The rectification report shall be examined and accepted by concerned Sr. DEN/Co at Divisional level or Dy. CE(C) in construction as per *C Rly HQ letter No. W.294.BR FOB.Cross dated 16-04-2019*.

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 atleast 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 crane of adequate capacity shall always be made at erection sites.

5.3 Erection shall be done at site as per launching scheme (TAD) 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 3rd party inspection agency shall be conducted by sectional ADEN after erection to ensure that the joints are properly fitted.** After erection, 3rd party inspection is must, even if the girders are fabricated in RDSO approved workshop or Railway's Engineering Workshop at Manmad. 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 100mm.

6.3 The sequence and method statement of casting shall be approved by sectional DEN/Sr.DEN.

6.4 Suitable anti-slippage 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 resting 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 Stair case:

7.1 No structure shall be allowed under the staircase structure for any purpose. Entire space underneath staircases, ramps should be kept free for inspection and maintenance.

7.2 The steps of staircase should be of uniform height & width.

7.3 Anti-slippage floor finish with grooved lining, on FOB steps shall be provided.

8.0 Metallizing & Painting:

8.1 All steel members of new FOBs including nuts, bolts, washers etc shall be metallised as per IRBM para 218 (1).

9.0 Miscellaneous:

9.1 Provision of stainless-steel railing of 40mm dia. pipe as per specification of RDSO for differently abled persons should be provided on steps/ ramp during construction itself.

9.2 Floor should be provided with suitable camber 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 specified in JPO issued vide letter No. W.294/Br/Hoarding/Division dated 19-07-2018 are fully complied with.

10. Inspection & Maintenance:

10.1 Periodic inspection of FOB shall be conducted in detailed proforma circulated vide *letter No. W.294.Br.FOB.Maint.Mumbai dated 29-05-2019*.

This issues with the approval of PCE/CR.

(Ashwani Saxena)
CPD/BW

References:

i. B-1/2001, BS-110 (R)
ii. RDSO guidelines for HSFG bolts BS – 111 (Updated)
iii. Rly Bd letter No. 2017/16/CE-III/BR/Girder inspection dated 26-05-2017 – Inspection of New steel bridge girders
iv. HQ letter No. W.293.BR.Circular dated 22-5-2018 – Fabrication & erection of FOBs/ ROBs
v. HQ letter No. W.294.BR/ROB/FOB dated 29-03-2019 – Non provision of granite flooring & AMC for FOBs
vi. HQ letter No. W.294.BR FOB.Cross dated 16-04-2019 – Quality control in Fabrication of FOB girder
vii. HQ letter No. W.294.Br.FOB.Maint. Mumbai dated 29-05-2019 – FOB Inspection proforma
viii. JPO issued vide letter No. W.294/Br/Hoarding/Division dated 19-07-2018 – Provision of Hoarding
ix. CRly Typical drawings No. GM (W) BB/6628-R1 – Roofing of FOB
x. Rly Bd letter No. 2018/LM (PA)/03/06 dated 09-04-2018 – Comprehensive instruction for PA works
xi. RDSO letter No. CBS/Stainless Steel/FOB dated 29-07-2019 – Use of stainless steel in FOB

CENTRAL RAILWAY

HEADQUARTERS OFFICE,
ENGINEERING BRANCH,
MUMBAI C.S.T.

NO: W.294.BR.FOB.Circulars

Date: 28.12.2022

Sub: Inspection and Maintenance of FOBs - Issue of PCE Circular No. 212.

Ref:
1. CBE Office letter No. W.294/BR/BP/IV dated 08.06.2005
2. CBE Office letter No. W.294/BR/FOB/Maint 23.03.2015.
3. CBE Office letter No. W.294/BR/FOB/Maint 23.04.2015.
4. CBE Office letter No. W.131.BR.C/General dated 17.05.2019
5. PCE Office letter No. W.294.BR.FOB.Maint. Mumbai dated 29.05.2019.
6. PCE Office letter No. W.294/BR/Ins of Girder dated 16.04.2021.
7. PCE Circular No. 202 (Revision R3) issued vide Office letter No.W.294.CE.FOB. Ciculars dated 29.07.2022.

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1. Recently an incidence has occurred, wherein the joint of a floor beam with that of gusset plate of a FOB at Balharshah has gave way leading to collapse of the floor beam and a part of deck, resulting into injuries to passengers and one casualty also, beside disruption of traffic.
2. Instructions regarding inspection and maintenance of FOBs have been being issued from time to time by this office vide letters referred above. A detailed Proforma for inspection of FOBs was also circulated vide this office letter no. W.294.BR.FOB.Maint.BB 29.05.2019, which is being followed at present by AEN/SSE works.
3. Despite elaborate instructions issued from time to time, such undesirable incidents are happening, which indicate that inspections are not being carried out with due care and seriousness.
4. In order to achieve objective to improve the quality of inspection and thereafter maintenance of FOBs, it is decided to prepare and issue a detailed guideline regarding inspection of FOBs and other Over Head Structures (Excluding ROBs). A detailed guideline in this regard has been prepared as per guidance and direction of GM/CR and PCE/CR and extensive deliberation with other stack holders, such is SSE/Works, AENs, SrDENS, Bridge Engineers, other HQ Officers, etc. The same is now issued in the form of PCE Circular No. 212 for immediate adoption and implementation.

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5. CWM/MMR in association of the DyCE/Bridge Line (for experienced SSE/Bridge) shall arrange to conduct one day's training courses in inspection and maintenance of steel works for SSE/JE works in respective division or at mutually agreed location, atleast one session in each division in the coming month.

28/12/22

(S. K. Gupta)
Chief Bridge Engineer

Copy to:

CWM/MMR - for information and necessary action.
CE/G - The vacancies of SSE/JE(Works) against direct and departmental quota respectively needs to be filled up on top priority. May please monitor and coordinate with divisions and CPO/IR for this.

CENTRAL RAILWAY

HEADQUARTERS OFFICE,
ENGINEERING BRANCH,
MUMBAI C.S.T.

NO: W.294.BR.FOB.Circulars

Date: 28.12.2022

PCE Circular No. 212

Sub: Inspection and Maintenance of FOBs - PCE Circular.

Applicability: All FOBs, Railway as well as Public, Overhead Structures such as pipeline crossings but excluding ROBs.

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1. As per Para-228 of IRWM, inspection of all FOBs to be done by SSE/Works once a year. ADEN shall be required to inspect atleast 20% of FOBs once in a year, on prorate basis. Proforma for inspection of FOBs was also circulated vide this office letter no. W.294.BR.FOB.Maint.BB 29.05.2019, which is being followed at present by ADEN/SSE(Works).

2. It is noticed that SSE/Works are not carrying out independent inspection of FOB as stipulated in Para-228 of IRWM and are only accompanying ADENs during their inspections, which is against the provisions of IRWM.

3. **Annual inspection by SSE/Works:** Inspection of all FOB to be done by SSE/Works once in a year, as stipulated in para 228 of IRWM. SSE/Works shall do the annual inspection of all the FOBs in a prescribed proforma (Annexure-I), in a register called "FOB Register" and complete by September of the year. These registers shall be submitted to ADEN by 1st week of October, who shall scrutinise the entries, issue such orders 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/Works to carry out the repairs required. Wherever required, tower-cars, trolley-based ladders, modified RBMV or similar arrangements may be used for inspection of FOBs.

4. **Inspection by ADEN:** ADEN shall carryout inspection of atleast 20% FOBs once a year, as stipulated in Para-228 of IRWM, on prorata basis, in a prescribed proforma (Annexure-I), in the same "FOB Register" of SSE/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/SrDENs by 15th February every year.

5. **Detailed Inspection:**

5.1 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.

5.2 FOBs should be selected for detailed inspection in the order of their age i.e. oldest FOB shall be inspected first. DEN/SrDEN, 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 subsequent years. Any new FOB constructed during a year shall be inserted in the roster in the suitable year. Based on the data collected from divisions, a tentative schedule for inspection of N-type FOBs as per frequency of 5 years is attached herewith as **Annexure-II**. 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 AEN in his jurisdiction and same to be updated based on new constructions and dismantling regularly.

5.3 FOBs having age more than 60 years in Mumbai 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). FOBs, the condition of which warrant special attention, shall be inspected more frequently.

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5.4 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.

5.5 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 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.

(iii) **Bottom of steel columns of public FOBs** – at both ends generally remain covered with excavated muck, garbage dumped by public etc. Column base should be adequately encased with concrete above ground level to protect from corrosion.

5.6 Single Ladder, Track Mounted Trollies and Ladder, Tower Wagons or any other Departmental Material Train MUST be used for effective inspection of underneath portions of these overhead bridges.

5.7 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**.

5.8 For these detailed inspections, if so, considered necessary, assistance of the Bridge Line staff and SSE/Bridge shall be requisitioned.

5.9 **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 in the same register, which shall include the details as per **Appendix-A, B & C as given in Annexure-I.** This proforma supersedes the proforma issued earlier vide HQ's letter no. *W.294.BR.FOB.Maint.BB 29.05.2019*.

5.10 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"*.

6. **Assigning ORN:**

6.1 System of assigning ORN for FOBs shall be for –

(i) Concrete work such as foundation, deck slab, flooring in steps etc.

(ii) Condition of Main girders, beam, roof, railing & protective screens etc.

(iii) Connections, junctions, pins & areas clearly not visible from a distance, etc.

(iv) Any other location/part of FOB.

6.2 Each FOB shall be assigned an ORN number based on its overall condition.

6.3 A brief reason shall also be recorded for while assigning ORN 1, 2 and 3.

6.4 FOBs with ORN 1, 2 and 3 to be inspected by ADEN every year.

6.5 FOBs with ORN 1, 2 and 3 pertaining to steel to be got inspected by SSE/Bridge.

6.6 All the FOB Registers shall be submitted to divisional HQ and to be scrutinised by respective Sectional DEN/SrDEN.

6.7 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.

6.8 Along with FOB Registers, DEN/SrDEN 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 finalised/concluded by respective Territorial HOD, while for ORN-1 & 2 FOBs, it shall be finalised by CBE in HQ. Any FOB having ORN 3, based on merit, can also be referred to CBE by Territorial HOD.

6.9 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.

7. DyCE/Br/I in HQ 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.

8. High-Definition High-zoom DSLR cameras, mounted with a lens with focal length 300 mm or more may be procured and used for regular use in 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.

9. In the inspection kit, a good quality Binocular like Binocular Falcon 10 x 50 or similar with atleast 10x zooming feature, shall be kept and used for the inspection purpose, beside other equipment viz. scrapper, light hammer, callipers, etc.

10. 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.

11. **Painting of FOBs:** Generally painting of FOBs is done as per prescribed frequency, which is instructed for vide HQ's CBE Office letter No. W.294/BR/BP/IV dated 08.06.2005 and vide PCE Circular No. 202 (R3) which stands good. However, critical underneath parts and connections are either left or casually attended. SSE/Works should ensure that the painting is done only after proper surface preparation is done. 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.

12. Replacement & rehabilitation of FOBs may be proposed in PH-53. However, major repairs shall be charged to Revenue and must be executed on top priority.

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.

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.

15. FOBs, the condition of which warrant special attention, shall be inspected more frequently.

16. In exceptional circumstances, an external inspection and testing agency or institute of repute may be engaged and deployed for a detailed safety audit of a FOB. The decision to be taken not below the level of SrDEN(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.

17. Above instructions are applicable for pipe line and other overhead crossings also, but excluding ROBs and RORs.

18. This supersedes this office letter dated 16.05.2021 as provision of assigning of ORN has been incorporated. Para-10 of PCE circular 202 (R3) also stands withdrawn.

28.12.22

(Rajesh Arora)
Principal Chief Engineer

Annexure-I

PROFORMA FOR DETAILED INSPECTION OF FOB

STATIC DATA		
A. GENERAL DATA		
1	Bridge No / Bridge Name (if any)[1]	
2	Section	
3	Kms	
4	Station/Location	
5	Year of construction	
6	No. & Length of span	
7	No. and width of stair cases/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	Center to Center of Main girders	
4	Clear width 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) Minimum required as per SOD:	

[1] Entire view of FOB to be attached in the register.

INSPECTION REPORT			
1. General			
	a) Date of Inspection		
	b) Last technical Inspection on		
	c) Last Repair done on		
	d) Date of last painting		
	e)Overall Condition of painting		
2. Condition of steel work			
A	**N Type Truss**	Span 1	Span 2
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 detailed 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		
4	Condition of junction with skywalk etc.		
5	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, if 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		Staircase 1	Staircase 2
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		To be attached during detailed inspection.	
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			

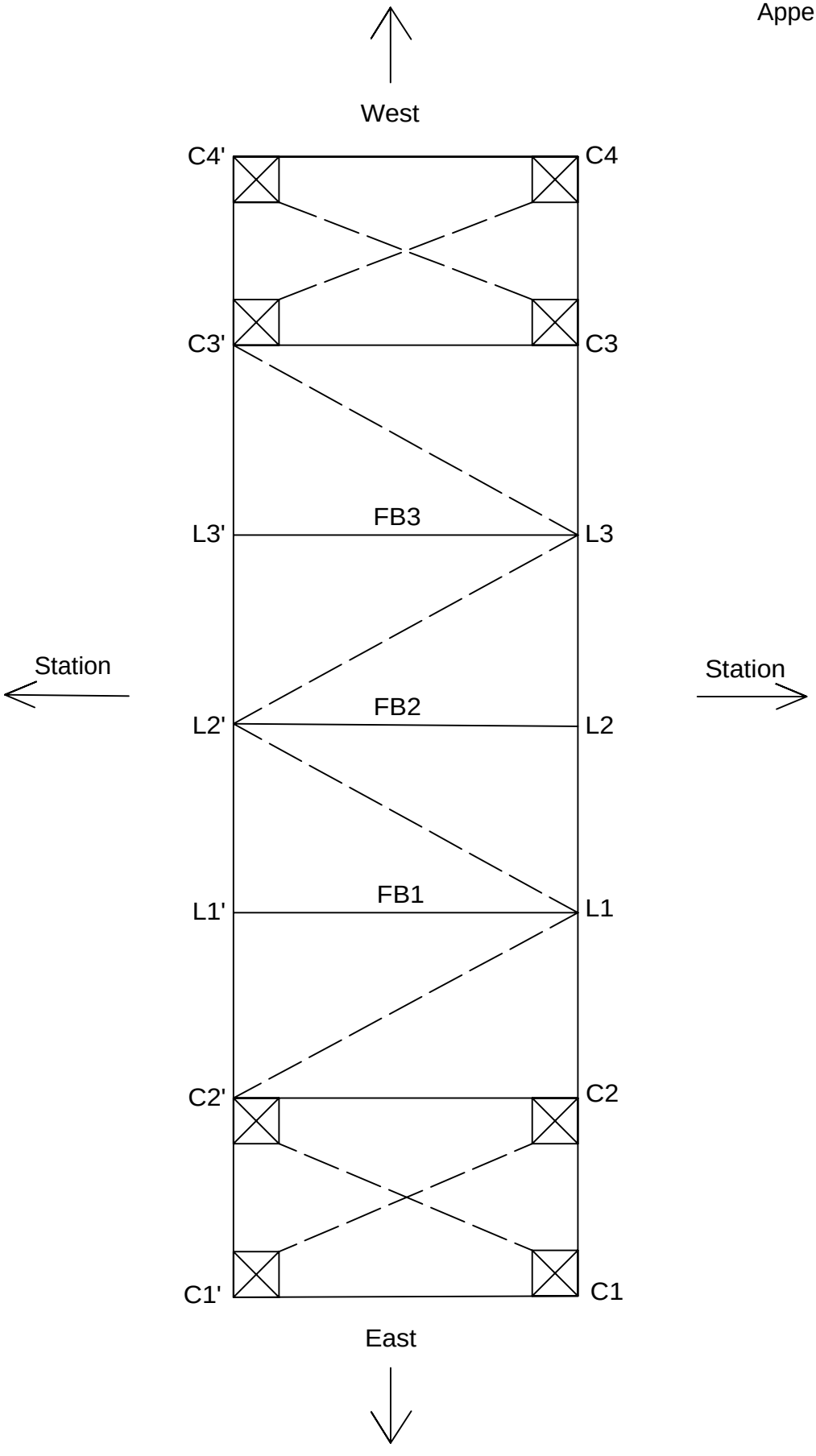
***** These items shall be inspected in detail by ADEN and observations to be recorded in respective Appendix. These items shall also be inspected by SSE/Works during his/her inspection - visual or otherwise and record his/her observation in the table. If the condition of the structure and its components 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 (Span Wise)			Inspected through Ladder/Tower wagon/Moving Rail Ladder
		Loose/corroded/Missing rivet or Bolts	Weld Joint	Cleat	

Appendix-B

Identification Mark	Condition of member(Span Wise)	Inspected through Ladder/Tower wagon/Moving Rail Ladder	Remarks



Members & Joints Identification mark

Annexure-II

SN	Name of FOBs	Type of FOBs	Year of Construction	Remarks	Planning of Detailed Inspections
Mumbai Division					
1	Matunga Station FOB (CST end)	Warran type	1912		2022-23
2	Bhandari FOB	Warran type	1915	Replacement planned under Gati Shakti Unit	2022-23
3	Masjid Station Public FOB (KYN end)	Warran type(IN WEST) & N-Type (East to PF 04)	1922	Replacement planned under Gati Shakti Unit	2022-23
4	Gunpowder FOB (Between Dock yard-Ray road)	N' type	1923	Closed. To be dismantled. Replacement planned under Gati Shakti Unit	2022-23
5	Masjid Station FOB (CST end)	N' type	1924		2022-23
6	Thane Chandnibunder Public FOB (KYN	N' type	1932		2022-23
7	Dadar Station middle old FOB(KYNend)	N TYPE	1950		2022-23
8	BPT Colony FOB bet. Sewari-Wadala Stn.	N type	1952		2022-23
9	Wadala Station public BPT FOB (CST end) PF 01 to BPT colony	N type	1952		2022-23
10	Kings Circle Station FOB WADALA END	N type	1954		2026-27
11	BADLAPUR MIDDLE	N-TYPE	1955		2022-23
12	VANGNI	N-TYPE	1955		2022-23
13	Chunabhatti Station FOB (CLA end)	N' type	1960		2022-23
14	Khandala Station	N Type	1960		2022-23
15	Sion Station FOB(CST End)	N' type	1963		2022-23
16	ULHASNAGAR STN.	N-TYPE	1963		2022-23
17	Sion Stn. FOB (Kyn end)	N type	1963		2022-23
18	IGP Station FOB (BSL	N Type	1965		2022-23
19	Ghatkoper Station FOB (KYNend)	N' type	1967		2022-23
20	Byculla Station FOB (KYN end)	N' type	1968		2022-23
21	Kalyan Station FOB	N' type	1969		2022-23
22	VITHALWADI STN. EXTENSION PA END	N-TYPE	1971		2022-23
23	Mulund Station FOB (KYN end)	N' type	1972		2022-23
24	Dharavi Public FOB (Between Matunga - SION Station)	N' type	1973	Replacement planned under Gati Shakti Unit	2023-24

SN	Name of FOBs	Type of FOBs	Year of Construction	Remarks	Planning of Detailed Inspections
Mumbai Division					
25	Vikroli Station FOB (KYN end)	N' type	1973		2023-24
26	Kalyan Station FOB (CST end) PF1&6	N' type	1974		2023-24
27	Byculla Station FOB (CST end)	N' type	1975		2023-24
28	Matunga Station FOB (KYN end)	Warran type	1975		2023-24
29	Matunga Work shop FOB	Warran type	1975	Replacement planned under Gati Shakti Unit	2023-24
30	Mulund Station Public FOB (CST end)	N' type	1975	Replacement planned under Gati Shakti Unit	2023-24
31	Public FOB (Between SION-CLA Station) Swadeshi Mill	N' type	1976		2023-24
32	Public FOB between Bhandup - Nahur	N' type	1976	Replacement planned under Gati Shakti Unit	2023-24
33	SHELU (KYN End)	LATTICE TYPE	1976		2023-24
34	Chinchpokli Station FOB	N' type	1977		2023-24
35	Matunga level Crossing FOB	N' type	1977	Replacement planned under Gati Shakti Unit	2023-24
36	Public FOB between Dombivili & Thakurli Station.	N' type	1977		2023-24
37	Public FOB between Gurutegbahadur - Chunabhatti station	N' type	1977		2023-24
38	Public FOB between Nahur-MLND	N' type	1979	Replacement planned under Gati Shakti Unit	2023-24
39	Govandi Station Public middle FOB	N type + DP Girder	1979		2023-24
40	Mankhurad Station FOB (CLA end)	N' type (new) ,RSJ (old)	1979		2023-24
41	Kings Circle Station Public FOB along PF 01 (WEST)	N' type	1980		2023-24
42	Kings Circle Station Public FOB along PF 02 (EAST)	N' type	1980		2023-24
43	Chembur Station Middle FOB	N' type + P.G.	1983		2023-24
44	Parel Station FOB(CST End)	N' type +DPG	1984		2024-25
45	VPS school Public FOB	N Type	1984		2024-25
46	LNL Station FOB PA END	N Type	1984		2024-25
47	Dombivili Station FOB (CST end)	N' type	1985		2024-25
48	Bhandup Station FOB (CST end)	N' type	1986		2024-25
49	Kanjurmarg FOB (KYN end)	N' type	1987		2024-25

SN	Name of FOBs	Type of FOBs	Year of Construction	Remarks	Planning of Detailed Inspections
Mumbai Division					
50	Kanjurmarg Public FOB (KYN end)	N' type	1987		2024-25
51	Mulund Station FOB (CST end)	N' type	1989		2024-25
52	Gurutegbahadur Station FOB (CST end)	N' type	1990		2024-25
53	Roha Station FOB	N Type	1990		2024-25
54	Wadala Station Station FOB (CST end)	N type	1995		2024-25
55	Public FOB between GTBN-Wadala	N' type	1995	Replacement planned under Gati Shakti Unit	2024-25
56	Mankhurad Station FOB (VASHI end)	N' type	1995		2024-25
57	Khadawali Station FOB	N Type	1996		2024-25
58	Panvel Station FOB, ROHA END	N Type	1998		2024-25
59	Datiwali Station FOB	N Type	1999		2024-25
60	Nilje Station FOB	N Type	1999		2024-25
61	Taloja Station FOB	N Type	1999		2024-25
62	Nawade RD. Station FOB	N Type & Plate girder	1999		2024-25
63	Kalmboli Station FOB	N Type	1999		2024-25
64	Diwa Station FOB (Middle)	N' type + DP Girder	1999		2024-25
65	Asangaon Station FOB IGP end	N Type	2000		2025-26
66	Kasara Station FOB old	N Type	2000		2025-26
67	Panvel Station FOB,DW end	N Type	2001		2025-26
68	AMBERNATH PUBLIC FOB PA END	N-Type	2002		2025-26
69	Kopar Station FOB	N Type	2002		2025-26
70	Kharbao Station FOB	N Type	2002		2025-26
71	Juichandra Station FOB	N Type	2002		2025-26
72	Bhivandi Road Station FOB	N Type & Plate girder	2002		2025-26
73	Kaman Road Station FOB	N Type & Plate girder	2002		2025-26
74	KARJAT LNL END	N-TYPE	2003		2025-26
75	Public FOB between Dombivili & Thakurli Station.	N' type	2004		2025-26

SN	Name of FOBs	Type of FOBs	Year of Construction	Remarks	Planning of Detailed Inspections
Mumbai Division					
76	Vasind Station FOB	N Type	2004		2025-26
77	ULHASNAGAR STN.	N-TYPE	2005		2025-26
78	Mohape Station FOB	N Type	2005		2025-26
79	Choake Station FOB	N Type	2005		2025-26
80	Mumbra Station new KYN end	N' type	2006		2025-26
81	CST Station FOB connecting PF14 to 18 (Main Line)	N' type	2007		2025-26
82	Koper Station FOB	N' type	2007		2025-26
83	Kanjurmarg FOB (CST end)	N' type	2008		2025-26
84	ULHASNAGAR PUBLIC FOB.	N-TYPE	2010		2025-26
85	Parel Station FOB(KYN End) NEW	N' type +DPG+ Bailey	2013		2025-26
86	Chinch Bunder Public FOB (galvenized)	N' type	2015		2026-27
87	Vikroli Station FOB (CST end)	N' type	2015		2026-27
88	Vidya Vihar Station PUBLIC FOB (KYN End)	N' type	2016		2026-27
89	Kurla Station FOB (KYN end)	N' type	2017		2026-27
90	Nahur Station new FOB	N' type	2017		2026-27
91	Thane Station Public FOB (CST end)	N' type	2017		2026-27
92	Thane Station FOB (CST end)	N' type	2017		2026-27
93	BHIVPURI ROAD STN.	N Type	2017		2026-27
94	Curry Road Station FOB (CST end)	Designed by Army	2018		2026-27
95	Parel station FOB DR END	Designed by Army	2018		2026-27
96	Ambivali Station FOB	Baily Bridge	2018		2026-27
97	Dadar Station FOB (CST end) Connecting PF03 to 06	Lattice type	2022		2026-27
98	FOB at VSH (29/5-7)	N Type	2022		2026-27
99	NEU-SWED FOB	N Type	2022		2026-27

SN	Name of FOBs	Type of FOBs	Year of Construction	Remarks	Planning of Detailed Inspection
Bhusawal Division					
1	BADNERA 2	N-type truss+ Lattice type	1916		2022-23
2	MHASAVAD	Lattice Type	1918		2022-23
3	MURTIZAPUR	Lattice-type truss	1937		2022-23
4	MALKAPUR	Half lattice and N type (New FOB of Plate girder type in lieu of old FOB construction is in progress.)	1956		2022-23
5	Savda	N-type truss	1956		2022-23
6	BODWAD	Lattice type truss (New FOB of Plate girder type in lieu of old FOB construction is in progress.)	1957		2022-23
7	Raver	N-type truss	1957		2022-23
8	Burhanpur 1	N-type truss	1958		2022-23
9	Nepanagar	N-type truss	1958		2022-23
10	CHALISGAON	N-type truss	1960		2022-23
11	LASALGAON	N-type truss	1961		2023-24
12	Akola	Lattice type	1961	Closed. To be dismantled.	2023-24
13	Nandura FOB	Half N-type truss & Half lattice type	1967	Closed. To be dismantled.	2023-24
14	BHUSAWAL 1	N-type truss	1967		2023-24
15	VARANGAON	N type, extended portion plate girder on UP loop1 & loop 2	1968		2023-24
16	Nimbhora	N-type truss	1968		2023-24
17	JALAMB	N-type truss	1971		2023-24
18	NASIK ROAD 3	N-type truss	1975		2024-25
19	NASIK ROAD 1	N-type truss	1984		2024-25
20	JALGAON 2	N-type truss	1984		2024-25
21	AKOLA 1	N-type truss	1995		2024-25
22	Manmad Workshop FOB	N-type truss	1999		2024-25
23	NANDGAON	N-type truss	1999	Closed. To be dismantled.	2026-27
24	PACHORA	N-type truss	2004		2025-26
25	MAHEJI	N-type truss	2007		2025-26
26	ODHA	N-type truss + Plate Girder	2010		2025-26
27	NIPHAD	N-type truss	2010		2025-26
28	KAJGAON	N-type truss	2010		2025-26
29	NAGARDEVLA	N-type truss	2010		2025-26
30	BORGAON	N-type truss	2010		2026-27
31	PARAS	N-type truss	2010		2026-27
32	Khandwa 1	N-type truss	2014		2026-27
33	Burhanpur 2	N-type truss	2019		2026-27

SN	Name of FOBs	Type of FOBs	Year of Construction	Planning of Detailed Inspection
Nagpur Division				
1	JNO YARD OLD FOB	Steel Structure (M.S. Structure) N Type truss.	1920	2023-24
2	BPQ FOB	Truss N-Type	1969	2022-23
3	WRR FOB	M.S. Structure, Truss	1974	2022-23
4	MAJRI FOB	M.S. Structure, Truss	1974	2022-23
4	GGS FOB	Truss N-Type	1974	2022-23
5	AQ FOB 1 WR END	Steel Structure (M.S. Structure) N Type truss.	1974	2022-23
6	BUX FOB	Truss N-Type	1975	2022-23
7	WR FOB	Steel Structure (M.S. Structure) N Type truss.	1976	2022-23
8	BPQ FOB	Truss N-Type	1978	2022-23
9	PLO FOB	Steel Structure (M.S. Structure) N Type truss.	1982	2023-24
10	CD FOB	Truss N-Type	1983	2023-24
11	BZU2 FOB	Steel Structure (M.S. Structure) N Type truss.	1984	2023-24
12	DMN FOB	Steel Structure (M.S. Structure) N Type truss.	1984	2023-24
14	NRKR FOB	N-Type Truss	1989	2023-24
15	MTY FOB	N-Type Truss	1989	2023-24
16	PAR FOB	N-Type Truss	1989	2024-25
17	AMF FOB	N-Type Truss	1989	2024-25
18	CND FOB	Steel Structure (M.S. Structure) N Type truss.	1989	2024-25
19	GDYA FOB	Steel Structure (M.S. Structure) N Type truss.	1990	2024-25
20	NGP FOB 4 (WR end)	Steel Structure (M.S. Structure) N Type truss.	1991	2024-25
21	KSWR FOB	M.S. Structure, Truss	1995	2024-25
22	KATL FOB	Steel Structure (M.S. Structure) N Type truss.	1995	2025-26
23	SEGM FOB	Steel Structure (M.S. Structure) N Type truss.	1995	2025-26
24	BTBR FOB	Steel Structure (M.S. Structure) N Type truss.	2000	2025-26
25	SNI FOB 2	Steel Structure (M.S. Structure) N Type truss.	2000	2025-26
26	NGP FOB 3 (WR end)	Steel Structure (M.S. Structure) N-Type Truss.	2007	2024-25
27	TAE FOB	Truss N-Type	2009	2025-26
28	AQ FOB 2	Steel Structure (M.S. Structure) N- Type truss.	2009	2025-26
29	PUX FOB	Steel Structure (M.S. Structure) N Type truss.	2014	2026-27
30	JUNNARDEO FOB	Steel Structure (M.S. Structure) N Type truss.	2017	2026-27
31	BZU1 FOB	Steel Structure (M.S. Structure) N Type truss.	2017	2026-27
32	HGT FOB	M.S. Structure, Truss	2018	2026-27

SN	Name of FOBs	Type of FOBs	Year of Construction	Date of Painting	Remarks	Planning of Detailed Inspection
Pune Division						
1	Pune 1	Pin type girder	1925	42125	FOB for PF 1 to 6 closed for public. FOB to be dismantled.	_
2	Dehuroad	Pin type girder	1958	May-18		2022-23
3	Uruli	N Type	1958	Nov-21		2022-23
4	Satara	Truss Type	1971	Dec-22		2022-23
5	Karad	N Type	1971	Nov-20		2022-23
6	Sangli	N Type	1971	Jan-21		2022-23
7	Kedgaon	N Type	1972	Nov-21		2022-23
8	Dapodi	N Type	1989	Jun-18		2022-23
9	Malavli	N Type	1990	Jul-20		2022-23
10	Kamshet	N Type	1990	Dec-20		2022-23
11	Vadgaon	N Type	1990	Jan-21		2022-23
12	Talegaon 1	Latice truss	1990	Oct-21		2023-24
13	Pimpri (Old)	N Type	1990	Dec-21		2023-24
14	Khadki 1	N Type	1990	Jun-21		2023-24
15	Shivajinagar 2	N Type	1990	Jun-18		2023-24
16	Jaisingpur	N Type	1991	Jan-21		2023-24
17	Hatkangale	N Type	1991	Jan-21		2023-24
18	Rukadi	N Type	1991	Jan-21		2023-24
19	Kolhapur 1	N Type	1991	Jan-21		2023-24
20	AKRD-CCH 2	N Type	1992	Dec-21		2023-24
21	Akurdi	N Type	1995	Oct-18		2023-24
22	AKRD-CCH 1	N Type	1998	Dec-21		2024-25
23	Ghorawadi	N Type	2002	Jan-21		2024-25
24	Begdewadi	N Type	2002	May-18		2024-25
25	Shivajinagar 1	N Type	2002	Jun-18		2024-25
26	Kanhe	N Type	2005	Nov-21		2024-25
27	Pimpri (New)	N Type	2006	Dec-18		2024-25
28	Loni	N Type	2006	Dec-21		2024-25
29	Miraj 2	N Type	2006	Jan-21		2024-25
30	Hadapsar	N Type	2007	Nov-21		2024-25
31	Yevat	N Type	2008	Dec-18		2025-26
32	Kasarwadi	N Type	2010	May-18		2025-26
33	DAPD-KSWD	N Type	2010	Oct-21		2025-26
34	Lonand	N Type	2014	Nov-22		2025-26
35	Khadki 2	N Type	2015	Oct-15		2025-26
36	Kirloskarwadi	Truss Type	2015	Jan-21		2025-26
37	Jejuri	N Type	2016	Nov-22		2025-26
38	Nira	N Type	2018	Nov-22		2026-27
39	Kolhapur 2	N Type	2018	Jan-21		2026-27
40	Manjri	N Type	2019	Oct-19		2026-27
41	Khutbhav	N Type	2019	Oct-19		2026-27
42	Miraj 1	N Type	2020	Jan-20		2026-27
43	Kadethan	N Type	2021	Nov-21		2026-27

SN	Name of FOBs	Type of FOBs	Date of Construction	Planning of Detailed Inspection
Solapur Division				
1	BELAPUR STATION FOB	N-Type Truss	1975	2022-23
2	AHMED NAGAR OLD FOB	N-Type Truss	1979	2022-23
3	WADI STATION FOB	N-Type Truss	1987	2022-23
4	SHAHABAD DD END	N-Type Truss	1987	2022-23
5	SHAHABAD WD END FOB	N-Type Truss	1987	2022-23
6	KALBURGI SUR END FOB	N-Type Truss	1989	2022-23
7	HIRENANDUR STATION FOB	N-Type Truss	1989	2022-23
8	MARTUR STATION FOB	N-Type Truss	1989	2023-24
9	KOPARGAON STATION FOB	N-Type Truss	1993	2023-24
10	DAUND PA END FOB	N-Type Truss	2000	2023-24
11	BHIGVAN STATION FOB	N-Type Truss	2000	2023-24
12	HOTGI STATION FOB	N-Type Truss	2000	2023-24
13	KURUDWADI STATION FOB	N-Type Truss	2000	2023-24
14	SOLAPUR MIDDLE	N-Type Truss	2005	2023-24
15	SOLAPUR WD END	N-Type Truss	2005	2024-25
16	PUNTAMBA STATION FOB	N-Type Truss	2007	2024-25
17	AKKALKOT RD. STATION FOB	N-Type Truss	2007	2024-25
18	DUDHANI STATION FOB	N-Type Truss	2007	2024-25
19	OSMANABAD STATION FOB	N-Type Truss	2013	2024-25
20	LATUR STATION FOB	N-Type Truss	2013	2025-26
21	MOHOL STATION FOB	N-Type Truss	2013	2025-26
22	TIKEKARWADI STATION FOB	N-Type Truss	2013	2025-26
23	PANDHARPUR STATION FOB	N-Type Truss	2014	2025-26
24	SANGOLA STATION FOB	N-Type Truss	2014	2026-27
25	MADHA STATION FOB	N-Type Truss	2017	2026-27
26	AHMED NAGAR NEW FOB	N-Type Truss	2019	2026-27
27	JEUR STATION FOB	N-Type Truss	2022	2026-27