

भारतीय रेल
INDIAN RAILWAY
अनुसंधान अभिकल्प एवं मानक संगठन
RESEARCH DESIGNS & STANDARDS ORGANISATION
मानक नगर लखनऊ 226011-
MANAK NAGAR LUCKNOW-226011
रुचि अभिव्यक्ति
FOR INVITING EXPRESSION OF INTEREST
सूचना संख्या सीटी/ईएफ/ईओआई/25t/ईआरसी दिनांक 20.03.2015.
NOTICE No. CT/EF/EOI/25t/ERC Dated 20.03.2015.

Ministry of Railways, Research Designs & Standards Organization (R.D.S.O.), Lucknow is interested in development of specification for '*G-clip/ e-Clip based designs of elastic rail clips fit for 25t axle load on Indian Railways*' as per **Functional Requirement Specifications** available on RDSO's website www.rdso.indianrailways.gov.in.

These functional requirement specifications are tentative in nature and variations may be considered after consideration of offers and available technologies. Firms who have experience and capability in development of said item and are having ISO certificate are requested to see the details on RDSO's website or contact Director/Track-IV, RDSO, Lucknow on Telephone No. **91-522-2452796** / email: **eoidtd5rdso@gmail.com** on any working day for further details.

The firms are requested to submit details in the prescribed format by **20.04.2015** to the **Director/Track-IV**, Anusandhan Bhawan, (Main Administrative Building), Track Design Directorate, RDSO, Manak Nagar, Lucknow –226011(INDIA).

Instructions/ Guidelines for the firms expressing their interest against Expression of Interest (EOI)

Notice No. CT/EF/EOI/25t/ERC Dated 20.03.2015.

1. DISCLAIMER

Ministry of Railways' Research, Designs & Standards Organization (RDSO) has prepared this document to give interested parties background information of the product, it intends to get developed. While RDSO has taken due care in preparation of information contained herein and believes it to be accurate, neither RDSO nor any of its officers, employees gives any warranty or make any representations, express or implied as to the completeness or accuracy of the information contained in this document or any information which may be provided in association with it. The information is not intended to be exhaustive. Interested parties are required to make their own inquiries and respondents will be required to confirm in writing that they have done so. The information is provided on the basis that it is non-binding on RDSO or any of its officers, employees or advisors.

RDSO reserves the right not to proceed with the project, at a later stage or to change the process or procedure to take the project forward. In such eventualities, no liability shall be attributable to RDSO. RDSO also reserves the right to decline to discuss the project further with any party expressing interest. No reimbursement of cost of any type will be paid to persons, or entities, expressing interest.

2. PURPOSE OF INVITING THE EOI

The purpose of inviting EOI is to shortlist the firms for finalizing the specification for ***G-clip/ e-Clip based designs of elastic rail clips*** suitable for **25t axle load**. The broad functional requirement specifications for such clips are given in this document.

3. SUBMISSION OF EOI BY INTERESTED FIRMS

Interested firms are requested to submit their EOI to Director/Track-IV, RDSO, Anusandhan Bhawan, Manak Nagar, Lucknow- 226011 by 20.04.2015 in the enclosed "Format for Letter of Response attached as Annexure 'B'". In the EOI, the firms should mention RDSO's Notice No. CT/EF/EOI/25t/ERC dated 20.03.2015. In the EOI, the respondents must furnish the following details as required in the enclosed "Format for Letter of Response":

- (i) Turn-over of the firm during the last three financial years with the copies of annual report.
- (ii) Details of various items being manufactured/consultancy undertaken.
- (iii) Details of customer(s) and supplies made in the field of item under EOI or similar items for use over Railways across the world.
- (iv) Experience and expertise for the items proposed in EOI.
- (v) Details of man-power with their qualification and experience.

- (vi) Detailed proposal for item proposed in EOI including alternative proposal, if any.
- (vii) Complete technical specifications of the product matching with the requirements under this EOI.
- (viii) Details of Intellectual Property Rights (IPR) held, patent filed/held and MoU/ agreement signed.
- (ix) Details of ISO certification.
- (x) Details as given in Para 'D' of functional requirement specifications.
- (xi) Undertakings as per Annexure-C & D.
- (xii) Willingness certificate for joint development of technical specifications of the product.
- (xiii) Confirmation regarding own inquiries made before submission of EOI documents.

4. OTHER INFORMATION

- (i) The firms will be short listed based on the attached criteria- "Method of Short listing of firms".
- (ii) The discussions shall be held with the short listed firms for finalizing the specification/STR and product for this item based on Functional Requirement Specification for *G-clip/ e-Clip based designs of elastic rail clips*. After short listing of firms, further action will be taken as per provisions of RDSO's ISO document no. QO-D-7.1.15, attached herewith.
- (iii) The firm(s) referred above shall either be an Indian firm or a foreign firm acting through its Indian agent/authorized representative.

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FUNCTIONAL REQUIREMENT SPECIFICATION FOR DEVELOPMENT OF G-CLIP/ e-CLIP BASED DESIGNS OF ELASTIC RAIL CLIPS WHICH CAN BE USED WITH PSC SLEEPER TO DRAWING NO. RDSO/T-7008 FIT FOR 25T AXLE LOAD ON INDIAN RAILWAYS.”

A. SCOPE:

This functional requirement covers the broad requirements of G-clip/ e-Clip based design for 25t. Variations may be considered while finalizing specifications of the product.

B. OBJECTIVE:

The objective of this EOI is to jointly develop technical specifications for an elastic rail clip of G-clip/ e-Clip based design for 25t, which is reportedly not covered under any patent/copyright, with all willing manufacturers of same or similar items in order to provide equal opportunity to all concerned. To have the best specification, selected specifications should at least conform to the functional requirement specifications of RDSO.

C. GENERAL REQUIREMENTS:

- 1.0 The interested firms offering technical specifications of G-clip/ e-Clip based designs of Elastic rail clips for 25t axle load to suit the requirements of the Indian Railways, should have all the plant & machineries required for manufacturing elastic rail clips, skilled & trained technical manpower for manufacturing clips, detailed drawing & specification of the product in EOI.
- 2.0 The application form duly filled in duplicate along with all relevant attested documents, fee of Rs. 10,000/- (non refundable) drawn in favour of Executive Director (Finance), RDSO, Lucknow shall be submitted to Director General/Track, Research Designs & Standards Organization (RDSO), Manak Nagar, Lucknow-226011. All payments shall be done through on-line payment by the use of SBI payment Portal “SB Collect” designed for Government departments for all types of payments implemented w.e.f. August 01, 2013.
- 3.0 The technical specifications submitted by the firms shall be scrutinised by RDSO. After scrutinising the details, the deficiencies noticed or further query, if any, would be advised to the firm for improvement. Firms shall rectify the deficiencies immediately (not later than one month) otherwise case may be considered as closed.
- 4.0 The firms whose technical specifications are selected will give an undertaking and will indemnify RDSO/PSUs/such sources in the enclosed Proforma (Annexure-D) from all any such claims which may arise, in case the offered technical specifications of their design is found covered under any patent/copyright at any stage.
- 5.0 RDSO reserves all the right of this exercise. In case of any doubt/dispute, decision of RDSO /MoR shall be final.

D. TECHNICAL REQUIREMENTS:

For better appreciation of the profile of the two designs i.e. G-clip/ e-Clip, photos of typical *G-clip*, *e-Clip* & *Pandrol e-clip* are given below as 'Pic. 1', 'Pic. 2' & 'Pic. 3' respectively.



'Pic.1'



'Pic.2'



'Pic.3'

The technical specifications of G-clip/ e-Clip based designs of Elastic rail clips design should meet the following technical requirements:

1. The technical specification of G-clip/ e-Clip based designs of Elastic rail clips should be such that the clips so manufactured can be used on PSC sleeper to drawing to RDSO/T-7008 (*drawing uploaded*) and assembly drawing to RDSO/T-7009 (*drawing uploaded*) for 25t axle load of RDSO design with 60kg UIC/ 136 RE rails.
2. The minimum toe load of the G-clip/ e-Clip based designs of Elastic rail clips should not be less than 850kg per clip.
3. The minimum extra elastic margin of the G-clip/ e-Clip based designs of Elastic rail clips should not be less than 3mm over the design / specified deflection when installed in the above mentioned assembly for 25t. Therefore, there should be no permanent set in the clips up to 3mm from the designed/specified deflection. For this purpose, load deflection curve drawn to establish that the designated toe load is imparted by the clip with assembly as mentioned in 1) above within limit of proportionality with minimum 3mm margin should also be submitted by the interested firms.
4. The stress values of the G-clip/ e-Clip based designs of Elastic rail clips measured through strain gauging method shall not exceed 148kg/mm^2 in case the material is 55Si7. For material other than 55Si7, interested firms will provide the maximum stress values with details of testing done to work out these values.
5. The technical specifications of the G-clip/ e-Clip based designs of Elastic rail clips should enable the clips to pass the fatigue test for at least 2.5 million cycles.
6. The technical specifications for checking the micro / macro structure of the G-clip/ e-Clip based designs of Elastic rail clips shall also be submitted.
7. The interested firms should also submit the complete drawing, technical specifications of G-clip/ e-Clip based designs of Elastic rail clips.

FORMAT FOR LETTER OF RESPONSE

Respondents Ref No.:

Date:

Director Track-IV

Building: Anusandhan Bhawan, (Main Administrative Building), Research Designs & Standards
Organization , Ministry of Railways, Manak Nagar, Lucknow, INDIA 226011

Dear Sir,

Subject: RESPONSE TO – EOI FOR PARTICIPATION _____

1. We, the undersigned, offer the following information in response to the Expression of Interest sought by you vide your Notification No.
2. We are duly authorized to represent and act on behalf of _____ (hereinafter the “respondent”)
3. We have examined and have no reservations to the EOI Document including Addenda No(s)_____.
4. We are attaching with this letter, the copies of original documents defining: -
 - 4.1 the Respondent’s legal status;
 - 4.2 its principal place of business;
 - 4.3 its place of incorporation (if respondents are corporations); or its place of registration (if respondents are cooperative institutions, partnerships or individually owned firms);
 - 4.4 Self certified financial statements of Last three years, clearly indicating the financial turn over and net worth.
 - 4.5 Copies of any market research, business studies, feasibility reports and the like sponsored by the respondent, relevant to the project under consideration
5. We shall assist MoR and/or its authorized representatives to obtain further clarification from us, if needed.
 - 5.1 RDSO and/or its authorized representatives may contact the following nodal persons for further information on any aspects of the Response:

S. No.	Contact Name	Address	Telephone	E Mail
1				
2				

6. This application is made in the full understanding that:
 - 6.1. Information furnished in response to EOI shall be used confidentially by RDSO for the purpose of development of the project.
 - 6.2 RDSO reserves the right to reject or accept any or all applications, cancel the EOI and subsequent bidding process without any obligation to inform the respondent about the grounds of same.
 - 6.3. We confirm that we are interested in participating in discussion for finalization of the specification, vendor registration & development of the system at our own cost.
 - 6.4 We confirm that from the date of applying for vendor registration, we will submit prototype within 6 months, if RDSO decided for vendor registration
 - 6.5 The activities to be completed before submission of prototype as per laid down vendor registration procedure, will be complied before submission of prototype.

7. We certify that our turnover and net worth in the last three years is as under:

Financial Year	Turn over	Net worth
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8. In response to the EOI we hereby submit the following additional details annexed to this application.

- 8.1. Details of various items being manufactured/consultancy undertaken.
- 8.2. Details of customer(s) and supplies made in the field of item under EOI.
- 8.3. Experience and expertise for the items proposed in EOI.
- 8.4. Details of man-power with their qualification and experience.
- 8.5. Detailed proposal for items proposed in EOI including alternative proposal, if any.
- 8.6. Complete technical details of the product matching with the requirements under this EOI.
- 8.7. Details of Intellectual Property Rights (IPR) held, patent filed/held and MoU/ agreement signed.
- 8.8. Details of ISO certification.
- 8.9. Undertaking as per Annexure-C.

9. The following undertakings are hereby given:

- 9.1. In regard to matters relating to the security and integrity of the country, no charge sheet has been filed by an agency of the Government / conviction by a Court of Law for an offence committed by the -----(name of the entity) or by any sister concern of the -----(name of the entity) otherwise it would result in disqualification.
- 9.2. In regard to matters other than the security and integrity of the country, ----- (name of the entity) has not been convicted by a Court of Law or indicted / passed any adverse order by a regulatory authority against it or against its any sister concern which relates to a grave offence, or would constitute disqualification. Grave offence is defined to be of such a nature that it outrages the moral sense of the community.

10. The undersigned declare that the statements made and the information provided in the duly completed application are complete, true, and correct in every detail. We also understand that in the event of any information furnished by us being found later on to be incorrect or any material information having been suppressed, RDSO may delete our name from the list of qualified Respondents. We further understand that RDSO will give first preference to the applicants considered relevant for the purpose.

11. Our response is valid till (date in figures and words): _____

Yours sincerely,

(Sign)

NAMEin the Capacity ofduly authorized to sign the response for and on behalf of Date

Method of short listing of Firms

S.No.	Item	Marks	Remarks
1.	Turnover of the firms during the last 3 years.	5	The firm having maximum will be given full marks & others as percentile.
2.	Details of supplies made in the field of item under EOI or similar items in use over Railways.	10	This is the turnover of supplies made in the field of item under EOI. The firm having maximum will be given full marks & others as percentile.
3.	Experience and expertise for item under EOI or similar items in use over Railways across the World.	5	It is based on years of experience in such product. The firm having maximum will be given full marks & others as percentile.
4.	Man power & their qualification	5	No. of persons with professional qualification on firm's direct roll and percentile.
5.	Details of patent held and MOU/agreement with OEM	5	Number of such items and percentile thereof.
6.	Technical specifications of product conforming to the functional requirement specifications.	70	The functional technical requirement specifications are enclosed herewith

Note: Decision taken by RDSO in this regard shall be final, based on details submitted.

(To be submitted on non-judicial stamp paper of appropriate value as applicable in the respective state and duly notarized and witnessed)

UNDERTAKING

I, son of _____ aged about _____ Years, resident of _____ do hereby solemnly affirm as under:

1. That the deponent is the Authorized signatory of (Name of the Sole Proprietorship Concern/Partnership Firm Registered Company/Joint Venture).
2. That the deponent declares on behalf of (Name of the Sole Proprietorship Concern/Partnership Firm Registered Company/Joint Venture) that:
 - a) In regard to matters relating to the security and integrity of the country, no charge sheet has been filed by an agency of the Government/conviction by a Court of Law for an offence committed by the _____ (name of the entity) or by any sister concern of the _____ (name of the entity) would result in disqualification.
 - b) In regard to matters other than the security and integrity of the country _____ (name of the entity) has not been convicted by a Court of Law or indicated/passed any adverse order by a regulatory authority against it or it's any sister concern which relates to a grave offence, or would constitute disqualification. Grave offence is defined to be of such a nature that it outrages the moral sense of the community.

DEPONENT

VERIFICATION

I declare that the contents of para 1 to 2 above are true as per my knowledge and nothing has been hidden.

DEPONENT

(To be submitted on non-judicial stamp paper of appropriate value as applicable in the respective state and duly notarized and witnessed)

**UNDERTAKING FOR TRANSFER OF DRAWINGS/ SPECIFICATIONS &
OTHER DOCUMENTS 'G' CLIP / e-CLIP BASED DESIGN OF ELASTIC RAIL CLIPS
FIT FOR 25t AXLE LOAD TO RDSO/IR UNCONDITIONALLY**

I ----- son of ----- aged about ----- resident of -----
the deponent, does hereby solemnly affirm as under:

- 1 The deponent is the authorized signatory of M/s
- 2 The deponent declares on behalf of M/s that they have developed technical specifications of 'G' clip / e-clip based design of elastic rail clips fit for 25t axle load and approached Indian Railway/RDSO for joint development of these products on Indian Railways.
- 3 The deponent declares that technical specifications of the offered 'G' clip / e-clip based design of elastic rail clips fit for 25t axle load developed by them are not patented products and not protected under any copyright, brand, etc. and currently there are no pending legal or any other disputes pertaining to these specifications & products.
- 4 The deponent indemnifies RDSO/IR (which includes the Zonal Railways and Public Sector Undertakings (PSUs) under the administrative control of the Ministry of Railways- so authorized by Indian Railways, at all times from any possible litigation, claims, its cost and expenses/financial liability arising out of any possible infringement of patent/registered design/trademark/ IPR violation/ encroachment of any item of any other firm/company/ venture/organization located both in India and abroad for duration at least equivalent to develop/use of the product specifications for/on the Indian Railways.
- 5 The deponent declares that this is an unconditional transfer of drawings/ specifications and other documents of the offered 'G' clip / e-clip based design of elastic rail clips fit for 25t axle load to RDSO/IR with consent for issuing/modifying them as RDSO drawings/documents without claiming any preferential treatment and authorizing to RDSO.
6. The deponent further declares that M/s is willing to unconditionally provide all logistic support and technical knowhow, for joint development of the products, to RDSO/IR as and when required.

Deponent

Verification

I declare that the contents of aforesaid Para 1 to 6 are true to my knowledge and belief and nothing has been concealed.

Deponent

ISO9001:2008	Document No: QO-D-7.1-15	Version No:1.0	Date Effective: 01/12/2010
Document Title: Product development			



RESEARCH DESIGNS & STANDARDS ORGANIZATION

Manaknagar, Lucknow – 226011

QO-D-7.1-15 *Product development*

1.0 Amendment History:

S. No.	Amendment Date	Version	Reasons for Amendment
1.	30/11/2010	1.0	First issue Approved by DG/RDSO on NP4 of MR/ISO9001/Policy/Vendor-Interface on 30/11/2010

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ARE/ISO Cell	MR/ISO Cell	Printed: 2010/11/30
Prepared By:	Issued By:	Page 1 of 8

2.0 Purpose

To define the process of development of new product / design for introduction on the Indian Railways.

3.0 Scope of Application

Applicable to all directorates of RDSO involved in the process of development of products / specifications for introduction of new technology / product for use on the Indian Railways.

4.0 Procedure / Details

There are five conceivable cases for introduction of new equipment / item for use on the Indian Railways. These are as listed below:

1. Technology and product is available in the open market.
2. Product is not readily available but manufacturers for similar items exist.
3. Technology is not available locally in the market, RDSO develops technology.
4. Technology is available in foreign railways/countries open market; RDSO does a Transfer of Technology with OEM
5. Technology is in operation on foreign railways & adopted on cross approval basis.

The following processes shall be adopted for product development for introduction of new equipment / item on the Indian Railways.

Prior administrative approval of competent authority shall be taken for start of the processes as outlined below.

Wherever required the directorate / project manager may propose hiring of consultant as per delegations provided under the schedule of powers.

Product development process shall follow the design development process as described in (*ref-1*). The following paragraphs contain specific instructions on how to process the different categories of product development.

4.1 Case 1: Technology and product available in the open market

The following process shall be followed.

4.1.1 Frame functional requirements

Functional requirement specification shall be framed by the directorate describing the purpose of use and desired characteristics. This document shall be placed on the RDSO website after approval of the directorate head.

4.1.2 Publication of EOI

An EOI shall be published for development of technical specifications for the functional requirements prepared earlier. The EOI shall be published as per the guidelines given in (*ref-2*)

4.1.3 Selection of panel

Out of the respondents to the EOI a panel of minimum three (if available) shall be selected for deliberations for development of specifications. The selection criteria for selection of panels shall be as provided in (*ref-2*).

4.1.4 Finalize draft specification with STR in consultation with the select panel

The RDSO team in consultation with the selected panel shall finalize the specifications and the STR.

4.1.5 Creation and issue of specification

The RDSO process for creation and issue of specifications shall be followed for issue of new specifications. (*ref-3*)

4.1.6 Vendor approval process if required

RDSO vendor approval process shall be followed as required for development of vendors for the specification so finalized. (*ref-4*)

4.2 Case 2: Product is not available but manufacturers for similar items exist

The following process shall be followed in this case.

4.2.1 Frame functional requirements

Functional requirement specification shall be framed by the directorate describing the purpose of use and desired characteristics. This document shall be placed on the RDSO website after approval of the directorate head.

4.2.2 Publication of EOI

An EOI shall be published for development of technical specifications for the functional requirements prepared earlier. The EOI shall be published as per the guidelines given in (*ref-2*)

4.2.3 Selection of panel

Out of the respondents to the EOI a panel of minimum three (if available) shall be selected for deliberations for development of specifications. The selection criteria for selection of panels shall be as provided in (*ref-2*).

4.2.4 Willingness for joint development, if required

A willingness certificate shall be obtained from respondents for joint development.

4.2.5 Finalize draft specification with STR in consultation with the select panel

The RDSO team in consultation with the selected panel shall finalize the specifications and the STR.

4.2.6 Sanction of work

Based on the cost estimates for the development process, a detailed estimate shall be drafted and sanctioned for taking up the work of development as per the established process of creation vetting and sanction of estimates.

4.2.7 Orders for manufacture of prototypes

Tenders (open/special limited tenders) shall be called for development of the prototypes. This tender shall be evaluated and orders for manufacture of prototypes shall be issued to the each of selected parties.

4.2.8 Verification / validation of prototypes

The prototypes received shall be evaluated as per the draft specification. This shall be done as in two stages namely: verification of design calculations and validation of actual performance.

4.2.9 Iterate if necessary

Incase improvements are required in the prototype design; further orders may be given to develop further prototypes or to improve the same. This process should be iterated as required for finalization of the design and verification / validation of the prototype.

4.2.10 Finalize draft specification

The final draft specification shall be created by the RDSO team in consultation with the selected panel incorporating changes that are required over the period of the development exercise.

4.2.11 Creation and issue of specification

The RDSO process for creation and issue of specifications shall be followed for issue of new specifications. (*ref-3*)

4.2.12 Vendor approval process if required

RDSO vendor approval process shall be followed as required for development of vendors for the specification so finalized. (**ref-4**)

The firms who have successfully developed the product through this process of product development shall be listed as part-II vendors on the RDSO vendor list. They shall be exempted from payment of vendor registration fees.

4.3 Case 3: RDSO develops technology

When the technology / design are developed by RDSO the following steps shall be followed.

4.3.1 Follow internal design development process

The RDSO internal design development shall be followed for development of product design. In case prototype needs to be developed and tested along with updation of specifications the following steps shall be followed.

However, if prototype development and testing is not required then the steps may be omitted and process should be started at the stage of creation and issue of draft specification. The directorate shall record the reasons for adopting the shorter process and approval of DG shall be obtained. For such specifications. The limitations and areas of further work to be done shall be mentioned as a part of the specification.

4.3.2 Publication of EOI

An EOI shall be published for finalization of specifications and development of prototypes if required and not developed. The EOI shall be published as per the guidelines given in (**ref-2**)

4.3.3 Selection of panel

Out of the respondents to the EOI a panel of minimum three (if available) shall be selected for deliberations for development of specifications. The selection criteria for selection of panels shall be as provided in (**ref-2**).

4.3.4 Willingness for joint development, if required

A willingness certificate shall be obtained from respondents for joint development.

4.3.5 Finalize draft specification with STR in consultation with the select panel

The RDSO team in consultation with the selected panel shall finalize the specifications and the STR.

4.3.6 Sanction of work

Based on the cost estimates for the development process, a detailed estimate shall be drafted and sanctioned for taking up the work of development as per the established process of creation vetting and sanction of estimates.

4.3.7 Orders for manufacture of prototypes

Tenders (open/special limited tenders) shall be called for development of the prototypes. This tender shall be evaluated and orders for manufacture of prototypes shall be issued to the each of selected parties.

4.3.8 Verification / validation of prototypes

The prototypes received shall be evaluated as per the draft specification. This shall be done as in two stages namely: verification of design calculations and validation of actual performance.

4.3.9 Iterate if necessary

In case improvements are required in the prototype design; further orders may be given to develop further prototypes or to improve the same. This process should be iterated as required for finalization of the design and verification / validation of the prototype.

ISO9001:2008	Document No: QO-D-7.1-15	Version No:1.0	Date Effective: 01/12/2010
Document Title: Product development			

4.3.10 Finalize draft specification

The final draft specification shall be created by the RDSO team in consultation with the selected panel incorporating changes that are required over the period of the development exercise.

4.3.11 Creation and issue of specification

The RDSO process for creation and issue of specifications shall be followed for issue of new specifications. (*ref-3*)

4.3.12 Vendor approval process if required

RDSO vendor approval process shall be followed as required for development of vendors for the specification so finalized. (*ref-4*)

The firms who have successfully developed the product through this process of product development shall be listed as part-II vendors on the RDSO vendor list. They shall be exempted from payment of vendor registration fees.

4.4 Case 4: RDSO buys product with technology on ToT from OEM

4.4.1 Sanction of work

The process of sanction of work as a WP/RSP proposal shall be followed as required.

4.4.2 Finalize draft specification

Draft specifications shall be framed by the directorate describing the purpose of use and desired characteristics. This document shall be placed on the RDSO website after approval of the directorate head

4.4.3 Publication of EOI

An EOI shall be published for finalization of specifications and development of prototypes if required and not developed. The EOI shall be published as per the guidelines given in (*ref-2*)

4.4.4 Selection of panel

Out of the respondents to the EOI a panel of minimum three (if available) shall be selected for deliberations for development of specifications. The selection criteria for selection of panels shall be as provided in (*ref-2*).

4.4.5 Finalize spec & STR in consultation with select panel

The RDSO team in consultation with the selected panel shall finalize the specifications and the STR.

4.4.6 Creation and issue of specification

The RDSO process for creation and issue of specifications shall be followed for issue of new specifications. (*ref-3*)

4.4.7 Tender for product and ToT

Tender for ToT shall be published based on the final specifications. The processing of the supply and ToT shall be done in accordance with the conditions of the finally accepted contract document.

It shall be ensured that the ToT provider provides the detailed documents defining the type and extent of control of the outsourced sub-assembly / process that affects product conformity to requirements.

4.4.8 Follow case 2 for further development and indigenization

Further development / indigenization of product or its sub components shall be done in following the guidelines under Case 2.

4.4.9 Vendor approval process if required

RDSO vendor approval process shall be followed as required for development of vendors for the specification so finalized.

ARE/ISO Cell	MR/ISO Cell	Printed: 2010/11/30
Prepared By:	Issued By:	Page 5 of 8

ISO9001:2008	Document No: QO-D-7.1-15	Version No:1.0	Date Effective: 01/12/2010
Document Title: Product development			

The firm supplying the ToT shall be listed as part-I vendor on the RDSO vendor list for the equipment supplied.

The sub-suppliers who have supplied sub-components that have been tested by RDSO during the acceptance test of the complete equipment shall also be treated as part-I vendor for the sub-component supplied by them.

Other sources of sub-components indicated by the ToT provider shall be listed as part-II vendors.

All the firms as described here shall be exempted from payment of vendor registration fees.

4.5 Case 5: Adoption of technology on cross approval basis

4.5.1 Finalise draft specification

The draft specification shall be framed by the concerned Directorate describing the broad functional requirements and the purpose of use and desired characteristics. This draft specification shall be loaded on the RDSO website after the approval of Directorate Head

4.5.2 EOI for interested foreign manufactures

An EOI shall be published for finalization of specifications and approval of prototypes if required and not developed. The EOI shall be published as per the guidelines given in (*ref-2*)

4.5.2.1 Submission of documents

The interested firms shall submit the following documents to RDSO:-

1. Independent verification and validation safety report based on standards as applicable and other related documents.
2. Environmental/clmatic and EMI/EMC test reports of system and sub-systems.
3. Performance feedback of users of the equipments already installed over World Railways for minimum quantity as prescribed.
4. History of modifications in the hardware and software of the equipment and their reasons.
5. Commitment of the firm for maintenance and repair support in India.
6. Details of testing and repairing facilities proposed to be installed in India.
7. Detailed documents defining the type and extent of control of the outsourced sub-assembly / process that affects product conformity to requirements.

4.5.3 Selection of panel

Out of the respondents to the EOI a panel of minimum three (if available) shall be selected for deliberations for development of specifications. The selection criteria for selection of panels shall be as provided in (*ref-2*).

4.5.4 Finalize spec & STR in consultation with select panel

The RDSO team, in consultation with the selected panel and zonal railways, shall finalize the specifications and the STR.

4.5.5 Examination of documents

Examine the documents and various tests done on the product. This may include independent validation and testing wherever required.

4.5.6 Willingness to indigenize the product

The firm shall be requested to give its willingness to indigenize the product in a prescribed timeframe.

4.5.7 Provisional approval for performance assessment

If the documents and details submitted by the firm are found in order, the provisional approval to supply limited number of equipments for field trial for performance assessment shall be given to the firm.

ARE/ISO Cell	MR/ISO Cell	Printed: 2010/11/30
Prepared By:	Issued By:	Page 6 of 8

4.5.8 Field trials

The cross approved equipment shall be monitored during the course of field trials.

4.5.9 Approval for regular supply

Based on the performance in the field of the equipments for a prescribed equipment months, the regular approval to the firm to supply equipments to Indian Railways shall be given.

4.5.10 Follow up for indigenization

After the creation of necessary infrastructure required for indigenization, the capacity-cum-capability of the local firm shall be assessed.

After indigenization, the annual progress of indigenization shall be monitored and after completion of indigenization, the firm has to offer indigenized prototype sample for type testing to RDSO in a given timeframe. The type testing shall be applicable as in case of any other indigenized product developed in India

4.5.11 Creation and issue of specification

The RDSO process for creation and issue of specifications shall be followed for issue of new specifications. (ref-3)

4.5.12 Vendor approval process if required

RDSO vendor approval process shall be followed as required for development of vendors for the specification so finalized.

The approved firm shall be listed as part-II vendor on the RDSO vendor list for the equipment supplied.

The sub-suppliers who have supplied sub-components that have been tested by RDSO during the acceptance test of the complete equipment shall also be treated as part-II vendor for the sub-component supplied by them.

Other sources of sub-components indicated by the ToT provider shall be listed as part-II vendors.

All the firms as described here shall be exempted from payment of vendor registration fees.

5.0 Referenced Documents

Ref.SNo.	Document Number	Document Name
1.	QO-G-7.3-1	Design and development
2.	QO-G-7.1-16	Publishing expression of interest
3.	QO-D-7.1-1	Creation of equipment, item specification
4.	QO-D-7.1-5 to 14	Vendor Development process guidelines

6.0 Referenced Documents of External Origin

None

7.0 Associated Records

As required by the RDSO design development process, and office files as required.

8.0 Responsibility and Authority

Activity	Responsible	Approver	Supporting	Consulted	Informed
Creation, maintenance of this document	MR/ISO Cell	DG	Staff of ISO Cell		All directorates through intranet
Compliance of directives contained in this document.	Director charge of Directorate	Head of Directorate	Directorate Staff		
Requirement of deviation from directive.	Head of Directorate	DG	Respective officer of directorate	MR/ISO Cell	All directorates through intranet

ISO9001:2008	Document No: QO-D-7.1-15	Version No:1.0	Date Effective: 01/12/2010
Document Title: Product development			

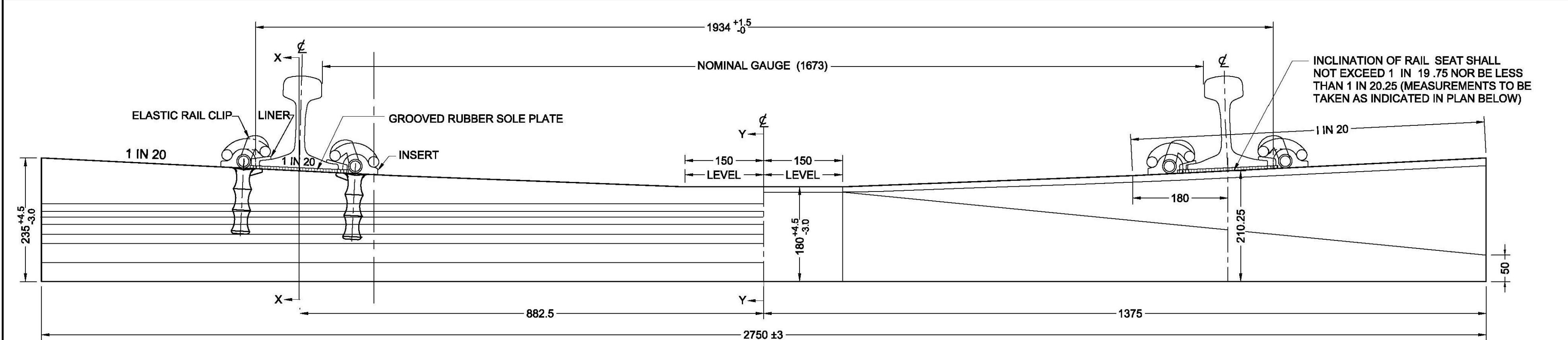
9.0 Abbreviations

None

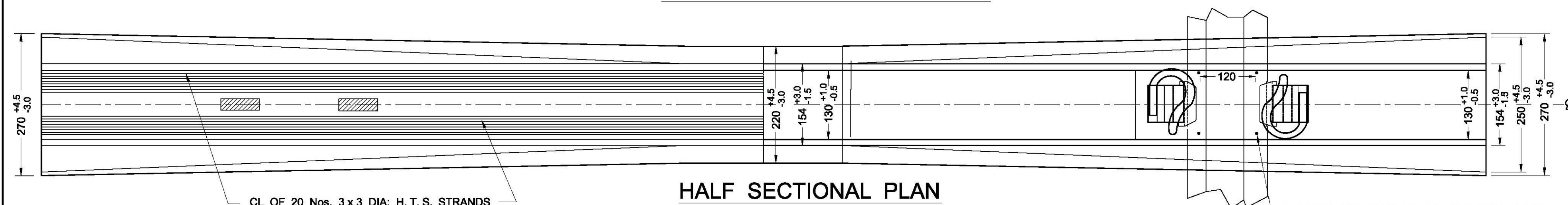
Copy controlled only when viewed on the RDSO ISO Cell Website. Local/printed copies permitted, but are uncontrolled. Check controlled copies before use.

ARE/ISO Cell	MR/ISO Cell	Printed: 2010/11/30
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FILE PAGE CT/SRC/3/2 SNo.3205p-21-22 PAGES
CAL: CH: - -
DRG: K.J.SINGH CHD: R.L.WAGHWARE
TRC: -
COMPUTER BY
DDST JDST-V KAMLESH JHA
AN.GUPTA



HALF SECTIONAL ELEVATION



HALF SECTIONAL PLAN

QUANTITY SCHEDULE FOR SLEEPER

DESCRIPTION	DRG N	MATERIAL	SPECIFICATION	No. PER SLEEPER	VOLUME PER SLEEPER	APPROX. WEIGHT EACH IN Kg.	APPROX. TOTAL WEIGHT IN Kg.
SLEEPER	RDSO/T-7008	CONCRETE	IRS/T-39	1	108900 cm ³	267	267
REINFORCEMENT	RDSO/T-7008	H.T.S.	IS: 6006	20 NOS. 3ply3 mm STRAND	-	0.4565	9.13
INSERTS	RDSO/T-6901	SGCI	IRS/T-46	4			

VALUES FOR STATIC BEND TEST

CRACKING LOAD (KN)			FAILURE LOAD AT RAILSEAT (KN)
CENTRE TOP	CENTRE BOTTOM	RAILSEAT	
65	60	270	490

QUANTITY SCHEDULE FOR RAILSEAT ASSEMBLY

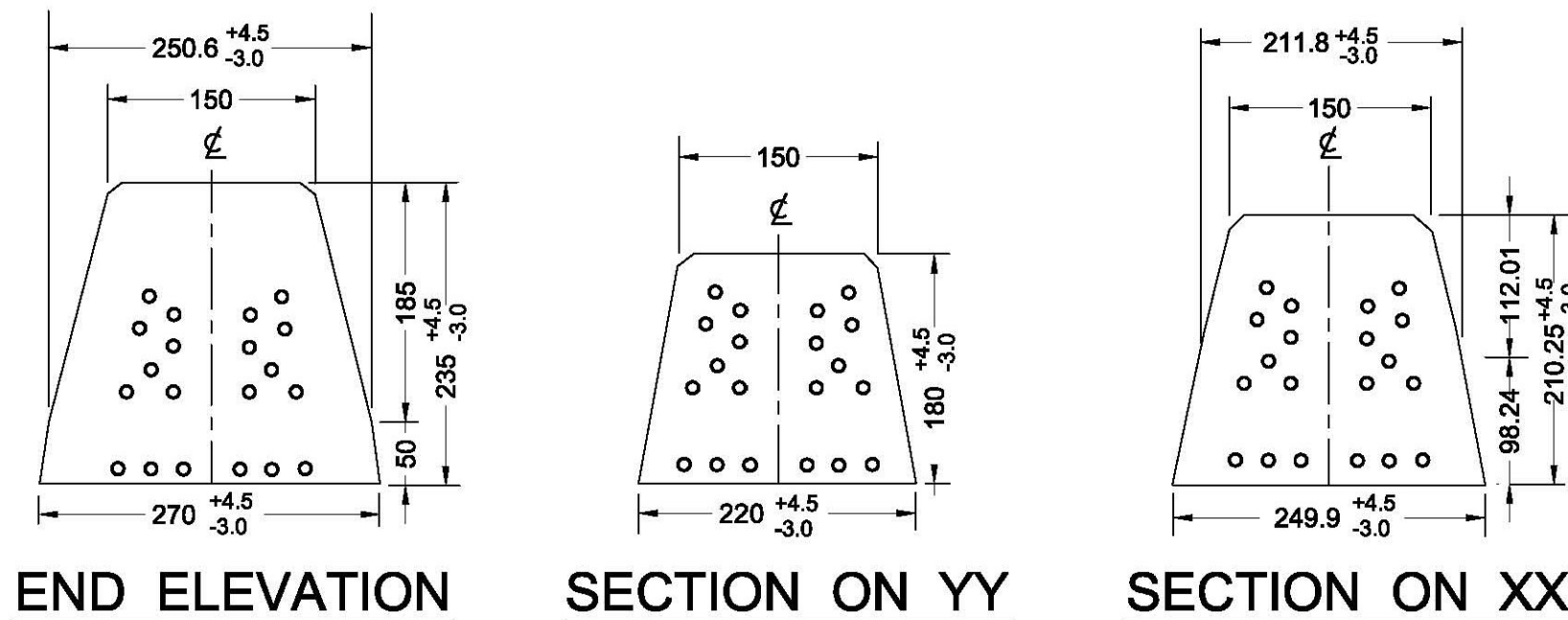
FOR 1673 mm GAUGE, 60 Kg.(UIC)

DESCRIPTION	DRG N	MATERIAL	SPECIFICATION	No. PER SLEEPER
GROOVED RUBBER SOLE PLATES	RDSO/T-7010	COMPOSITE RUBBER	RDSO/ M&C/ RP- 200/2007	2
LINERS	RDSO/T-6937	GLASS FILLED NYLON-66	IRS/T-44	4
ELASTIC RAIL CLIP MARK-V	RDSO/T-5919	-	IRS/T-31	4

QUANTITY SCHEDULE FOR RAILSEAT ASSEMBLY

FOR 1676 mm GAUGE, 60 Kg.(UIC)

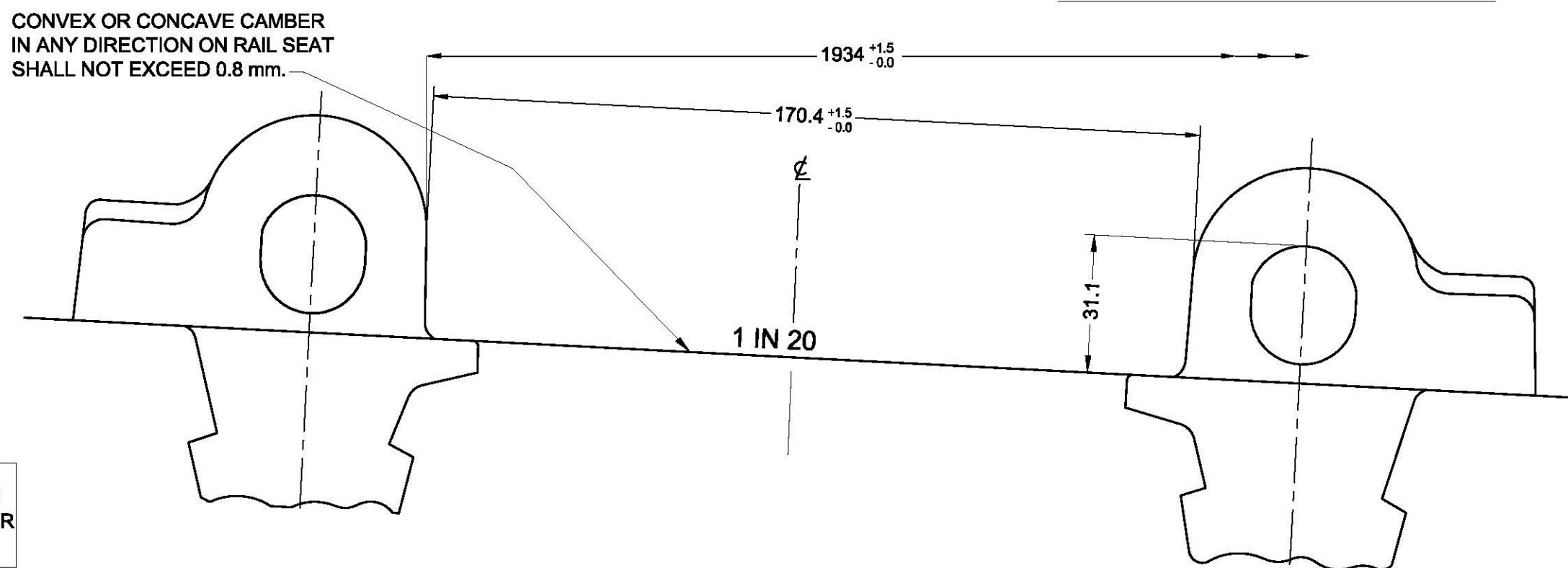
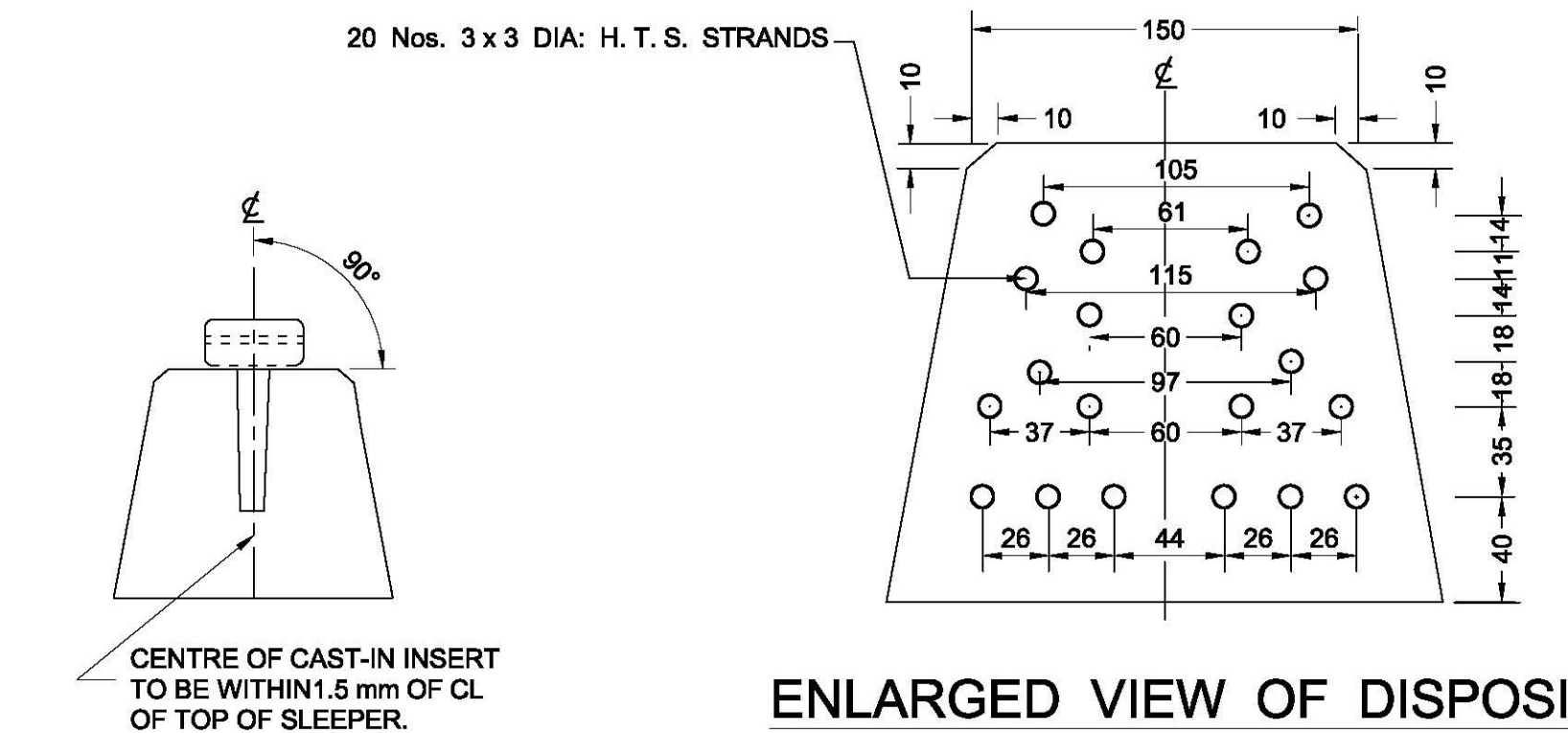
DESCRIPTION	DRG N	MATERIAL	SPECIFICATION	No. PER SLEEPER
GROOVED RUBBER SOLE PLATES	RDSO/-T7010	COMPOSITE RUBBER	RDSO/ M&C/ RP- 200/2007	2
LINERS	RDSO/T-8222 RDSO/T-8223	GLASS FILLED NYLON-66	IRS/T-44	2 2
ELASTIC RAIL CLIP MARK-V	RDSO/T-5919	-	IRS/T-31	4



END ELEVATION

SECTION ON YY

SECTION ON XX



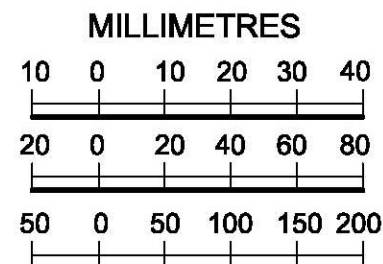
DETAIL OF FIXING INSERT AT RAIL SEAT

9. FOR ACHIEVING 1676 mm GAUGE ON THIS SLEEPER WITH 60 Kg.(UIC) RAIL TO DRG. No.RDSO/T-7008 LINERS TO DRG: No. RDSO/T-8222 & 8223 ARE TO BE USED. FOR 1673 mm GAUGE USE LINER TO DRG. NO.RDSO/ T- 6937
8. PART SHOWN IN QUANTITY SCHEDULE SHALL BE TO LATEST SPECIFICATION & DRAWING.
7. THE LATEST VERSION OF DRAWING TO BE CONFIRMED FROM RDSO BEFORE TENDERING.
6. FOR USE OF 60 Kg RAIL ON THIS SLEEPER TO DRG. No. RDSO/T-7008, REFER ASSEMBLY DRG. No. RDSO/T-7009.
5. MARKINGS ON SLEEPERS SHALL BE TO DRG. NO. RDSO/T-2466.
4. EACH STRAND SHALL BE TENSIONED WITH AN INITIAL FORCE OF 29 KN.
3. CONCRETE SHALL CONFORM TO IS: 4562 IRS/ T- 39 , OF GRADE M-60.
2. ALL CORNERS SHALL BE ROUNDED OFF TO A RADIUS OF 5 mm UNLESS OTHERWISE SPECIFIED.
1. ALL DIMENSIONS ARE IN MILLIMETRES.

NOTE

IRS / T-39

SPECIFICATION



SCALE

1. QUANTITY SCHEDULE FOR RAIL SEAT ASSEMBLY FOR 1676 mm. GAUGE & 1673mm GAUGE & NOTE No. 9 ADDED AND NOTE NO.3 ALTERED.

XX.12.11

ALT: DESCRIPTION DATE

THIS DRAWING IS THE PROPERTY OF
RESEARCH DESIGNS AND STANDARDS ORGANISATION
(MINISTRY OF RAILWAYS)
LUCKNOW - 226011, INDIA
AND SHALL NOT BE USED, COPIED, REPRODUCED IN
PART OR WHOLE, WITHOUT PRIOR CONSENT IN WRITING.

R. D. S. O.

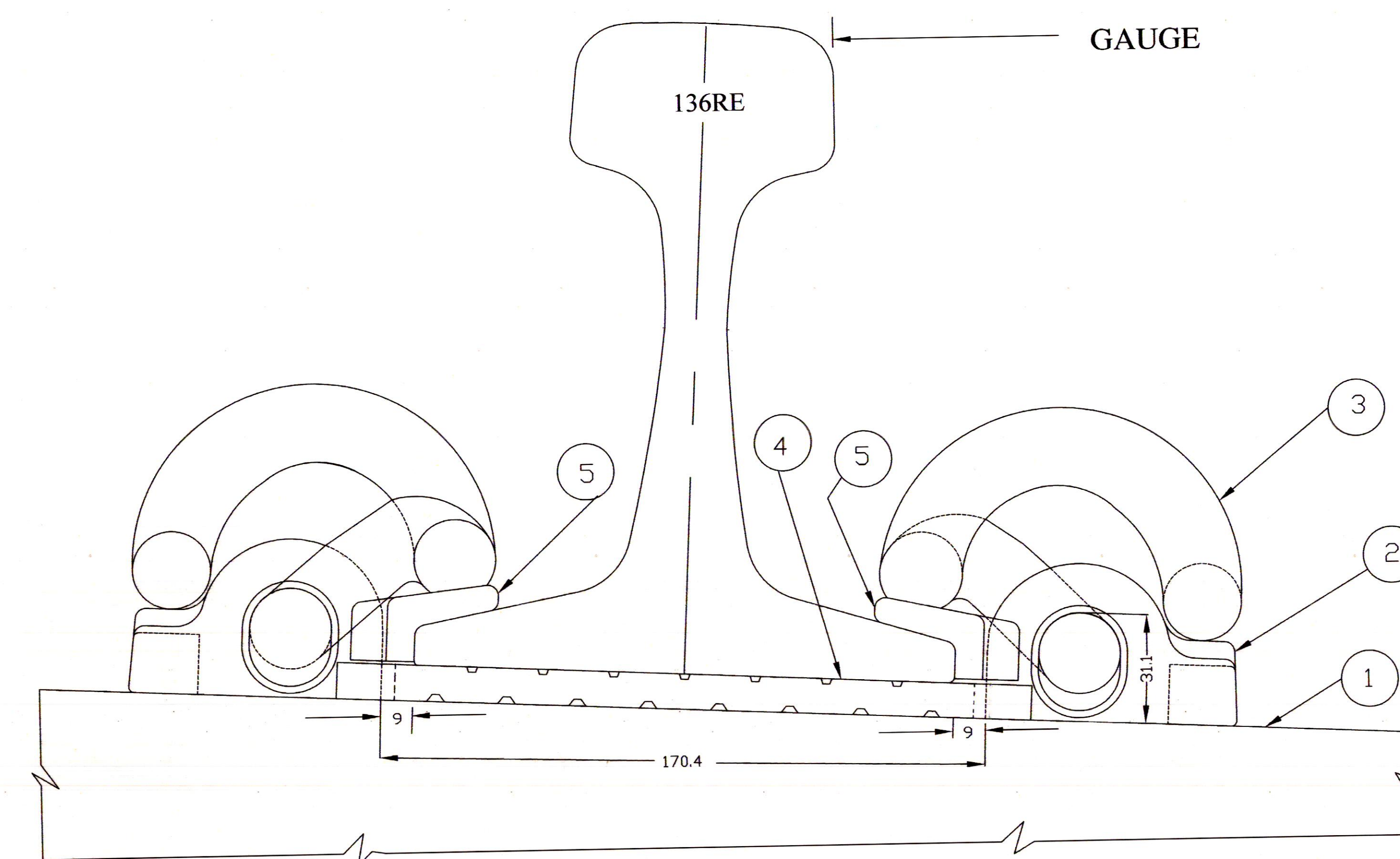
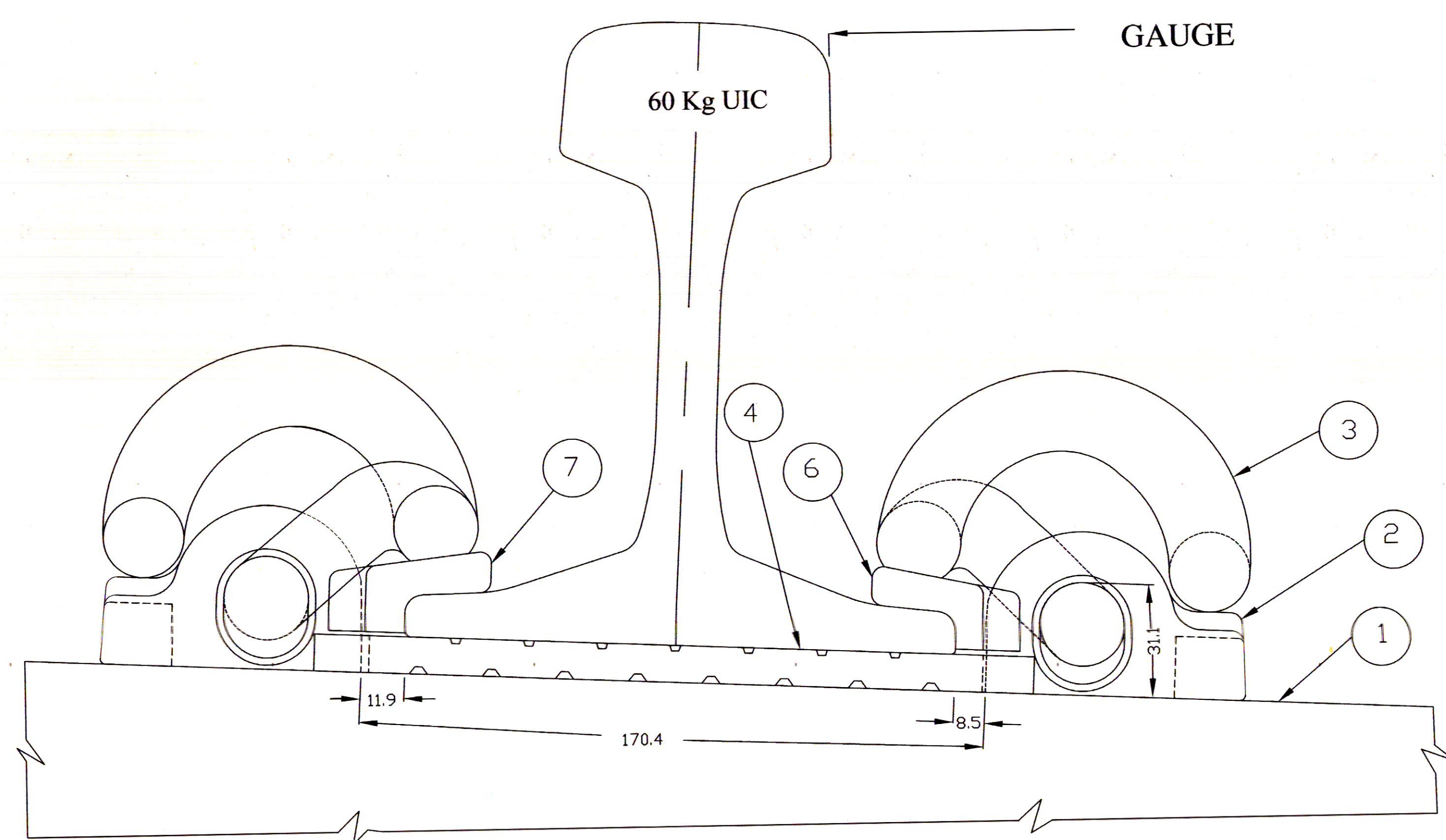
PRESTRESSED CONCRETE
SLEEPER FOR 25t AXLE LOAD FOR
B. G. ON 136 RE RAILS.

STAN B
CANC 12
REV B

ADVANCE
26 - 02 - 2009

(T)

RDSO/T-7008



SCHEDULE OF MATERIAL FOR ONE SLEEPER

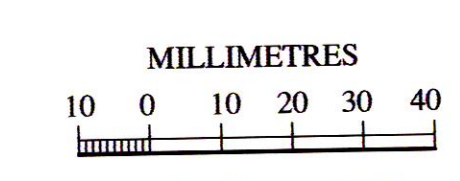
PART No.	No. OFF 60Kg 136RE	PART DESCRIPTION	DRAWING No.	SPECIFICATION
1	1	CONCRETE SLEEPER	RDSO/T-7008	IRS T-39
2	4	SGCI INSERT	RDSO/T-6901	IRS T-46
3	4	ELASTIC RAIL CLIP Mk-V	RDSO/T-5919	IRS T-31
4	2	10mm THICK COMPOSITE GROOVED RUBBER SOLE PLATE	RDSO/T-7010	RDSO/M&C/RP-200/2007
5	-	GLASS FILLED NYLON-66 INSULATING LINER	RDSO/T-6937	IRS T-44
6	2	- DO -	RDSO/T-6938	IRS T-44
7	2	- DO -	RDSO/T-6939	IRS T-44

1. ALL DIMENSIONS ARE IN MILLIMETRES.

NOTE

AS PER TABLE

SPECIFICATION



SCALE

ALT:

DESCRIPTION

DATE

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R. D. S. O.

RAIL SEAT ASSEMBLY ON
CONCRETE SLEEPER WITH 136 RE
& 60 Kg UIC RAIL

STAN D
CANCE
REV D
ADVANCE
20-05-2009 (T)

RDSO/T-7009

FILE PAGE CT/BE/DEV CR:NO PAGES N/P 13,14 DRG: CH: CAL: CH: SE: A/E/T