

East Coast Railway

Engineering Department

CE Circular No.40

Sub: Measurement of SEJ gap and fixing of reference pillars.

It has been observed during inspection both in Open Line and Construction/RVNL that the reference pillars for monitoring the behavior of LWR and measurement of SEJ gaps have been fixed differently in various sections.

It is therefore, felt necessary to reiterate the provision of para 5.9 and Addendum & Corrigendum No.17 dtd.25.09.18 to the Manual of Instructions on Long Welded Rails-1996.

I. Fixing of Reference Marks:

Reference marks are required to be fixed in LWR at the centre of LWR/CWR and at each SEJ by erecting rail pillars. The height of the rail pillars should exactly match with the top of the rail to facilitate measurement by stretching cord on the top of the rail pillars. The reference marks on the reference pillars shall be saw marks and the corresponding marks on the running rails shall be paint marks on the non-rail gauge face.

In no case a saw mark shall be made on the running rail. Reference pillars are required to be firmly fixed immediately after distressing of LWR/CWR and shall not be shifted or tampered with thereafter. The location of the reference pillars shall be on the cess clearly outside the ballast profile.

Along with reference pillars at the centre of LWR/CWR, additional reference marks in fixed portion and breathing length at a spacing of 100 mtr from the centre pillar shall be provided to know the behavior of LWR/CWR in the entire length.

The reference pillar for the SEJ should be fixed in accordance with Addendum & Corrigendum No.17 dtd.25.09.18 (enclosed)

II. Records of measurement.

The records of measurement of LWR/CWR should be accorded as per the proforma laid down in annexure XI,XII,XIIIA & XIIIB of LWR manual.

The observation of gaps of SEJ and creep/movement in fixed portion and breathing length of LWR/CWR shall be recorded as per annexure VIIIA & VIIIB of LWR manual.

When the creep in fixed portion of LWR/CWR exceeds 20mm a detailed investigation shall be carried out and remedial measures are taken accordingly.

Encl: As above.

(S. Nayak)

Chief Track Engineer

No: W-4/374CE/Circulars/Pt.I/ 9723

Dt. 05.12.2018

Copy to:

1. CAO(Con)/BBS
2. Sr.DEN/Co/KUR, SBP & WAT
3. CPM/I, II, III/RVNL/BBS
4. CPM/RVNL/R & VSKP.

25/2-9



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Lucknow - 226 011
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No. CT/IM/LWR

Date: 25.09.2018

As per Mailing list,

Sub: Addendum & Corrigendum Slip to "Manual of Instructions on Long Welded Rails-1996".

Ref: Railway Board's letter No.2015/CE-II/TK/LWR dated 23.08.2018.

Please find enclosed herewith a copy of Addendum & Corrigendum Slip no. 17 to Para 5.6.1, Fig. 5.6, Annexure-XIII-'A' and Figure 8.2.1 of Manual of Instructions on Long Welded Rails, 1996 for information and necessary action. The correction slip is approved by Railway Board vide letter under reference.

DA: As above

Aloph 25/9/18
(Alok Kumar)

Director/Track -I

Copy to:- Director/Civil Engineering (Planning), Railway Board, Rail Bhawan, New Delhi-110001
— for kind information please.

MAILING LIST

Principal Chief Engineer	प्रधान मुख्य अभियन्ता
1. Central Railway, Mumbai CST - 400 001.	1. मध्य रेलवे, मुम्बई सीएसटी-400001
2. Eastern Railway, Fairlie Place, Kolkata-700 001.	2. पूर्व रेलवे, फेयरली प्लेस, कोलकाता-700001
3. East Central Railway, Hajipur - 844 101.	3. पूर्व मध्य रेलवे, हाजीपुर-844101
4. East Coast Railway, Bhubaneswar - 751016	4. पूर्व तटीय रेलवे, भुवनेश्वर-364001
5. Northern Railway, Baroda House, New Delhi- 110 001.	5. उत्तर रेलवे, बड़ौदा हाउस, नई दिल्ली-110001
6. North Central Railway, Allahabad - 211 001.	6. उत्तर मध्य रेलवे, इलाहाबाद-211001
7. N.E.Railway, Gorakhpur-273 012.	7. पूर्वोत्तर रेलवे, गोरखपुर-273012
8. N.F.Railway, Maligaon, Guwahati - 781011.	8. पूर्व सीमान्त रेलवे, मॉलीगॉव, गुवाहाटी-781011
9. North Western Railway, Jaipur - 302001.	9. उत्तर पश्चिम रेलवे, जयपुर-755001
10. Southern Railway, Park Town, Chennai-600 003.	10. दक्षिण रेलवे, पार्क टाउन, चेन्नई-600003
11. South Central Railway, Rail Nilayam, Secunderabad- 500 371.	11. दक्षिण मध्य रेलवे, रेल निलायम, सिकन्दराबाद-500371
12. South Eastern Railway, Garden Reach, Kolkata-700043.	12. दक्षिण पूर्व रेलवे, गार्डनरिच, कोलकाता-700043
13. South East Central Railway, Bilaspur- 495004.	13. दक्षिण पूर्व मध्य रेलवे, बिलासपुर-495004
14. South Western Railway, Hubli - 589020.	14. दक्षिण पश्चिम रेलवे, हुबली-580023
15. Western Railway, Churchgate, Mumbai-400 020.	15. पश्चिम रेलवे, चर्चगेट, मुम्बई-400020
16. West Central Railway, Jabalpur - 482001.	16. पश्चिम मध्य रेलवे, जबलपुर-482001
17. Metro Railway, Metro Bhawan, 33/1, Chowringhee Road, Kolkata-700 071	17. मेट्रो रेलवे, मेट्रो भवन, 33/1, चौरंगी रोड, कोलकाता-700071

• The Chief Administrative Officer (Construction):

1. Central Railway, Mumbai CST - 400 001.	10. Southern Railway, Park Town, Chennai- 600003.
2. Eastern Railway, Fairlie Place, Kolkata-700 001.	11. South Central Railway, Rail Nilayam, Secunderabad- 500 371.
3. East Central Railway, Hajipur - 844 101.	12. South Eastern Railway, Garden Reach, Kolkata-700043.
4. East Coast Railway, Bhubaneswar - 751016	13. South East Central Railway, Bilaspur- 495004.
5. Northern Railway, Baroda House, New Delhi-110 001.	14. South Western Railway, Hubli - 589020.
6. North Central Railway, Allahabad - 211 001.	15. Western Railway, Churchgate, Mumbai-400 020.
7. N.E.Railway, Gorakhpur-273 012	16. West Central Railway, Jabalpur - 482001.
8. N.F.Railway, Maligaon, Guwahati - 781011.	17. CAO/CN/ERS, Southern Railway, Southern Railway Station Road, Ernakulam South, Kochi, Keala-682011.
9. North Western Railway, Jaipur - 302001.	18. CAO/Con., Southern Railway, Evr High Road, Egmore, Chennai-600008.

Director General/Director:

1. Director General, National Academy of Indian Railways (NAIR), Vadodara-390004
2. Director, IRICEN, Pune - 411001
3. Director, IRCAMTECH, Maharajpur, Gwalior-474020

Manual of Instructions on Long Welded Rails-1996
Addendum & Corrigendum Slip No. 17 Dated 25.09.2018

1.0 Para 5.6.1 at page 15 shall be read as under:-

"Gaps at SEJ shall be adjusted at the time of laying/subsequent distressing of LWR/CWR, as illustrated in Fig. 5.6.1 (IRS Design), Fig. 5.6.2 (Improved SEJ with double gap of max. 65 mm each i.e. DG65 Design), Fig. 5.6.3 (Improved SEJ with single gap of max. 80 mm i.e. SG80 Design) and shall be as under:

Rail section laid	Gap to be provided at 't' _d
52 kg/60kg	40 mm
Others	60 mm

2.0 Existing Fig.5.6 at page 101 shall be replaced with Fig. 5.6.1, Fig. 5.6.2 and Fig. 5.6.3.

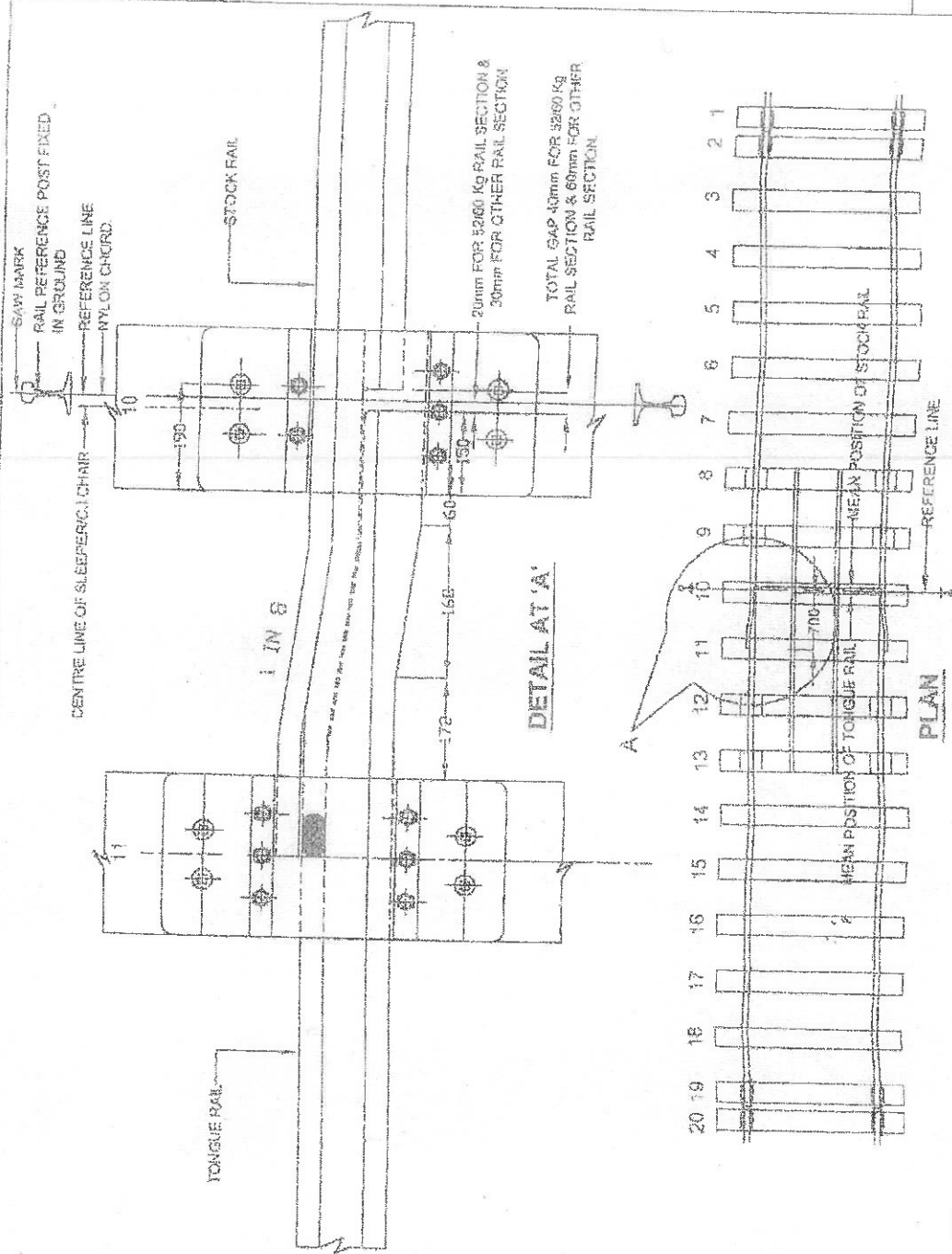
3.0 Existing Annexure XIII-'A' at page 83 shall be replaced with modified Annexure XIII-'A'.

4.0 A new figure 8.2.1 shall be added to LWR Manual.

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SETTING OF GAP AT SEJ (IRS DESIGN) TO DRAWING NOS. RDSO/T-412, RDSO/T-4160, RDSO/T-4165, RDSO/T-5478, RDSO/T-5586, RDSO/T-5748, RDSO/T-6257, RDSO/T-6782
AT DESTRESSING TEMPERATURE (td)

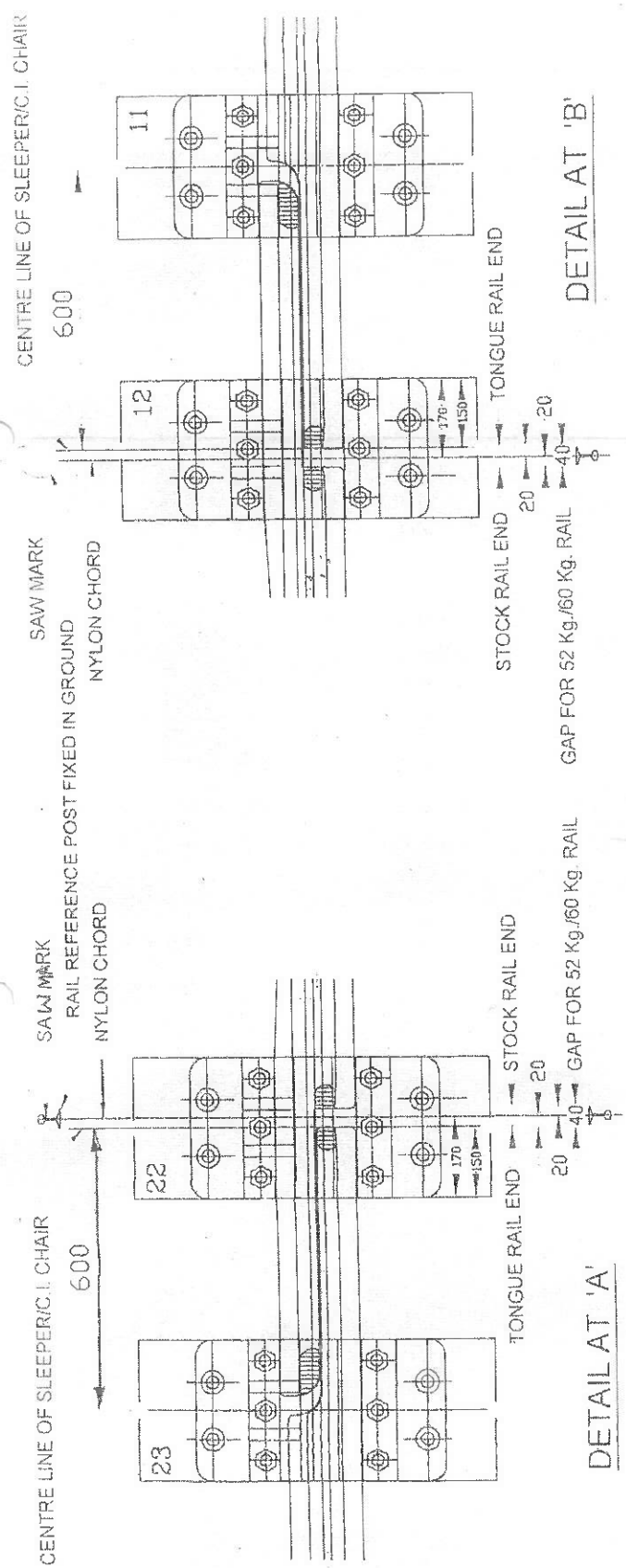
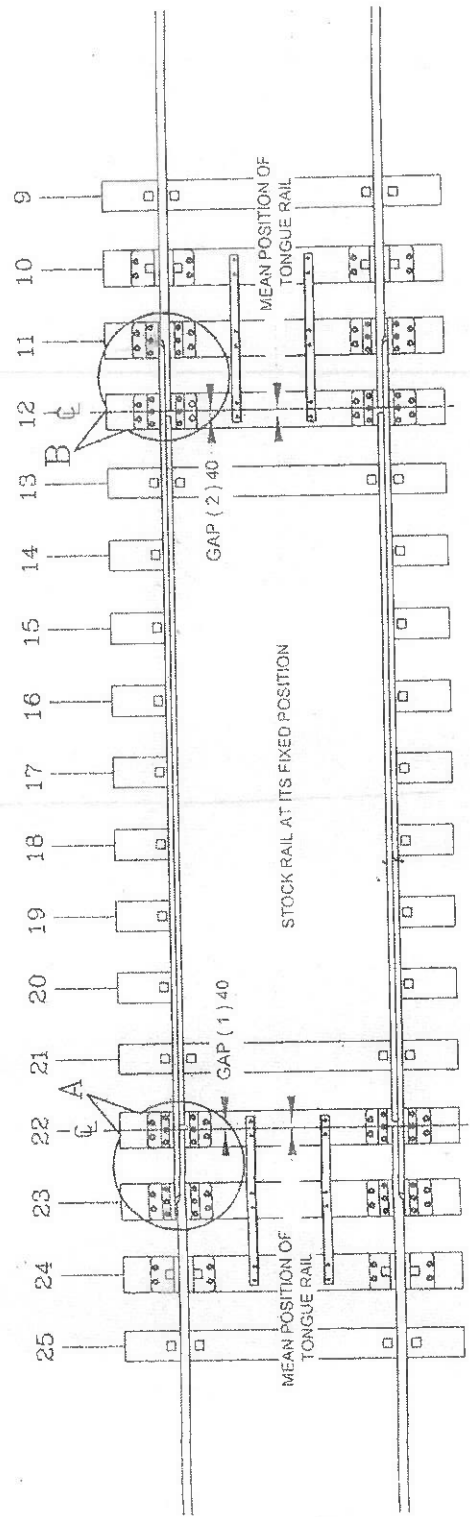
Fig 5.6.1



NOTE:- i) REFERENCE LINE SHALL BE KEPT AT 20mm FROM CENTRAL BOLT OF C.J. CHAIR FOR 52 Kg/60 Kg RAIL SECTION & 30mm FOR OTHER RAIL SECTION.
ii) AT THE TIME OF INITIAL LAYING/DESTRESSING, THE TIP OF TONGUE RAIL SHOULD CONCEDE WITH MID POINT OF CENTRAL BOLTS OF C. CHAIR.

SETTING OF GAP AT IMPROVED SEJ WITH DOUBLE GAP OF MAX. 65 mm EACH
 DG 65 DESIGN) TO DRAWING NO. RDSO/T- 6922 (60Kg) & RDSO/T- 6930 (52 Kg)
 (APPLICABLE FOR BOTH RAILS) AT DESTRESSING TEMPERATURE (t d)

Fig. 5.6.2



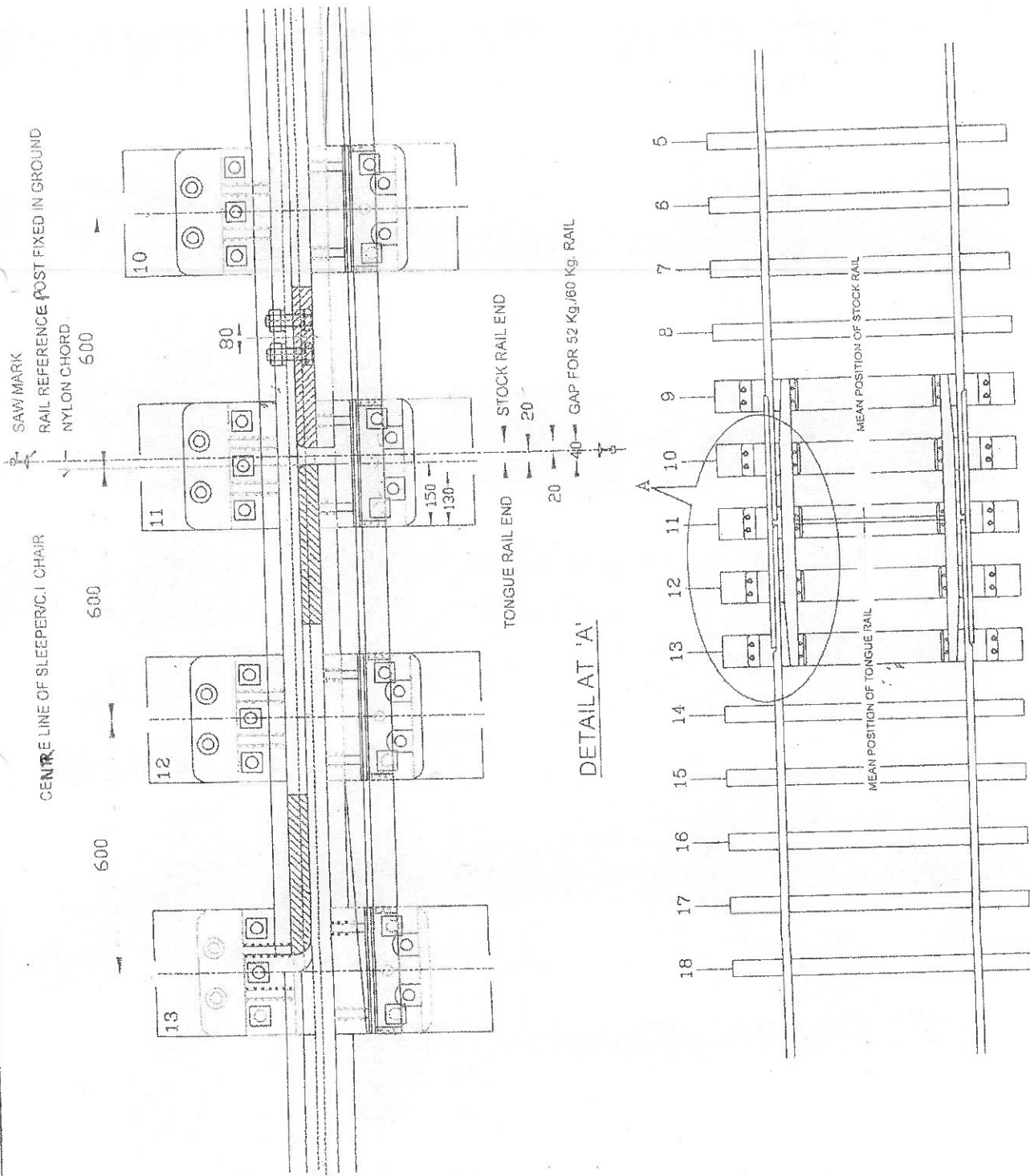
NOTE:-

- iii). REFERENCE LINE SHALL BE KEPT AT 20 mm FROM CENTRAL BOLT OF C.I. CHAIR.
- ii). AT THE TIME OF INITIAL LAYING/DESTRESSING, THE TIP OF TONGUE RAIL SHOULD COINCIDE WITH MID POINT OF CENTRAL BOLTS OF C.I. CHAIR.
- i). ALL DIMENSIONS ARE IN MILLIMETERS.

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SETTING OF GAP AT IMPROVED SEJ WITH SINGLE GAP OF MAX. 80 mm
(SG 80 DESIGN) TO DRAWING NO. RDSO/T- 6902 (60 Kg) & RDSO/T- 6914 (52 Kg)
(APPLICABLE FOR BOTH RAILS) AT DESTRESSING TEMPERATURE (t d)

Fig. 5.6.3



PLAN

- NOTE:-
- iii) REFERENCE LINE SHALL BE KEPT AT 20 mm FROM CENTRAL BOLT OF C.I. CHAIR.
 - iv) AT THE TIME OF INITIAL LAYING/DESTRESSING, THE TIP OF TONGUE RAIL SHOULD COINCIDE WITH MID POINT OF CENTRAL BOLTS OF C.I. CHAIR.
 - i) ALL DIMENSIONS ARE IN MILLIMETERS.

CHART OF MOVEMENT OF LWR/CWR No

at Km

[illegible]

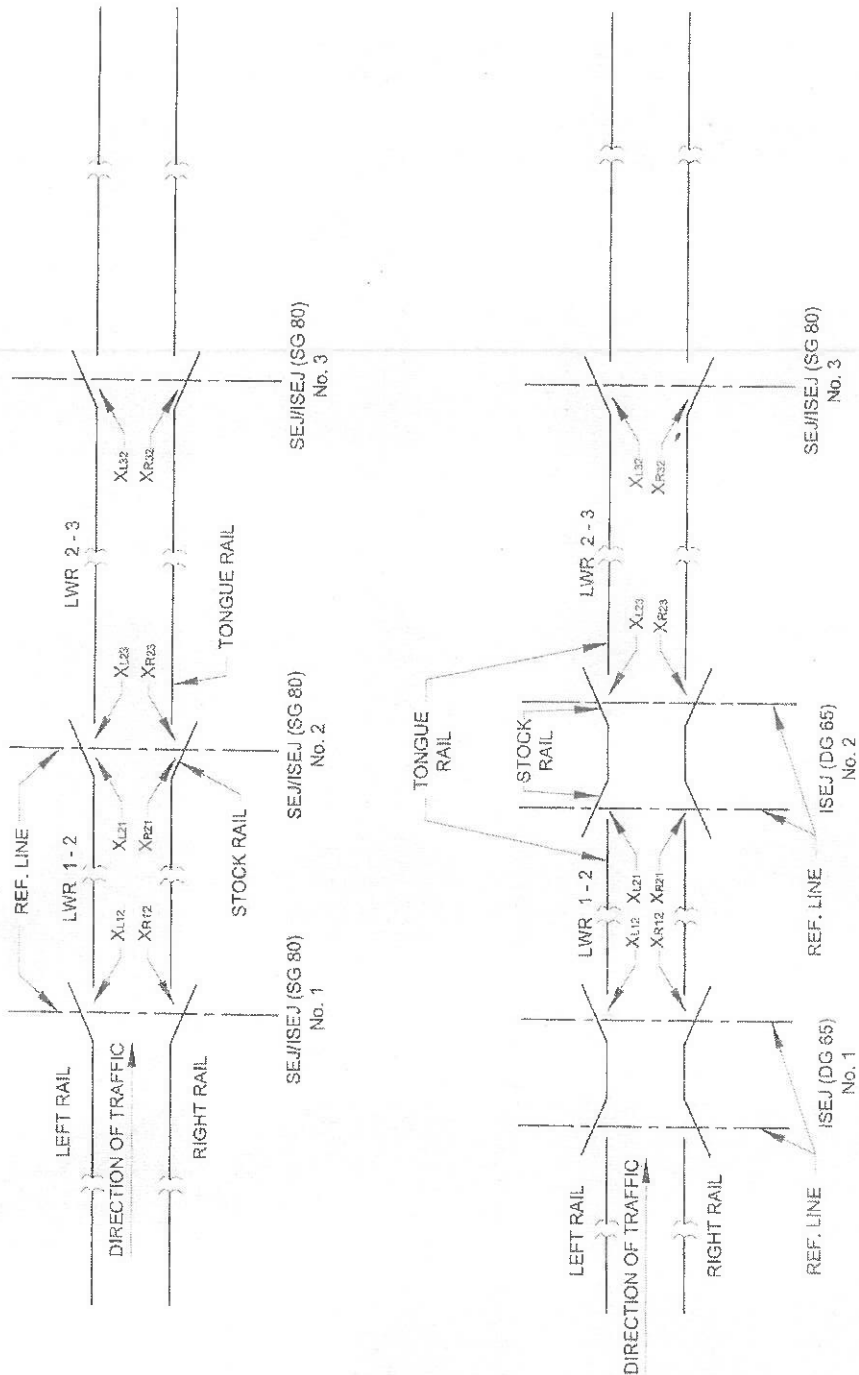
Note:

1. (a) and (b) at column 5 and 7 respectively will almost always be positive, except when tongue/stock rail crosses the reference line. In such a case, a (-ve) sign will be prefixed.
2. For IRS Design (Conventional) SEJ and Improved SEJ with Single gap of max. 80 mm i.e. SG80 Design (refer Fig. 5.6.1 & 5.6.3), the distance shall be measured between tongue/stock rail & reference line at SEJ. For Improved SEJ with Double Gap of max. 65 mm each i.e. DG65 Design (refer Fig. 5.6.2), distance shall be measured between tongue rail & reference line in the gap adjacent to LWR, the movement of which is being recorded. Please refer to Fig. 8.2.1 for illustration.
3. Permissible range for IRS Design SEJ and Improved SEJ of both SG80 & DG65 designs shall be governed by para 5.6.
4. Left and right rails on double lines are determined looking in the direction of traffic.
5. Left and right rails on single lines are determined, looking in the direction of increasing kilometrage.
6. If centre to centre spacing of two central sleepers of IRS Design i.e. Conventional SEJ differ by more than 700 ± 10 mm, immediate rectification will be made.

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ILLUSTRATION FOR MEASUREMENT OF GAP AT SEJ FOR
OBSERVATION OF MOVEMENT OF LWR/CWR

Fig. 8.2.1



LEFT/RIGHT RAIL	LWR No. 1 - 2		LWR No. 2 - 3	
	DISTANCE BETWEEN TONGUE/STOCK RAIL & REF. LINE AT SEJ No. 1 (COLUMN No. 5)	DISTANCE BETWEEN TONGUE/STOCK RAIL & REF. LINE AT SEJ No. 2 (COLUMN No. 7)	DISTANCE BETWEEN TONGUE/STOCK RAIL & REF. LINE AT SEJ No. 2 (COLUMN No. 5)	DISTANCE BETWEEN TONGUE/STOCK RAIL & REF. LINE AT SEJ No. 3 (COLUMN No. 7)
L/R R/R	X _{L12} X _{R12}	-----	X _{L23} X _{R23}	-----
L/R R/R	-----	X _{L21} X _{R21}	-----	X _{L32} X _{R32}

SEJ - IRS DESIGN/CONVENTIONAL SEJ

ISEJ (SG 80) - IMPROVED SEJ WITH SINGLE GAP OF MAX. 80 mm

ISEJ (DG 65) - IMPROVED SEJ WITH DOUBLE GAP OF MAX. 65 mm EACH

