



पश्चिम मध्य रेल
West Central Railway

No. W65/Bridge/Policy/Vol-II

महाप्रबंधक का कार्यालय,
General Manager's office,
इंजीनियरिंग विभाग,
Engineering Department,
जबलपुर-482 068
Jabalpur-482 068

Date: 27.01.2020

(PCE Circular No. 24)

Sub:- Planning and construction of FOB.

Ref:- CRS'CC's letter no.C-8/B(9)/2019/08 dated 02.01.2020.

Presently, large number of FOBs are being constructed on WCR, involving various organizations. It is extremely important that FOB works are executed with utmost care and safety. In WCR, FOBs are being constructed by Open line, Construction, IRCON & RVNL Organization.

Considering the importance of the issue, following guidelines are issued towards planning and construction of FOB, for ensuring uniformity, safety, quality and ease of execution:-

(A) General instruction:-

- (1) At most of places in field, it is found that quality of welding is not up to the mark. Therefore, fabrication shall be carried out at the workshops approved by RDSO/ CBE, to ensure proper weld quality. The assembling at site shall be done with HSFG bolts by splicing.
- (2) RDSO standard drawings for FOB are available, having plate girder and spliced joints with HSFG, which may directly be adopted in future works. In case RDSO drawings are not fitting to the site conditions, the relevant drawings issued by the Western and Central Railway can be adopted. Drawing nos. are mentioned as below:-

(i) 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.

OR

(ii) Western Railway

- (a) TP BR-62/2019 HQ,
- (b) TP BR-62/2019 HQ (1),
- (c) TP BR-62/2019 HQ (2),

OR

(iii) Central Railway

- (a) GM (W)BB/6664-R1, GM (W)BB/6667-R1- for 3.66m wide FOB.
- (b) GM(W)BB/6671-R1, GM (W)BB/6672-R1- for 4.5m to 5.0m wide FOB.

- (3) Vertical clearance and horizontal clearance should be kept for island/non-island platforms as per Item- 7b, Chapter no. II of SOD, ACS no.-24.
- (4) Composite girder to be used of so that depth of girder is minimized.

- (5) Ramp shall be dog-legged/multi legged as far as possible. For this purpose, concept followed at Misrod Station by RVNL, Drg. No. MSO/17/04, may be adopted with necessary site specific fitment.
- (6) Provision of future lifts, escalator etc. shall be shown in the GAD with future widening.

(B) Main Girder Arrangement:-

- (1) Main girder shall be built up I section, with Submerged Arc Welding only.
- (2) Splicing of web/flange will be done with HSFG bolts using DTI washers under the supervision of authorised person of approved supplier, as per guidelines issued.
- (3) Field welding shall be done only in exception circumstances, with prior approval of CBE, duly furnishing cogent reasons for such request.

(C) Welded/Bolted Connections & their amenability for inspection:-

- (1) Connections of members should not result in development of water accumulation pockets and should enable easy replacement.
- (2) All welds should be done in workshop only by Submerged Arc Welding process, either fully automatic or semi-automatic machines, as approved by designer.
- (3) QAP & WPSS shall ensure that approved type of welding is being done and proper record is maintained.
- (4) Medium Inert Gas (CO₂) welding may be done only for short runs or for secondary members or inaccessible locations. It should be possible to visually inspect all such welded joints during periodical inspections.
- (5) Only approved welders should be assigned the fabrication work.
- (6) 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).
- (7) Steel should be procured from primary manufacturer only, like SAIL, TISCO, JINDAL, RINL etc.
- (8) Before fabrication drawings, Quality Assurance Plan (QAP) and Welding Procedure Specification Sheet (WPSS) should be prepared.
- (9) Girder should be fabricated in RDSO approved workshop as per BS-110 & Railway Board letter No. 2017/50/CE-III/FOB dated 18.12.2018 supplemented by CRly guidelines issued vide letter No. W.293.BR.Circular dated 22.05.2018 & 31.12.2018.

(D) Erection at site:-

- (1) The crane deployed for erection shall be of adequate capacity, with 50% extra margin, to lift the girders at specified working radius and boom length as per approved scheme.
- (2) Erection shall be done at site as per launching scheme (TAD) approved in presence of section Sr. DEN/DEN.
- (3) No Gas cut holes shall be allowed to fix diaphragms of cross bracing.

(E) Deck Slab:-

- (1) Casting of in-situ deck slab should be done with galvanised sacrificial shuttering.

- (2) Protective screen as per RDSO drawing to be provided during construction itself.
- (3) A clear gap of minimum 50mm to 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.
- (4) Wherever pre-cast slab is used in deck, the following need to be ensured:-
 - (a) Minimum Grade of concrete for pre-cast slab shall be M-35.
 - (b) Minimum cover of 25mm to reinforcement should be scrupulously ensured.
 - (c) Pre-cast deck slab should be properly handled during erection, preferably with Mechanical device such as Hydra etc, to avoid damage to the slab.

(F) Stair case:-

- (1) No structure shall be allowed to be constructed under the staircase for whatsoever purpose. Structures already constructed are to be dismantled.
- (2) The tread and rise steps of staircase should be uniform throughout.
- (3) 25mm thick (minimum) semi polished/burnt granite with grooved lining, without nosing angles, may be provided on the steps.

(G) Painting:-

- (1) All steel component of FOB (column, girder, floor system, roofing etc.) should preferably be galvanised/metalized.

(H) Miscellaneous:-

- (1) Provision of stainless steel railing of 40mm dia pipe as per specification of RDSO for disabled persons to be provided on steps/ramp during construction itself.
- (2) Floor to be provided with suitable camber and should have drainage arrangement to prevent stagnation of water/water pockets on floor slab.
- (3) Single column of RCC/Steel type should be provided to reduce space occupation on PF for ramp. Height of bracings of FOB columns on Platform area shall be kept so high as to permit free flow of commuters.

- (I) The drawing shall have all relevant items listed above incorporated in the "Note" specific to the drawing.
- (J) The relevant items of this circular should be incorporated in the Tender Documents & Contract Agreement for all future tenders.

This issue is in compliance of various instructions issued by CRS.

3/gmm
06.02.2020

Anil Kumar Malik
PCE/WCR

Copy to:-

- CAO/C, CPD/BW.
- DRM/JBP, BPL, Kota.
- CTE, CBE, CPDE, CE/TP, CE/G, CE/TMC, CE/C-I & II, CE/C/HQ, CPM/Kota, CE/Br. Reh./Kota, CE/RSW/BPL.
- Sr.DEN/Co/ JBP, BPL, Kota.
- Dy. CE/Br. Line/JBP, BPL & Kota.