भारत सरकार / GOVERNMENT OF INDIA
रेल मंत्रालय / MINISTRY OF RAILWAYS
रेलवे बोर्ड / RAILWAY BOARD

No. 2019/M(N)/204/6 (E:3324111) **Dated: 17.05.2024**

General Managers
All Zonal Railways

Sub: Compendium of latest instructions on loading of various consignments on wagons (Rev-1).
Ref: RDSO letter no. MW/Loading & Securing dated 17.05.2024 (Copy enclosed).

Please find attached the compendium of latest revised instructions on loading of different consignments (Steel pipe, Granite, TMT Bars, Steel Slab/ Billets, Steel Coil, Steel Bar Coil, Mix Loading--Steel plates & Steel Coils and Steel plates bundle) on the BOST, BOXN variants, BRN/BRN22.9, BFNS22.9/BFNSM22.9 & BFNV wagons and a check sheet to ensure the proper loading and securing of the consignments issued by RDSO letter under reference

Loading arrangements allowed on trial basis are indicated in blue colour in index table, Concerned Zonal Railways should ensure sending of trial report as indicated in the remarks column.

It is requested to kindly arrange to take necessary action for implementation of instructions regarding loading and securing of the consignments on wagons as issued by RDSO, for safe operation of Rolling Stocks over Indian Railways.

HAPPY WALIA Digitally signed by HAPPY WALIA
Date: 2024.05.17 18:29:45 +05'30'

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Copy to:

1. **AM(ME)/RB** - for kind information please.
2. **PCOMs, PCCMs & PCMEs/All Zonal Railways** – For kind information & necessary action please.
3. **PED/TT(M)/RB**- for kind information please & to advise all concerned to comply with the above instructions.

फैक्स / Fax : 91-0522-2452494
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सत्यमेव जयते

भारत सरकार –रेल मंत्रालय
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पत्र सं0 एम डब्ल्यू / लोडिंग एवं सेक्योरिंग

दिनांकः 17-05-2024

कार्यकारी निदेशक यांत्रिक अभियन्ता (फ्रेट),
रेल भवन, रेलवे बोर्ड,
नई दिल्ली–110 001

विषय : Compendium of instructions on loading of consignment on wagons(Rev-1)
संदर्भ: (i) This office letter of even no. Dated:12.03.2024.
(ii) Railway Board's letter No. 2019/M(N)/204/6 (E:3324111) dated 13.03.2024.

Vide ref. (i) above, a compendium of instructions on loading of consignments on different wagons was issued containing all latest drawings and instructions on this subject. However during course of implementation, certain issues were raised by Steel plants and Zonal Railways related to space constraints in loading and lashing, application of saddles etc. Accordingly, a team of RDSO officials was sent to Tata Steel and SAIL Bokaro from 08.04.2024 to 10.04.2024 to jointly witness and analyses these issues. Besides Tata steel, SAIL Bokaro and JSW, this pre-informed joint exercise was also attended by officers and supervisors of ECoR, SER and SWR.

Based on this joint exercise all issues raised by Steel plants and Zonal Railway have been analyzed and action taken on each item is enclosed as **Annexure-A** for ready reference please.

Accordingly, relevant loading diagrams have been reviewed & altered and few new diagrams have also been issued to effect requisite changes within the overall ambit of safe and efficient train operations. All latest drawings and instructions are enclosed herewith. The drawings / diagrams/instructions included in this compendium are in suppression to all their previous versions. The revised / new drawings have been added to the compendium with distinct revision identity and indicated in red colour in the index table. A check sheet has also been added as a super check tool to ensure proper loading & securing of consignments on the wagons. Zonal Railways should monitor compliance of these instructions by concerned loading parties.

Loading arrangement allowed on trial basis is included in blue colour in index table. Concerned Zonal Railways should ensure sending of trial report as indicated in remarks column.

Railway Board may kindly issue "Compendium of instructions on loading of consignment on wagons (Rev-1)" in supersession to all previous versions.

सग्लंक : उपरोक्त (in 92 pages)

(अजीत कुमार सिंह)
कार्यकारी निदेशक / माल डिब्बा
कृत महानिदेशक / माल डिब्बा / अ.आ.मा.स0.

Digitally Signed by Ajit Kumar Singh
Date: 17-05-2024 16:24:15
Reason: Approved

Annexure-A

Decision taken on points raised by steel plants during visit of RDSO officials of TATA and BKSC on 08 to 10.04.2024

Sl. No.	Items	Raised By	Recommendation of RDSO
1	It has been discussed during the meeting that there are practical issues in loading of coils in eye-to-platform orientation and therefore flexibility of loading coils should be allowed for both in eye to platform and eye to engine orientations. Currently drawings have specified loadings only in eye-to-platform orientation for majority of the cases. RDSO is requested to provide the alternative to load coils in both the orientations for all kinds of rolling stock and coil sizes used for Steel Coil loading, if possible.	Tata Steel, RSP, JSW, JSPL, Mech - KUR/ SBP	Eye to platform orientation for loading of steel coil on the wagon was done for trial purpose based on the unusual report by Central Railway. After operation of about six months, issues were again raised by Zonal Railways and loading parties regarding space constraints and consequent difficulties in loading and strapping in open wagons. Keeping above in view, both options i.e. eye to platform and eye to engine have been permitted in BOST, BOXN and BOXNHL variants.
2	In presence of RDSO and other representatives of Railways, the weight of new design of metal saddle was found to be approx. 65 kg which is not suitable for handling and loading of coils in wagons. Therefore, it is requested to reconsider the earlier design of metal saddle (as per WD-16042- S- 01, Alt 3, Dtd- Nov-2022- Ref Annexure 1) used by Steel Producers, which was lighter in weight(less than 20kg), and already in use for last 5 years.	Tata Steel, RSP, JSW, JSPL	The issue has been examined in detail. Considering all requisite factors viz. coil diameter, weight, etc. and provisions contained in AAR, new universal drawing bearing no. WD-24036-S-01 has been issued and attached herewith. This drawing no. has also been incorporated in all relevant drawings. However, keeping specific request of Steel plants, use of existing metal saddle to the RDSO drawing no. WD-16042- S- 01, Alt 3, Dtd- Nov-2022- is permitted for a period of one year. Further, all steel plants should ensure that new manufacturing of metal saddle shall only be done as per drawing no.WD-24036-S-01.
3	Permission is required to load coils <25 T with three saddles in BOXNHL and with 6 saddles for coil weights>25 T till 28T. Size of wooden saddles should be same as allowed for other wagon types since availability of the wooden saddle as specified for BOXNHL is a concern.	Tata Steel, RSP, JSW, JSPL, Mech -KUR/SBP	The issue has been examined and suitable changes have been incorporated in the relevant drawings. Generally use of less than six and minimum up to three wooden saddles has been permitted upto 25t coil load.
4	In BOXNHL type wagons, use of six saddles for smaller coil widths is not practical as the coil does not rest on all saddles when the width is below 1200 mm.	Tata Steel, RSP, JSW, JSPL, Mech -KUR/SBP	
5	During the field visit, it was shown to the RDSO that centering of coil cannot be done without adequate tolerances. Positioning of coil without any manual intervention from inside the wagon will always require some tolerance to be allowed. Manual Intervention is not allowed at Steel Plants during loading since it may result into fatality in case of any failures of the equipment. While Steel Plants would always endeavor to load the coils in the center, RDSO is requested to mention a tolerance of up to 100 mm from the center line of the wagons in all drawings. RDSO is requested to consider this tolerance and issue the required guidelines urgently.	Tata Steel, RSP, JSW, JSPL, Bokaro, Mech - KUR/SBP	In the loading diagram symmetrical loading has been specified. General tolerance cannot be specified due to different under frame structure and position of load bearing members. However, Zonal Railways may issue suitable directions for symmetrical loading required as per local conditions. Tools like paint marking on wagon floor, walls, etc. may be used.

6	In certain drawings, difference of 2 T in coils or sheets/plates loaded on the Bolsters is not mentioned and therefore the Divisional Mechanical team is asking for absolute matching of coil/sheet/plate weights which is not practical. It was discussed and agreed that a difference of 2T can be allowed in all cases of steel loading in all types of stock and can be implemented from immediate effect. RDSO is requested to consider making necessary changes in the notes in the subsequent revision of the drawings.	Tata Steel, RSP, JSW, JSPL, Bokaro, Mech - KUR/SBP/ Tata	The issue has been examined and tolerance limit of 2 tons has been incorporated in all relevant drawings.
7	Sheets/Plates loading in BOST, BOXN wagons and its variants, loading at bolsters is permitted but there is no drawing allowing loading at the wagon center and between bolster and wagon center. Since Sheets/Plates are distributed loads, complete flexibility in loading of sheets/plates of different lengths in full wagon should be allowed within the Payload of the wagon.	Tata Steel, RSP, JSW, JSPL, Mech - KUR/SBP	The matter has been studied, new drawings covering BOST, BOXN and BOXNHL variants have been issued.
8	Loading on PU Saddles is not specified in most of the drawings issued by RDSO. The suppliers of these PU Saddles are requested to submit the complete test report of the material through an NABL approved Laboratory to enable permission to use PU saddles for Steel Coil Loadings. Steel Industry is to expedite the process with vendor partners.	Tata Steel, RSP, JSPL, Mech - KUR/SBP	As stated above, ample flexibility with metal and wooden saddle have been given to suit varied loading requirement. Existing details available on PU saddle are not adequate to permit its use. However, keeping request of steel plants in view, S.E. Railway may be nominated for detailed study of proposed PU saddle and sending their recommendation to RDSO for further evaluation before permitting its use.
9	Availability of wood is continuously declining, and Metal and PU are more environment friendly options of saddles as compared to wood and therefore, provision to use all three types of saddles viz: Metallic, Wooden & PU for all types of Steel coil loadings and in all types of rolling stocks. Steel Industry has been using PU saddles with approval from Zonal Railways and RDSO is requested to consider allowing the same in all drawings. For business continuity, loading of coils on PU saddles should be allowed with immediate effect since the same has been in practice for last several years, RDSO is requested to allow the same with immediate effect while the necessary modification to the drawings is done.	Tata Steel, RSP, JSW, JSPL, Mech - KUR/SBP	
10	Lashing with 1.45mm strap thickness has practical challenges of ensuring the proper crimping and sealing as required by RDSO and also has issues with respect to handling and bending of the straps. Further considering the challenge of achieving the breaking strength of 49KN and 500-800 Kg of tension, which was also observed by RDSO team and other members of Mechanical department of other Zonal Railways during the field visit, RDSO is requested to revisit this requirement and lower the range to the extent possible so that the usage of existing and established 1.27 mm straps can be continued. Steel Industry represented to RDSO to specify the minimum failsafe tension requirement and breaking strength. RDSO is also requested to review M/s Signode's proposal of a new strap having 1.27 mm thickness and capability of 5000 Kg breaking strength.	Tata Steel, RSP, JSW, JSPL, SAIL-Bokaro	This issue has been examined and considering all the factors use of strap of different sizes has been permitted to the extent possible and incorporated in relevant drawings. Generally, use of 1.45 mm steel strap is limited to steel coils. Proposal of using 1.27 mm steel strap having similar mechanical properties as that of 1.45 mm steel strap is under evaluation and shall be advised in due course of time.
11	Value of tension shown by tensionometer is valid only at the time of initial tensioning. Once tensioning is completed, the three-point tension meter cannot be used for measurement of tension. Hence measurement of tension value enroute or at destination is not possible. It was discussed that only looseness of	Tata Steel, RSP, JSW, JSPL	Use of tension meter is generally prescribed only at originating loading point and existing instructions are considered adequate.

	the strap can be checked manually. As there is a lack of common understanding on tension measurement and Zonal Mechanical Teams were using this tensionmeter for measuring tension enroute, RDSO is requested to clarify the same in the form of a guideline of how tension is to be checked once initial tensioning activity is completed at the loading points.		
12	Difference in interpretation of the drawings by the user and the Mechanical team is a concern. Further, the Zonal Mechanical teams are issuing local norms beyond the RDSO norms. Mechanical team to consult RDSO in case of any query/doubt, and necessary modifications/guidelines to be issued centrally by RDSO.	Tata Steel, RSP, JSPL	No specific issue has been brought out and existing instructions are considered adequate.
13	TMT is loaded in forms of bundles which are already strapped. Railways is asking to strap all the bundles loaded in BOST wagons which is not practical as entering of a person inside the wagon is not possible. Similar issue is there in loading of Billets in BOST/BOXN wagons and variants. RDSO is requested to revise the drawings for loading of TMT/Billets in BOST & BOXN type wagons without the need to unitise all bundles inside the wagons. Steel Industry represented that this has been the practice for several years and no untoward incident has been reported.	Tata Steel	The issues have been reviewed for the BOST and BOXN wagon and suitable changes have been incorporated in relevant drawings.
14	RDSO has instructed wagon wise check sheet for load securing which requires manual noting of the mentioned data. Maintaining such exhaustive checklist for each wagon is not possible. Requesting RDSO to revisit the checklist requirement, if any data has to be validated then it can be done randomly on sampling basis as per pre-defined frequency.	Tata Steel, RSP, JSPL, Mech - KUR/SBP/ TATA	The check sheet has been issued as a super check tool to ensure proper loading. Use of this check sheet for all wagons is not prescribed and frequency may be decided by Zonal Railways as per prevailing conditions.
15	RDSO is requested to reconsider the loading in BOXNHL up to Payload/2 for loading on the Bolsters and Payload/3 in case of 3 coil loading (2 on Bolster and 1 in Centre).	Tata Steel, RSP, JSW, JSPL, Mech - KUR/SBP	BOXNHL wagon has been designed for bulk commodities which impart uniformly distributed loads. The loading of coils on these wagons has been examined and the permissible loading combination of coils has been specified in the relevant drawings.
16	Since Cold Roll material are very surface sensitive and customers want material without any defects. Steel Industry proposed some packing Materials to be placed between coil surface and stoppers. RDSO is requested to consider the proposal and provide the necessary note in the drawing.	Tata Steel, JSPL	It is not possible to specify the exact location and material of the packing due to varying size of steel coils. However, a note on use of suitable packing material has been incorporated in relevant drawings.
17	For horizontal loading of coils in unitised pack, with the suggested profile of the wooden saddles, the two coils do not become a single homogeneous mass depending upon the coil diameters and there is a possibility of gap between coils. Tata Steel proposes to use single flat saddle with side wedges as per the prevailing practice. Alternatively, two separate sets of wooden saddles can be used for each small coil loaded in unitised pack. RDSO team to consider the use of two separate sets of wooden saddles for each coil and provide the necessary modification in the drawings.	Tata Steel	Use of single saddle having common coil seating area has been permitted in the relevant drawings.
18	Length of wooden saddles specified in new drawings are 2290 mm which are also heavy and difficult to handle. Wooden saddles of 1820mm were always being used and found satisfactory. The optimum length of wooden saddle that can be used is 1220 mm which is also suitable for use with all coil sizes. RDSO	Tata Steel, RSP, JSW, JSPL, Mech -	Relevant drawings have been reviewed and uniform length and cross section of wooden saddle has been incorporated.

	is requested to revisit the length of the wooden saddle and reduce it to the optimum length so that wood consumption could be minimized.	KUR/SBP	
19	The drawing for loading on BFNS22.9 & BFNSM wagons requires lashing to be done with straps although the wagons are provided with movable locking arrangement for locking of the consignment at its place and arrest any possible movement of the coil in the grove during transit. RDSO is requested to review the requirement of lashing on BFNS22.9 wagons and remove the same from the drawings, if possible.	Tata Steel, RSP, JSW, JSPL	The provision of stepping has been made as a fail-safe provision and existing instructions are considered adequate.
20	The compendium of drawings issued in March'24 does not include the pre-approved drawings (WD-17047-S-01 – **Ref Annexure 2**) which allows for loading of Billets/Blooms/Sheets/Plates on BFNS 22.9 type wagons. A similar drawing is also required for loading of Slabs and TMT Rebars on BFNS22.9 wagons and loading of Slabs/Billets/Blooms/Sheets/Plates/TMT Rebars on BFNSM type wagons.	Tata Steel, RSP, JSW, JSPL	BFNS 22.9 wagon has been specifically designed for coil transportation with the consideration of point loading at specified locations. However, keeping specific request of loading of Billets/Blooms/Sheet/Plates in BFNS22.9 wagon can be done following RDSO drawing no. WD-17047-S-01.
21	Since the 1st and 5th Pockets in BFNS22.9 wagons are only 1800mm wide, coils which are more than 1800mm width cannot be loaded in these pockets. However, in many cases the coil weight (>28t up to 32t) are of width >1800 mm. RDSO should allow the loading of such higher weight and higher width coils in the second and 4th pockets of BFNS22.9 wagons.	Tata Steel, RSP, JSW, JSPL	Width is specified as per designed pocket size. Changes will entail major modifications in wagon hence not recommended.
22	While BFNV type wagons allows loading of coils up to 32 T, the drawing depicts loading of max coil diameter up to 1900mm. In majority of the coils, when the weight is more, the coil diameter exceeds 1900mm. RDSO is requested to allow loading of coils up to 2250mm diameter in BFNV type wagons.	Tata Steel, RSP, JSW, JSPL	Limit on diameter is imposed due to prescribed CG height for safe operation of this wagon at sanctioned speed.
23	In BFNV type wagons, max coil weight allowed for loading is 32T only whereas the Payload capacity is 69T. RDSO is requested to allow loading of coils up to Payload/2 when coils are loaded only in the end pockets.	Tata Steel, RSP, JSW, JSPL	Specified limits are as per design capability of this wagon and proposed changes are not recommended.
24	Drawing no WD-21095-S01 has been issued for loading and securing of steel slabs (9 to 13 m) in BRN and BOST wagons and its variants. Except the longitudinal and lateral straps, consignment strap with isolation hooks may be minimized for extra-long consignments. RDSO is requested to kindly revisit the drawings.	JSPL	Reviewed and requisite changes have been incorporated in relevant drawings.
25	Proper welding electrodes should be used for welding isolation hooks i.e., specific welding electrodes to be used for welding in MS body and SS body wagons. IRSM-28 may be referred.	Mech-Tata/KUR/ SBP	Prescribed electrodes and welding methodology for MS and SS materials should be used for welding of isolation hook on wagons having structural steel and stainless steel floors respectively.
26	As per drawings WD-24028-S-03 and WD-24028-S-02, 3 coils loading are allowed in which a single center coil and 2 coils on bolster can be loaded. Practical constraints require loading of more than 1 coil at the center without compromising on the overall CC and center coil weight restrictions. RDSO is requested to revise the drawings to allow loading of more than 1 coil at the center (Centre bunching).	Tata Steel, JSPL, JSW	Reviewed, suitable note has been incorporated in relevant drawings. While permitting loading of more than one coil at center of the wagon all stipulated norms on weight limit, unitization, use of saddles, strapping, etc. for such loading shall be ensured. New drawing no.WD-24036-S-06 for BOST wagon and WD-24038-S-04 for BOXN wagon and its variants has been issued.

27	Currently location of isolation hook is not specified in RDSO drawings. RDSO is requested to kindly specify the indicative range with sufficient tolerances of fixing the hooks in all drawings. The users have pointed out that due to space constraints, product dimensions and floor conditions, this should only be treated as a reference and not a mandatory compliance item.	Mech-KUR/ SBP	Issue has been examined, isolation hook location cannot be specified due to variation in shape and size of the steel consignments, existing instructions are considered adequate.
28	Contact area of strap tying in isolation hook should be reduced to avoid excessive play on either side.	Mech-KUR/ SBP	Detailed drawing containing all relevant details of isolation hook has been prepared. This drawing no.WD-24036-S-01 is enclosed and also incorporated in all other relevant drawings.
29	As per RDSO, reading of strap tension should be uniform, which is not practical to achieve.	Mech-KUR/ SBP	As per para 11 above.
30	Strap surface should be corrugated type rather than polished type so that friction can be more, and slip can be less. Users pointed out that straps come in coil form and having intermittent knurling or corrugated surface at defined interval is not a practical as the straps length varies from coil to coil, eye strap to circum strap, sheet/plate to bundle sizes etc.	Mech-KUR/ SBP	Use of standard crimping is prescribed so as it does not allow slipping of the strap.
31	Requirement of mentioning individual design for Metallic and PU saddle for drawings applicable for loading of steel in BOXNHL wagon.	Mech-KUR/ SBP	Covered in relevant paragraphs as above.
32	Wagon type (BOXN, BOXNHL & BOST) which are carrying raw materials like coal, iron ore, slag, gypsum etc. should not carry Steel, HR/ CR coil loading due to presence of residual materials on wagon floor which cause welding failure and uneven floor surface which restrict even placement of saddle. Users' opinion was that due to scarcity of Steel Rakes and track capacity issues, backloading of BOX type wagons cannot be avoided. However, during POH/ROH/PME of the rakes, floor conditions should be restored to the extent possible.	Mech-KUR/ SBP	Policy matter. Adequate instructions and guidelines are already issued from Railway Board.
33	Vertical bunching should be allowed on all types of wagons which is currently allowed only in BRN22.9 type	JSW	New drawings no.WD-24036-S-03 & WD-24038-S-02 have been issued for BOST & BOXN wagons respectively.
34	RDSO is requested to consider removal of lashing and stopper requirement in Steel Coil loading in vertical position i.e., eye towards sky. 1. Bokaro steel Plant has been loading HR Coil with vertical eye towards sky since inception i.e., 1977. 2. BSL HR Coil loading is vertical (eye to sky), and its load is not linear but well distributed at the center with full stability. SAIL, Bokaro dispatches 110-120 wagons per day. HR Coil loading on 4 wooden scantlings without any stopper and strapping has been continued since 1977 without any issue. 3. From 01.04.2024; new RDSO guidelines which requires 6 nos. of hook welding and 4 nos. of stopper welding. This has necessitated more than 3600 welding per day (in 120 wagons) in addition to requirement of material/ resources to facilitate the same. Welding of hooks and angles while loading of consignment and removal of the fixtures weakens the floor surface of the wagons leading to damages of wagons thereby rendering these wagons unsuitable for further loading. It may also be noted that there is little space left	SAIL - BOKARO (Similar request from Tata Steel, JSW, JSPL & RSP)	This has been examined in detail and necessary changes have been incorporated in the relevant drawings.

	between coil and wagon wall. 4. With this guideline, our loading time has gone up from 16 hrs. to 53 hrs. per rake. SAIL, BSL was dispatching about 120 wagons (4 rakes) per day prior to this guideline. Now, we've came down to almost 43 wagons (1 rake) per day. Turnaround time of railway wagons has been adversely affected. It has resulted into high inventory due to low dispatch to production ratio. Also, additional estimated cost implication per wagon comes around Rs 7.2 Lakhs per day and thus additional cost implication of 24 crores per annum. 5. HR coil with vertical eye is the most stable configuration (Since W/D ratio is less than 1.5) and hence, it doesn't require any strapping and stopper welding in BOST/ BOXN/ BRN and its variants including BOXNHL based on our past 40 years of experience of HR coil dispatch. 6. The co-efficient of friction between wooden log and layered coil surface & wood and metal floor is very high and it provides sufficient frictional resistance force preventing any sliding motion of coil. There is no metal-to-metal contact with floor. Vibration is also taken care by wooden surface. 7. It may be noted that horizontal loading has rolling tendency and hence it is less stable to vertical loading of coils. **8. In view of the above, it is requested that Loading diagram of Steel coils in eye vertical orientation (eye-to-sky) may be revised for loading without stopper and lashing.**		
35	Reduction of door height by RDSO for BOST/BOXN type wagon: 1. Introduction of reduced height doors in BOST and BOXN wagons is also a big challenge in loading of steel consignments in these wagons. RDSO is requested to rethink and redesign the door design as designed for BOSM for easy ingress and egress. 2. Safety of workmen will be ensured by changing the height after redesigning of the door in BOST/BOXN type of wagons including BOXNHL.	Tata Steel, SAIL - BOKARO, JSW	Reduction in door size has been done on safety consideration.
36	Tata Steel has made one representation to RDSO for points related with issues in loading of steel in different wagon types with Ref No. Chief CRL//2024/18 dated 21st March 2024 **(Ref :** Annexure 3). Many points have already been discussed in the meeting and noted as part of MOM. Requesting RDSO to kindly review the remaining points and help with modification/issuance of old/new drawings for respective applicable issues.	Tata Steel	Relevant points are covered in above paras. Further, feasible changes to facilitate loading of TMT bars have been incorporated in relevant drawings.

Compendium of Loading Diagrams on Wagons (Rev.-1)

1. Loading Diagrams details for BOST wagon and its variants

(i) Steel Pipe Loading Diagram details

SN	Steel pipe Loading diagram No.	Pipe Dia	No. of Pipes	Length of Pipes For BOST variants	Remarks
1	WD-20042-S-01 Alt 01	24",22",20 & 18"in one set (inside of 24")	12 no. sets (total=48 pipes of 04 size)	Max-12600 mm	Same drawing is also applicable for BOXN, BOXNR, BOXNS, BOXNHL and its variants
2	WD-20052-S-01 Alt Nil	32",24",22" & 20" in one set (inside of 32")	08 no. sets (total=32 pipes of 04 size)	-same above-	-same as above-
3	WD-21038-S-01 Alt Nil	10"	89 nos.	-same above-	-same as above-
4	WD-21038-S-02 Alt Nil	12"	60 no.	-same above-	-same as above-
5	WD-21038-S-03 Alt Nil	16"	40 no.	-same above-	-same as above-
6	WD-21038-S-04 Alt Nil	24"	17 no.	-same above-	-same as above-
7	WD-21060-S-01 Alt Nil	18"	29 no.	-same above-	-same as above-
8	WD-21060-S-02 Alt Nil	20"	24 no.	-same above-	-same as above-
9	WD-21060-S-03 Alt Nil	26"	15 no.	-same above-	-same as above-
10	WD-21060-S-04 Alt Nil	30"	11 no.	-same above-	-same as above-
11	WD-22038-S-02 Alt Nil	32"	10 no.	-same above-	-same as above-
12	WD-22076-S-01 Alt 01	36"	08 no.	-same above-	-same as above-
13	WD-23059-S-01 Alt 01	59"	01 no.	-same above-	The previous Drawing has been superseded by Alt.01
14	WD-23059-S-02 Alt Nil	48"/ 49"	04 no.	-same above-	------

(ii) Granite Loading Diagram details

S. No.	Granite Loading diagram No.	Height	No. of Blocks	Length of Granite /Wt.	Remarks
1	WD-21039-S-01 Alt Nil	2000mm	02 Block (01 at each Bolster)	N/A, Up to Pay load	Also applicable for BOXN, BOXNR, BOXNS, BOXNHL and its variants
2	WD-21039-S-02 Alt Nil	2000mm	03 Block (not more than 15t at centre)	N/A, Up to Pay load	-same as above-
3	WD-21039-S-03 Alt Nil	2000mm	04 Block (02 block at centre but total wt. not more than 15 t)	N/A, Up to Pay load	-same as above-
4	WD-21039-S-04 Alt Nil	2000mm	04 Block (02 blocks at each Bolster)	N/A, Up to Pay load	-same as above-

(iii) TMT Bars Loading Diagram details

S. No.	TMT Bars Loading diagram No.	Dia	Length	Wt.	Remarks
1	WD-15057-S-07 Alt 01 **(For Reinforcement Bar)**	Oval shape 381/ 254 mm OR as per requirement	Up to 12000mm (Max-12600 mm)	Up to Pay load	The previous Drawing has been superseded by Alt.01
2	WD-22038-S-01 Alt 02 **(for TMT bars)**	8 mm to 40 mm	12 meter (Max-12600 mm)	Up to Pay load	The previous Drawing has been superseded by Alt.02. Same drawing is also applicable for BOXN, BOXNHL and its variants.

(iv) Steel Slab/ Billets Loading Diagram details

S. No.	Steel slab Loading diagram No.	B X H	Length	Wt.	Remark
1	WD-21095-S-01 Alt 05 **(for steel Slab)**	----	9 to 12.5 meter	Up to Pay load	The previous Drawing has been superseded by Alt.05 Also applicable for BRN and its variants.

(v) Steel Coil Loading Diagram details

SN	Coil Loading diagram No.	Coil Outer Dia	No. of Coil	Wt. of Coil	Remarks
1	WD-15057-S-08 Alt 03 **(Coil Eye to Side Wall/PF)**	----	05 (01 at middle & 02 at each bolster centre) Or 04 (02 at each bolster centre)	Up to Pay load (Max. 16t at middle for 05nos. coil loading)	The previous Drawing has been superseded by Alt.03
2	WD-22038-S-03 Alt 05 **(Coil Eye to Side Wall/PF)**	----	03(01 at middle& 01 on each bolster) Or 02(each at Bolster)	Up to Pay load (Max. 16t in middle for 03 nos. coil loading)	The previous Drawing has been superseded by Alt.05.
3	WD-23115-S-01 Alt 02 **(Coil Eye to Side Wall/PF)**	----	03(01 at middle & 01 on each bolster) Or 02(01 at each Bolster)	Up to Pay load (Max. 16t in middle for 03 nos. coil loading)	The previous Drawing has been superseded by Alt.02 • **This loading diagram is on trial basis for two years and valid up to 06.12.25 only.** • **Zonal Railways to provide feedback to RDSO in accordance to L. No. MW/ Loading & securing dated 06.12.2023.**

4	WD-24027-S-01 Alt 01 **(Coil Eye to Sky/Vertical)**	-----	03 (01 at middle & 01 on each bolster) Or 02(01 at each Bolster)	Up to Pay load (Max. 22 t in middle for 03 nos. coil loading)	The previous Drawing has been superseded by Alt.01 • **This loading diagram is on trial basis for one year and valid up to 12.03.2025 only.** • **Zonal Railways to provide feedback to RDSO on any unusual reports and defects in wagons due to this loading pattern on quarterly basis for further action.**
5	WD-24027-S-02 Alt. 01 **(Coil Eye to side wall/PF at both bolster and eye to engine at wagon centre)**	-----	03(01 at middle & 01 on each bolster) Or 02(01 at each Bolster)	Up to Pay load (Max. 22 t in middle for 03 nos. coil loading)	The previous Drawing has been superseded by Alt.01 • **This loading diagram is on trial basis up to 12.03.2025 only.** • **Zonal Railways to send feedback to RDSO on any unusual reports and defects in wagons due to this loading pattern on quarterly basis for further action.**
6	WD-24036-S-02 alt. Nil **(eye to engine)**	-----	03 (01 at middle & 01 on each bolster) Or 02 (01 at each Bolster)	Up to Pay load (Max. 22 t in middle for 03 nos. coil loading)	**New Diagram added for coil eye to longitudinal direction on wooden cradle (eye to engine) at both bolster and wagon centre.** • **This loading diagram is on trial basis up to 12.03.2025 only.** • **Zonal Railways to send feedback to RDSO on any unusual reports and defects in wagons due to this loading pattern on quarterly basis for further action.**
7	WD-24036-S-03 Alt. Nil **(Steel Coil eye to sky/ Vertical)**	Up to 33 T at each bolster (for adjacent two coil at bolster center)	04 Per Wagon (1 at bolster center and 2nd to adjacent to 1st coil)	Up to Pay load	**New Diagram added for Steel Coil eye to sky/ Vertical, one at bolster centre and second to adjacent to 1st coil**

8	WD-24036-S-05 Alt. Nil **(Coil eye to engine)**	-----	03 (01 at middle & 01 on each bolster) or 02 (01 at each Bolster)	Up to Pay load (Max. 22 t in middle for 03 nos. coil loading)	**New diagram added for coil eye to longitudinal direction on metal saddle (eye to engine) at both bolster and wagon centre.** • **This loading diagram is on trial basis up to 12.03.2025 only.** • **Zonal Railways to send feedback to RDSO on any unusual reports and defects in wagons due to this loading pattern on quarterly basis for further action**
9	WD-24036-S-06 Alt. Nil Loading of Unitized steel coil in lateral direction **(Eye to Platform)**	-------	06 (02 at meddle & 02 at each bolster Centre) or 04 (02 at each bolster)	Up to Pay load. (Unitized coil weight at middle up max 16t)	**New diagram added for Loading of Unitized steel coil in lateral direction (Eye to Platform**)

(vi) Steel Bar Coil Loading Diagram details

SN	Bar Coil Loading diagram No.	Coil Outer Dia	No. of Coil	Wt. of Coil	Remark
1	WD-23059-S-03 Alt Nil **(for Steel Bar/wire Coil)**	Max. 1200 mm Outer Diameter	As per steel bar diameter & weight	As per wagon pay load	The upper layer steel bar coil centre shall be below top coping height of wagon.

(vii) Mix Loading (Steel plates & Steel Coils) Diagram Details

S. No.	Mix Loading diagram No.	Coil Outer Dia	No. of Coil	Wt. of Coil	Remark
1	WD-24001-S-01 Alt 01 **(Steel Coil eye to Sky/Vertical)**	----	02 No.'s of steel coil (01 at each bolster centre) & Bundles of steel plates at Middle.	Up to Pay load (Max. 20t at middle for mixed load pattern)	The previous Drawing has been superseded by Alt.01
2	WD-24001-S-02 Alt 02 **(Steel Coil eye to Sky/Vertical)**	----	01 Bundles Steel Plates at each bolster & 01 vertical Steel Coil at Middle.	Up to Pay load (Max. 22t coil at middle for mixed load pattern)	The previous Drawing has been superseded by Alt.02
3	WD-24001-S-03 Alt 01 **(Steel Coil eye to side wall/PF)**	----	01 Bundle of Steel Plates at each bolster centre & 01 Steel Coil at Middle.	Up to Pay load (Max. 16t coil at middle for mixed load pattern)	The previous Drawing has been superseded by Alt.01
4	WD-24001-S-04 Alt 01 **(Steel Coil eye to side wall/PF)**	----	02 No.'s of steel coil (01 each at bolster centre) & Bundles of steel plates at Middle.	Up to Pay load (Max. 20t steel plate bundle at middle for mixed load pattern)	The previous Drawing has been superseded by Alt.01

(viii) Steel plates bundle loading Diagram Details

S. No.	Steel slab Loading diagram No.	B X H	Length	Wt.	Remark
1	WD-24036-S-04 Alt Nil **(for Steel Plates)**	----	01 Bundle of Steel Plates at each bolster centre & 01 Bundle of Steel Plates at middle Or 02 Bundle of Steel Plates at each bolster centre	Up to Pay load	**New diagram added for steel plates at bolster centre and wagon centre.**

2.Loading Diagrams details for BOXNHL wagons and its variants

(i) Steel Coil Loading Diagram details

SN	Loading diagram No.	Coil Outer Dia	No. of Coil	Wt. of Coil	Remark
1	SKETCH/WD II/10 Alt-1 **(Steel Coil eye to side wall/PF)**	--	Total 03 coil (01 no. coil at each bolster and 01 no. at middle)	Up to 64T (28 Ton on each Bolster centre and 8 ton at wagon centre)	• **This loading diagram is on trial basis for one year and valid up to 12.03.2025 only.** • **This type of loading permitted only after ensuring that minimum 06 nos. wooden/PU dunnage are used.** • **Zonal Railways to send feedback to RDSO on defects in wagons due to this loading pattern on quarterly basis for further action**
2	SKETCH/WD II/11 Alt 1 **(Steel coil eye to sky/ vertical)**	--	Total=03 or 02 coil (01 no. coil at each bolster and 01 no. at middle)	Up to 64T (28 Ton on each bolster centre and 8 Ton at wagon centre)	• **This loading diagram is on trial basis for one year and valid up to 12.03.2025 only.** • **Zonal Railways to send feedback to RDSO on defects in wagons due to this loading pattern on quarterly basis for further action**
3.	SKETCH/WD II/12 Alt Nil **(Steel coil eye to engine)**	--	Total=03 or 02 coil (01 no. coil at each bolster and 01 no. at middle)	Up to 64T (28 Ton on each bolster centre and 8 Ton at wagon centre)	• **This loading diagram is on trial basis for one year and valid up to 12.03.2025 only.** • **Zonal Railways to send feedback to RDSO on defects in wagons due to this loading pattern on quarterly basis for further action**
4.	SKETCH/WD II/13 Alt Nil **1. Steel plates on wagon centre** 2. Steel coil eye to side wall	--	04 (02 at each bolster Centre) Plates at centre	Up to Pay load. (Unitized coil weight at middle up max 8t)	• **This loading diagram is on trial basis for one year and valid up to 12.03.2025 only.** • **Zonal Railways to send feedback to RDSO on defects in wagons due to this loading pattern on quarterly basis for further action**

3. Loading Diagrams details for BOXN wagons and its variants

(i) Steel Coil Loading Diagram details

SN	Steel coil Loading Diagram no.	Coil outer dia	No. of Coil	Wt. of the Coil	Remarks
1	WD-24028-S-01 Alt 1 **(Steel Coil eye to side wall/PF)**	-----	Total=05 or 4 coil (02 no. coil at each bolster and one no. at middle)	Up to Pay load	The previous Drawing has been superseded by Alt.01 **Max. weight of coil at middle = 16 t.**
2	WD-24028-S-02 Alt 1 **(Steel Coil eye to side wall/PF)**	-------	Total=03 or 2 coil (01 no. coil at each bolster and one no. at middle)	Up to Pay load	The previous Drawing has been superseded by Alt.01 **Max. weight of coil at middle = 16 t.**
3.	WD-24028-S-03 Alt 1 **1. Steel Coil eye to side wall/PF** **2. Loading with metal saddle**	-------	Total=03 or 2 coil (01 no. coil at each bolster and one no. at middle)	Up to Pay load	The previous Drawing has been superseded by Alt.01 **Max. weight of coil at middle = 16 t.**
4.	WD-24028-S-04 Alt 1 **(Steel coil eye to sky/ vertical))**	------	Total=03 or 2 coil (01 no. coil at each bolster and one no. at middle)	Up to Pay load (Max. weight of coil at middle = 22 t.)	The previous Drawing has been superseded by Alt.01 • **These loading diagrams are on trial basis for one year and valid up to 12.03.2025 only.** • **Zonal Railways to send feedback to RDSO on any unusual reports and defects in wagons due to this loading pattern on quarterly basis for further action.**
5.	WD-24038-S-01 Alt Nil **(Coil Eye to engine)**	------	Total=03 or 2 coil (01 no. coil at each bolster and one no. at middle)	Up to Pay load	Max. weight of coil at middle = 16 t.
6.	WD-24038-S-02 Alt nil 1.Steel coil eye to engine 2. Loading with metal saddle	-----	Total=03 or 2 coil (01 no. coil at each bolster and one no. at middle)	Up to Pay load	Max. weight of coil at middle = 16 t.
7.	WD-24038-S-03 Alt nil. (Steel coil eye to sky/ vertical)	-----	04 Per Wagon (1 at each bolster centre and 2nd adjacent to 1st coil)	Up to Pay load	New Diagram added for Steel Coil eye to sky/ Vertical, one at bolster centre and second to adjacent
8.	Wd-24038-S-04 Alt nil. Loading of Unitized steel coil in lateral direction (Eye to Platform)	-----	06 (02 at meddle & 02 at each bolster Centre) or 04 (02 at each bolster)	Up to Pay load. (Unitized coil weight at middle up max 16t)	New diagram added for Loading of Unitized steel coil in lateral direction (Eye to Platform)

9.	Wd-24038-S-05 Alt nil	-----	02 No.'s of steel coil (01 each at bolster centre) & Bundles of steel plates at Middle.	Up to Pay load (Max. 20t steel plate bundle at middle for mixed load pattern)	New drawing added for loading of steel coils and steel plates at wagon centre.

4. Loading Diagrams details for loading on Flat type Wagons (BRN/BRN22.9)

(i) HR Sheets/Plates Diagram details

SN	HR Sheets Loading diagram No.	B X H	Length	Wt.	Remarks
1	WD-21112-S-03 Alt 03	---	---	Up to Pay Load	The previous Drawing has been superseded by Alt.03

(ii) Granite Loading Diagram details

SN	Granite Loading diagram No.	Height	No. of Blocks	Length of Granite /Wt	Remarks
1	WD-21048-S-01 Alt Nil	2000mm	02 Block (at Bolsters)	Up to Pay load	----
2	WD-21048-S-02 Alt Nil	2000mm	03 Block(not more than 15 t at centre)	Up to Pay load	-----
3	WD-21048-S-03 Alt Nil	2000mm	04 Block (02 block at centre and not more than 15 t)	Up to Pay load	----
4	WD-21048-S-04 Alt Nil	2000mm	04 Block (02&02 block at Bolster)	Up to Pay load	----

(iii) Steel Slab/ Billets Loading Diagram details

SN	Steel slab Loading diagram No.	B X H	Length	Wt.	Remarks
1	WD-21112-S-01 Alt 03	As per wagon	12 meter	Up to Pay load	The previous Drawing has been superseded by Alt.03
2	WD-21112-S-02 Alt 03	As per wagon	Two bundle of 6 meters	Up to Pay load	The previous Drawing has been superseded by Alt.03
3	WD-21095-S-01 Alt 05	As per wagon	9-13 meters	Up to Pay load	The previous Drawing has been superseded by Alt.05

(iv) Steel Coil Loading Diagram details

SN	Steel coil Loading Diagram no.	Wt. of Coil	No. of Coil	Total pay load	Remarks
1	WD-94019-S-01 Alt 06 **(Steel Coil eye to sky/ Vertical)**	15 to 27 T	01 no. at each bolster	Up to Pay load	The previous Drawing has been superseded by Alt.06 For BRH/BRN/BRNA/BRNA HS Wagons.

2	WD-94038-S-02 Alt 06 **(Steel Coil Eye to Platform)**	As per coil pack arrangement	➢ 02 (02 coils pack) at each bolster center. ➢ 02 nos. (03 coils pack) ➢ 03+02 coils pack.	Up to Pay load	The previous Drawing has been superseded by Alt.06 For BRN, BRHC, BRHT, BRNA & BRNAHS wagons.
3.	WD-15060-S-01 Alt 05 **(Eye to Platform with metal saddle)**	As per coil pack arrangement	➢ 04 Per Wagon (2+2) ➢ 05 Per Wagon (3+2) ➢ 06 Per Wagon (3+3)/(2+2+2) ➢ 07 Per Wagon (2+3+2) ➢ 08 Per Wagon (3+2+3) 09 Per Wagon (3+3+3)	Up to Pay load (The Wt. on any Bogie should not exceed Pay load/2. The Max. difference in wt. of two bogie shall not more than 02 tons	The previous Drawing has been superseded by Alt.05
4.	WD-15060-S-02 Alt 05 **(Steel Coil eye to sky/ Vertical)**	➢ *15-22.5t (for 03 coil)* ➢ *15-34t (for 02 coil)*	*03 or 02 coil loading*	*Up to Pay load*	The previous Drawing has been superseded by Alt.05
5.	WD-16042-S-01 Alt 07 **(Steel Coil Eye to Platform)**	As per diagram arrangement	*03 or 02 coil loading*	For other than BRN22.9 wagon, Max coil wt.-28T	The previous Drawing has been superseded by Alt.07
6.	WD-23115-S-02 Alt-02 **(Steel Coil eye to Platform with metal saddle)**	As per diagram arrangement	03(01 at middle & 01 on each bolster) Or 02(each at both Bolster)	Up to Pay load ➢ 03 coils loading (Max. Wt. 23T for individual Coil) ➢ 02 Coils Loading (Max. Wt. 34T for individual Coil) ➢ For other than BRN22.9 wagon, Max coil wt.-28T.	The previous Drawing has been superseded by Alt.02 • **This loading diagram is on trial basis for two years and valid up to 06.12.25 only.** • **Zonal Railways to provide feedback to RDSO in accordance to L. No. MW/ Loading & securing dated 06.12.2023.**
7	WD-23080-S-05 Alt. 01 **(Steel Coil eye to sky/ Vertical)**	10 to 17 T	04 Per Wagon (2 vertical Steel coil Unitized at each Bolster)	Up to Pay load	The previous Drawing has been superseded by Alt.01

(v) TMT Bars Loading Diagram details

S. No.	TMT Bars Loading diagram No.	Dia	Length	Wt.	Remark
1	WD-24024-S-01 Alt.02 (for TMT bars)	8 mm to 40 mm	Up to 12.5 meter.	Up to Pay load	The previous Drawing has been superseded by Alt.02

(vi) Mix Loading (Bundle of Steel plates & Steel Coils) Diagram Details

S. No.	Mix Loading diagram No.	Wt. of Coil	No. of Coil	Total Pay	Remarks
1	WD-23080-S-01 Alt.02	As per the details in the drawings.	03 (01 Steel Coil Along Longitudinal Axis At Bolster & 01 Vertical Steel Coil At Middle)	Up to Pay load (Max. Wt. at middle ≤ 20T)	The previous Drawing has been superseded by Alt.02

2	WD-23080-S-02 Alt.02	As per the details in the drawings.	03 (01 Vertical Steel Coil At each Bolster & 01 Steel Coil Along Longitudinal Axis At Middle)	Up to Pay load (Max. Wt. at middle ≤ 20T)	The previous Drawing has been superseded by Alt.02 The Max. Difference in wt. of two bogies shall not more than 02 tons.
3	WD-23080-S-03 Alt.02	As per the details in the drawings.	02 No.'s of steel coils along Longitudinal Axis (01 each at bolster centre) & Bundles of steel plates at Middle.	Up to Pay load (Max. Wt. at middle ≤ 20T	The previous Drawing has been superseded by Alt.02 The Max. Difference in wt. of two bogies shall not more than 02 tons.
4	WD-23080-S-04 Alt.02	As per the details in the drawings.	Bundles of Steel Plates (at each bolster centre) & Steel Coil along Longitudinal Axis at Middle.	Up to Pay load (Max. Wt. at middle ≤ 20T	The previous Drawing has been superseded by Alt.02 The Max. Difference in wt. of two bogies shall not more than 02 tons.

5. Loading Diagrams details for loading on BFNS22.9/BFNSM22.9 Wagons

(i) Steel Coil Loading Diagram details

S. No.	Steel Coil Loading Diagram no.	Wt. of Coil	No. of Coil	Total pay	Remarks
1	WD-98057-S-02 Alt 14 Loading arrangement shown in Diagram drawing BFNS/BFNS22.9	11 to 32 t	01 to 05 no. As per loading pattern	Up to pay load 64.89t	----
2	WD-18052-S-01 Alt 01 BFNSM22.9/BFNSM 1	As per pay load	01 of 2000 mm coil width max.	Up to pay load	The previous Drawing has been superseded by Alt.01 Drawing for lashing arrangement
3	WD-17047-S-01 Alt 01 (BFNS22.9)	-	-	Up to pay load	----

6. Loading Diagrams details for loading on BFNV Wagon

(i) Steel Coil Loading Diagram details

S. No.	Steel Coil Loading Diagram no.	Total pay	No. of Coil	Wt. of Coil	Remarks
1	WD-19024-S-02 Alt 06	69.6	1 to 10 (as per loading pattern table)	As per loading pattern table up to pay load	• WD-20044-S-08 for Coil securing and End wall arrangement, • WD-20044-S-09 for Coil Securing arrangement and detailed • WD-21067-S-01 for Lashing arrangement

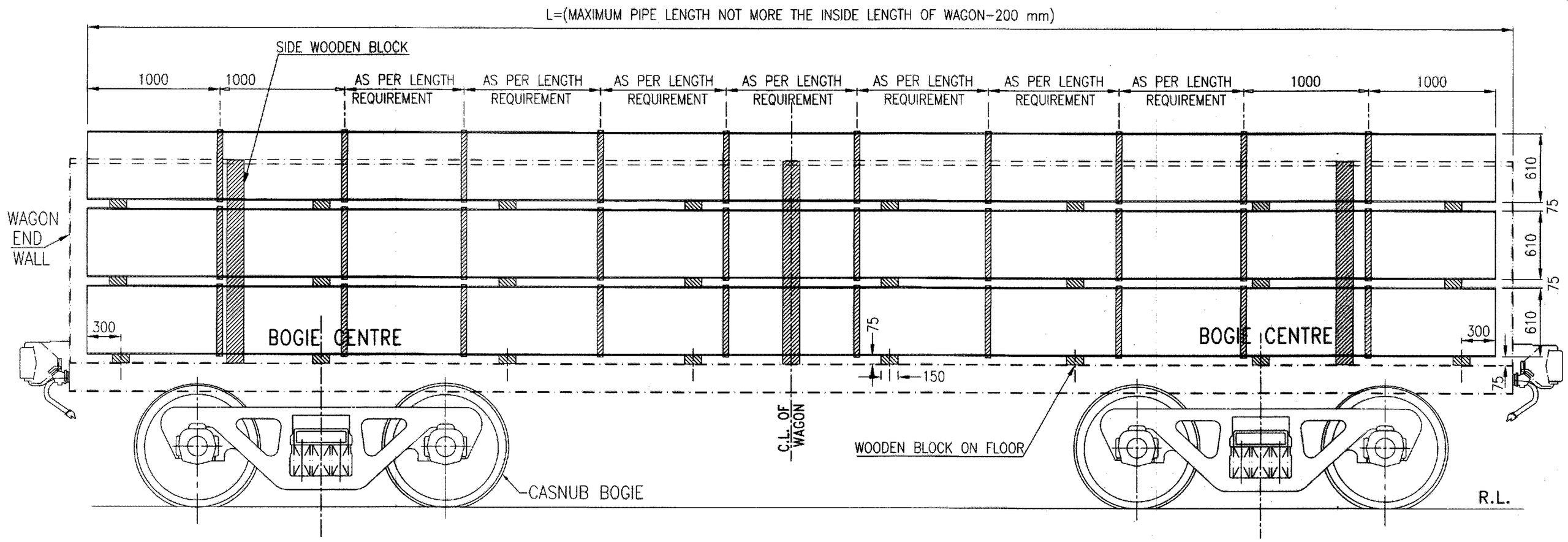
7. Component's drawing for Loading & Securing arrangement

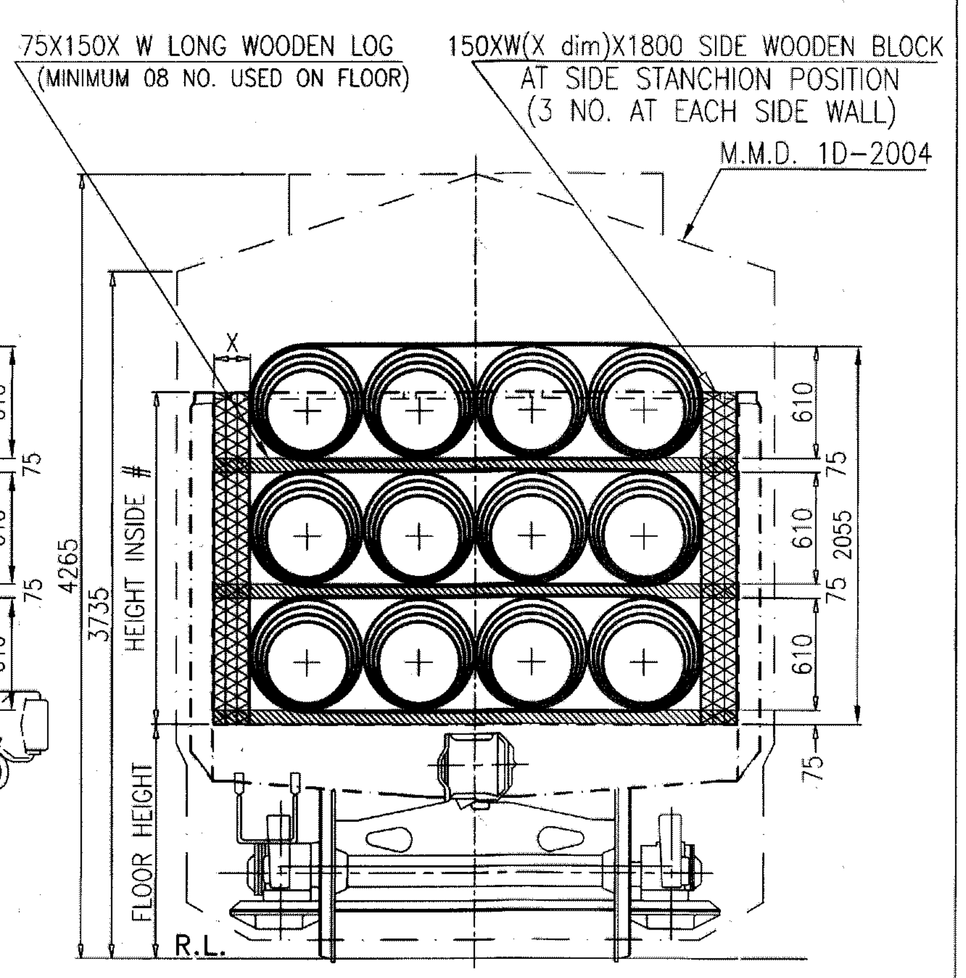
Metal Saddle, Isolation Hook and angle Stopper etc. used for Loading and securing arrangement Drawing No. WD-24036-S-01 Alt Nil is attached.

8. Check Sheet no. WD-CS-01-LOAD SECURING CHECK SHEET

Check sheet no. WD-CS-01-LOAD SECURING CHECK SHEET has been issued as a super check tool to ensure proper loading. Use of this check sheet for all wagons is not prescribed and frequency may be decided by Zonal Railways as per prevailing conditions

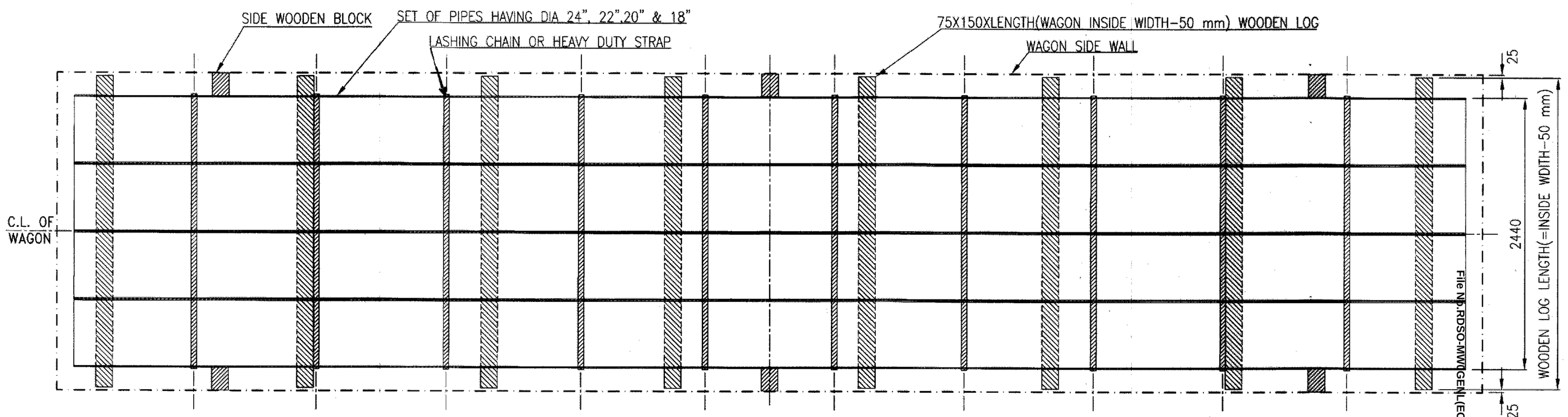
x-x-x-x-x-x





X- TO SUIT THE INSIDE WIDTH OF WAGON

#- TO SUIT THE INSIDE HEIGHT OF WAGON



LOADING AND SECURING ARRANGEMENT DIAGRAM FOR 12 NOs PIPE SETS

NOTE:-

1. PIPE HAVING DIAMETER OF 24",22",20"&18" CAN BE LOADED BY PLACING SMALLER DIA PIPE INSIDE THE LARGER DIA PIPE.
2. PIPES OF DIA 24",22",20"&18" TO BE UNITIZED BY CLAMPING AT BOTH END PROPERLY IN A SET.
3. IN CASE OF VARIATION IN LENGTH OF PIPES, ONE END OF THE PIPES SHOULD BE CO-PLANNER (IN SAME VERTICAL PLANE).
4. TOTAL 12 NOs. OF PIPE SET CAN BE LOADED IN A WAGON IN THREE ROWS AND 04 COLOUMN AS SHOWN IN END VIEW.
5. BEFORE LOADING PIPE SET ON THE WAGON, INSURE THAT WOODEN LOGS ARE PLACED IN CORRECT POSITION AS SHOWN IN DRAWING.
6. AFTER LOADING , EACH ROW OF PIPE SETS SHALL BE UNITIZED BY MINIMUM 10 NOs. OF LASHING CHAIN / HEAVY DUTY STRIP HAVING MINIMUM BREAKING STRENGTH 3700 KG PER CHAIN/STRIP (1)
7. PIPES ARE LOADED ALONG THE LENGTH OF WAGON AS SHOWN PATTERN IN DRAWING.
8. THE TOTAL CONSIGNMENT LOAD SHOULD NOT EXCEED THE WAGON PAY LOAD.
9. THE LOADING/UNLOADING OF PIPES IN WAGON IN SUCH A WAY, SO IT WILL NOT DAMAGE THE WAGON.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
1.	--	WD-20052	IN NOTE NO. 6,MINIMUM BREAKING STRENGTH 3700 KG PER CHAIN/STRIP ADDED. DRG. VIEWS MODIFIED.	11/20	

SUPERSEDED BY		
SUPERSEDES		DATE
SCALE	PASSED	-Sd- 10/20
	CHECKED	-Sd- 10/20
	DRAWN	A.K.KUSHVAHA 10/20
	J.S.NO.	WD-20042 10/20

B.G. | R.D.S.O. [W]

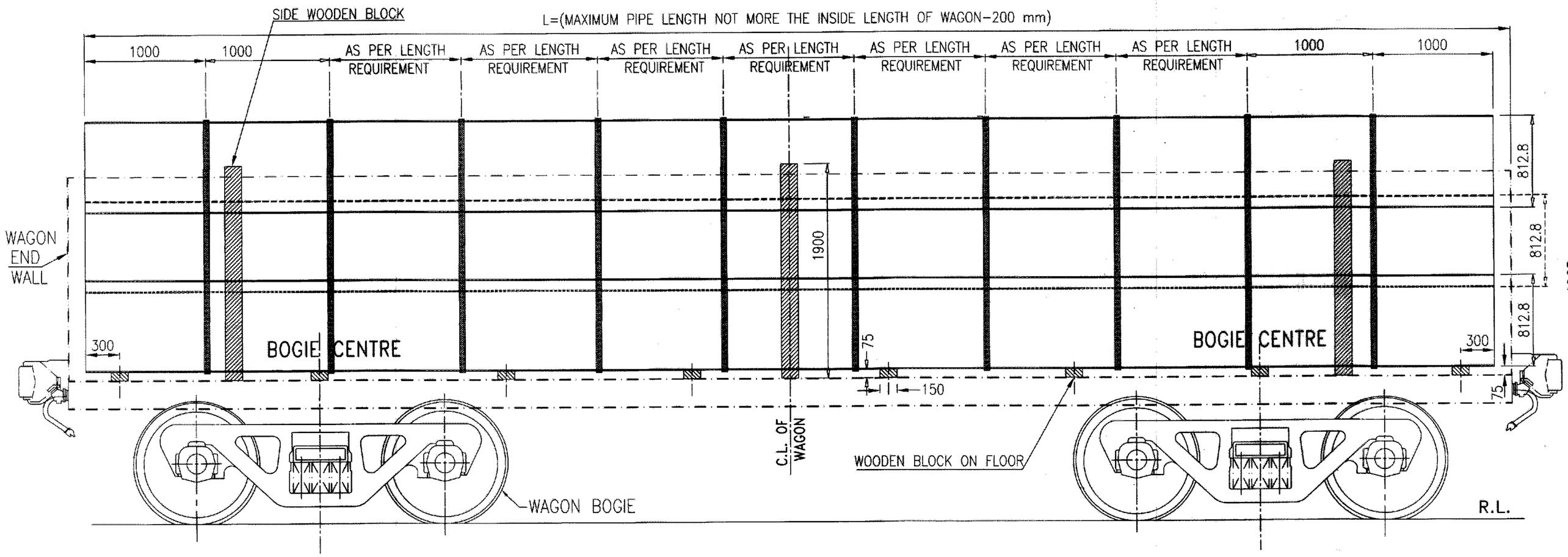
LOADING DIAGRAM OF STEEL PIPES IN BOXN/BOST/BOXNR/BOXNHL/ BOXNS WAGON & ITS VARIANTS

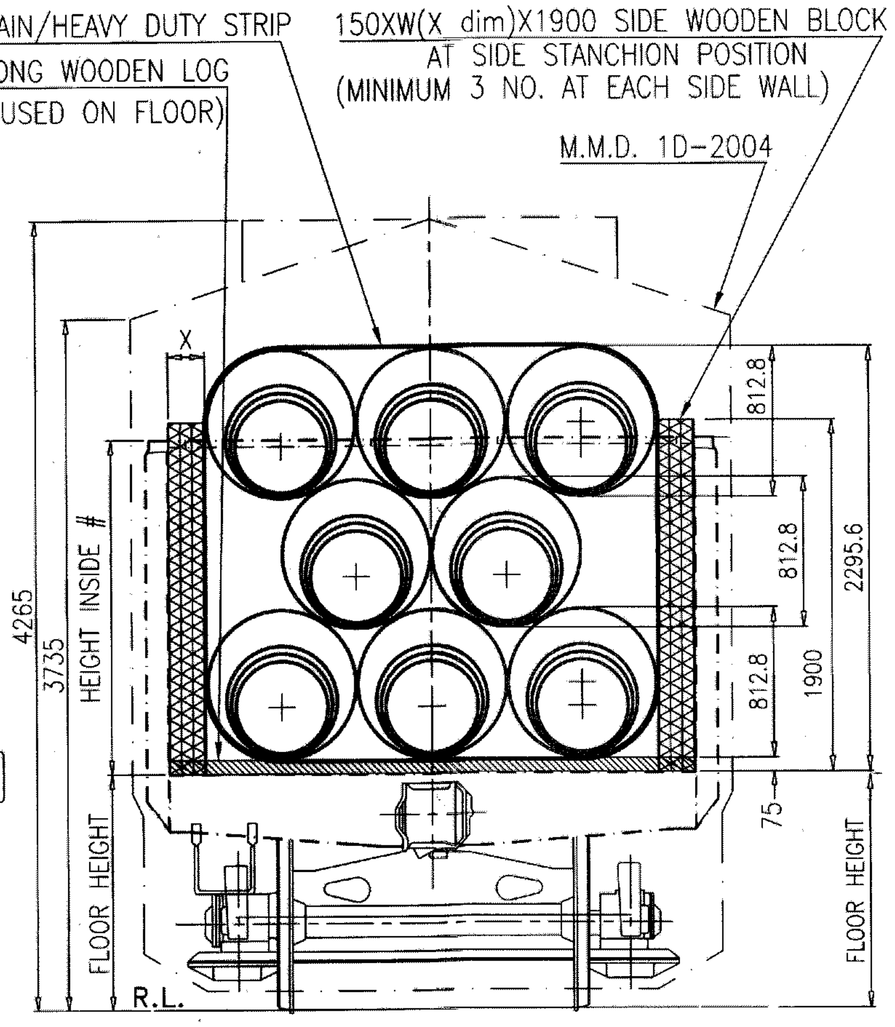
GROUP

WD-20042-S-01

File No.RDSO-MWG(EGFC)/8/2023-O/o PED(SW)RDSO

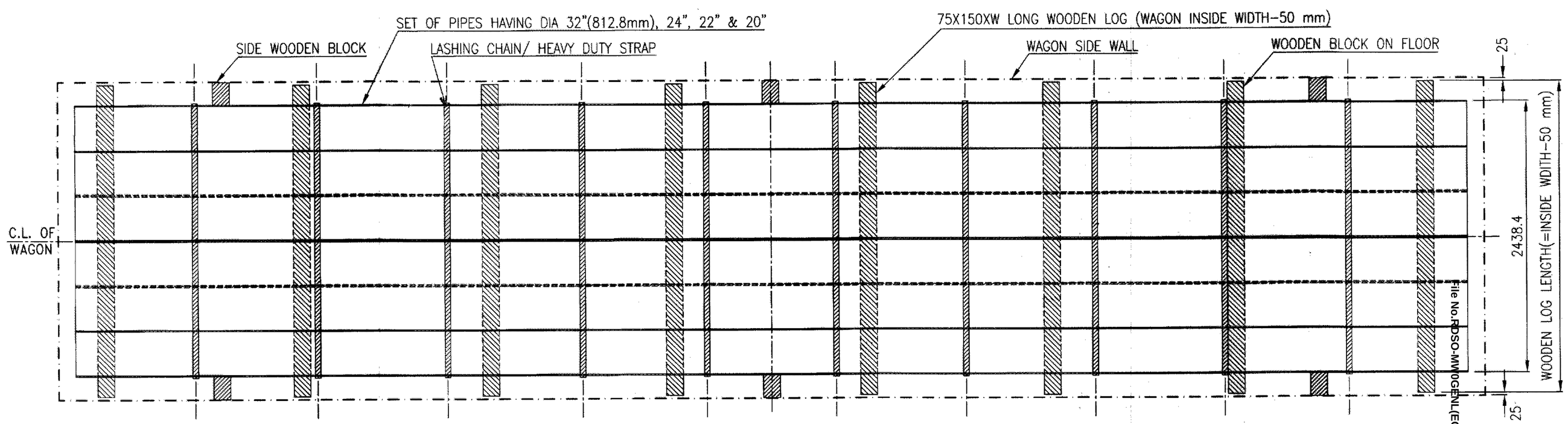
A1





X- TO SUIT THE INSIDE WIDTH OF WAGON

#- TO SUIT THE INSIDE HEIGHT OF WAGON



LOADING AND SECURING ARRANGEMENT DIAGRAM FOR 08 NOs PIPE SETS

NOTE:-

1. PIPE HAVING DIAMETER OF 32"(812.8 mm), 24",22"& 20" CAN BE LOADED BY PLACING SMALLER DIA PIPE INSIDE THE LARGER DIA PIPE.
2. PIPES OF DIA 32", 24",22"& 20" TO BE UNITIZED BY CLAMPING AT BOTH END PROPERLY IN A SET.
3. IN CASE OF VARIATION IN LENGTH OF PIPES, ONE END OF THE PIPES SHOULD BE CO-PLANNER (IN SAME VERTICAL PLANE).
4. TOTAL 08 NOs. OF PIPE SET CAN BE LOADED IN A WAGON IN THREE ROWS AND THREE COLOUMN AS SHOWN IN END VIEW.
5. BEFORE LOADING PIPE SET ON THE WAGON, INSURE THAT WOODEN LOGS ARE PLACED IN CORRECT POSITION AS SHOWN IN DRAWING.
6. AFTER LOADING , EACH ROW OF PIPE SETS SHALL BE UNITIZED BY MINIMUM 10 NOs. OF LASHING CHAIN / HEAVY DUTY STRIP HAVING MINIMUM BREAKING STRENGTH 3700 KG PER CHAIN/STRIP.
7. PIPES ARE LOADED ALONG THE LENGTH OF WAGON AS SHOWN PATTERN IN DRAWING.
8. THE TOTAL CONSIGNMENT LOAD SHOULD NOT EXCEED THE WAGON PAY LOAD.
9. THE LOADING/UNLOADING OF PIPES IN WAGON IN SUCH A WAY, SO IT WILL NOT DAMAGE THE WAGON.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

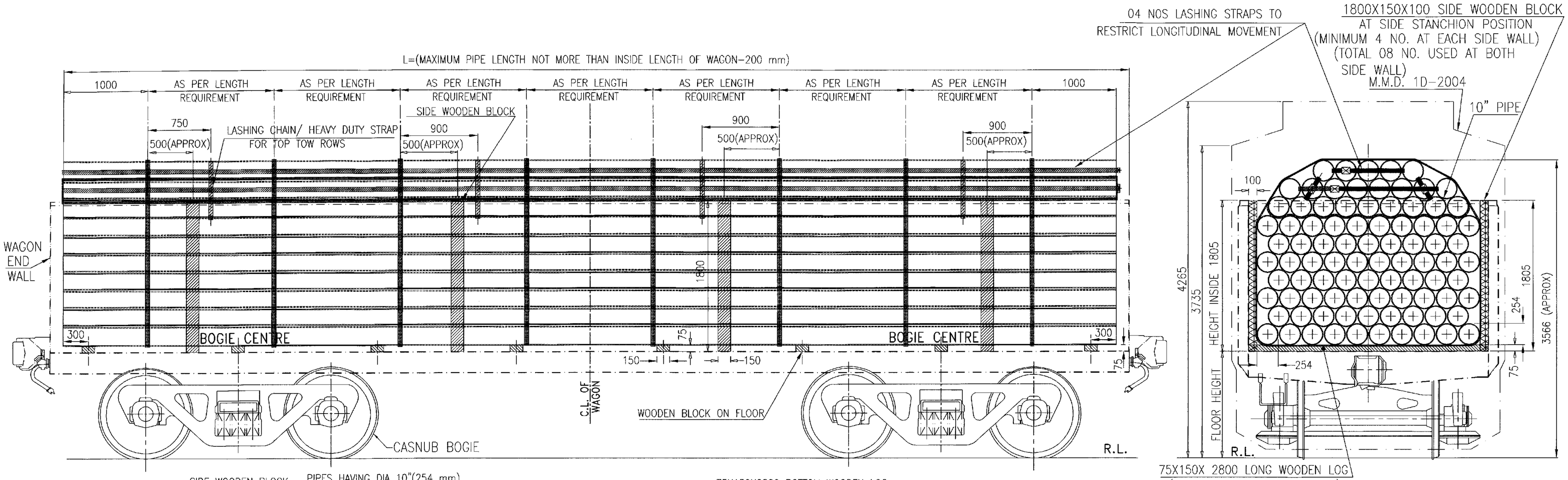
SUPERSEDED BY		
SUPERSEDES		DATE
SCALE PASSED		11/20
CHECKED		11/20
DRAWN	A.K.KUSHWAHA	11/20
J.S.NO.	WD-20052	11/20

B.G. | R.D.S.O. [W] | GROUP

LOADING DIAGRAM OF 32",24",22"& 20" PIPES SET IN BOXN/BOST/BOXNR/BOXNHL/ BOXNS WAGON & ITS VARIANTS

WD-20052-S-01

File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED/SW/RDSO



LOADING AND SECURING ARRANGEMENT DIAGRAM FOR 89 NOs OF 10" DIA PIPES

File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SWIRDSO

NOTE:-

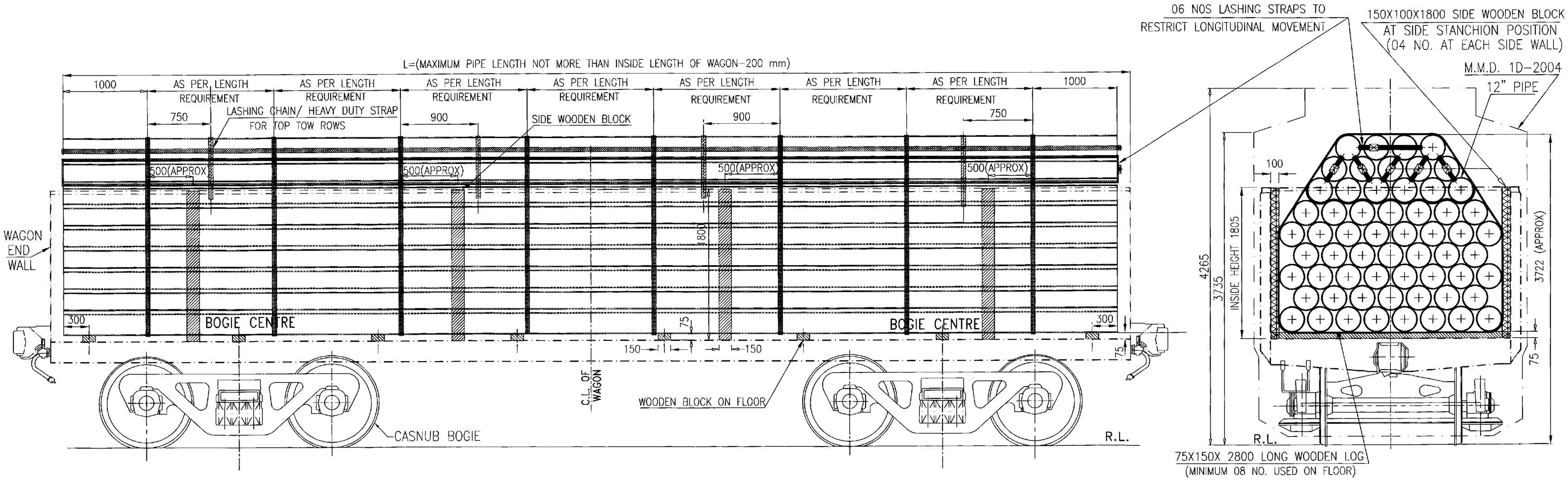
1. MAXIMUM 89 NOS. PIPES HAVING DIAMETER OF 10"(254 mm) SHOULD BE STACKED IN 10 ROWS AS SHOWN IN LOADING DIAGRAM.
2. IN CASE OF VARIATION IN LENGTH OF PIPES, ONE END OF THE PIPES SHOULD BE COPLANAR (IN SAME VERTICAL PLANE).
3. TOTAL 89 NOS. OF PIPES OF 10" CAN BE LOADED IN 10 ROWS AND 10 COLUMN AS SHOWN IN END VIEW.
4. BEFORE LOADING PIPES ON THE WAGON, ENSURE THAT WOODEN LOGS ARE PLACED IN CORRECT POSITION AS SHOWN IN DRAWING.
5. AFTER LOADING , ALL PIPES SHALL BE UNITIZED BY 08 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY.
6. TOP 03 ROWS (ABOVE BRIM), SHALL BE UNITIZED BY 04 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY.
7. TO AVOID LONGITUDINAL SHIFTING OF PIPES DURING RUN, 04 NOS OF LASHING CHAIN/ HEAVY DUTY STRAP TO BE USED TO FASTEN PIPES LONGITUDINALLY WHICH WILL PASS THROUGH INSIDE OF THE PIPE ALONG THE LENGTH & AT LEAST 03 PIPES TO BE TIGHTEN TOGETHER AS SHOWN AT END VIEW OF DRAWING.
8. THE LASHING CHAIN / HEAVY DUTY STRAP USED SHOULD HAVE (MIN.) BREAKING STRENGTH 5000 KG PER CHAIN/STRAP.
9. PIPES ARE LOADED ALONG THE LENGTH OF WAGON AS SHOWN IN DRAWING.
10. THE TOTAL CONSIGNMENT LOAD SHOULD NOT EXCEED THE PAY LOAD OF THE WAGON.
11. THE LOADING/UNLOADING OF PIPES TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
12. THE LOADING OF PIPES ON "BOXN" AND "BOXNHL" WAGONS CAN BE FOLLOWED IN SAME PATTERN BY CONSIDERING LENGTH OF PIPES & PAY LOAD.

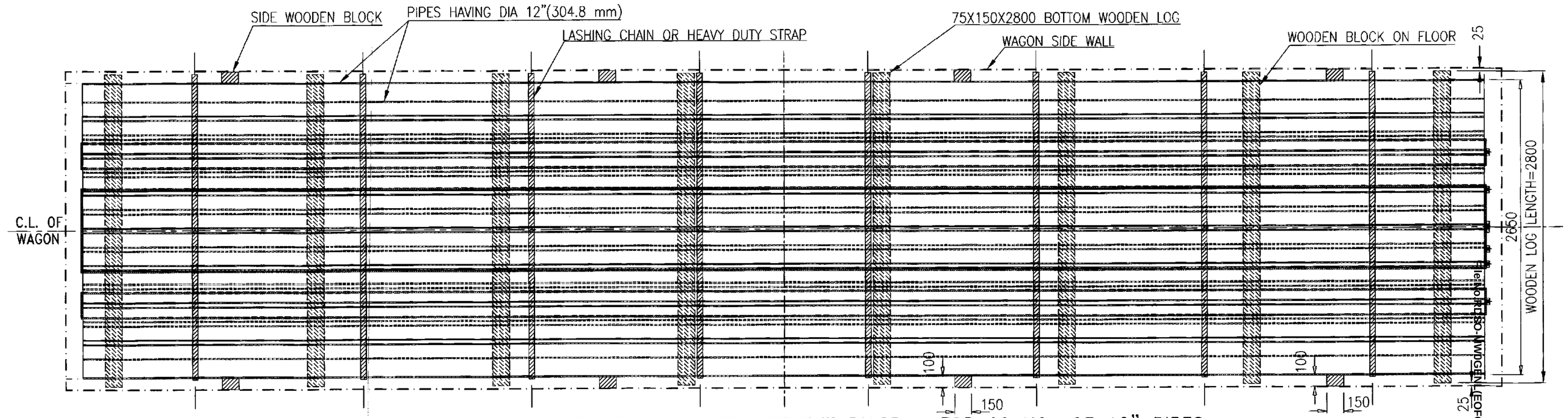
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SUPERSEDES		DATE
SCALE	PASSED	04/21
	CHECKED	04/21
	DRAWN J.AHMAD	04/21
	J.S.NO. WD-21038	04/21

LOADING DIAGRAM OF 10" STEEL PIPES IN BOST WAGON & ITS VARIANTS

B.G.	R.D.S.O. [W]	GROUP	WD-21038-S-01





LOADING AND SECURING ARRANGEMENT DIAGRAM FOR 60 NOs OF 12" PIPES

NOTE:–

1. MAXIMUM 60 NOS. PIPES HAVING DIAMETER OF 12"(304.8 mm) SHOULD BE STACKED IN 09 ROWS AS SHOWN IN LOADING DIAGRAM.
2. IN CASE OF VARIATION IN LENGTH OF PIPES, ONE END OF THE PIPES SHOULD BE COPLANAR (IN SAME VERTICAL PLANE).
3. TOTAL 60 NOS. OF PIPES OF 12" CAN BE LOADED IN 09 ROWS AND 08 COLUMN AS SHOWN IN END VIEW.
4. BEFORE LOADING PIPES ON THE WAGON, ENSURE THAT WOODEN LOGS ARE PLACED IN CORRECT POSITION AS SHOWN IN DRAWING.
5. AFTER LOADING , ALL PIPES SHALL BE UNITIZED BY 08 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY.
6. TOP 03 ROWS (ABOVE BRIM), SHALL BE UNITIZED BY 04 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY.
7. TO AVOID LONGITUDINAL SHIFTING OF PIPES DURING RUN, 06 NOS OF LASHING CHAIN/ HEAVY DUTY STRAP TO BE USED TO FASTEN PIPES LONGITUDINALLY WHICH WILL PASS THROUGH INSIDE OF THE PIPE ALONG THE LENGTH & AT LEAST 03 PIPES TO BE TIGHTEN TOGETHER AS SHOWN AT END VIEW OF DRAWING.
8. THE LASHING CHAIN / HEAVY DUTY STRAP USED SHOULD HAVE (MIN.) BREAKING STRENGTH 5000 KG PER CHAIN/STRAP.
9. PIPES ARE LOADED ALONG THE LENGTH OF WAGON AS SHOWN IN DRAWING.
10. THE TOTAL CONSIGNMENT LOAD SHOULD NOT EXCEED THE PAY LOAD OF THE WAGON.
11. THE LOADING/UNLOADING OF PIPES TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
12. THE LOADING OF PIPES ON "BOXN" AND "BOXNHL" WAGONS CAN BE FOLLOWED IN SAME PATTERN BY CONSIDERING LENGTH OF PIPES & PAY LOAD.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

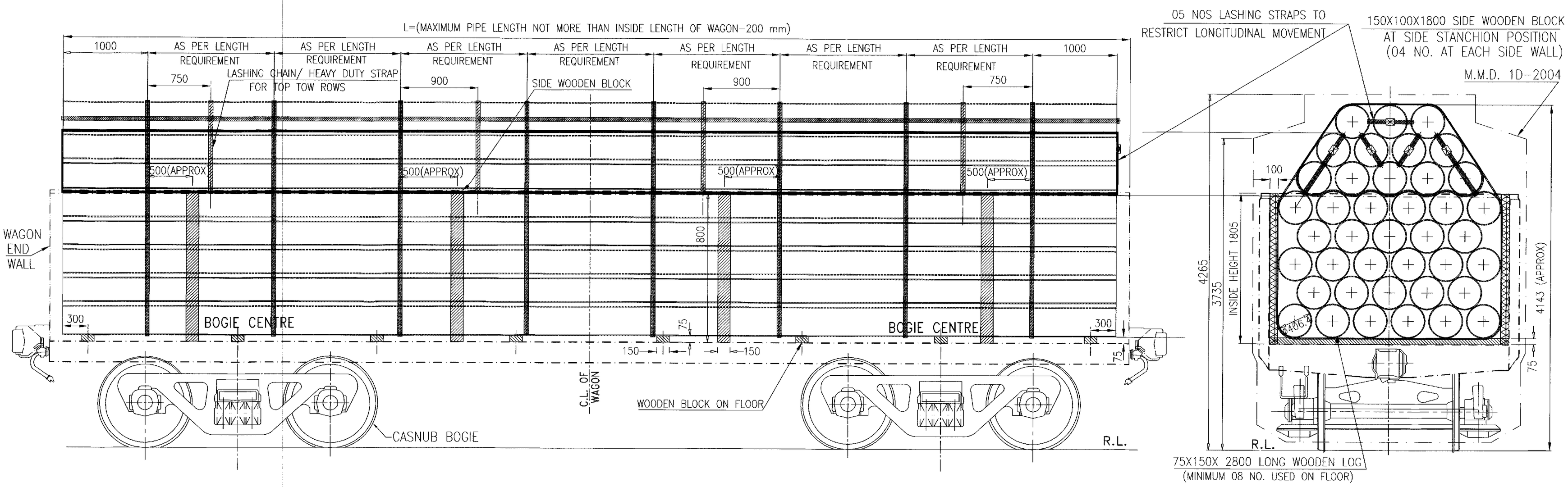
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	J.S.NO. WD–21038	04/21

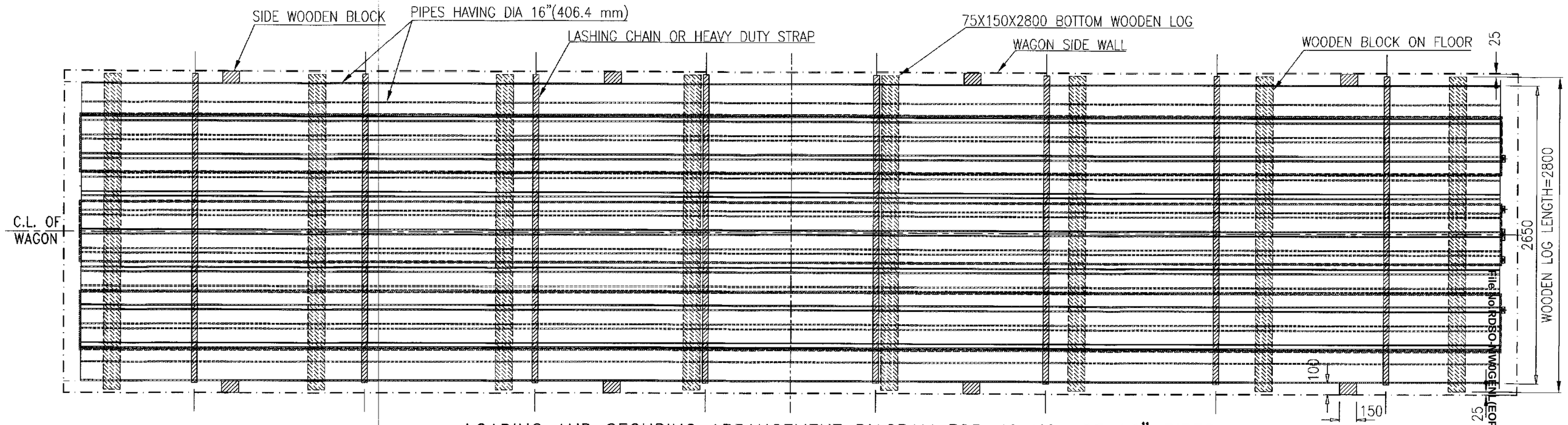
B.G. | R.D.S.O. [W] | GROUP

LOADING DIAGRAM OF 12" STEEL PIPES OVER BRIM IN BOST WAGON & ITS VARIANTS

WD–21038–S–02

Ref. to RDSO LWDG/LEO(C)/B/2023-O/o PED/SW/RDSO





LOADING AND SECURING ARRANGEMENT DIAGRAM FOR 40 NOs OF 16" PIPES

NOTE:-

1. MAXIMUM 40 NOS. PIPES HAVING DIAMETER OF 16"(406.4 mm) SHOULD BE STACKED IN 08 ROWS AS SHOWN IN LOADING DIAGRAM.
2. IN CASE OF VARIATION IN LENGTH OF PIPES, ONE END OF THE PIPES SHOULD BE COPLANAR (IN SAME VERTICAL PLANE).
3. TOTAL 40 NOS. OF PIPES OF 16" CAN BE LOADED IN 08 ROWS AND 06 COLUMN AS SHOWN IN END VIEW.
4. BEFORE LOADING PIPES ON THE WAGON, ENSURE THAT WOODEN LOGS ARE PLACED IN CORRECT POSITION AS SHOWN IN DRAWING.
5. AFTER LOADING , ALL PIPES SHALL BE UNITIZED BY 08 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY.
6. TOP 03 ROWS (ABOVE BRIM), SHALL BE UNITIZED BY 04 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY.
7. TO AVOID LONGITUDINAL SHIFTING OF PIPES DURING RUN, 05 NOS OF LASHING CHAIN/ HEAVY DUTY STRAP TO BE USED TO FASTEN PIPES LONGITUDINALLY WHICH WILL PASS THROUGH INSIDE OF THE PIPE ALONG THE LENGTH & AT LEAST 03 PIPES TO BE TIGHTEN TOGETHER AS SHOWN AT END VIEW OF DRAWING.
8. THE LASHING CHAIN / HEAVY DUTY STRAP USED SHOULD HAVE (MIN.) BREAKING STRENGTH 5000 KG PER CHAIN/STRAP.
9. PIPES ARE LOADED ALONG THE LENGTH OF WAGON AS SHOWN IN DRAWING.
10. THE TOTAL CONSIGNMENT LOAD SHOULD NOT EXCEED THE PAY LOAD OF THE WAGON.
11. THE LOADING/UNLOADING OF PIPES TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
12. THE LOADING OF PIPES ON "BOXN" AND "BOXNHL" WAGONS CAN BE FOLLOWED IN SAME PATTERN BY CONSIDERING LENGTH OF PIPES & PAY LOAD.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

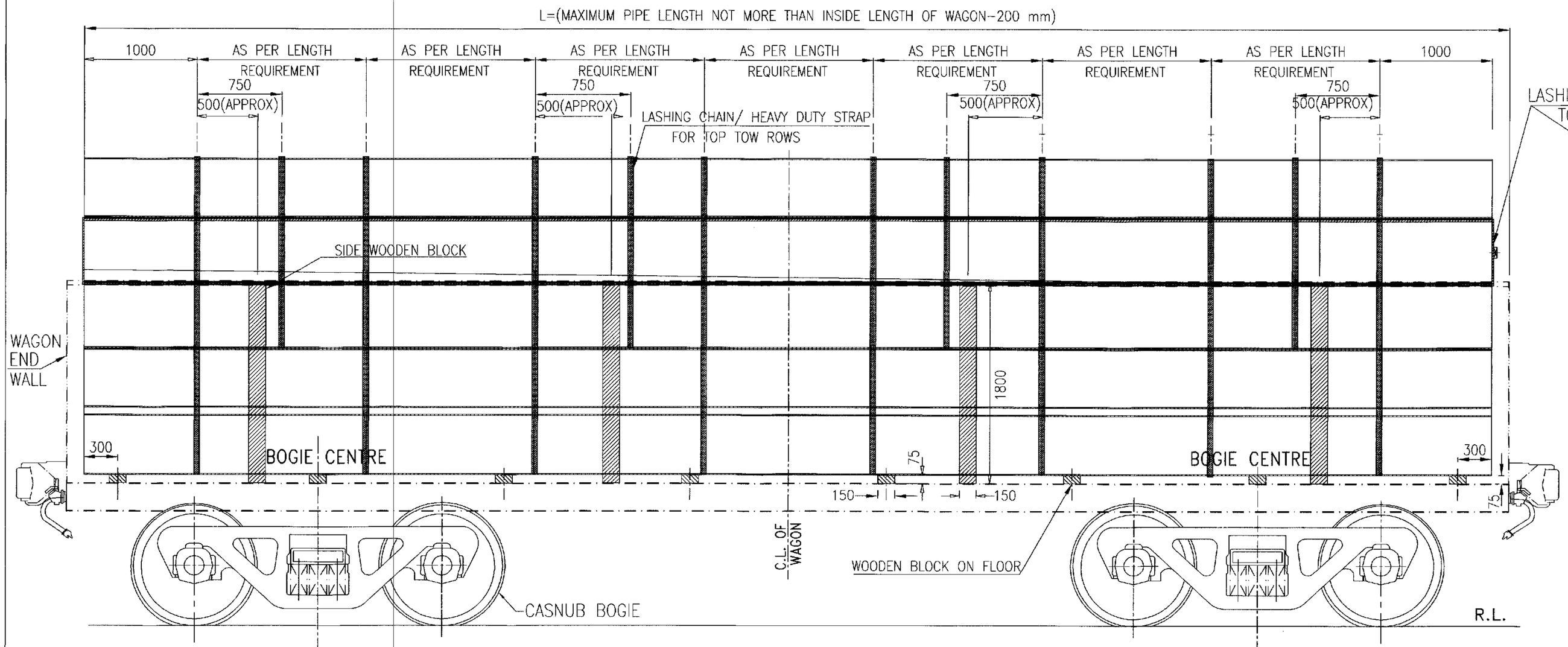
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SUPERSEDES			DATE
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	CHECKED		04/21
	DRAWN	J AHMAD	04/21
	J.S.NO.	WD-21038	04/21

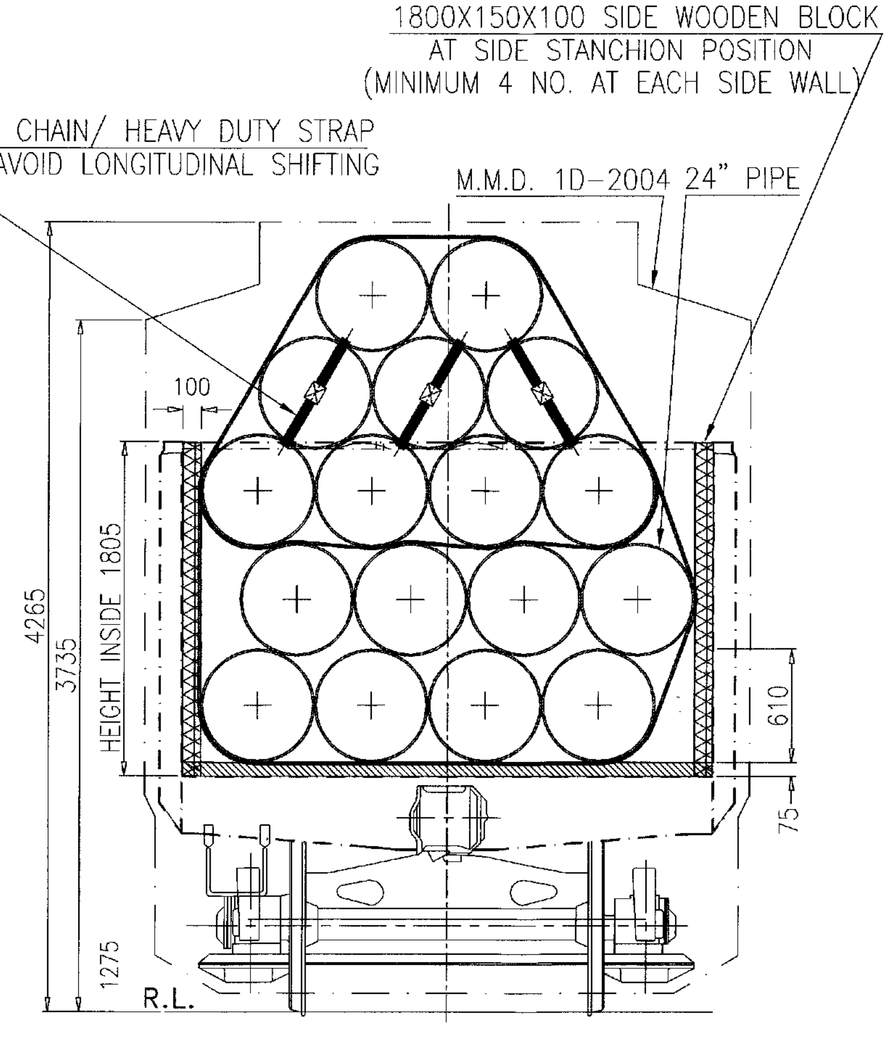
B.G. | R.D.S.O. [W] | GROUP

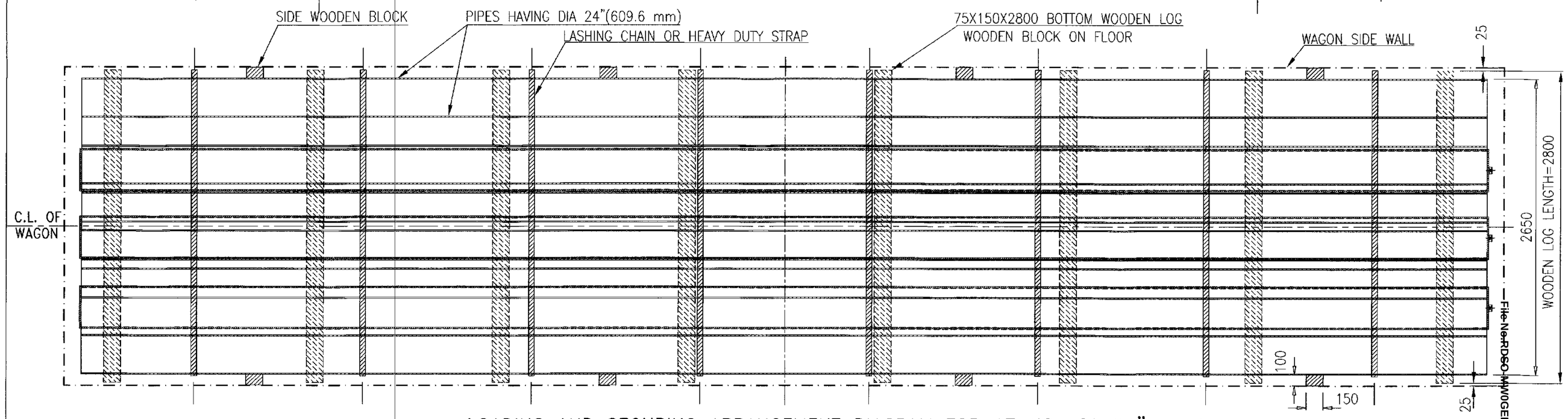
LOADING DIAGRAM OF 16" STEEL PIPES OVER BRIM IN BOST WAGON & ITS VARIANTS

WD-21038-S-03

File No: RDSO/WAGEN/LEOFC/I/82023-O/o PED/SWI/RDSO







LOADING AND SECURING ARRANGEMENT DIAGRAM FOR 17 NOs OF 24" PIPES

NOTE:-

1. MAXIMUM 60 NOS. PIPES HAVING DIAMETER OF 24"(609.6mm) SHOULD BE STACKED IN 05 ROWS AS SHOWN IN LOADING DIAGRAM.
2. IN CASE OF VARIATION IN LENGTH OF PIPES, ONE END OF THE PIPES SHOULD BE COPLANAR (IN SAME VERTICAL PLANE).
3. TOTAL 17 NOS. OF PIPES OF 24" CAN BE LOADED IN 05 ROWS AND 04 COLUMN AS SHOWN IN END VIEW.
4. BEFORE LOADING PIPES ON THE WAGON, ENSURE THAT WOODEN LOGS ARE PLACED IN CORRECT POSITION AS SHOWN IN DRAWING.
5. AFTER LOADING , ALL PIPES SHALL BE UNITIZED BY 08 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY.
6. TOP 02 ROWS (ABOVE BRIM), SHALL BE UNITIZED BY 04 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY.
7. TO AVOID LONGITUDINAL SHIFTING OF PIPES DURING RUN, 03 NOS OF LASHING CHAIN/ HEAVY DUTY STRAP TO BE USED TO FASTEN PIPES LONGITUDINALLY WHICH WILL PASS THROUGH INSIDE OF THE PIPE ALONG THE LENGTH & AT LEAST 03 PIPES TO BE TIGHTEN TOGETHER AS SHOWN AT END VIEW OF DRAWING.
8. THE LASHING CHAIN / HEAVY DUTY STRAP USED SHOULD HAVE (MIN.) BREAKING STRENGTH 5000 KG PER CHAIN/STRAP.
9. PIPES ARE LOADED ALONG THE LENGTH OF WAGON AS SHOWN IN DRAWING.
10. THE TOTAL CONSIGNMENT LOAD SHOULD NOT EXCEED THE PAY LOAD OF THE WAGON.
11. THE LOADING/UNLOADING OF PIPES TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
12. THE LOADING OF PIPES ON "BOXN" AND "BOXNHL" WAGONS CAN BE FOLLOWED IN SAME PATTERN BY CONSIDERING LENGTH OF PIPES & PAY LOAD.

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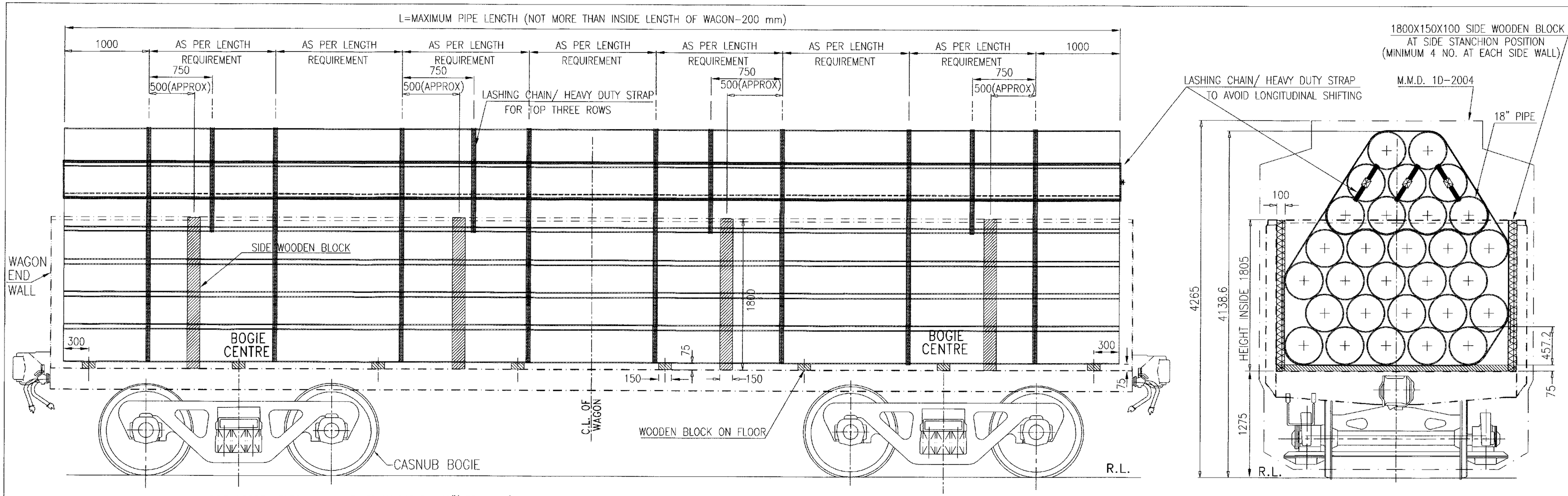
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	J.S.NO.	WD-21038	04/21

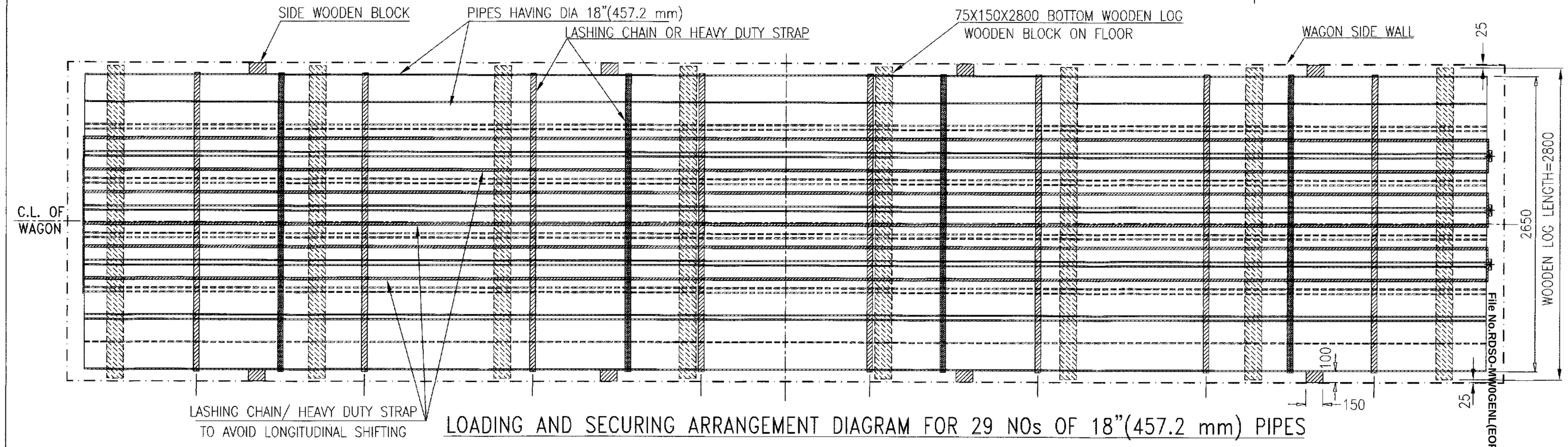
B.G. | R.D.S.O. [W] | GROUP

LOADING DIAGRAM OF 24" STEEL PIPES OVER BRIM IN BOST WAGON & ITS VARIANTS

WD-21038-S-04

File No:RDSO/WD/GENL(EOFC)/8/2023-O/o PED/SW/RDSO





LOADING AND SECURING ARRANGEMENT DIAGRAM FOR 29 NOs OF 18"(457.2 mm) PIPES

NOTE:-

1. MAXIMUM 29 NOS. PIPES HAVING DIAMETER OF 18"(457.2 mm) SHOULD BE STACKED IN 07 ROWS AS SHOWN IN LOADING DIAGRAM.
2. IN CASE OF VARIATION IN LENGTH OF PIPES, ONE END OF THE PIPES SHOULD BE COPLANAR (IN SAME VERTICAL PLANE).
3. TOTAL 29 NOS. OF PIPES OF 18" DIA CAN BE LOADED IN 07 ROWS AND 05 COLUMN AS SHOWN IN END VIEW.
4. BEFORE LOADING PIPES ON THE WAGON, ENSURE THAT WOODEN LOGS ARE PLACED IN CORRECT POSITION AS SHOWN IN DRAWING.
5. AFTER LOADING , ALL PIPES SHALL BE UNITIZED BY 08 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY.
6. TOP 03 ROWS (ABOVE BRIM), SHALL BE UNITIZED BY 04 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY.
7. TO AVOID LONGITUDINAL SHIFTING OF PIPES DURING RUN, 09 NOS OF LASHING CHAIN/ HEAVY DUTY STRAP TO BE USED TO FASTEN PIPES LONGITUDINALLY WHICH WILL PASS THROUGH INSIDE OF THE PIPE ALONG THE LENGTH AS SHOWN AT END VIEW OF DRAWING.
8. THE LASHING CHAIN / HEAVY DUTY STRAP USED SHOULD HAVE (MIN.) BREAKING STRENGTH 5000 KG PER CHAIN/STRAP.
9. PIPES ARE LOADED ALONG THE LENGTH OF WAGON AS SHOWN IN DRAWING.
10. THE TOTAL CONSIGNMENT LOAD SHOULD NOT EXCEED THE PAY LOAD OF THE WAGON.
11. THE LOADING/UNLOADING OF PIPES TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
12. THE LOADING OF PIPES ON "BOXN" AND "BOXNHL" WAGONS CAN BE FOLLOWED IN SAME PATTERN BY CONSIDERING LENGTH OF PIPES & PAY LOAD.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

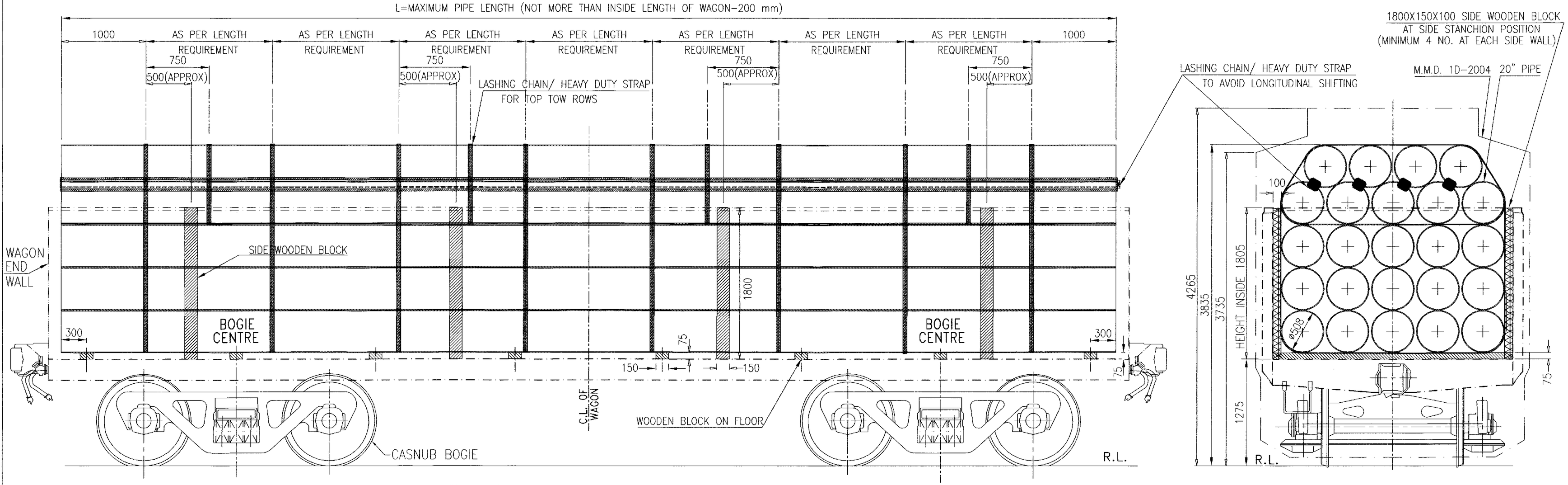
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	J.S.NO.	WD-21060	07/21

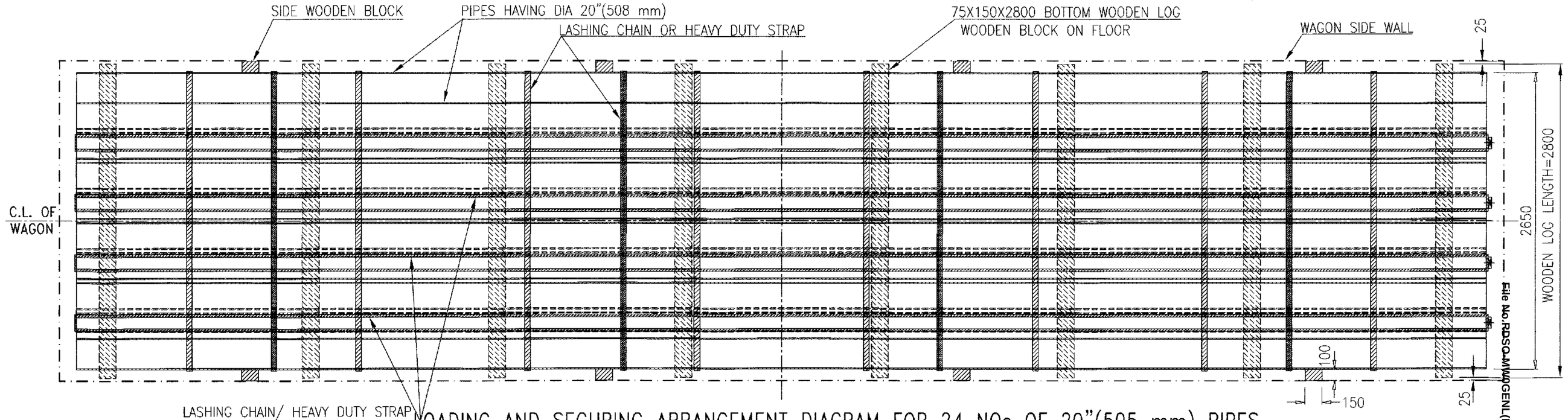
LOADING DIAGRAM OF 18" STEEL PIPES OVER BRIM IN BOST WAGON & ITS VARIANTS

B.G.	R.D.S.O. [W]	GROUP	WD-21060-S-01

File No.RDSO-WWOGENL(EOFC)/8/2023-O/o PED/SW/RDSO

A1





LOADING AND SECURING ARRANGEMENT DIAGRAM FOR 24 NOs OF 20"(505 mm) PIPES

NOTE:-

1. MAXIMUM 24 NOS. PIPES HAVING DIAMETER OF 20"(508 mm) SHOULD BE STACKED IN 05 ROWS AS SHOWN IN LOADING DIAGRAM.
2. IN CASE OF VARIATION IN LENGTH OF PIPES, ONE END OF THE PIPES SHOULD BE COPLANAR (IN SAME VERTICAL PLANE).
3. TOTAL 24 NOS. OF PIPES OF 20" DIA CAN BE LOADED IN 05 ROWS AND 05 COLUMN AS SHOWN IN END VIEW.
4. BEFORE LOADING PIPES ON THE WAGON, ENSURE THAT WOODEN LOGS ARE PLACED IN CORRECT POSITION AS SHOWN IN DRAWING.
5. AFTER LOADING , ALL PIPES SHALL BE UNITIZED BY 08 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY.
6. TOP 02 ROWS (ABOVE BRIM), SHALL BE UNITIZED BY 04 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY.
7. TO AVOID LONGITUDINAL SHIFTING OF PIPES DURING RUN, 04 NOS OF LASHING CHAIN/ HEAVY DUTY STRAP TO BE USED TO FASTEN PIPES LONGITUDINALLY WHICH WILL PASS THROUGH INSIDE OF THE PIPE ALONG THE LENGTH AS SHOWN AT END VIEW OF DRAWING.
8. THE LASHING CHAIN / HEAVY DUTY STRAP USED SHOULD HAVE (MIN.) BREAKING STRENGTH 5000 KG PER CHAIN/STRAP.
9. PIPES ARE LOADED ALONG THE LENGTH OF WAGON AS SHOWN IN DRAWING.
10. THE TOTAL CONSIGNMENT LOAD SHOULD NOT EXCEED THE PAY LOAD OF THE WAGON.
11. THE LOADING/UNLOADING OF PIPES TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
12. THE LOADING OF PIPES ON "BOXN" AND "BOXNHL" WAGONS CAN BE FOLLOWED IN SAME PATTERN BY CONSIDERING LENGTH OF PIPES & PAY LOAD.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

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	J.S.NO.	WD-21060	07/21

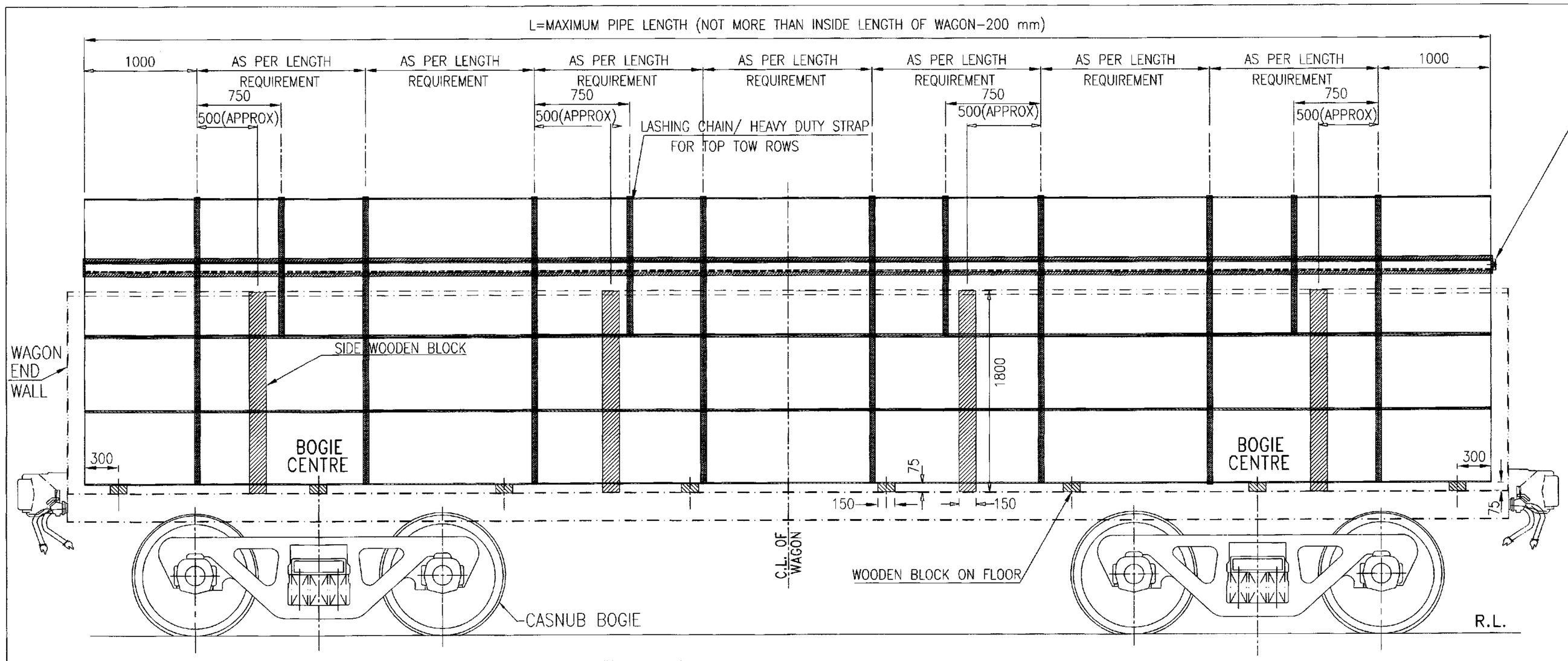
B.G. | R.D.S.O. [W] | GROUP

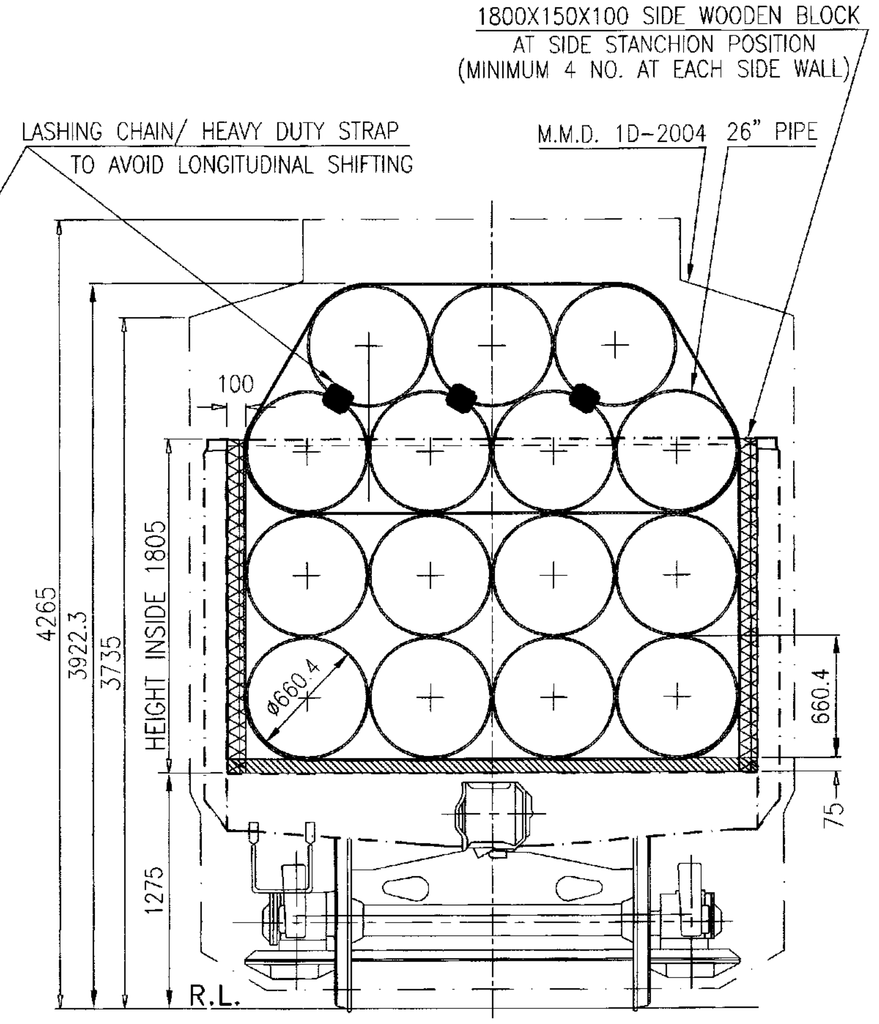
LOADING DIAGRAM OF 20" STEEL PIPES OVER BRIM IN BOST WAGON & ITS VARIANTS

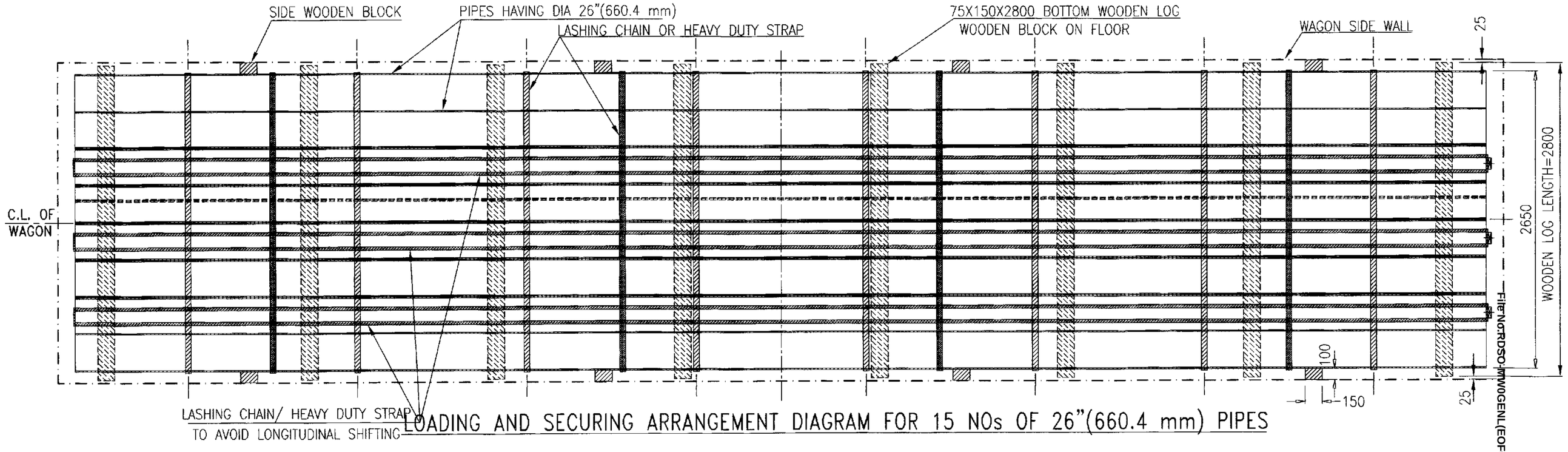
WD-21060-S-02

File No.RDSO-MMGENL(EOFC)/8/2023-O/o PED/SW/RDSO

A1







LOADING AND SECURING ARRANGEMENT DIAGRAM FOR 15 NOs OF 26"(660.4 mm) PIPES

NOTE:-

1. MAXIMUM 15 NOS. PIPES HAVING DIAMETER OF 26"(660.4 mm) SHOULD BE STACKED IN 04 ROWS AS SHOWN IN LOADING DIAGRAM.
2. IN CASE OF VARIATION IN LENGTH OF PIPES, ONE END OF THE PIPES SHOULD BE COPLANAR (IN SAME VERTICAL PLANE).
3. TOTAL 15 NOS. OF PIPES OF 26" DIA CAN BE LOADED IN 04 ROWS AND 04 COLUMN AS SHOWN IN END VIEW.
4. BEFORE LOADING PIPES ON THE WAGON, ENSURE THAT WOODEN LOGS ARE PLACED IN CORRECT POSITION AS SHOWN IN DRAWING.
5. AFTER LOADING , ALL PIPES SHALL BE UNITIZED BY 08 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY.
6. TOP 02 ROWS (ABOVE BRIM), SHALL BE UNITIZED BY 04 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY.
7. TO AVOID LONGITUDINAL SHIFTING OF PIPES DURING RUN, 03 NOS OF LASHING CHAIN/ HEAVY DUTY STRAP TO BE USED TO FASTEN PIPES LONGITUDINALLY WHICH WILL PASS THROUGH INSIDE OF THE PIPE ALONG THE LENGTH AS SHOWN AT END VIEW OF DRAWING.
8. THE LASHING CHAIN / HEAVY DUTY STRAP USED SHOULD HAVE (MIN.) BREAKING STRENGTH 5000 KG PER CHAIN/STRAP.
9. PIPES ARE LOADED ALONG THE LENGTH OF WAGON AS SHOWN IN DRAWING.
10. THE TOTAL CONSIGNMENT LOAD SHOULD NOT EXCEED THE PAY LOAD OF THE WAGON.
11. THE LOADING/UNLOADING OF PIPES TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
12. THE LOADING OF PIPES ON "BOXN" AND "BOXNHL" WAGONS CAN BE FOLLOWED IN SAME PATTERN BY CONSIDERING LENGTH OF PIPES & PAY LOAD.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

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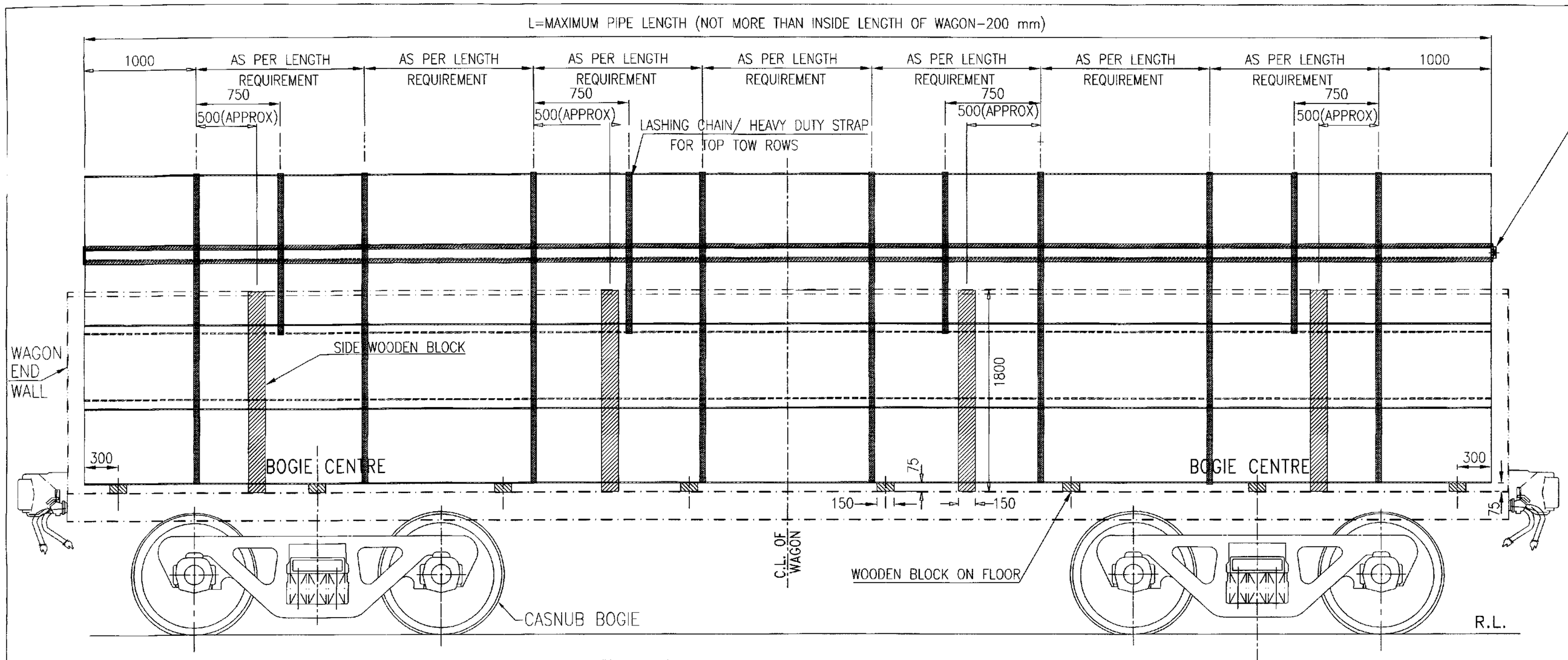
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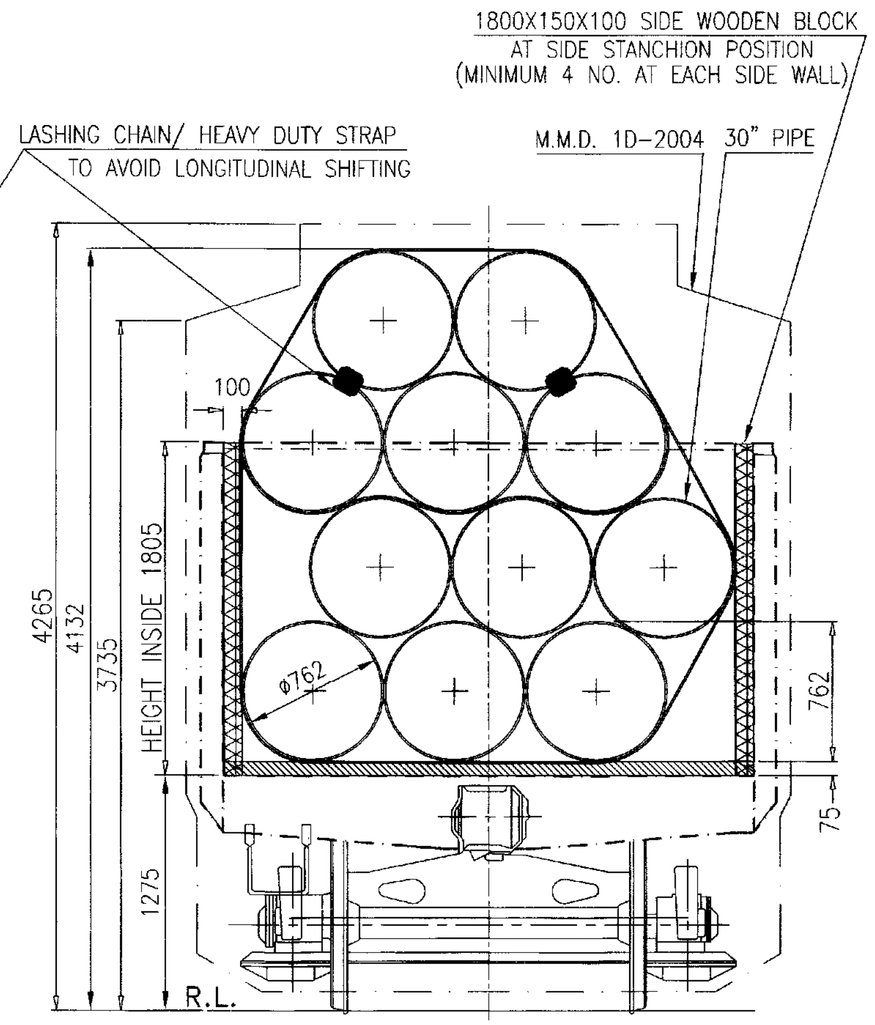
LOADING DIAGRAM OF 26" STEEL PIPES OVER BRIM IN BOST WAGON & ITS VARIANTS

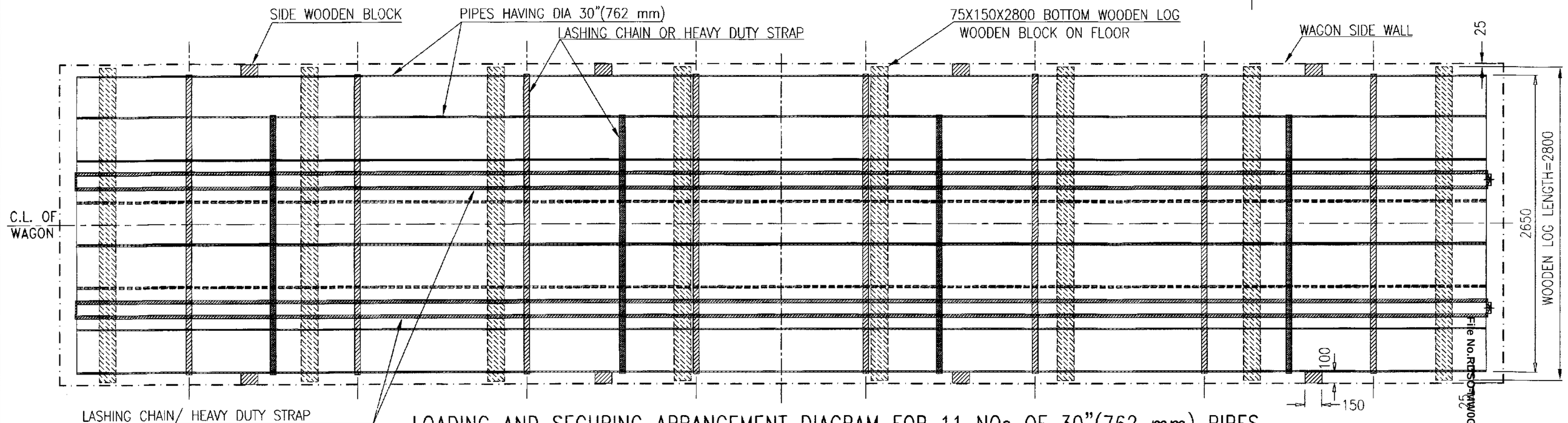
WD-21060-S-03

A1

File No:RDSO/MW0GEN\LEOFC\8\2023-O\o PED\SW\RDSO







LOADING AND SECURING ARRANGEMENT DIAGRAM FOR 11 NOs OF 30"(762 mm) PIPES

NOTE:-

1. MAXIMUM 11 NOS. PIPES HAVING DIAMETER OF 30"(762 mm) SHOULD BE STACKED IN 04 ROWS AS SHOWN IN LOADING DIAGRAM.
2. IN CASE OF VARIATION IN LENGTH OF PIPES, ONE END OF THE PIPES SHOULD BE COPLANAR (IN SAME VERTICAL PLANE).
3. TOTAL 11 NOS. OF PIPES OF 30" DIA CAN BE LOADED IN 04 ROWS AND 03 COLUMN AS SHOWN IN END VIEW.
4. BEFORE LOADING PIPES ON THE WAGON, ENSURE THAT WOODEN LOGS ARE PLACED IN CORRECT POSITION AS SHOWN IN DRAWING.
5. AFTER LOADING , ALL PIPES SHALL BE UNITIZED BY 08 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY.
6. TOP 02 ROWS (ABOVE BRIM), SHALL BE UNITIZED BY 04 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY.
7. TO AVOID LONGITUDINAL SHIFTING OF PIPES DURING RUN, 02 NOS OF LASHING CHAIN/ HEAVY DUTY STRAP TO BE USED TO FASTEN PIPES LONGITUDINALLY WHICH WILL PASS THROUGH INSIDE OF THE PIPE ALONG THE LENGTH AS SHOWN AT END VIEW OF DRAWING.
8. THE LASHING CHAIN / HEAVY DUTY STRAP USED SHOULD HAVE (MIN.) BREAKING STRENGTH 5000 KG PER CHAIN/STRAP.
9. PIPES ARE LOADED ALONG THE LENGTH OF WAGON AS SHOWN IN DRAWING.
10. THE TOTAL CONSIGNMENT LOAD SHOULD NOT EXCEED THE PAY LOAD OF THE WAGON.
11. THE LOADING/UNLOADING OF PIPES TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
12. THE LOADING OF PIPES ON "BOXN" AND "BOXNHL" WAGONS CAN BE FOLLOWED IN SAME PATTERN BY CONSIDERING LENGTH OF PIPES & PAY LOAD.

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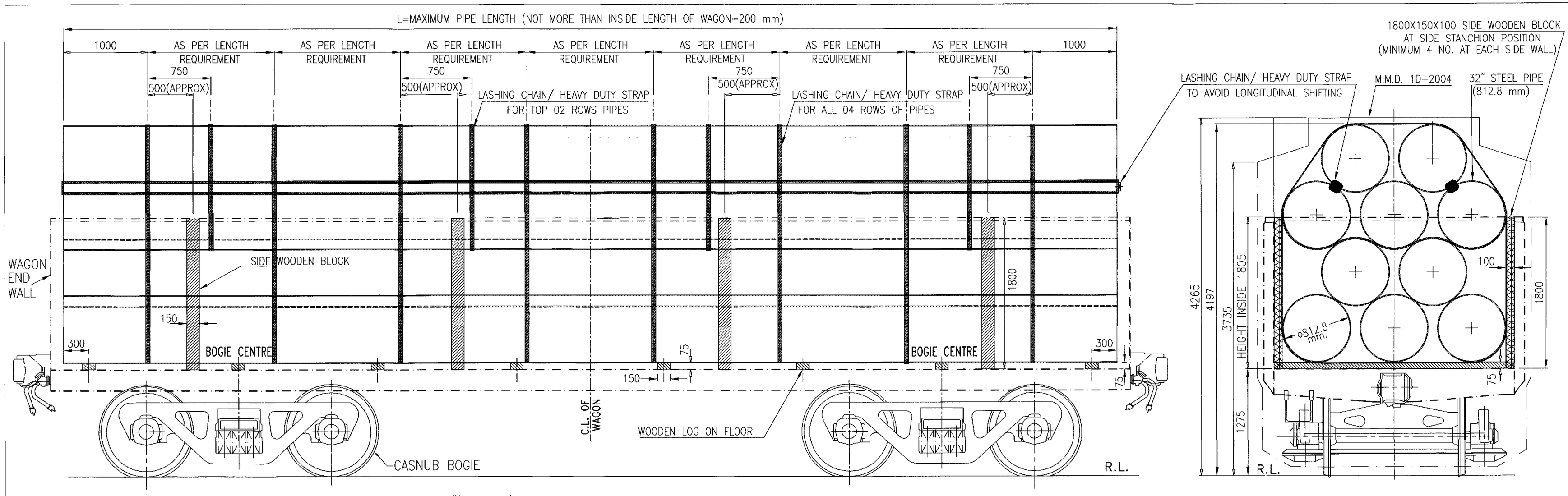
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	DRAWN	A.K.KUSHWAHA	07/21
	J.S.NO.	WD-21060	07/21

B.G. | R.D.S.O. [W] | GROUP

LOADING DIAGRAM OF 30" STEEL PIPES OVER BRIM IN BOST WAGON & ITS VARIANTS

WD-21060-S-04

File No.RDSO/WDGEN/(EOFC)/8/2023-O/o PED/SW/RDSO



LOADING AND SECURING ARRANGEMENT DIAGRAM FOR 10 NOs OF 32"(812.8 mm) STEEL PIPES

NOTE:-

1. MAXIMUM 10 NOS. PIPES HAVING DIAMETER OF 32"(812.8 mm APPROX) SHOULD BE STACKED IN 04 ROWS AS SHOWN IN LOADING DIAGRAM.
2. IN CASE OF VARIATION IN LENGTH OF PIPES, ONE END OF THE PIPES SHOULD BE COPLANAR (IN SAME VERTICAL PLANE).
3. TOTAL 10 NOS. OF PIPES OF 32" DIA CAN BE LOADED IN 04 ROWS AND 03 COLUMN AS SHOWN IN END VIEW OF DRAWING.
4. BEFORE LOADING PIPES ON THE WAGON, ENSURE THAT WOODEN LOGS ARE PLACED IN CORRECT POSITION AS SHOWN IN DRAWING.
5. AFTER LOADING , ALL PIPES SHALL BE UNITIZED BY 08 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY.
6. TOP 02 ROWS (ABOVE BRIM/ TOP COPING), SHALL BE UNITIZED BY 04 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY.
7. TO AVOID LONGITUDINAL SHIFTING OF PIPES DURING RUN, 02 NOS OF LASHING CHAIN/ HEAVY DUTY STRAP TO BE USED TO FASTEN PIPES LONGITUDINALLY WHICH WILL PASS THROUGH INSIDE OF THE PIPE ALONG THE LENGTH AS SHOWN AT END VIEW & SIDE VIEW OF DRAWING.
8. THE LASHING CHAIN / HEAVY DUTY STRAP USED SHOULD HAVE MINIMUM BREAKING STRENGTH 5000 KG PER CHAIN/STRAP.
9. PIPES ARE LOADED ALONG THE LENGTH OF WAGON AS SHOWN IN DRAWING.
10. THE TOTAL CONSIGNMENT LOAD SHOULD NOT EXCEED THE PAY LOAD OF THE WAGON.
11. THE LOADING/UNLOADING OF PIPES TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
12. THE LOADING OF PIPES ON "BOXN" AND "BOXNHL" WAGONS CAN BE FOLLOWED IN SAME PATTERN BY CONSIDERING LENGTH OF PIPES AS PER THEIR WAGON LENGTH AND PAY LOAD.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

SUPERSEDED BY		
SUPERSEDES		DATE
SCALE	PASSED	05/22
	CHECKED	A.K.KUSHVAHA 05/22
	DRAWN	A.K.KUSHVAHA 04/22
	J.S.NO.	WD-22038 04/22

B.G. | R.D.S.O. [W]

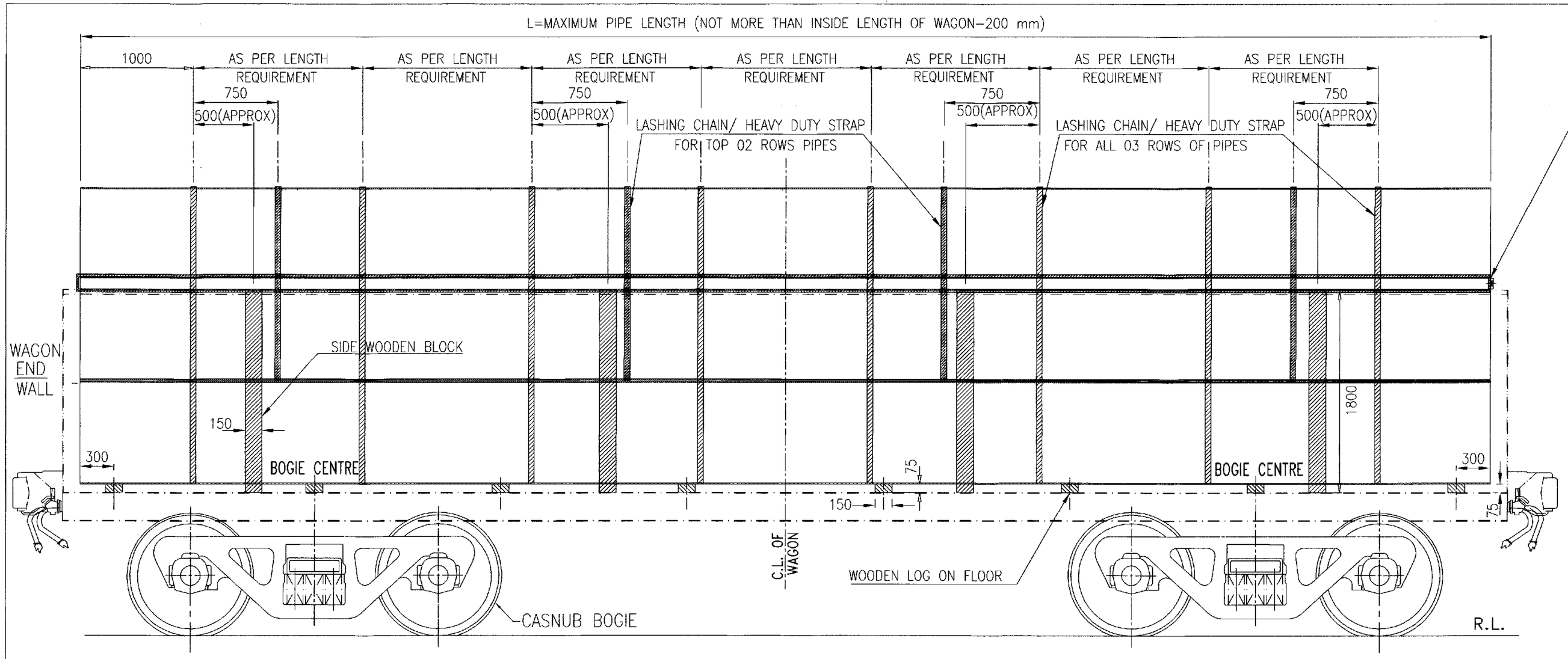
LOADING DIAGRAM OF 32" STEEL PIPES OVER BRIM IN BOST WAGON & ITS VARIANTS

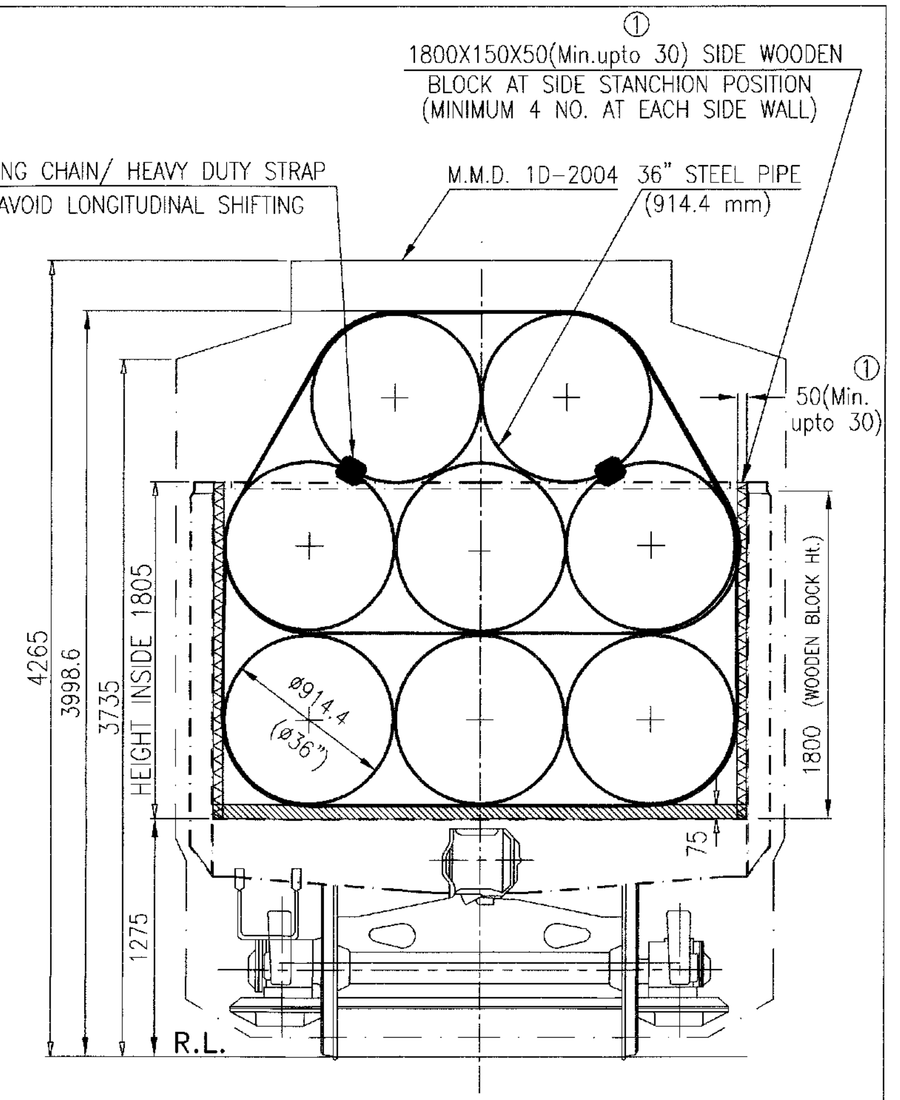
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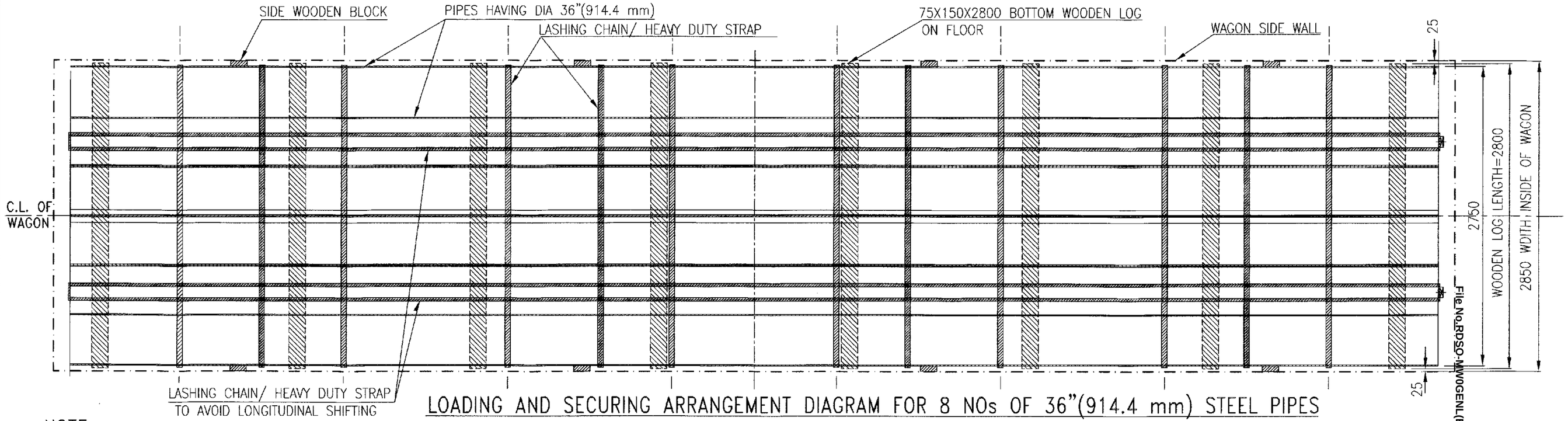
WD-22038-S-02

File No:RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SWRDSO

A1 19/05/22







LOADING AND SECURING ARRANGEMENT DIAGRAM FOR 8 NOs OF 36"(914.4 mm) STEEL PIPES

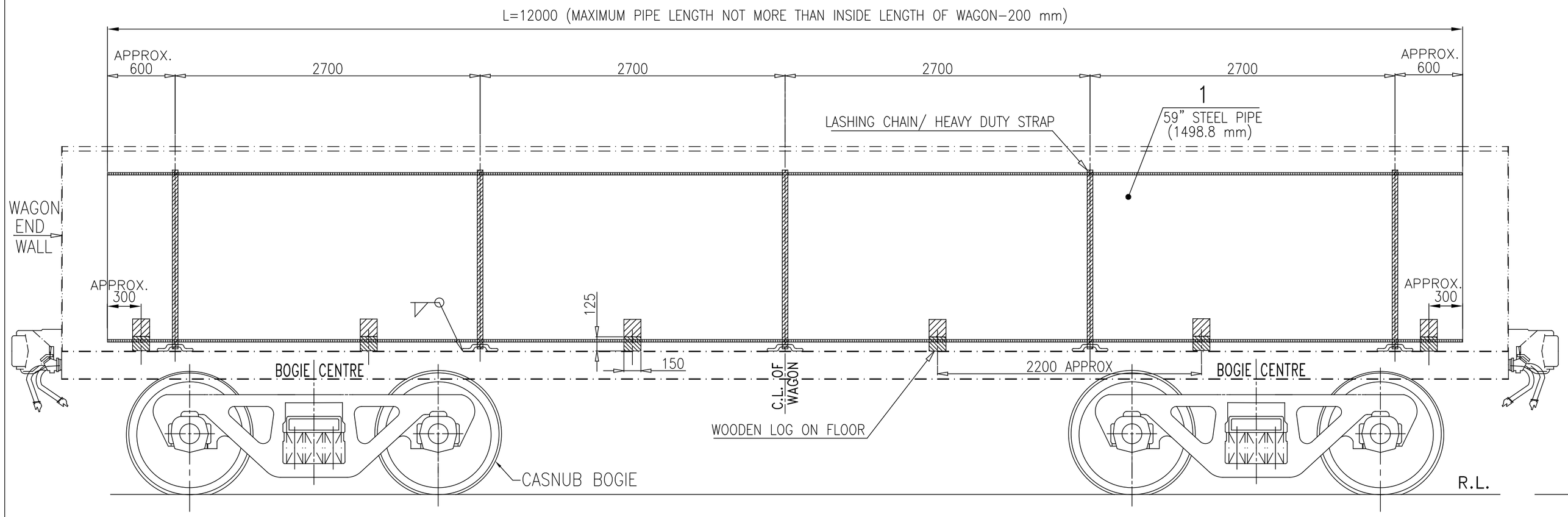
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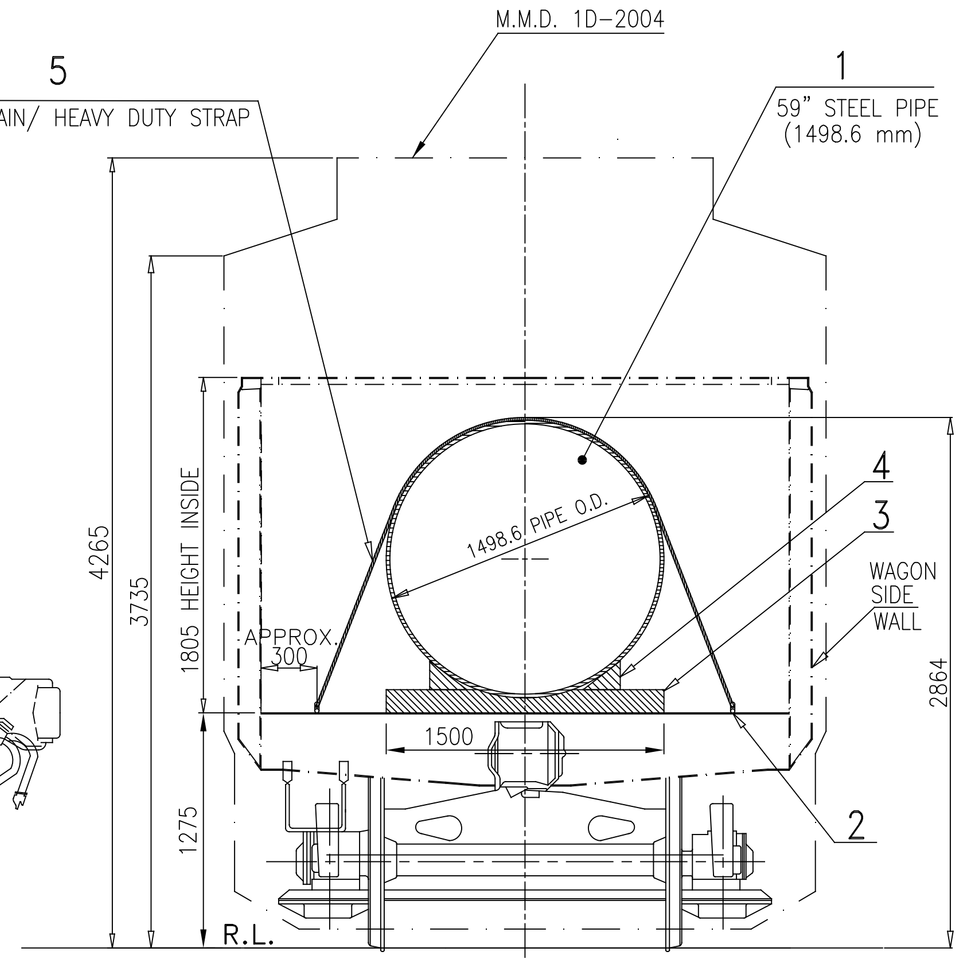
1. MAXIMUM 8 NOS. PIPES HAVING DIAMETER OF 36"(914.4 mm APPROX) SHOULD BE STACKED IN 03 ROWS AS SHOWN IN LOADING DIAGRAM.
2. IN CASE OF VARIATION IN LENGTH OF PIPES, ONE END OF THE PIPES SHOULD BE COPLANAR (IN SAME VERTICAL PLANE).
3. TOTAL 8 NOS. OF PIPES OF 36" DIA CAN BE LOADED IN 03 ROWS AND 03 COLUMN AS SHOWN IN END VIEW OF DRAWING.
4. BEFORE LOADING PIPES ON THE WAGON, ENSURE THAT WOODEN LOGS ARE PLACED IN CORRECT POSITION AS SHOWN IN DRAWING.
5. AFTER LOADING , ALL PIPES SHALL BE UNITIZED BY 08 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY.
6. TOP 02 ROWS SHALL BE UNITIZED BY 04 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY.
7. TO AVOID LONGITUDINAL SHIFTING OF PIPES DURING RUN, 02 NOS OF LASHING CHAIN/ HEAVY DUTY STRAP TO BE USED TO FASTEN PIPES LONGITUDINALLY WHICH WILL PASS THROUGH INSIDE OF THE PIPE ALONG THE LENGTH AS SHOWN AT END VIEW & SIDE VIEW OF DRAWING.
8. THE LASHING CHAIN / HEAVY DUTY STRAP USED SHOULD HAVE MINIMUM BREAKING STRENGTH 5000 KG PER CHAIN/STRAP.
9. PIPES ARE LOADED ALONG THE LENGTH OF WAGON AS SHOWN IN DRAWING & ALL DIMENSION IN MM.
10. THE TOTAL CONSIGNMENT LOAD SHOULD NOT EXCEED THE PAY LOAD OF THE WAGON.
11. THE LOADING/UNLOADING OF PIPES TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
12. THE LOADING OF PIPES ON "BOXN" AND"BOXNHL" WAGONS CAN BE FOLLOWED IN SAME PATTERN BY CONSIDERING LENGTH OF PIPES AS PER THEIR WAGON LENGTH AND PAY LOAD.
13. THE THICKNESS OF SIDE WOODEN BLOCK IS SHOWN 50 mm. HOWEVER IF PIPES HAVE COATING THICKNESS, IT SHOULD NOT BE LESS THAN 30 mm. ①

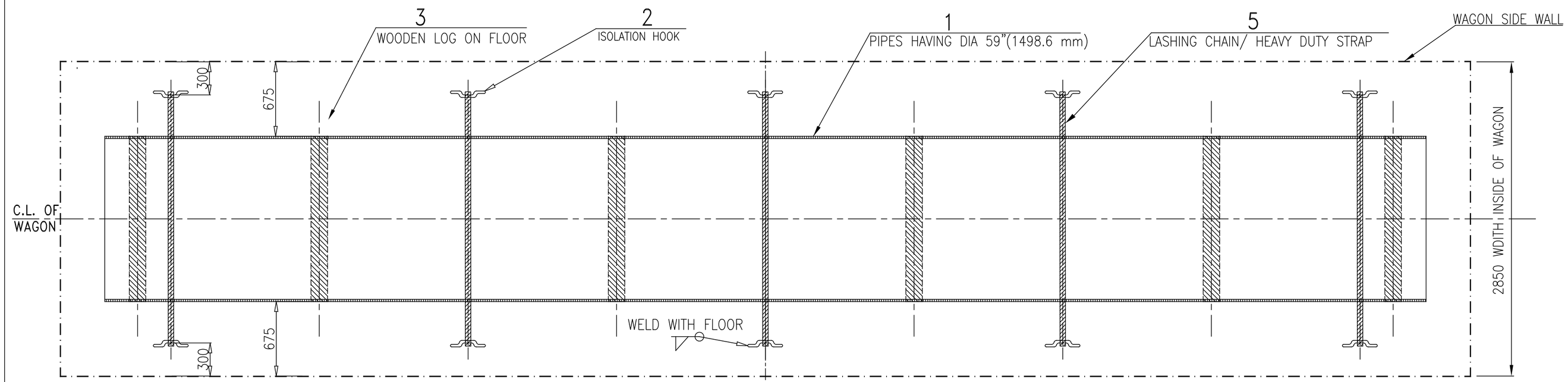
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
1	--	WD-22085	SIDE WOODEN BLOCK THICKNESS 50mm MODIFIED 50(Min. UP TO 30 mm). NOTE NO. 13 ADDED.	09/22	

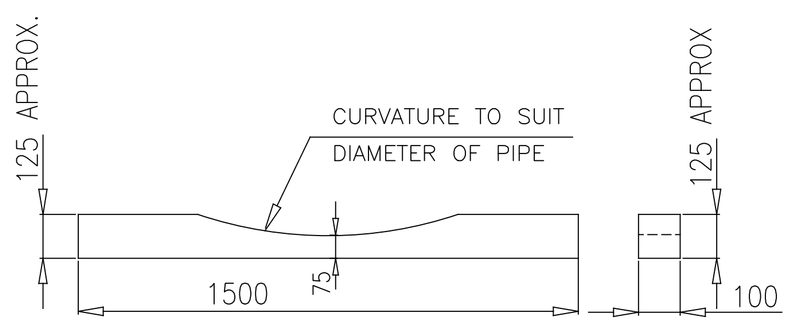
SUPERSEDED BY		DATE	LOADING DIAGRAM OF 36" STEEL PIPES OVER BRIM IN BOST WAGON & ITS VARIANTS
SUPERSEDES		DATE	
SCALE	PASSED	Sd-S.M.Tajbhate 08/22	
	CHECKED	Sd-Amit 08/22	
	DRAWN	ASHUTOSH kr. SINGH 08/22	
	U.S.NO.	WD-22076 08/22	
B.G.	R.D.S.O. [W]	GROUP	WD-22076-S-01

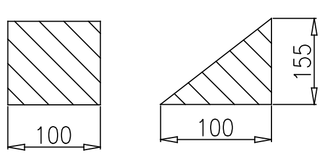
File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SWR/DSO











LOADING AND SECURING ARRANGEMENT DIAGRAM FOR 01 NOs OF 59"(1498.6 mm) STEEL PIPE

①

NOTE:–

1. 01 NO. PIPES HAVING DIAMETER OF 59"(1498.6 mm APPROX) SHALL BE LOADED AS SHOWN IN LOADING DIAGRAM.
2. THE PIPE LOADING ALONG THE WAGON LENGTH SHOULD BE SYMMETRICAL ABOUT THE LONGITUDINAL CENTRE LINE AS WELL AS TRANSVERSE AXIS OF THE WAGON.
3. BEFORE LOADING PIPE ON THE WAGON, ENSURE THAT WOODEN CRADLE ARE PLACED IN CORRECT POSITION AS SHOWN IN DRAWING.
4. AFTER LOADING, PIPE SHALL BE UNITIZED BY 05 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY AND PLACED/FIXED THE WOODEN WEDGE ON SADDLE.
5. TO AVOID SHIFTING OF PIPE DURING RUN, WOODEN CRADLE, WOODEN WEDGES AND 05 NOS OF LASHING CHAIN/ HEAVY DUTY STRAP TO BE USED PROPERLY. WOODEN WEDGE SHOULD BE FIX ON THE WOODEN CRADLE SUCH THAT IT DOES NOT SLIP FROM WOODEN CRADLE.
6. THE LASHING CHAIN/ HEAVY DUTY STRAP USED SHOULD HAVE MINIMUM BREAKING STRENGTH 5000 KG PER CHAIN/STRAP.
7. THE LASHING CHAIN LOCKING/ TIGHTENING OR HEAVY DUTY STRAP CRIMPING SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING/ LOOSE UP TO THE BREAKING POINT.
8. LOADING OF PIPE SHOULD BE SUCH THAT:–
   - 8.1 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2.
   - 8.2 THE PIPE WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   - 8.3 MAXIMUM DIFFERENCE IN PIPE WEIGHT LOADED ON BOTH BOGIE CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   - 8.4 TOTAL WEIGHT OF LOADED PIPE ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
9. THE ISOLATION HOOK (ITEM NO.2) SHOULD BE WELD WITH WAGON FLOOR TO ACCOMMODATE COIL DIA/ WIDTH AS SHOWN IN DRAWING.
10. THE LOADING/UNLOADING OF PIPES TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON.
11. THIS RDSO DRAWING IS AN INDUCTIVE DRAWING. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.

ITEM	DESCRIPTION	NO. OF PCS/ WAGON	REFERENCE DRAWING NO.	MTL&SPEC	REMARKS
5.	LASING CHAIN OR HEAVY DUTY STRAP	5	---	STEEL OR NYLON WEBING HEAVY DUTY STRAP	
4.	WOODEN WEDGE	12	---	WOOD	
3.	WOODEN CRADLE	6	---	WOOD	
2.	ISOLATION HOOK	10	WD–24036–S–01 ITEM–3 ①	---	
1.	STEEL PIPE 59" (01 NO./ WAGON)	01	---	STEEL	

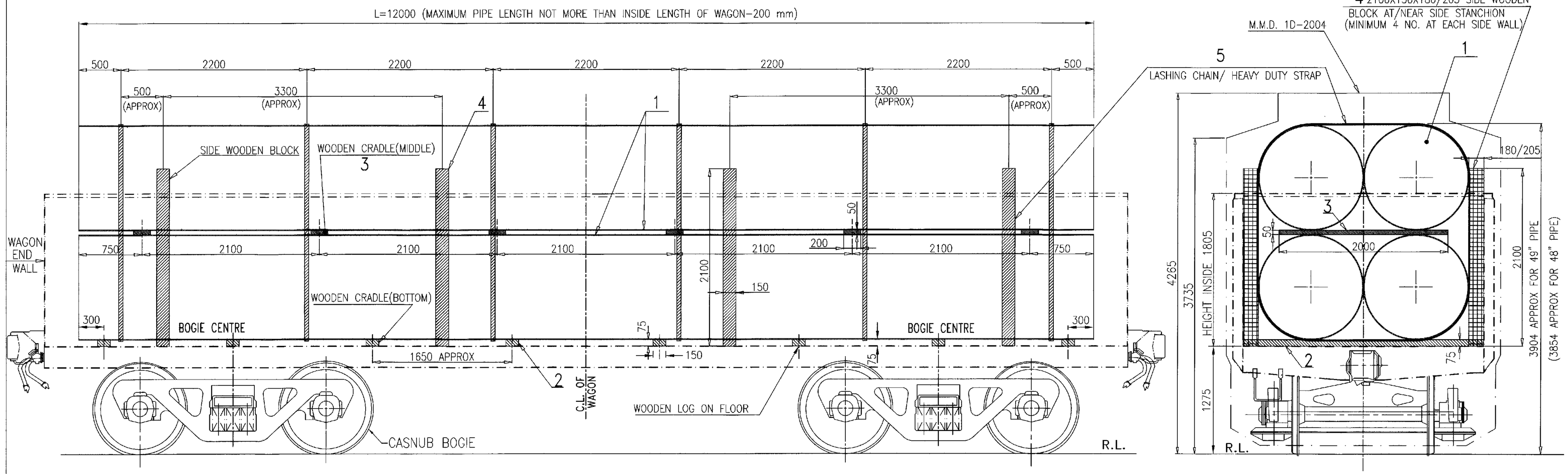
	ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
	1	--	WD–24036	ISOLATION HOOK DRG. DELETED & REFERENCE DRG. ADDED IN DESCRIPTION TABLE. NOTE & ITEM–3 & 4 DIMENSION REVISED.	04/24	

SUPERSEDED BY			
SUPERSEDES			DATE
SCALE	PASSED	sd–S.M.TRIPATHI	06/23
	CHECKED	sd–A.K.KUSHWAHA	06/23
	DRAWN	A.K.KUSHVAHA	06/23
	J.S.NO.	WD–23059	06/23

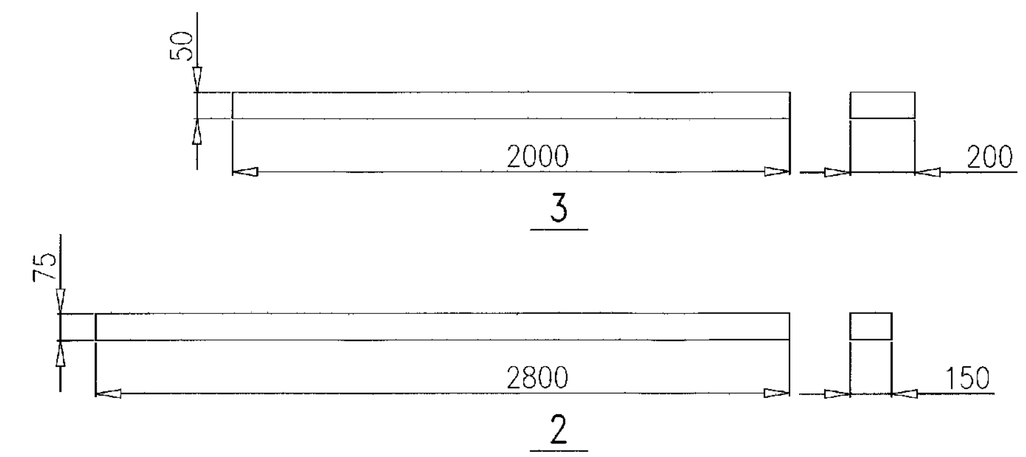
LOADING DIAGRAM OF 59" STEEL PIPES IN BOST WAGON & ITS VARIANTS

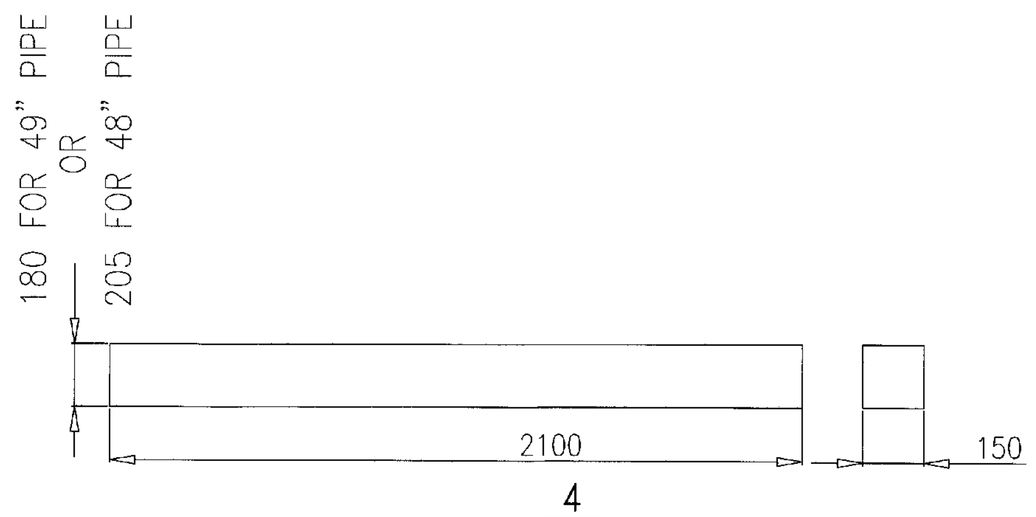
B.G. | R.D.S.O. [W] | GROUP | WD–23059–S–01

File No.RDSO-MWGENL(EOFC)/8/2023-O/o PED/SWIRDSO



LOADING AND SECURING ARRANGEMENT DIAGRAM FOR 04 NOs OF 49"(1244.6 mm) / 48"(1219.2 mm) STEEL PIPES





File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED/SW/RDSO

NOTE:-

1. MAXIMUM 4 NOS. PIPES HAVING DIAMETER OF 49"(1244.6 mm) OR 48"(1219.2 MM)SHOULD BE STACKED IN 02 ROWS AS SHOWN IN LOADING DIAGRAM.
2. PIPE LOADED AT WAGON CENTRE AS PER LENGTH, END OF THE PIPES SHOULD BE EQUAL DISTANCE FROM EACH SIDE WALL.
3. BEFORE LOADING PIPES ON THE WAGON, ENSURE THAT WOODEN LOGS ARE PLACED IN CORRECT POSITION AS SHOWN IN DRAWING.
4. AFTER LOADING, ALL PIPES SHALL BE UNITIZED BY 06 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY.
5. BOTH 02 ROWS SHALL BE UNITIZED BY 06 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP & TIGHTEN ADEQUATELY.
6. TO AVOID SHIFTING OF PIPES DURING RUN, WOODEN CRADLES, SIDE WOODEN BLOCKS AND 06 NOS OF LASHING CHAIN/ HEAVY DUTY STRAP TO BE USED PROPERLY.
7. THE LASHING CHAIN / HEAVY DUTY STRAP USED SHOULD HAVE MINIMUM BREAKING STRENGTH 5000 KG PER CHAIN/STRAP.
8. PIPES ARE LOADED ALONG THE LENGTH OF WAGON AS SHOWN IN DRAWING & ALL DIMENSION IN MM.
9. THE TOTAL CONSIGNMENT LOAD SHOULD NOT EXCEED THE PAY LOAD OF THE WAGON.
10. THE LOADING/UNLOADING OF PIPES TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.

ITEM	DESCRIPTION	NO. OF PCS/ WAGON	MTL&SPEC	REMAKS
5.	LASING CHAIN OR HEAVY DUTY STRAP	6	STEEL OR NYLON WEBING HEAVY DUTY STRAP	
4.	SIDE WOODEN BLOCK (2100X180X150 MM FOR 49" PIPE) OR (2100X205X150 MM FOR 48" PIPE)	8	WOOD	
3.	WOODEN CRADLE (MIDDLE) (2000X200X50 MM)	6	WOOD	
2.	WOODEN CRADLE (BOTTOM) (2800X150X75 MM)	8	WOOD	
1.	STEEL PIPE 49"/48" (04 NO./ WAGON)	04	STEEL	

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

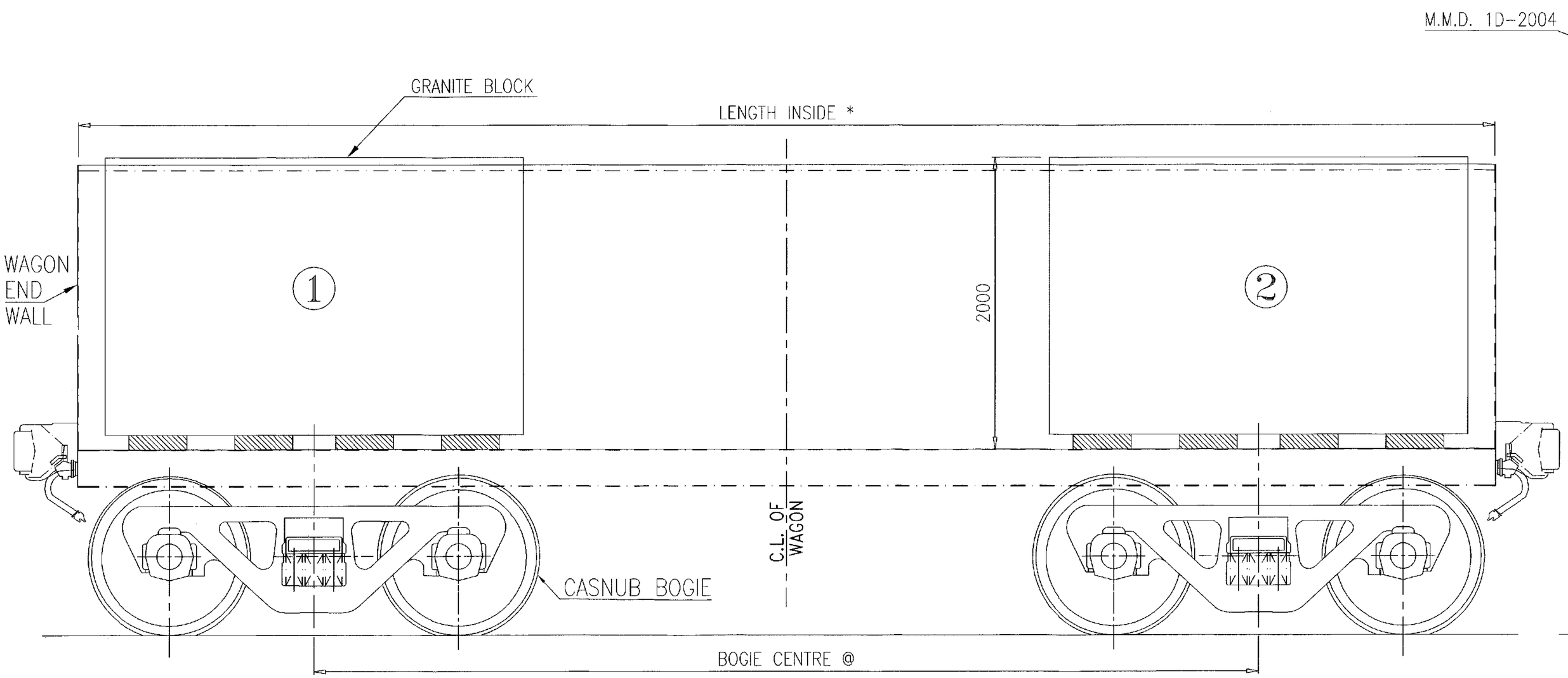
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SUPERSEDES
SCALE

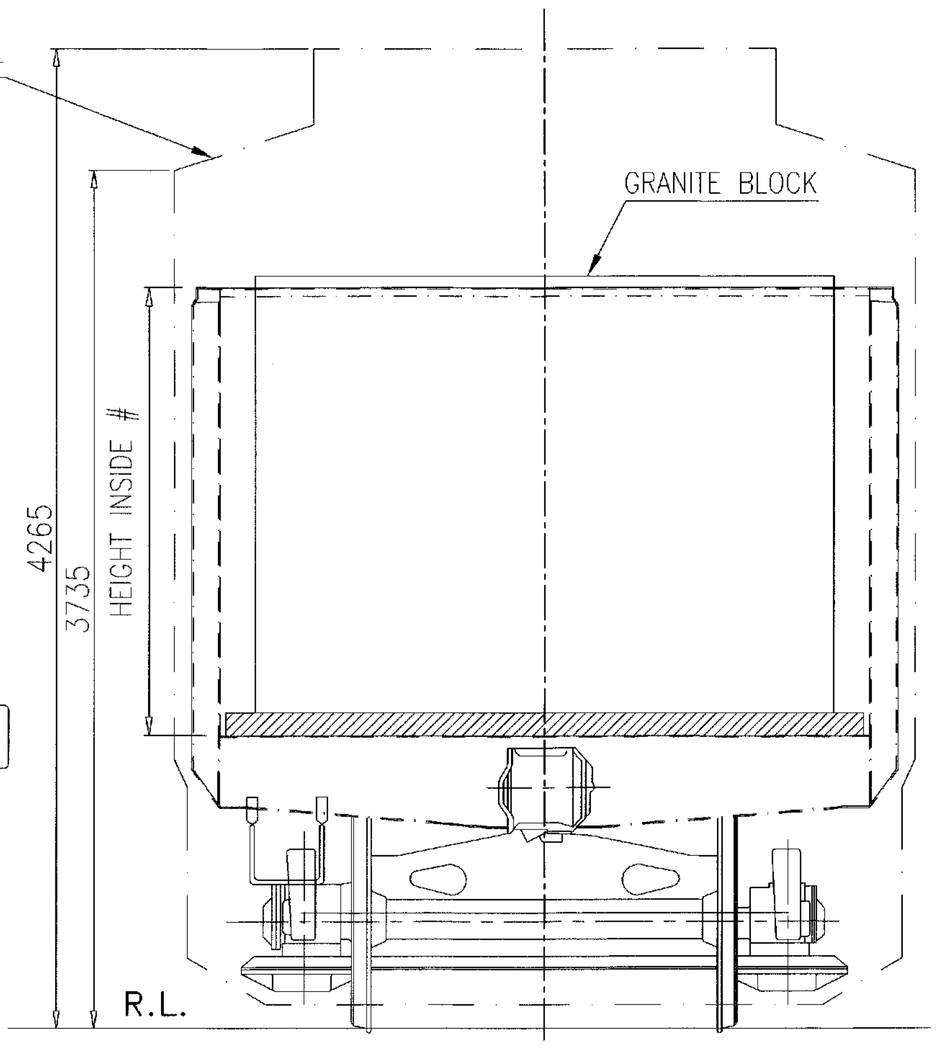
		DATE
PASSED		06/23
CHECKED		06/23
DRAWN	A.K.KUSHVAHA	06/23
J.S.NO.	WD-23059	06/23

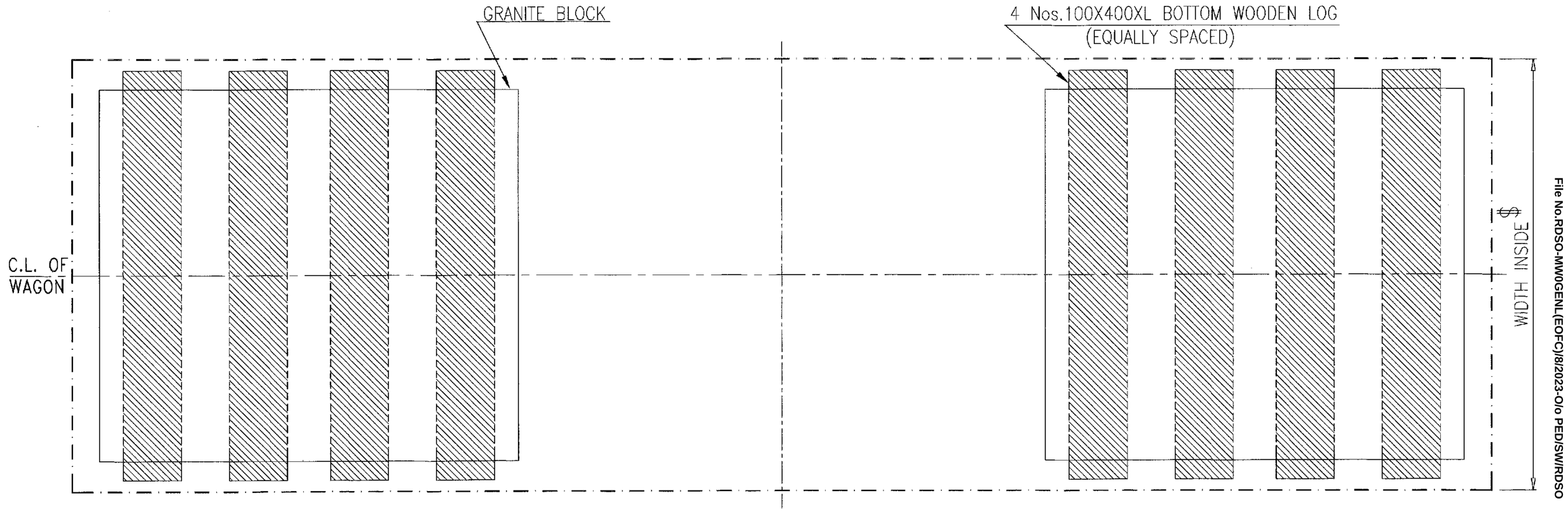
LOADING DIAGRAM OF 48" AND 49" STEEL PIPES IN BOST TYPE WAGON & ITS VARIANTS

B.G. | R.D.S.O. [W] | GROUP | WD-23059-S-02

A1 07/24







* – WAGON LENGTH INSIDE (AS PER USED WAGON)
\# – WAGON HEIGHT INSIDE (AS PER USED WAGON)
@ – WAGON BOGIE CENTRE (AS PER USED WAGON)
$ – WAGON WIDTH INSIDE (AS PER USED WAGON)

File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SW/RDSO

NOTE:–

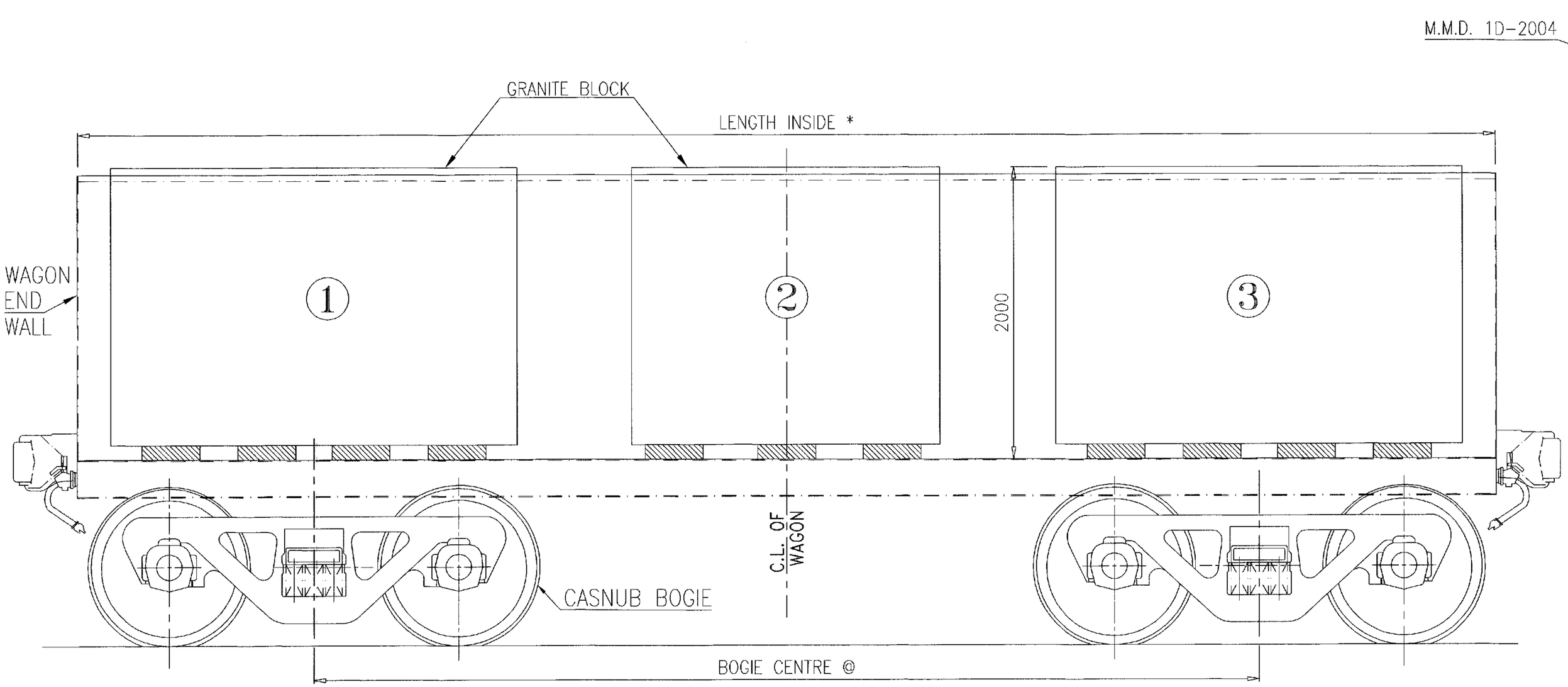
1. THE DIFFERENCE IN WEIGHT OF GRANITE BLOCK 1 & 2 SHOULD NOT BE MORE THAN 6t.
2. THE TOTAL LOAD ON ONE BOGIE SHOULD NOT EXCEED THE CARRYING CAPACITY OF THE BOGIE.
3. THE TOTAL GRANITE BLOCKS WEIGHT SHOULD NOT BE MORE THAN CARRYING CAPACITY OF THE WAGON.
4. THE GRANITE BLOCKS SHOULD BE KEPT CENTRALLY COINCIDE WITH BOGIE CENTER LATERALLY .
5. IN ANY CASE, THE HEIGHT OF GRANITE BLOCK ON ANY LOADED WAGON SHOULD NOT INFRINGE MMD.
6. THE LENGTH OF WOODEN LOGS 'L' SHOULD BE MORE THAN WIDTH OF THE GRANITE BLOCKS.
7. THE LOADING/UNLOADING OF GRANITE BLOCKS IN WAGON TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON.
8. THE MAX. PERMISSIBLE LATERAL MOVEMENT OF LOAD IS LIMITING TO 100 mm FROM CENTRE.
9. ALL DIMENSIONS ARE IN mm.

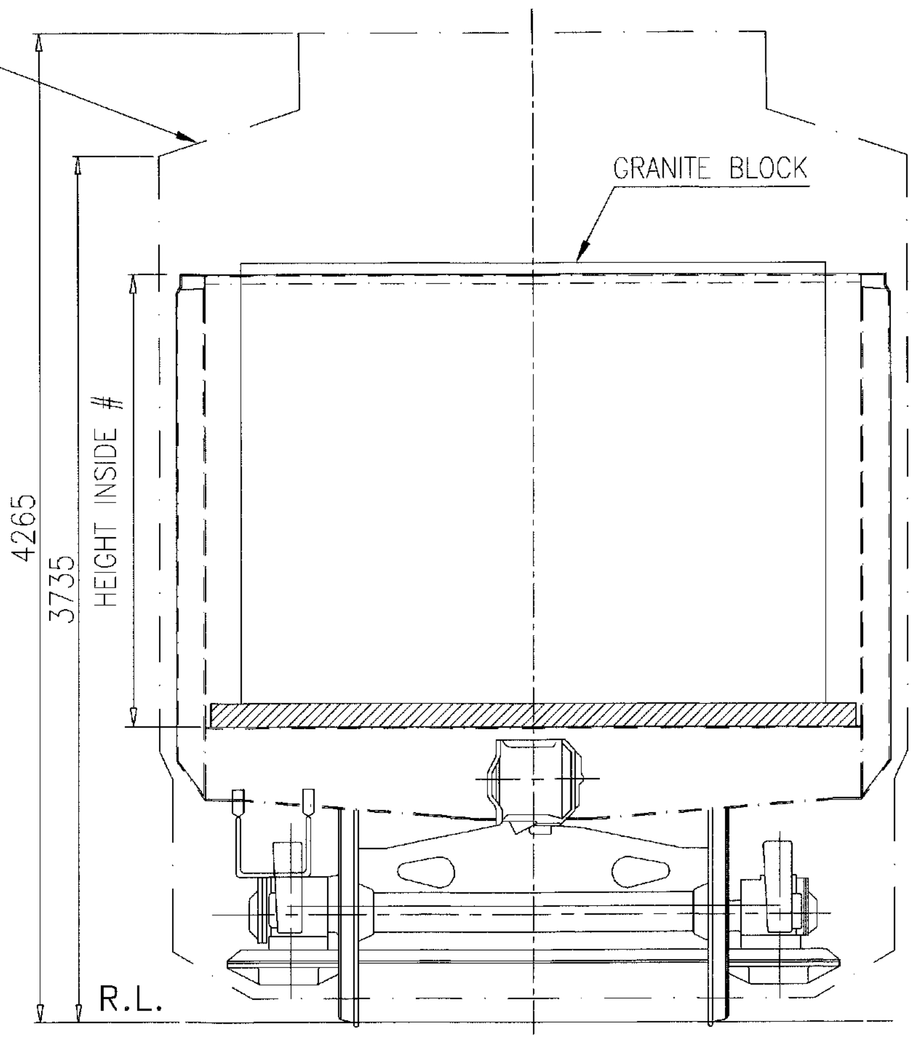
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

SUPERSEDED BY		
SUPERSEDES		DATE
SCALE	PASSED	05/21
	CHECKED	05/21
	DRAWN J.AHMAD	05/21
	J.S.NO. WD-21039	05/21

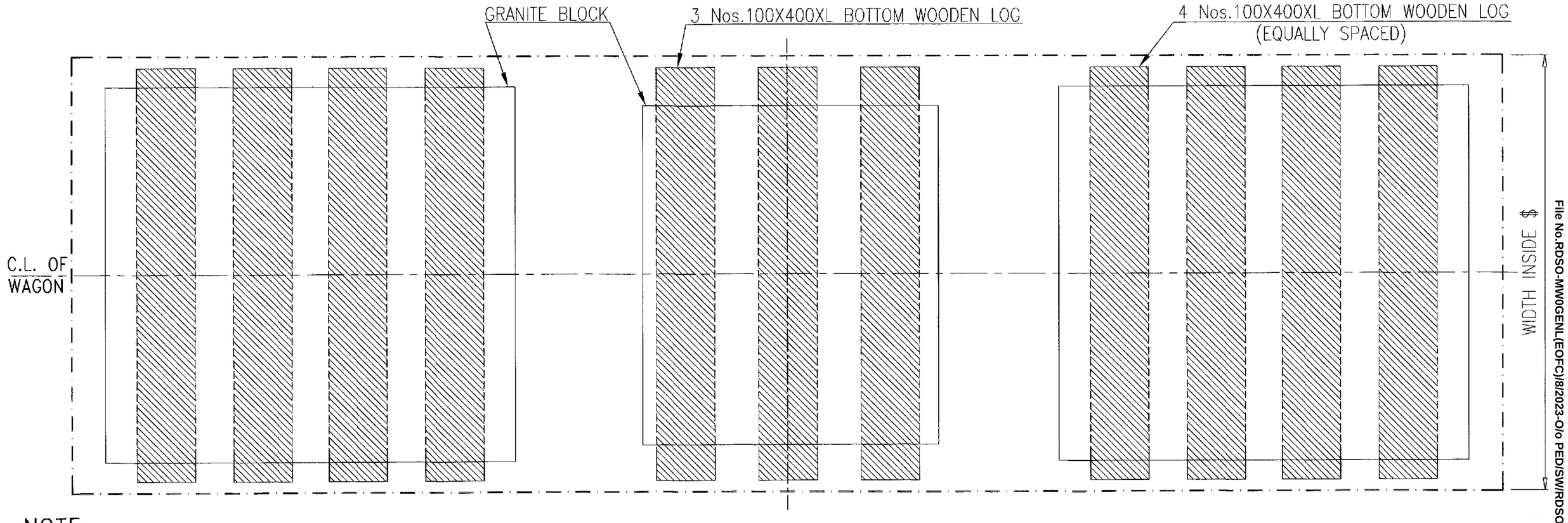
LOADING DIAGRAM OF GRANITE STONES IN BOXN/BOXNR/BOST/BOXNHL/BOXNS WAGONS & ITS VARIANTS (FOR 02 NO. GRANITE STONE BLOCKS)

B.G.	R.D.S.O. [W]	GROUP	WD-21039-S-01





* – WAGON LENGTH INSIDE (AS PER USED WAGON)
\# – WAGON HEIGHT INSIDE (AS PER USED WAGON)
@ – WAGON BOGIE CENTRE (AS PER USED WAGON)
$ – WAGON WIDTH INSIDE (AS PER USED WAGON)



File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED/SW/RDSO

NOTE:-

1. THE DIFFERENCE IN WEIGHT OF GRANITE BLOCK 1 & 3 SHOULD NOT BE MORE THAN 6t.
2. THE TOTAL LOAD ON ONE BOGIE SHOULD NOT EXCEED THE CARRYING CAPACITY OF THE BOGIE.
3. THE GRANITE BLOCKS LOADED AT CENTER SHOULD NOT BE MORE THAN 15t.
4. THE GRANITE BLOCKS SHOULD BE KEPT CENTRALLY COINCIDE WITH WAGON/ BOGIE CENTER LATERALLY .
5. IN ANY CASE, THE HEIGHT OF GRANITE BLOCK ON ANY LOADED WAGON SHOULD NOT INFRINGE MMD.
6. THE LENGTH OF WOODEN LOGS 'L' SHOULD BE MORE THAN WIDTH OF THE GRANITE BLOCKS.
7. THE LOADING/UNLOADING OF GRANITE BLOCKS IN WAGON TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON.
8. THE MAX. PERMISSIBLE LATERAL MOVEMENT OF LOAD IS LIMITING TO 100 mm FROM CENTRE.
8. ALL DIMENSIONS ARE IN mm.

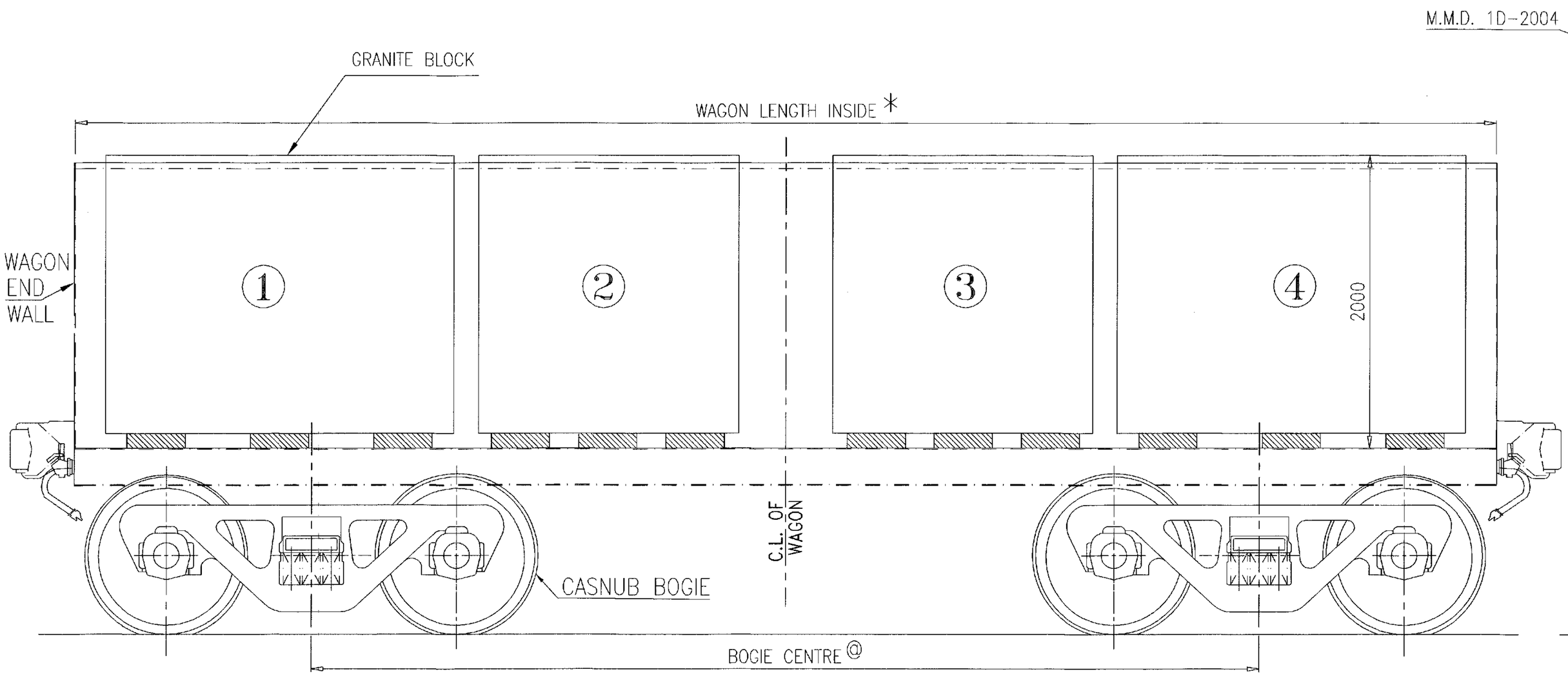
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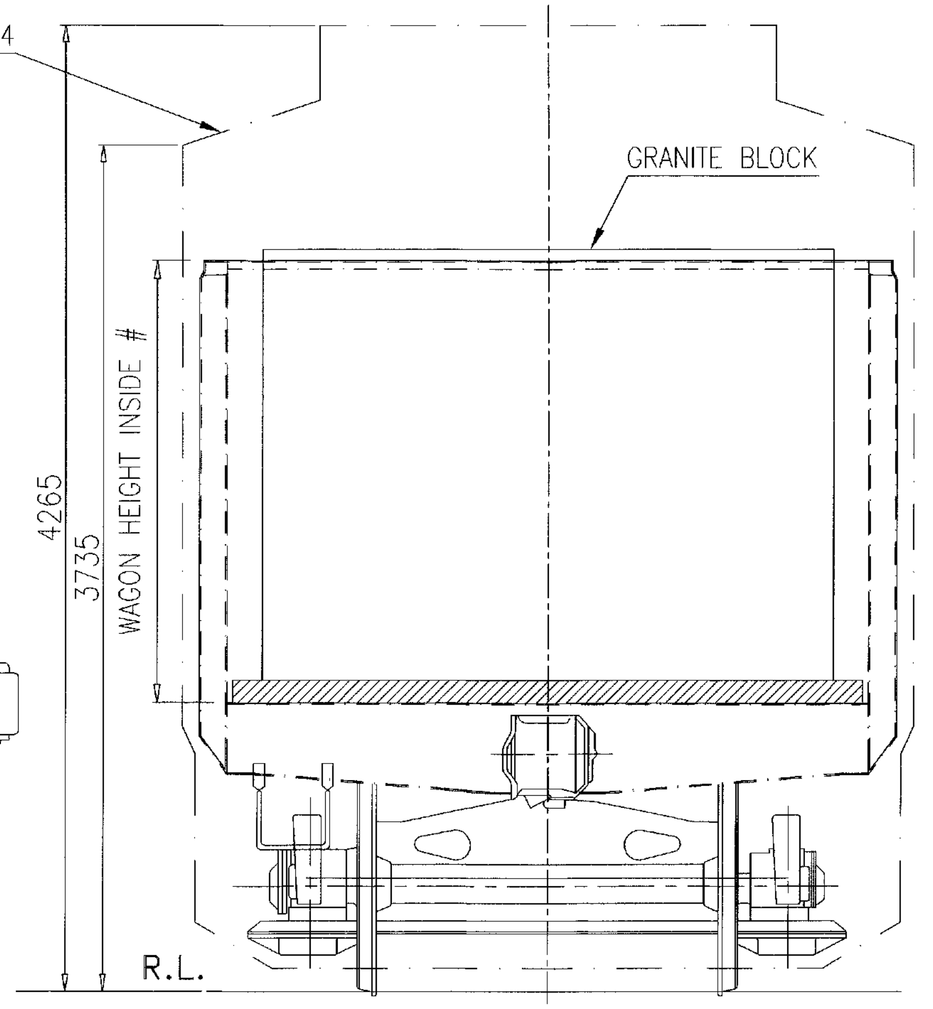
SUPERSEDED BY		DATE
SUPERSEDES		
SCALE	PASSED	05/21
	CHECKED	05/21
	DRAWN J.AHMAD	05/21
	J.S.NO. WD-21039	05/21

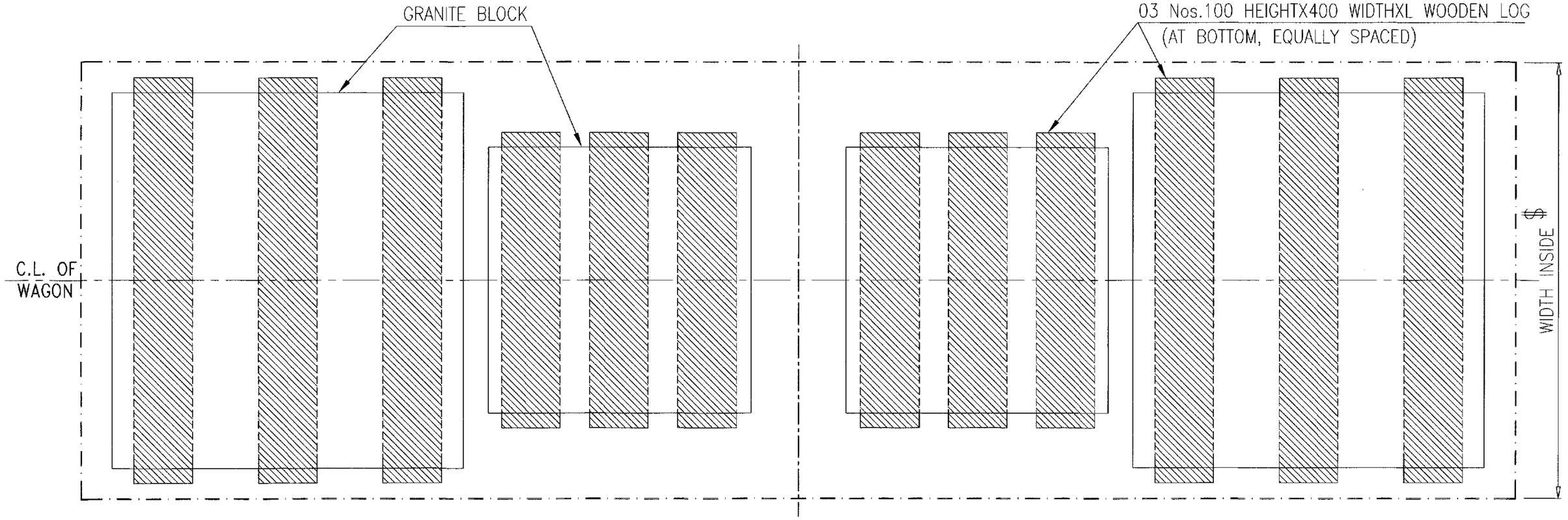
LOADING DIAGRAM OF GRANITE STONES IN BOXN/BOXNR/BOST/BOXNHL/BOXNS WAGONS & ITS VARIANTS (FOR 03 NO. GRANITE STONE BLOCKS)

B.G.	R.D.S.O. [W]	GROUP	WD-21039-S-02

A1







* – WAGON LENGTH INSIDE (AS PER USED WAGON)
\# – WAGON HEIGHT INSIDE (AS PER USED WAGON)
@ – WAGON BOGIE CENTRE (AS PER USED WAGON)
$ – WAGON WIDTH INSIDE (AS PER USED WAGON)

File No:RDSO-MWGENL(EOFC)/8/2023-O/o PED/SW/RDSO

NOTE:–

1. THE DIFFERENCE IN WEIGHT OF GRANITE BLOCK 1+2 & 3+4 SHOULD NOT BE MORE THAN 6t.
2. THE TOTAL LOAD ON ONE BOGIE SHOULD NOT EXCEED THE CARRYING CAPACITY OF THE BOGIE.
3. THE TOTAL GRANITE BLOCKS WEIGHT SHOULD NOT BE MORE THAN CARRYING CAPACITY(PAY LOAD) OF THE WAGON.
4. IN ANY CASE, THE WEIGHT OF BOTH MIDDLE GRANITE BLOCK, SHOULD NOT MORE THAN 15 t.
5. IN ANY CASE, THE HEIGHT OF GRANITE BLOCK ON ANY LOADED WAGON SHOULD NOT INFRINGE MMD.
6. THE GRANITE BLOCKS SHOULD BE KEPT CENTRALLY COINCIDE WITH WAGON/ BOGIE CENTER .
7. THE LENGTH OF WOODEN LOGS 'L' SHOULD BE MORE THAN WIDTH OF THE GRANITE BLOCKS.
8. THE LOADING/UNLOADING OF GRANITE BLOCKS IN WAGON TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON.
9. THE MAX. PERMISSIBLE LATERAL MOVEMENT OF LOAD IS LIMITING TO 100 mm FROM CENTRE.
10. ALL DIMENSIONS ARE IN mm.

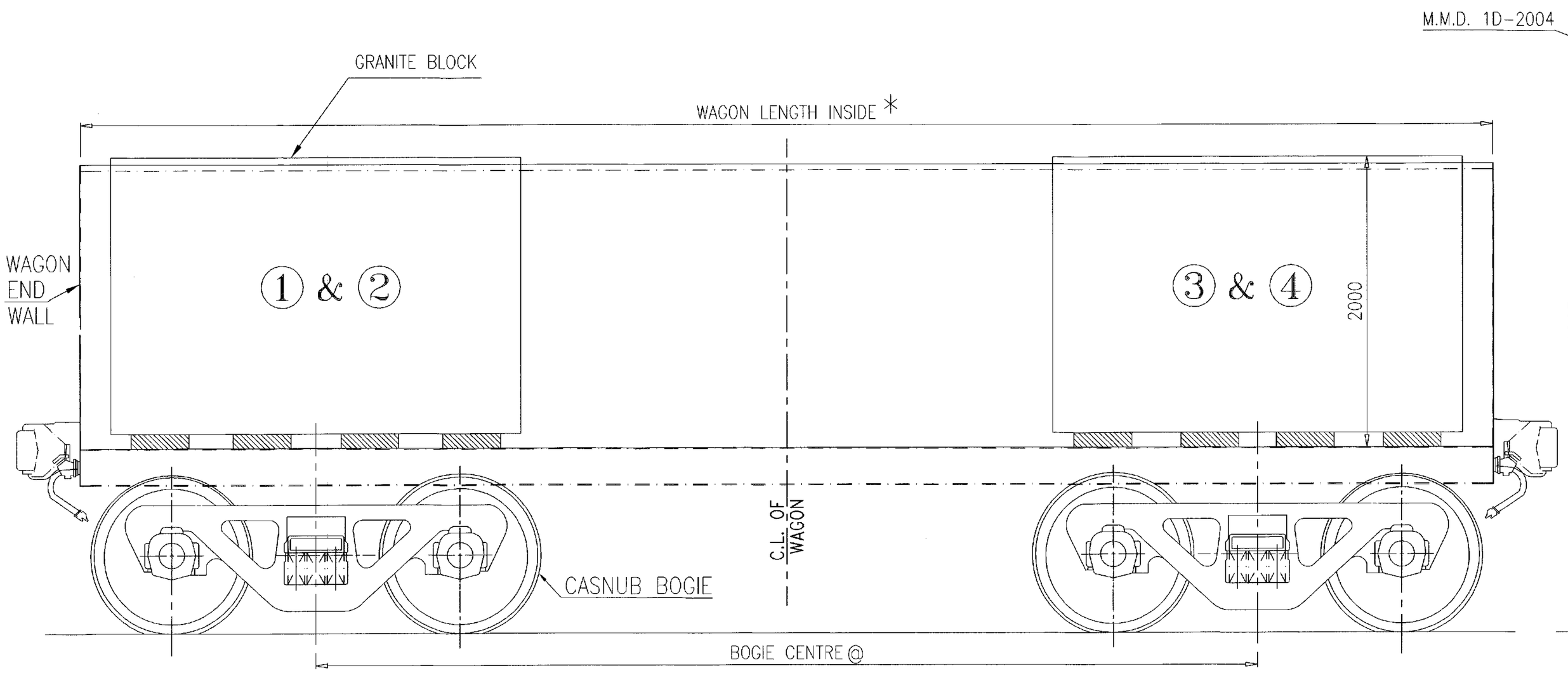
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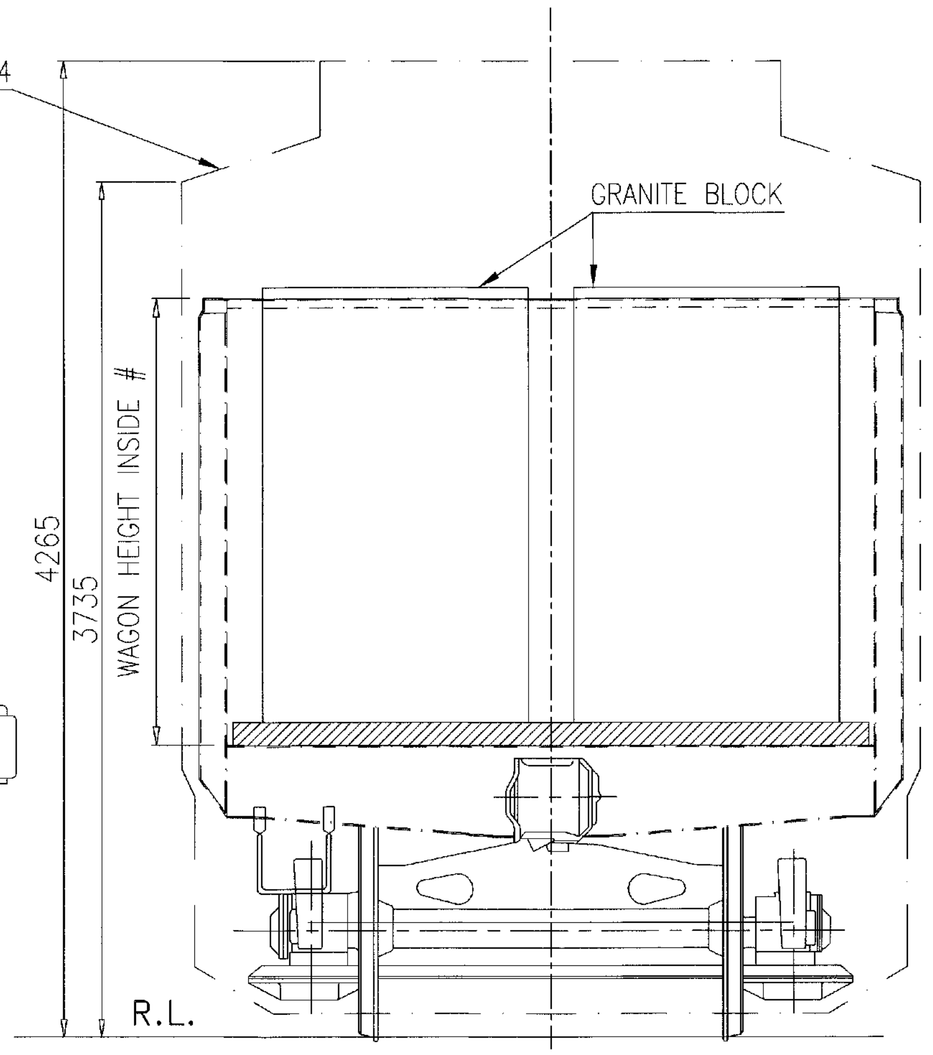
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SUPERSEDES		DATE
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	CHECKED	05/21
	DRAWN A.K.KUSHVAHA	05/21
	J.S.NO. WD-21039	05/21

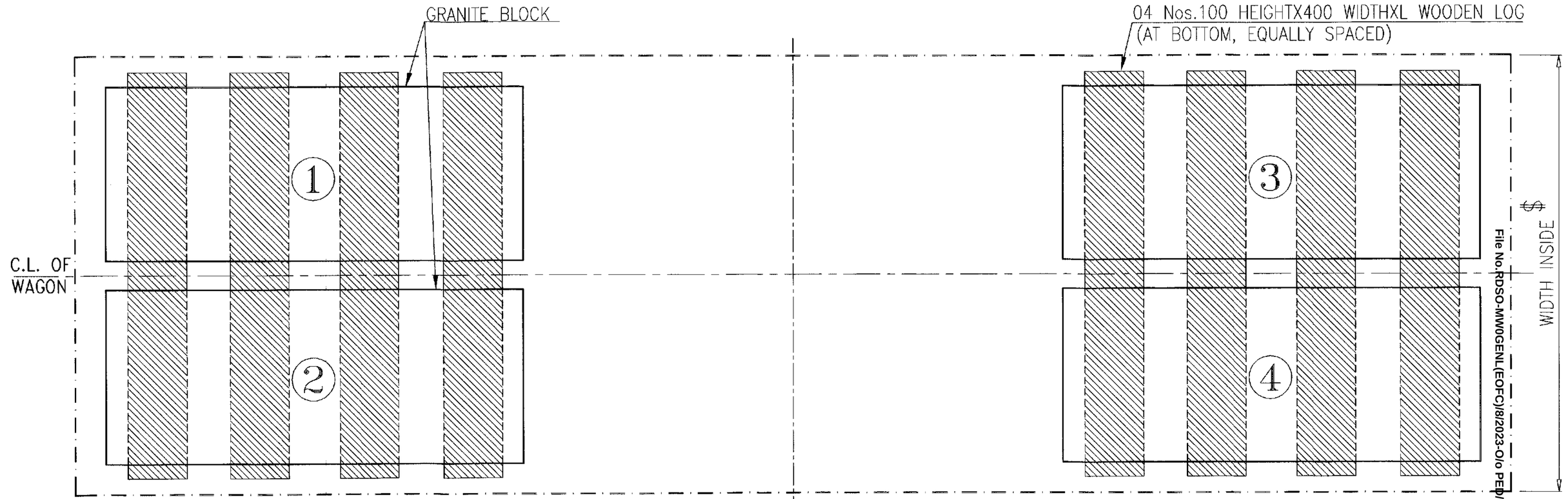
LOADING DIAGRAM OF GRANITE STONES IN BOXN/BOXNR/BOST/BOXNHL/BOXNS WAGONS & ITS VARIANTS (FOR 04 NO. GRANITE STONE BLOCKS)

B.G.	R.D.S.O. [W]	GROUP	WD-21039-S-03

A1







✳ – WAGON LENGTH INSIDE (AS PER USED WAGON)
\# – WAGON HEIGHT INSIDE (AS PER USED WAGON)
@ – WAGON BOGIE CENTRE (AS PER USED WAGON)
$ – WAGON WIDTH INSIDE (AS PER USED WAGON)

File No.RDSO-MWGENL(EOFC)/8/2023-O/o PED/SW/RDSO

NOTE:-

1. THE DIFFERENCE IN WEIGHT OF GRANITE BLOCK 1+2 & 3+4 SHOULD NOT BE MORE THAN 6t.
2. THE TOTAL LOAD ON ONE BOGIE SHOULD NOT EXCEED THE CARRYING CAPACITY OF THE BOGIE.
3. THE TOTAL GRANITE BLOCKS WEIGHT SHOULD NOT BE MORE THAN CARRYING CAPACITY(PAY LOAD) OF THE WAGON.
4. THE RATIO BETWEEN THE WHEEL LOADS OF A SAME AXLE IN TRANSVERSE DIRECTION IS LIMITING TO MAX. 1.25:1.
5. IN ANY CASE, THE HEIGHT OF GRANITE BLOCK ON ANY LOADED WAGON SHOULD NOT INFRINGE MMD.
6. THE GRANITE BLOCKS SHOULD BE KEPT CENTRALLY COINCIDE WITH BOGIE CENTER LATERALLY .
7. THE LENGTH OF WOODEN LOGS 'L' SHOULD BE MORE THAN WIDTH OF THE GRANITE BLOCKS.
8. THE LOADING/UNLOADING OF GRANITE BLOCKS IN WAGON TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON.
9. THE MAX. PERMISSIBLE LATERAL MOVEMENT OF LOAD IS LIMITING TO 100 mm FROM CENTRE.
10. ALL DIMENSIONS ARE IN mm.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

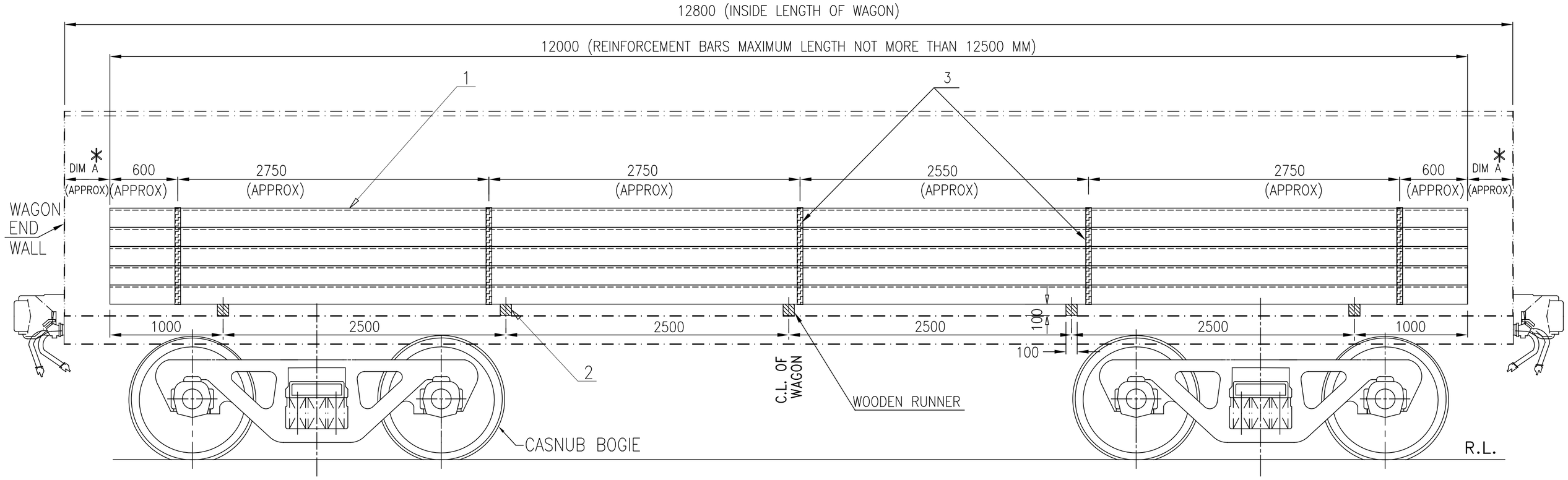
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SUPERSEDES		DATE
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	CHECKED	05/21
	DRAWN A.K.KUSHVAHA	05/21
	J.S.NO. WD-21039	05/21

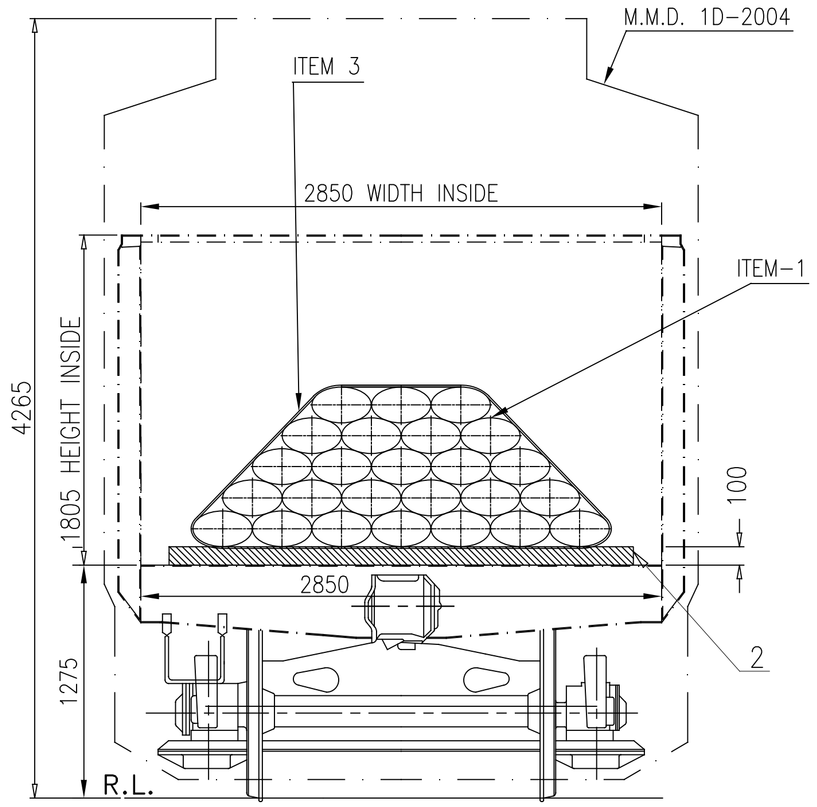
B.G. | R.D.S.O. [W] | GROUP

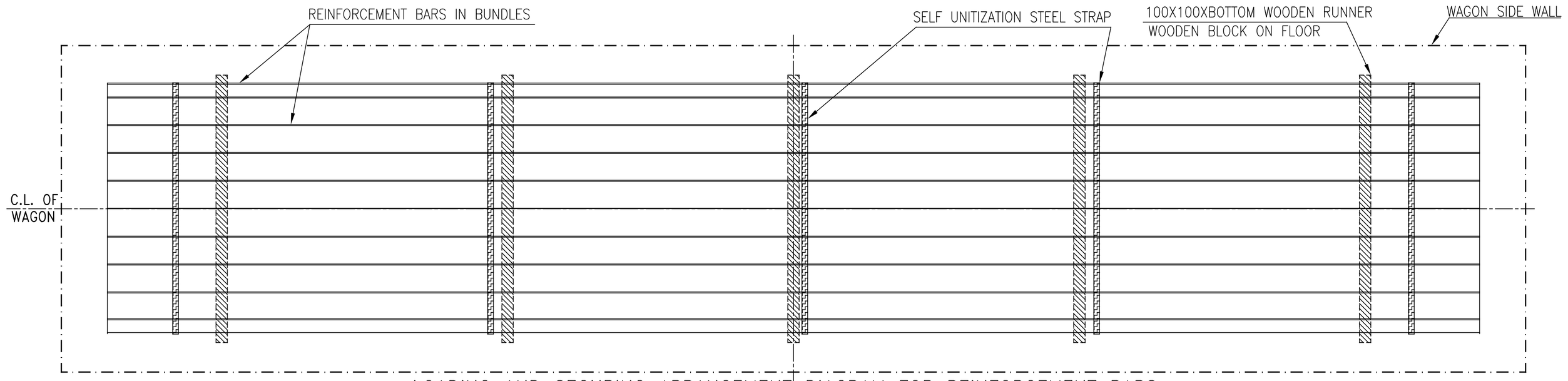
LOADING DIAGRAM OF GRANITE STONES IN BOXN/BOXNR/BOST/BOXNHL/BOXNS WAGONS & ITS VARIANTS (FOR 04 NO. GRANITE STONE BLOCKS)

WD-21039-S-04

A1

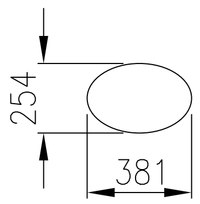




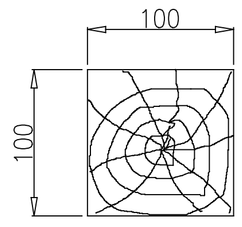


LOADING AND SECURING ARRANGEMENT DIAGRAM FOR REINFORCEMENT BARS

✳ DIM A = WAGON INSIDE LENGTH − RENFORCEMENT BARS LENGTH / 2



REINFORCEMENT BARS DIMENSION
(FOR REFERENCE)



LENGTH OF WOODEN RUNNER MUST BE MORE THAN WIDTH OF BOTTOM LAYER OF UNITIZE REINFORCEMENT BARS / 2

NOTE:−

1. REINFORCEMENT BARS SHOULD BE STACKED IN LAYERS(AS PER REQUIREMENT/ PAY LOAD) AND UNITIZE AS SHOWN IN LOADING DIAGRAM.
2. LOADING OF REINFORCEMENT BARS SHOULD BE UNIFORMLY DISTRIBUTED & SYMMETRICAL W.R.T. LONGITUDINAL AXIS AS WELL AS TRANSVERSE AXIS PASSING THROUGH CENTRE OF WAGON FLOOR TO AVOID UNEVEN LOADING.
3. IN CASE OF VARIATION IN LENGTH OF REINFORCEMENT BARS, SMALL LENGTH BARS BUNDLE SHOULD BE KEPT AT UPPER SIDE LAYER AT CENTRE OF WAGON.
4. LOADING OF REINFORCEMENT BARS BUNDLE SHOULD BE SUCH THAT:−
   4.1 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2.
   4.2 THE REINFORCEMENT BARS BUNDLE WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   4.3 MAXIMUM DIFFERENCE IN REINFORCEMENT BARS (UNITIZED) WEIGHT LOADED ON BOTH BOGIE CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   4.4 TOTAL WEIGHT OF LOADED COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
5. BEFORE LOADING REINFORCEMENT BARS BUNDLES IN THE WAGON, ENSURE THAT WOODEN RUNNERS ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING.
6. LENGTH OF WOODEN RUNNERS MUST BE MORE THAN WIDTH OF REINFORCEMENT BARS BOTTOM LAYER.
7. REINFORCEMENT BARS BUNDLE AFTER LOADING SHALL BE SELF UNITIZED BY 05 NOs. OF LASHING CHAIN/ STRAP AND TIGHTEN ADEQUATELY FOR SAFE TRANSPORTATION. THE END STRAP SHOULD NOT MORE THAN 600 MM AWAY FROM BARS EDGES & MAXIMUM DISTANCE BETWEEN INTERMEDIATE STRAPS IS 2750 MM.
8. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13246 TYPE 3.2 OR EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

EN 13246 TYPE 3.2

S. No.	PURPOSE	WIDTH (IN MM)	THICKNESS (IN MM)	PERCENTAGE ELONGATION MIN.	TENSILE ST. (N/MM^2)	PHYSICAL
1.	FOR BUNDLING & UNITISING	31.75	1.0	6	925	DEBURRED EDGE PAINTED & WAXED
2.	FOR SECURING WITH WAGON BODY	31.75	1.0	6	925	DEBURRED EDGE PAINTED BROWN & WAXED

OR

EN 13247: 2001

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.−EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3 TON)

9. FOR EN13247:2001, ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002−1.
10. INITIAL TENSION FOR STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSION METER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING .
11. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD−CS−01−LOAD SECURING CHECK SHEET (LATEST).
12. THE LOADING/UNLOADING OF REINFORCEMENT BARS/BUNDLES TO BE CARRIED OUT IN SUCH A WAY, THAT LOADING/UNLOADING DONE IN SAFE WAY AND IT WILL NOT DAMAGE THE WAGON..
13. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
14. THIS RDSO DRAWING IS AN INDUCTIVE DRAWING AS THE SIZE AND LENGTH OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.

ITEM	DESCRIPTION	NO.OFF	MTL/SPEC/DRG.	REMARKS
3	HIGH TENSILE STEEL STRAP (FOR SELF UNITIZATION)	05	EN 13246 TYPE 3.2 OR EN 13247:2001	
2	WOODEN RUNNER	05	WOOD	
1	REINFORCEMENT BARS	AS PER REQUIREMENT	STEEL	

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
1	--	WD-- 24036	DRAWING AND NOTE REVISED AND REDRAWN.	04/24	

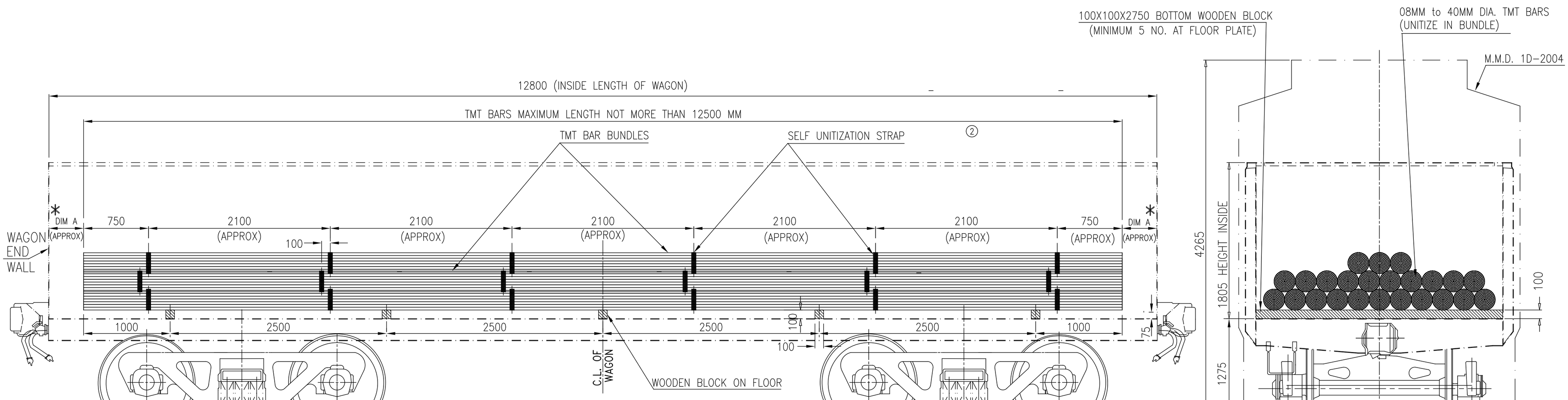
SUPERSEDED BY
SUPERSEDES
SCALE
PASSED Sd.A.K.ROY 11/15
CHECKED Sd.A.P.SINGH 10/15
DRAWN DEEPAK 10/15
COMPARED
J.S.NO. WD−15057 10/15

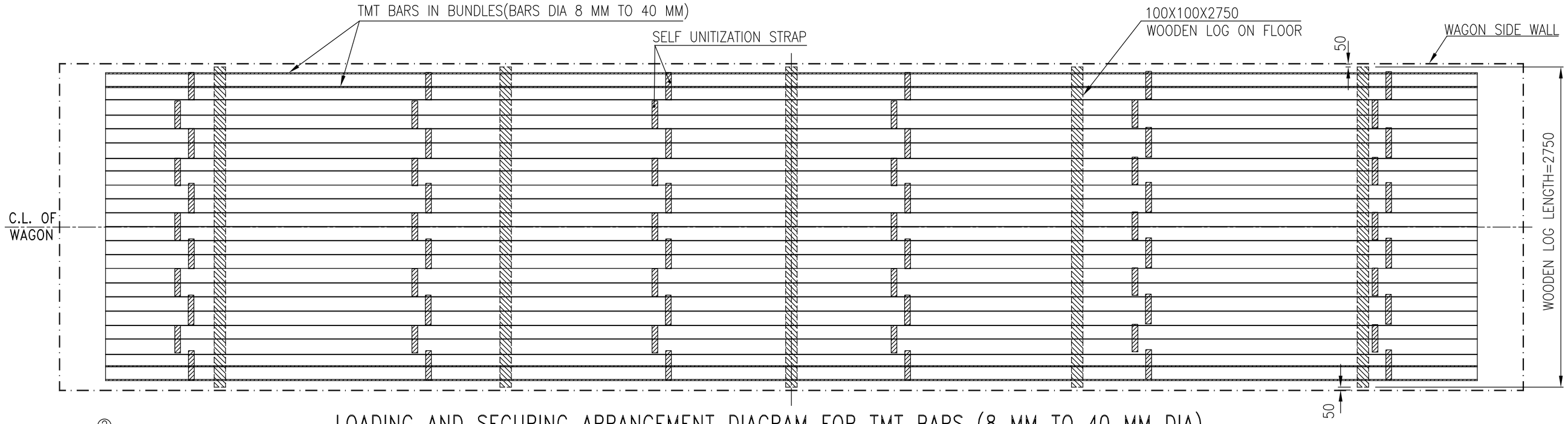
B.G. | R.D.S.O. [W] | GROUP

LOADING OF REINFORCEMENT BARS (12 mtrs.) ON BOST WAGON AND ITS VARIANTS

WD−15057−S−07

File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED(SW)RDSO





✳ DIM A = WAGON INSIDE LENGTH − TMT BAR LENGTH / 2

LOADING AND SECURING ARRANGEMENT DIAGRAM FOR TMT BARS (8 MM TO 40 MM DIA)

②

NOTE:−

1. TMT BARS HAVING DIAMETER OF 8MM TO 40MM UNITIZE IN BUNDLES, SHOULD BE STACKED IN 02 OR 03 LAYERS(AS PER REQUIREMENT) AS SHOWN IN LOADING DIAGRAM.
2. LOADING OF TMT BARS BUNDLES SHOULD BE UNIFORMLY DISTRIBUTED AND SYMMETRICAL W.R.T. LONGITUDINAL AXIS AS WELL AS TRANSVERSE AXIS PASSING THROUGH CENTRE OF WAGON FLOOR TO AVOID UNEVEN LOADING.
3. IN CASE OF VARIATION IN LENGTH OF TMT BARS, SMALL LENGTH BARS BUNDLE SHOULD BE KEPT AT UPPER SIDE LAYER AT CENTRE OF WAGON.
4. TMT BARS LOADED IN BUNDLE FORM & ANY BUNDLE WEIGHT NOT MORE THAN 10 TON. TMT BARS/ BUNDLES ARE LOADED ALONG THE LENGTH AND CENTRE OF WAGON AS SHOWN IN DRAWING.
5. STRAP USED FOR UNITIZE THE TMT BARS HAVE ADEQUATE STRENGTH FOR SAFE LOADING & UNLOADING OPERATION.
6. BEFORE LOADING TMT BARS BUNDLES IN THE WAGON, ENSURE THAT WOODEN RUNNER ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING.
7. LOADING OF TMT BARS BUNDLE SHOULD BE SUCH THAT:−
   - 7.1 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2.
   - 7.2 THE TMT BARS BUNDLE WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   - 7.3 MAXIMUM DIFFERENCE IN TMT BARS BUNDLE WEIGHT LOADED ON BOTH BOGIE CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   - 7.4 TOTAL WEIGHT OF LOADED COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
8. THE LOADING/UNLOADING OF TMT BARS BUNDLES TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON..
9. THE LOADING OF TMT BARS ON ''BOXN" AND ''BOXNHL" WAGONS CAN BE FOLLOWED IN SAME PATTERN BY CONSIDERING LENGTH OF TMT BARS/ WAGON & PAY LOAD.
10. THIS RDSO DRAWING IS AN INDUCTIVE DRAWING AS THE SIZE AND LENGTH OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
2	--	WD-24036	STRAP USED FOR UNITIZATION OF TMT BARS BUNDLE REMOVED. ACCORDINGLY DRAWING AND NOTE REVISED.	04/24	
1	--	WD-24029	BARS DIA & BUNDLE WT. MODIFIED TO 40 MM & 10 T RESPECTIVELY. STEEL STRAP SPEC. ADDED.	03/24	

SUPERSEDED BY			
SUPERSEDES			DATE
SCALE	PASSED	sd S.M.Tripathi	05/22
	CHECKED	sd A.K.Kushwaha	05/22
	DRAWN	SACHIN KUMAR	04/22
	J.S.NO.	WD-22038	04/22

B.G. | R.D.S.O. [W]

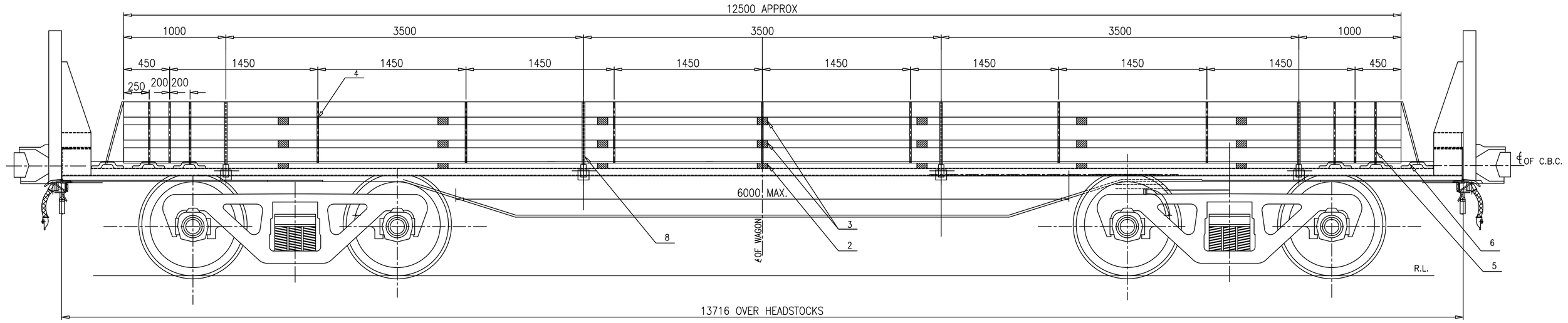
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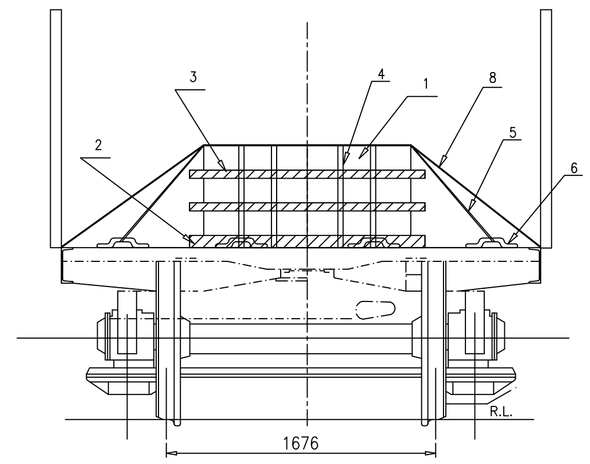
LOADING DIAGRAM FOR 08 mm to 40 mm TMT BARS IN BOST TYPE WAGON & ITS VARIANTS

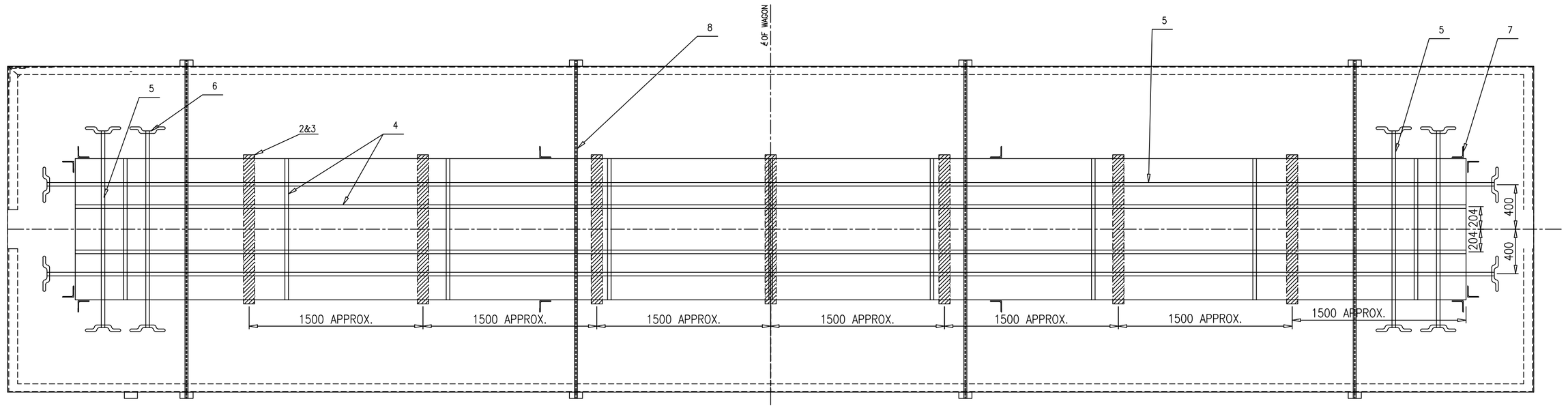
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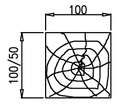
WD-22038-S-01

File No.RDSO-MW0GEN(EOFC)/8/2023-O/o PED/SW/RDSO









WOODEN LONGITUDINAL RUNNER
SECTIONAL VIEW

NOTE :–

1. LOADING SHOULD BE SYMMETRICAL W.R.T. LONGITUDINAL AXIS AS WELL AS TRANSVERSE AXIS PASSING THROUGH CENTRE OF WAGON FLOOR.
2. IN CASE STEEL SLABS ARE LOADED IN LAYERS SEPARATED WITH WOODEN RUNNERS AS PER CUSTOMER'S REQUIREMENT, WOODEN RUNNERS OF SIZE 100MMX50 MM.
3. ARE PROVIDED IN INTERMEDIATE LAYERS IN ADDITION TO THE BOTTOM WOODEN RUNNER OF SIZE 100MMX100 MM.
4. ~~HEIGHT TO WIDTH RATIO OF CONSIGNMENT SHOULD NOT EXCEED 1.5 IN ANY CASE.~~
4. LENGTH OF WOODEN RUNNER MUST BE MORE THAN WIDTH OF LAYERS.
5. STRAPPING SHOULD BE SYMMETRICAL TO EXTENT POSSIBLE MAINTAINING LIMITS AS INDICATED.
6. ALL SLABS ARE TO BE SECURED USING HEAVY DUTY STEEL STRAPS AS INDICATED
3. 7. THE END STRAPS SHOULD NOT MORE THAN 450 MM AWAY FROM EDGES AND MAXIMUM DISTANCE BETWEEN IMMEDIATE STRAPS IS 1450 mm.
8. NO. OF LAYERS SHOULD BE AS PER CONVENIENCE AND REQUIREMENT.
9. ALL SLABS ARE TO BE SECURED USING HEAVY DUTY STEEL STRAPS AS INDICATED
10. NO. OF WOODEN LONGITUDINAL RUNNER PER SLAB SHALL NOT BE LESS THAN AS INDICATED
11. LOADING OF SLABS SHOULD BE SUCH THAT :–
4. 11.1 THE LOAD SHOULD NOT EXCEED WAGON'S MAXIMUM PERMISSIBLE PAY LOAD.
3. 11.2 THE WEIGHT IMPOSED ON BOTH THE BOGIES SHOULD BE IDENTICAL (EVEN IN CASE OF NON STANDARDS STEEL SLABS).
12. STEEL STRAP SHALL BE CONFIRMING TO EN 13246 TYPE 3.2 OR EQUIVALENT.
13. ITEM NO. 7 I.E. STEEL ANGLES OF SUITABLE HEIGHT (APPROX. 300mm. TO 500mm.) ARE TO BE PROVIDED AS INDICATED
14. FOR BOST WAGON, SLAB LENGTH SHOULD BE RESTRICTED TO MAX. 12.5 MTRS.
15. ITEM NO. 5 (04 NOS) FOR STRAPING BETWEEN SOLEBAR TO SOLEBAR SHALL NOT BE USED IN BOST WAGON LOADING.
16. SIDE STANCHION (L.H. & R.H.) MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING AND IN DOWNWARD POSITION DURING LOADING/UNLOADING.
17. THE MINIMUM NO. OF EACH TYPE OF LONGITUDINAL/LATERAL STRAPS SHALL BE AS INDICATED IN THE DRAWING.
3. 5. 18. THE INITIAL TENSION IN THE STRAP SHALL BE IN THE RANGE OF 500kg TO 800kg.
19. WOOD OF ADEQUATE STRENGTH WHICH CAN SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED.
20. SECURING ARRANGEMENT SHALL BE CERTIFIED BY THE CONCERN RAILWAY.
21. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
5. 22. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.

① SPECIFICATION FOR STEEL STRAP

S. No.	PURPOSE	WIDTH (IN MM)	THICKNESS (IN MM)	PERCENTAGE ELONGATION MIN.	TENSILE ST. (N/MM^2)	PHYSICAL
1.	FOR BUNDLING & UNITISING	31.75	1.0	6	925	DEBURRED EDGE PAINTED & WAXED
2.	FOR SECURING WITH WAGON BODY	31.75	1.0	6	925	DEBURRED EDGE PAINTED BROWN & WAXED

ITEM	DESCRIPTION	NO.OFF	MTL&SPEC	REMARKS
8	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	AS PER REQUIREMENT	EN 13246 TYPE 3.2	ONLY FOR BRN WAGON VARIANTS
5. 7	ANGLE STOPPER	AS PER REQUIREMENT	WD-24036-S-01 PART-4	
6	ISOLATION HOOK	AS PER REQUIREMENT	WD-24036-S-01 PART-3	
5	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	AS PER REQUIREMENT	EN 13246 TYPE 3.2	3.
4	HIGH TENSILE STEEL STRAP (FOR BUNDLING & UNITIZATION)	AS PER REQUIREMENT	EN 13246 TYPE 3.2	3.
3	INTERMEDIATE WOODEN RUNNER	AS PER REQUIREMENT	WOOD	
2	WOODEN RUNNER	AS PER REQUIREMENT	WOOD	
1	STEEL SLABS	AS PER REQUIREMENT	STEEL	

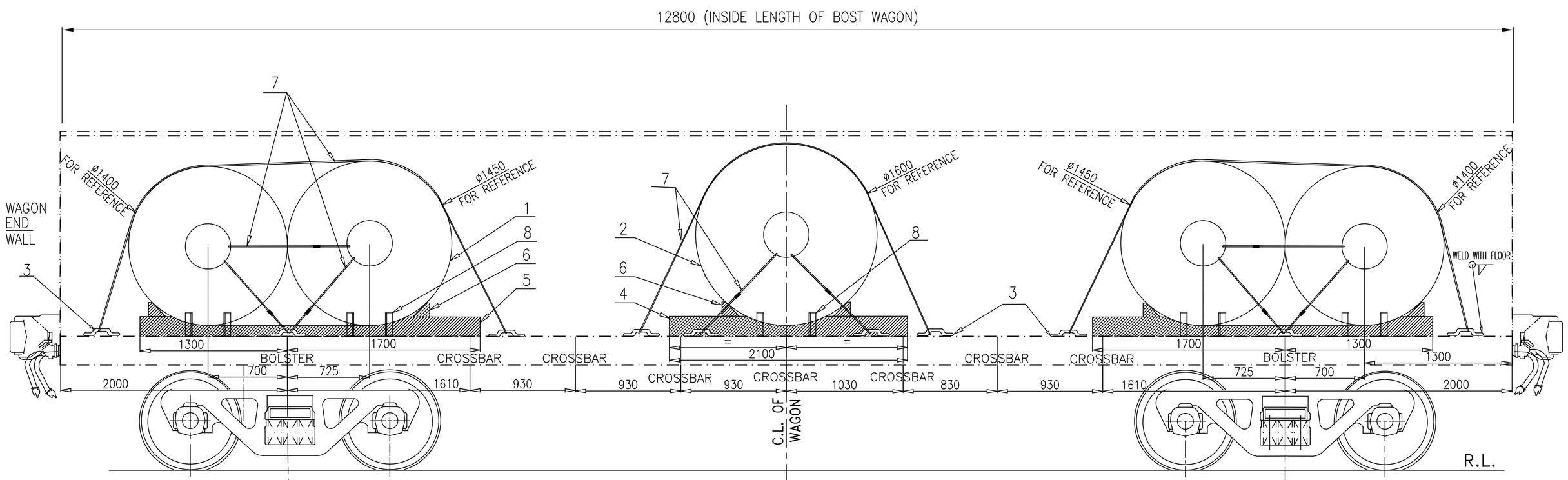
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
5	–	WD-24036	DRAWING REVISED	05/24	–
4	–	WD-24029	NOTE NO. 3 REMOVED	03/24	–
3	–	WD-23075	NOTE NO. 16 TO 21 ADDED.	08/23	–
2	–	WD-21112	NOTE NO. 16 ADDED	01/22	
1	–	WD-21119	NOTE NO. 14 & 15 ADDED AND BOST WAGON & ITS VARIANTS ADDED IN TITLE BLOCK.	12/21	

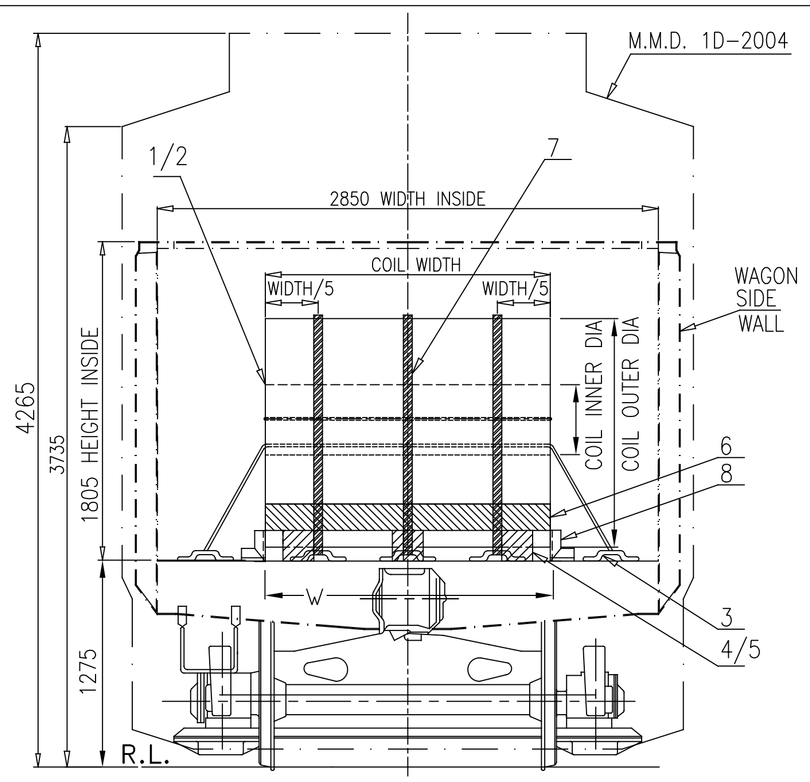
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	CHECKED	A.P.SINGH	10/21
	DRAWN	DINESH	10/21
	TRACED		
	COMPARED		
	J.S.NO.	WD-21095	10/21

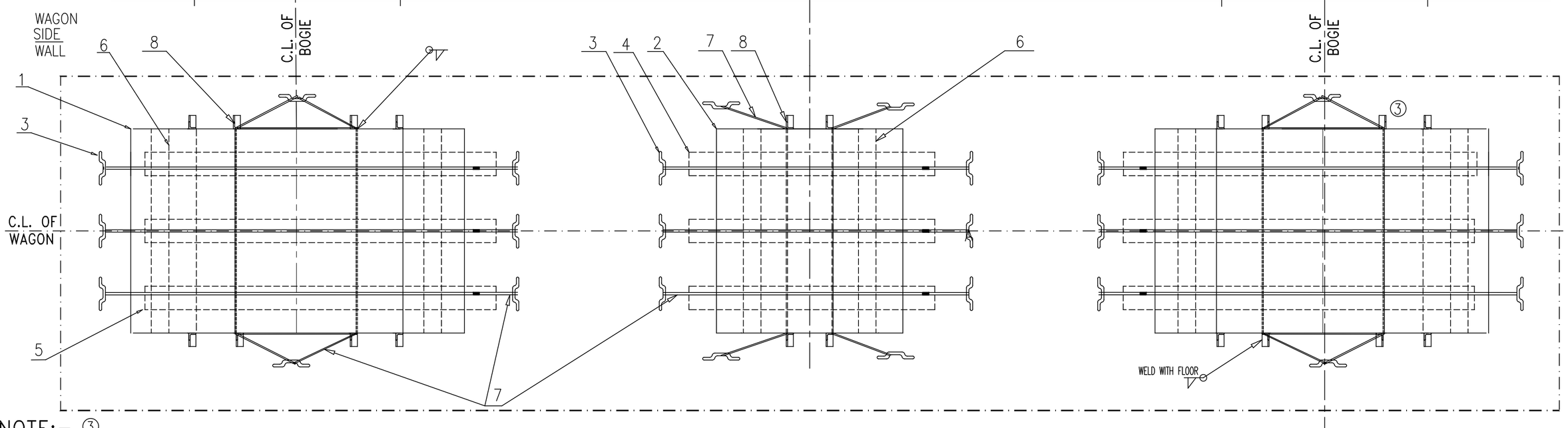
LOADING AND SECURING OF STEEL SLABS (9-13MTRS) ON BRN AND BOST WAGON & ITS VARIANTS ①

B.G. | R.D.S.O. [W] | GROUP | WD-21095-S-01

File No.RDSO-MWDGENL(EOFC)/8/2023-O/o PED/SWIRDSO





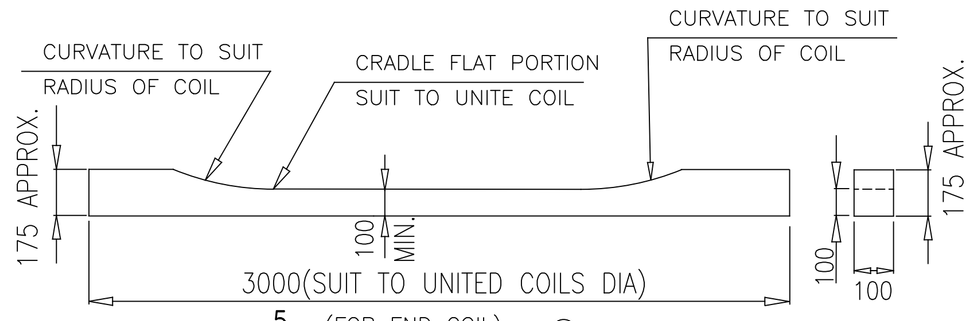


S.NO.	ONE COIL WEIGHT AT CENTRE OF WAGON	UNITED COILS WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 16 TON MAXIMUM	(TOTAL PAY LOAD–16 TON)/2 (SEE NOTE–3)

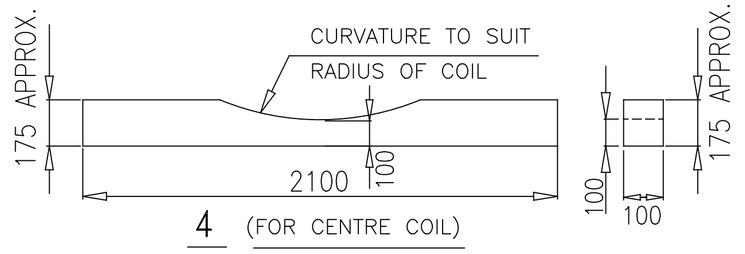
TABLE–A (LOADING SCHEME FOR 05 NO. STEEL COIL)

S.NO.	COIL WEIGHT AT CENTRE OF WAGON	UNITED COILS WEIGHT AT EACH BOGIE CENTRE
1.	NIL (NO COIL AT CENTRE)	TOTAL PAY LOAD/2 (SEE NOTE–3)

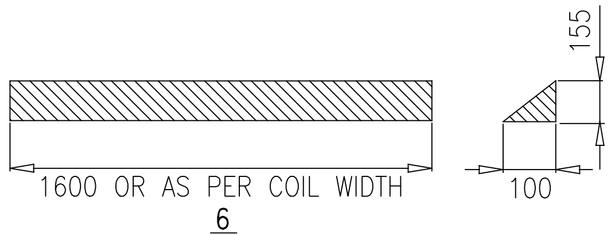
TABLE–B (LOADING SCHEME FOR 04 NO. STEEL COIL)



5 (FOR END COIL) ③



4 (FOR CENTRE COIL)



6

NOTE:– ③

1. ALL UNITIZE AND INDIVIDUAL COIL ARE TO BE LASHED BY USING HEAVY DUTY STRAPS AS PER SECURING/ LASHING PATTERN SHOWN IN THIS DRAWING.
2. THE COILS LOADING ALONG THE WAGON WIDTH, SHOULD BE SYMMETRICALLY ABOUT THE LONGITUDINAL CENTRE LINE AS WELL AS TRANSVERSE AXIS OF THE WAGON.
3. TWO COIL LOADING COMPOSITION DEPENDING UPON THE COIL WEIGHT, CAN BE USED AS PER TABLE A AND B :–
   3.1 IF FIVE COIL LOADED AS PER TABLE–A, 02 NO. UNITE COILS AT BOTH SIDE ON EACH BOGIE/ BOLSTER CENTRE AND 01 COIL AT MIDDLE OF WAGON, THEN MAXIMUM COIL WEIGHT AT CENTER SHOULD NOT EXCEED 16 TON IN ANY CONDITION.
   3.2 IF FOUR COIL LOADED AS PER TABLE–B, 02 NO. UNITE COILS AT EACH BOGIE CENTRE AND NO COIL LOADING DONE ON AT MIDDLE OF WAGON.
4. LOADING OF COILS SHOULD BE SUCH THAT :–
   4.1 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   4.2 THE COILS WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   4.3 MAXIMUM DIFFERENCE IN COILS WEIGHT LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   4.4 TOTAL WEIGHT OF LOADED COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
5. BEFORE LOADING, ENSURE THAT WOODEN CRADLES ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT, SHAL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY. TRIANGULAR WOODEN WEDGE USED ALONG THE WIDTH OF COILS.
6. AFTER PLACING THE UNITED COIL ON WOODEN CRADLE, FIRST USE ONE LASHING CHAIN/ STEEL STRAP BETWEEN EYE OF BOTH COILS TO TIGHTENED WITH EACH OTHER. FOR UNITIZED COIL, WOODEN CRADLE(SHORT) ITEM NO.–4 CAN ALSO BE USED AS ALTERNATIVE IN PLACE OF WOODEN CRADLE(LONG) ITEM NO. 5 AT EACH COIL.
7. AFTER PLACING ON WOODEN CRADLE, WOODEN WEDGE PLACED AND FIXED ON BOTH SIDE OF UNITED COILS/ COIL ON WOODEN CRADLE. THEN USE THREE STRAPS OVER EACH UNITED COILS/ COIL FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF EACH COIL SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
8. AFTER TIGHTENING BY THREE STRAP, UNITED COILS/COIL SHALL BE TIGHTENED ADEQUATELY BY 2 NOs. LASHING CHAIN/STEEL STRAP WITH ISOLATION HOOK AS PER POSITION.
9. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.–EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5 TON)

10. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1.
11. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSOMETER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT OF STEEL STRAP.
12. OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
13. THE ISOLATION HOOK (ITEM NO.3) SHOULD BE WELD WITH WAGON FLOOR TO ACCOMMODATE COIL DIA/ WIDTH AS SHOWN IN DRAWING.
14. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD–CS–01–LOAD SECURING CHECK SHEET (LATEST).
15. THIS RDSO DRAWING IS AN INDUCTIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
16. THE LOADING/UNLOADING OF COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.

ITEM	DESCRIPTION	NO. OF PCS PER COIL	MTL&SPEC	REMARKS
③ 8.	ANGLE STOPPER	4 AT MIDDLE 8 AT END	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–4
7.	LASHING CHAIN OR HEAVY DUTY STRAP	5 AT MIDDLE 6 AT END	STEEL	
6.	WOODEN WEDGE	2	WOOD	SEE NOTE NO.–7
5.	WOODEN CRADLE(LONG)	3	WOOD	
4.	WOODEN CRADLE(SHORT)	3	WOOD	
③ 3.	ISOLATION HOOK	10 AT MIDDLE 8 AT BOGIE CENTRE	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–3
2.	STEEL COIL AT CENTRE (01 NO./ WAGON)	--	STEEL	MAXIMUM COIL WEIGHT=16T SEE TABLE–A
1.	STEEL COIL AT END (02 NO./ BOGIE)	--	STEEL	SEE TABLE–A & B

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
③	–	WD–24036	ITEM NO. 3 & 8 REFERENCE DRG. NO. ADDED IN DESCRIPTION TABLE. ITEM–4,5 & 6 DIMENSION & NOTE REVISED.	04/24	–
②	–	WD–24022	BOXN WAGON VARIANTS REMOVED FROM TITLE BLOCK	02/24	–
①	–	WD–23075	DRAWING REVISED AND REDRAWN	08/23	–

SUPERSEDED BY
SUPERSEDES DATE

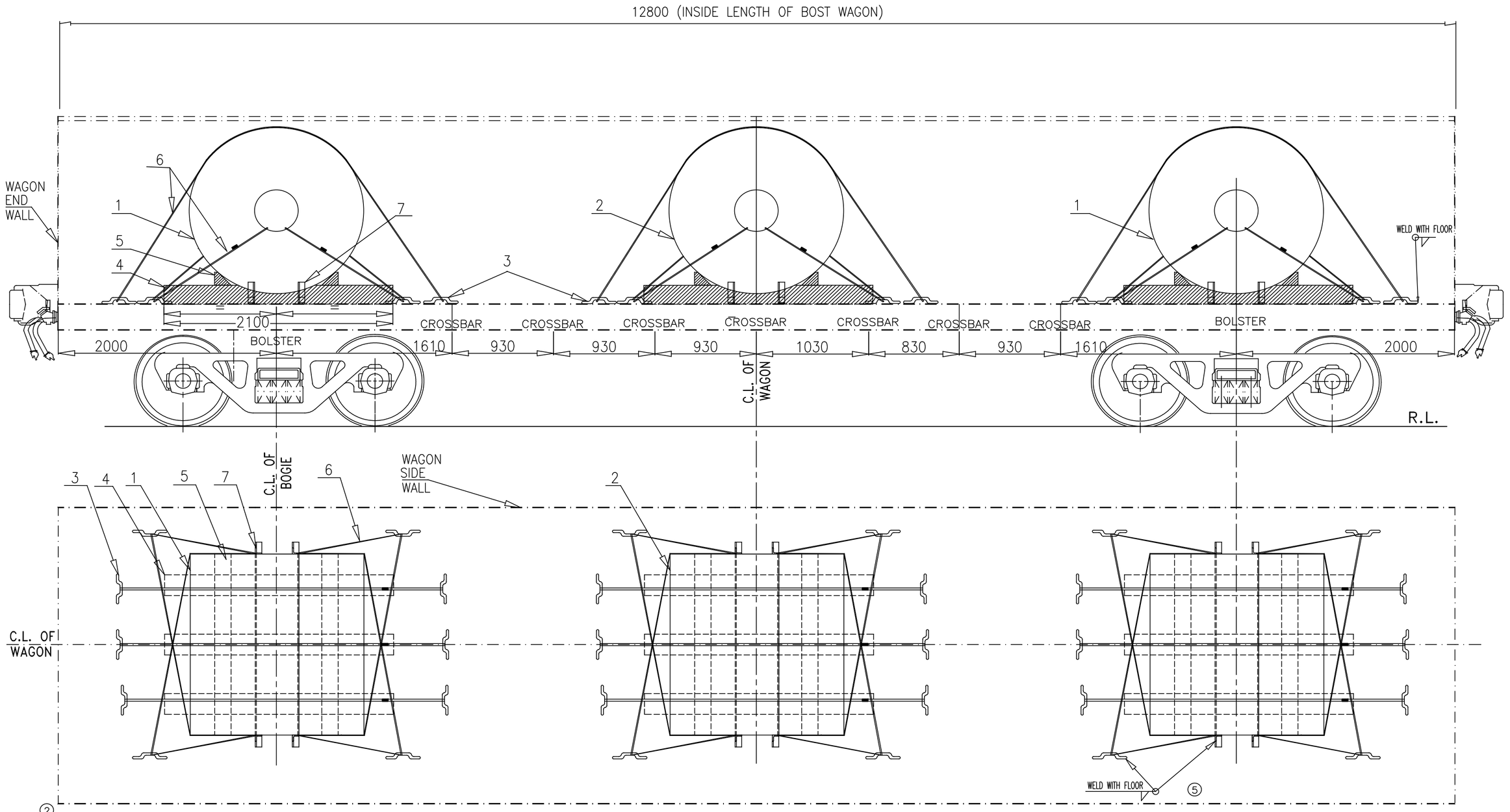
SCALE			
	PASSED	Sd–A. K. RAI	11/15
	CHECKED	Sd– A. P. SINGH	10/15
	DRAWN	Sd– D. KUMAR	10/15
	J.S.NO.	WD–15057	10/15

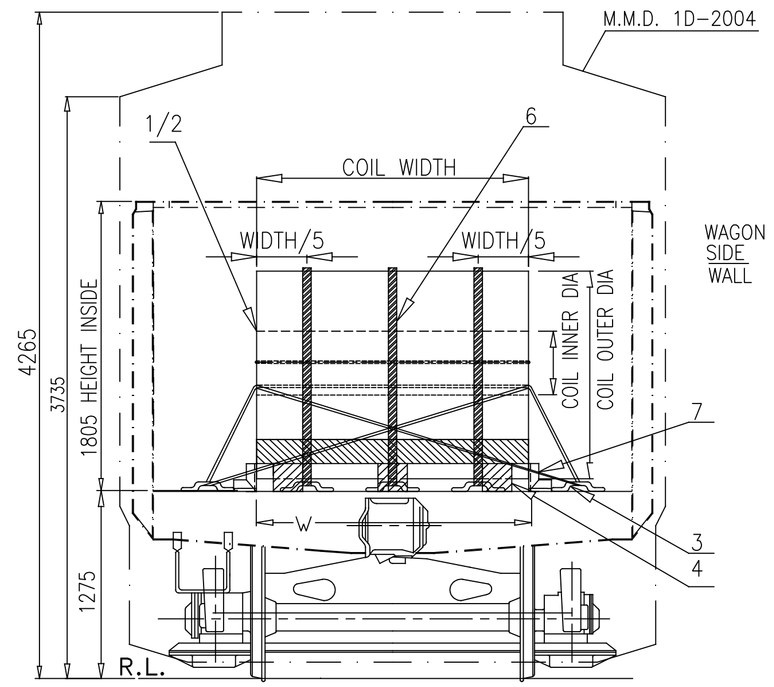
B.G. | R.D.S.O. [W]

② LOADING OF STEEL COILS ON BOST WAGON & ITS VARIANTS

GROUP | WD–15057–S–08

File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED/SW/RDSO





S.NO.	COIL WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 16 TON MAXIMUM	(TOTAL PAY LOAD–16 TON)/2

TABLE–A (LOADING SCHEME FOR 03 NO. STEEL COIL)

S.NO.	COIL WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	NO COIL LOADED AT CENTRE	TOTAL PAY LOAD/2

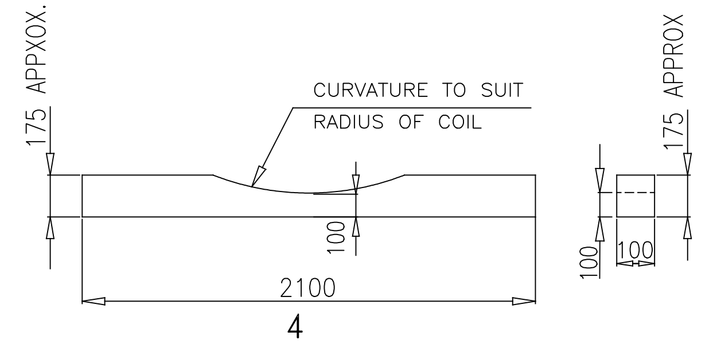
TABLE–B (LOADING SCHEME FOR 02 NO. STEEL COIL)

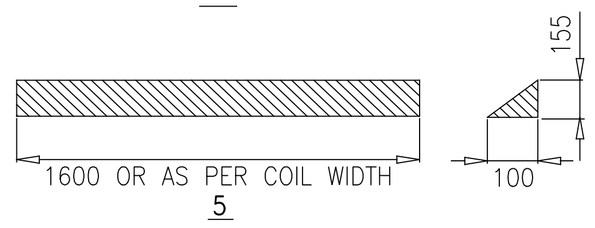
② NOTE:–

1. ALL INDIVIDUAL COILS ARE TO BE LASHED BY USING HEAVY DUTY STRAPS AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. ③ THE COIL LOADING ALONG THE WAGON WIDTH, SHOULD BE SYMMETRICALLY ABOUT THE LONGITUDINAL CENTRE LINE AS WELL AS TRANSVERSE AXIS OF THE WAGON.
3. TWO COIL LOADING COMPOSITION DEPENDING UPON THE COIL WEIGHT, CAN BE USED AS PER TABLE A AND B :–
   - 3.1 IF THREE COIL LOADED AS PER TABLE–A, 01 NO. COIL AT BOTH SIDE ON EACH BOGIE/ BOLSTER CENTRE AND 01 COIL AT MIDDLE OF WAGON, THEN MAXIMUM COIL WEIGHT AT CENTER SHOULD NOT EXCEED 16 TON IN ANY CONDITION.
   - 3.2 IF TWO COIL LOADED AS PER TABLE–B, 01 NO. COIL AT EACH BOGIE CENTRE AND NO COIL LOADING DONE ON AT MIDDLE OF WAGON.
4. LOADING OF COILS SHOULD BE SUCH THAT :–
   - 4.1 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   - 4.2 THE COILS WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   - 4.3 MAXIMUM DIFFERENCE IN COILS WEIGHT LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   - 4.4 TOTAL WEIGHT OF LOADED COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
5. BEFORE LOADING, ENSURE THAT WOODEN CRADLES ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT SHAL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY. TRIANGULAR WOODEN WEDGE USED ACROSS THE WIDTH OF COILS.
6. AFTER PLACING THE COIL ON WOODEN CRADLE, WOODEN WEDGE PLACED AND FIXED ON BOTH SIDE OF COIL ON WOODEN CRADLE. THEN USE THREE STRAPS ON EACH COIL FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF EACH COIL SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
7. AFTER TIGHTENING BY THREE STRAP, EACH COILS SHALL BE TIGHTENED ADEQUATELY BY 04 NOs. OF LASHING CHAIN/ MENTIONED STEEL STRAP WITH ISOLATION HOOK.
8. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.–EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5 TON)

9. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1.
10. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSION METER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT OF STEEL STRAP. ⑤
11. OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
12. THE ISOLATION HOOK (ITEM NO.3) SHOULD BE WELD WITH WAGON FLOOR TO ACCOMMODATE COIL DIA/ WIDTH AS SHOWN IN DRAWING.
13. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD–CS–01–LOAD SECURING CHECK SHEET (LATEST).
14. THIS RDSO DRAWING IS AN INDUCTIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
15. THE LOADING/UNLOADING OF COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
16. IF COIL LOADING IS DONE WITH METALLIC SADDLE THEN LOADING SHALL BE DONE AS PER LOADING DRAWING NO. WD–23115–S–01. ③





ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
⑤	–	WD–24036	ITEM NO. 3 & 7 DRG. DELETED AND REFERENCE DRG. NO. ADDED IN DESCRIPTION TABLE. ITEM NO. 4& 5 DIMENSION AND NOTE NO.–10 MODIFIED.	04/24	–
④	–	WD–24022	BOXN WAGON VARIANTS REMOVED FROM TITLE BLOCK	02/24	–
③	–	WD–23115	COIL AXIS ALONG THE WIDTH OF WAGON WITH WOODEN WEDGE & RUNNER DETAILS ACCORDINGLY DRG. REVISED	11/23	–
②	–	WD–23075	CROSSBAR,BOLSTER & STOPPER LOCATION SHOWN. NOTE REVISED.	08/23	–
①	–	WD–23005	TABLE–A REVISED WITH BOST & BOSTHSM1 MAXIMUM CARRYING CAPACITY CHANGED FROM 63.78 TO 66.10 T.	01/23	–

ITEM	DESCRIPTION	NO. OF PCS PER COIL	MTL&SPEC	REMARKS
⑤ 7.	ANGLE STOPPER	4	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–4
6.	LASHING CHAIN OR HEAVY DUTY STRAP	7	EN13247:2001	
5.	WOODEN WEDGE	2	WOOD	
4.	WOODEN CRADLE	3	WOOD	
⑤ 3.	ISOLATION HOOK	10	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–3
2.	STEEL COIL AT CENTER (01 NO./ WAGON)	--	STEEL	MAXIMUM COIL WEIGHT=16T (AS PER TABLE–A)
1.	STEEL COIL AT EACH BOGIE CENTER (01 NO./ BOGIE CENTER)	--	STEEL	(SEE TABLE–A & B)

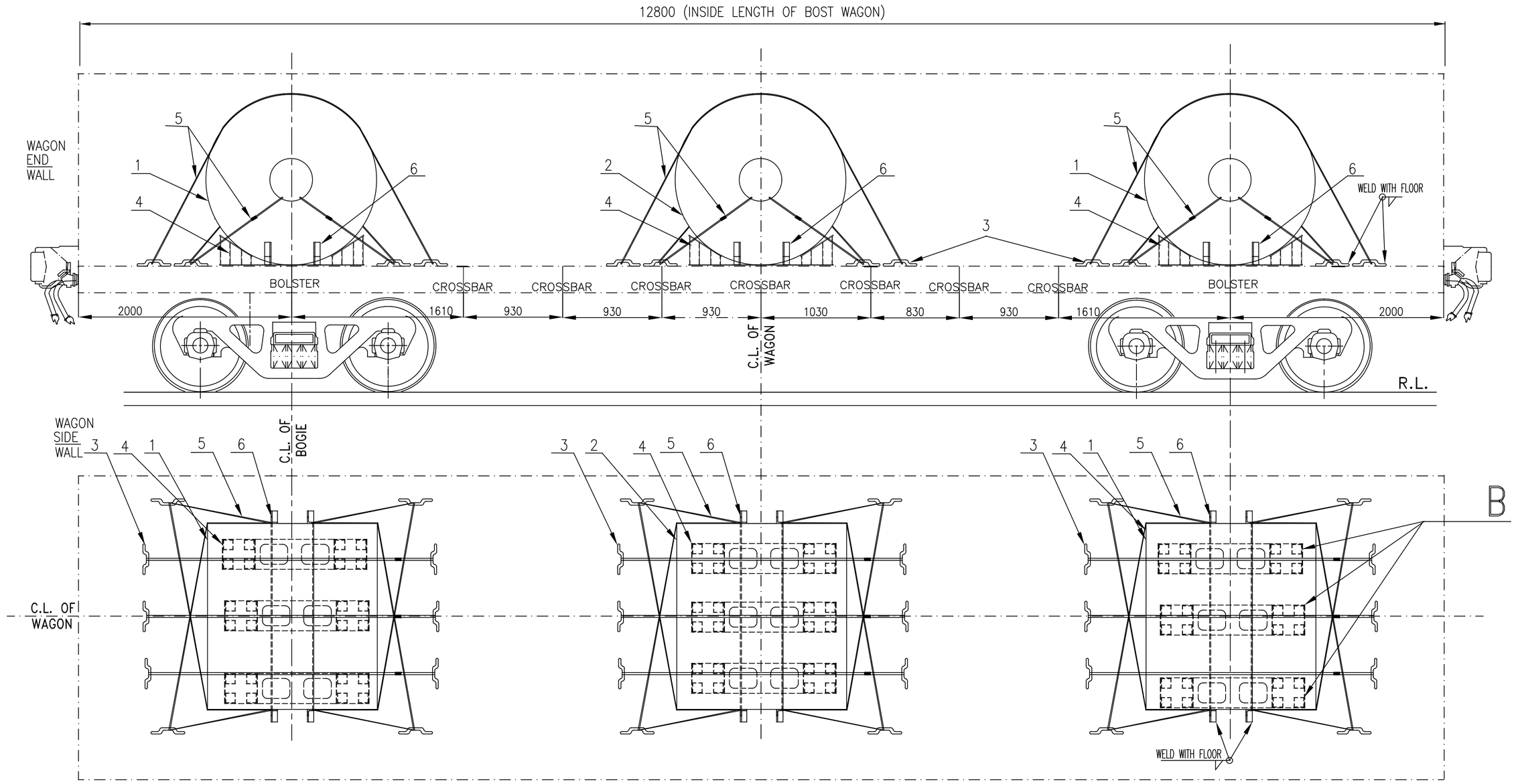
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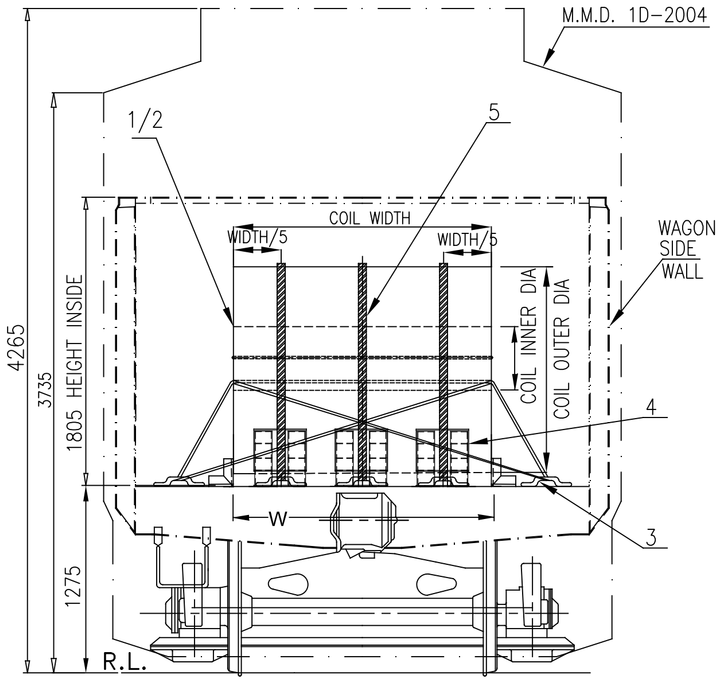
SCALE			
	PASSED	Sd–S.M.Tripathi	05/22
	CHECKED	A.K.KUSHVAHA	05/22
	DRAWN	SACHIN KUMAR	04/22
	J.S.NO.	WD–22038	03/22

LOADING DIAGRAM FOR STEEL COIL ON BOST WAGON AND ITS VARIANTS WITH WOODEN CRADLE. ③ ④

B.G.	R.D.S.O. [W]	GROUP	WD–22038–S–03

File No.RDSO-MWGENL(EOFC)/8/2023-O/o PED/SW/RDSO





S.NO.	COIL WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 16 TON MAXIMUM	(TOTAL PAY LOAD-16 TON)/2

TABLE-A (LOADING SCHEME FOR 03 NO. STEEL COIL)

S.NO.	COIL WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	NO COIL LOADED AT CENTRE	TOTAL PAY LOAD/2

TABLE-B (LOADING SCHEME FOR 02 NO. STEEL COIL)

NOTE:-

1. ALL INDIVIDUAL COILS ARE TO BE LASHED BY USING HEAVY DUTY STRAPS AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. THE COIL LOADING ALONG THE WAGON WIDTH, SHOULD BE SYMMETRICALLY ABOUT THE LONGITUDINAL CENTRE LINE AS WELL AS TRANSVERSE AXIS OF THE WAGON.
3. TWO COIL LOADING COMPOSITION DEPENDING UPON THE COIL WEIGHT, CAN BE USED AS PER TABLE A AND B :-
   3.1 IF THREE COIL LOADED AS PER TABLE-A, 01 NO. COIL AT BOTH SIDE ON EACH BOGIE/ BOLSTER CENTRE AND 01 COIL AT MIDDLE OF WAGON, THEN MAXIMUM COIL WEIGHT AT CENTER SHOULD NOT EXCEED 16 TON IN ANY CONDITION.
   3.2 IF TWO COIL LOADED AS PER TABLE-B, 01 NO. COIL AT EACH BOGIE CENTRE AND NO COIL LOADING DONE ON AT MIDDLE OF WAGON.
4. LOADING OF COILS SHOULD BE SUCH THAT :-
   4.1 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   4.2 THE COILS WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   4.3 MAXIMUM DIFFERENCE IN COILS WEIGHT LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   4.4 TOTAL WEIGHT OF LOADED COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
5. BEFORE LOADING, ENSURE THAT NO. OF METAL SADDLE PER COIL SHALL NOT BE LESS THAN THREE AS INDICATED BY 'B'. SELECT METAL SADDLE ON THE BASIS OF COIL DIAMETER RANGE (AS DETAILED IN ITEM NO. 4 DRAWING), WHICH CAN ACCOMMODATE COIL DIA TO SUSTAIN THE LOAD.
6. AFTER PLACING THE COIL ON METAL SADDLE, THEN USE THREE STRAPS ON EACH COIL FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF EACH COIL SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
7. AFTER TIGHTENING BY THREE STRAP, EACH COILS SHALL BE TIGHTENED ADEQUATELY BY 04 NOs. OF LASHING CHAIN/ MENTIONED STEEL STRAP WITH ISOLATION HOOK.
8. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.-EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5 TON)

9. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002-1.
10. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSION METER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT OF STEEL STRAP.
11. OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
12. THE ISOLATION HOOK (ITEM NO.3) SHOULD BE WELD WITH WAGON FLOOR TO ACCOMODATE COIL DIA/ WIDTH AS SHOWN IN DRAWING.
13. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD-CS-01-LOAD SECURING CHECK SHEET (LATEST).
14. THIS RDSO DRAWING IS AN INDUCTIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
15. THE LOADING/UNLOADING OF COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
16. IF COIL LOADING IS DONE WITH WOODEN CRADLE THEN LOADING SHALL BE DONE AS PER LOADING DRAWING NO. WD-22038-S-03 .

ITEM	DESCRIPTION	NO. OF PCS PER COIL	MTL&SPEC	REMARKS
② 6	ANGLE STOPPER	4	---	AS PER DRAWING NO. WD-24036-S-01,ITEM NO.-4
5	LASING CHAIN OR HEAVY DUTY STRAP	7	EN13247:2001	
② 4	METAL SADDLE	3	---	AS PER DRAWING NO. WD-24036-S-01,ITEM NO.-2
② 3	ISOLATION HOOK	10	---	AS PER DRAWING NO. WD-24036-S-01,ITEM NO.-3
2	STEEL COIL AT CENTER (01 NO./ WAGON)	--	STEEL	MAXIMUM COIL WEIGHT=16T (AS PER TABLE-A)
1	STEEL COIL AT EACH BOGIE CENTER (01 NO./ BOGIE CENTER)	--	STEEL	(SEE TABLE-A & B)

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
②	-	WD-24036	ITEM NO. 3, 4 & 6 DRG. DELETED AND REFERENCE DRG. NO. ADDED IN DESCRIPTION TABLE. NOTE NO.-10 MODIFIED.	04/24	
①	-	WD-24024	BOXN WAGON VARIANTS REMOVE FROM TITLE BLOCK	02/24	

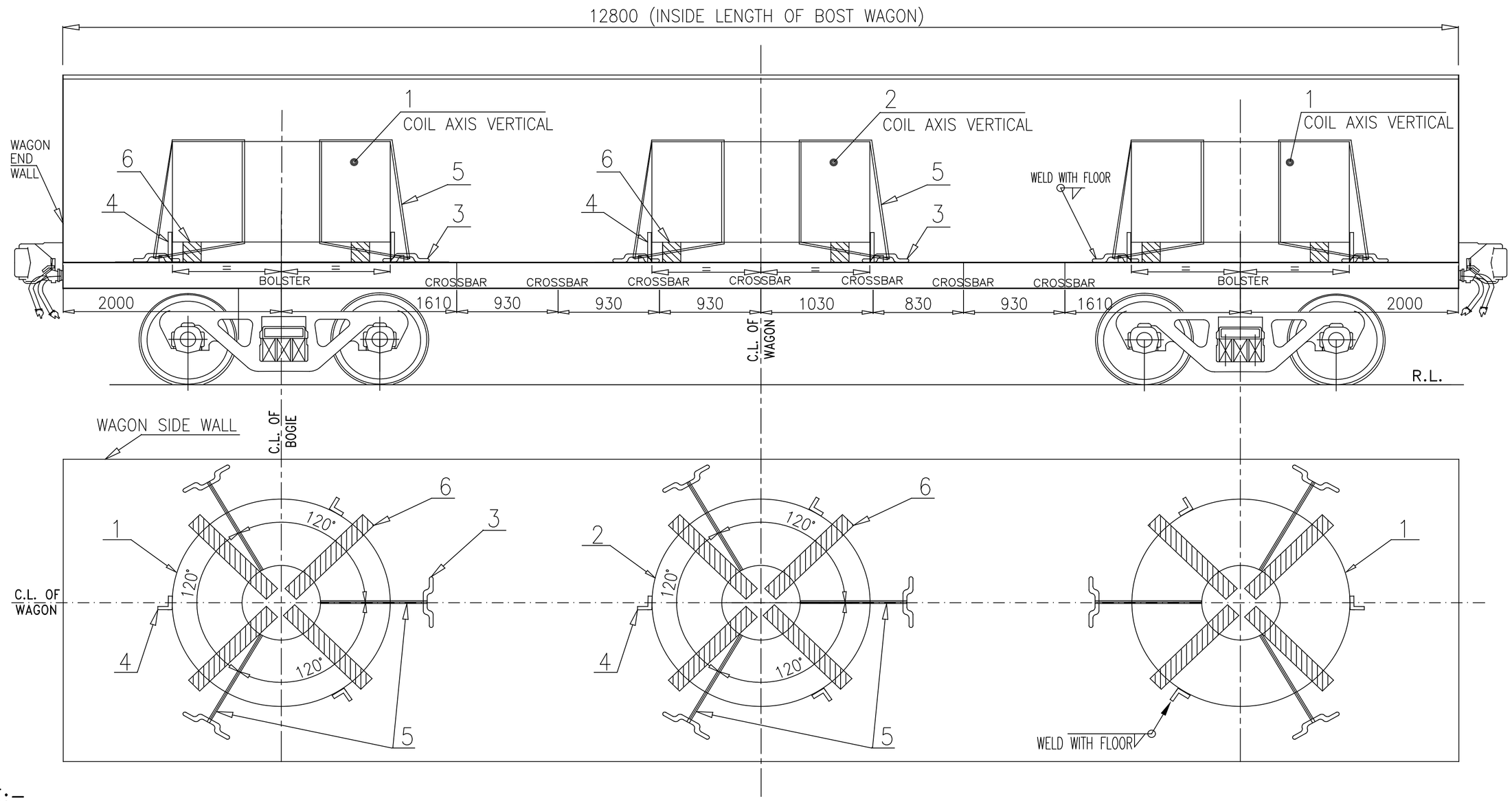
SUPERSEDED BY
SUPERSEDES — DATE

SCALE			
	PASSED	Sd. S.M.TRIPATHI	11/23
	CHECKED	Sd. ANIL KUSHWAHA	11/23
	DRAWN	A.K.SINGH	11/23
	J.S.NO.	WD-23115	11/23

LOADING DIAGRAM FOR STEEL COIL ON BOST WAGON VARIANTS WITH METAL SADDLE.

B.G. | R.D.S.O. [W] | GROUP | WD-23115-S-01

File No.RDSO-MWOGENL(EOF-O)/8/2023-O/o PED/SWRDSO

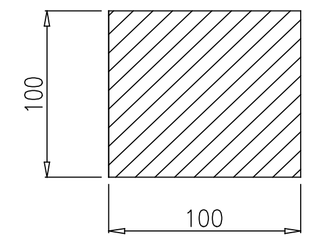


S.NO.	COIL WEIGHT AT WAGON CENTRE	COIL WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 22 TON MAXIMUM	(TOTAL PAY LOAD–22 TON)/2

TABLE–A (LOADING SCHEME FOR STEEL COIL AT BOGIE AND WAGON CENTER)

S.NO.	COIL WEIGHT AT WAGON CENTRE	COIL WEIGHT AT EACH BOGIE CENTRE
1.	NO STEEL COIL LOADED AT CENTRE	TOTAL PAY LOAD/2

TABLE–B (LOADING SCHEME FOR STEEL COILS AT BOGIE CENTER ONLY)



(LENGTH AS PER COIL DIA)
6

NOTE:–

1. INDIVIDUAL COIL ARE TO BE LASHED BY USING HEAVY DUTY STRAPS AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. THE STEEL COILS LOADED VERTICALLY (EYE TO SKY) SHOULD BE SYMMETRICAL ALONG LONGITUDINAL AND TRANSVERSE AXIS OF WAGON.
3. **LOADING PARAMETER OF STEEL COILS SHOULD BE SUCH THAT:–**
   - 3.1 THE VERTICAL LOADED STEEL COILS LOADING COMPOSITION DEPENDING UPON WEIGHT, AS PER TABLE A & B.
   - 3.1(a) IF LOADING IS DONE AS PER TABLE–A, STEEL COIL LOADED AT BOTH SIDE ON EACH BOGIE/ BOLSTER CENTRE AND AT MIDDLE OF WAGON, THEN MAXIMUM WEIGHT OF STEEL COIL AT WAGON CENTER SHOULD NOT EXCEED BY 22 TON IN ANY CONDITION.
   - 3.1(b) AS PER TABLE–B, STEEL COIL ARE LOADED AT EACH BOGIE/ BOLSTER CENTRE ONLY AND NO STEEL COIL IS LOADED AT MIDDLE OF WAGON.
   - 3.2 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   - 3.3 THE COIL WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   - 3.4 MAXIMUM WEIGHT DIFFERENCE IN COIL LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   - 3.5 TOTAL WEIGHT OF LOADED COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
   - 3.6 RESTRICTION: COIL WIDTH W<=1.5D .
4. **PROCEDURE OF LOADING STEEL COIL ON WAGON ARE:–**
   - 4.1 BEFORE LOADING, ENSURE THAT WOODEN RUNNER ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY.
   - 4.2 AFTER PLACING THE COIL ON WOODEN RUNNER, EITHER 03 NO's STOPPERS OR 03 NO's STRAPS (TIGHTENED WITH ISOLATION HOOK) SHOULD BE APPLIED FOR SECURING OF EACH COIL AS SHOWN IN DRAWING, FOR SAFE OPERATION.
   - 4.3 DEPENDING UPON THE EXPERIENCE/ REPORT OF UNUSUAL INCIDENCE WITH THE ABOVE COIL SECURING ARRANGEMENT, CONCERNED RAILWAY/ CONSIGNEE MAY TAKE DECISION FOR APPLICATION OF STOPPER AND STRAPS (BOTH) TO SECURE THE LOAD PROPERLY TO AVOID ANY UNUSUAL INCIDENCE.
   - 4.4 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
5. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.–EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3 TON)

6. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1.
7. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSOMETER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT OF STEEL STRAP.
8. THE ISOLATION HOOK (ITEM NO.3) SHOULD BE WELD WITH WAGON FLOOR TO ACCOMMODATE COIL DIA/ WIDTH AS SHOWN IN DRAWING.
9. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD–CS–01–LOAD SECURING CHECK SHEET (LATEST).
10. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE DIA AND WIDTH OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
11. THE LOADING/UNLOADING OF STEEL COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
12. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.
13. STEEL COIL SHOULD BE LOADED SLOWLY/ GRADUALLY ON THE FLOOR OF WAGON . IMPACT LOADING NOT TO BE CARRIED OUT IN ANY CIRCUMSTANCE.

ITEM	DESCRIPTION	No. OF PCS PER COIL	MTL&SPEC	REMARKS
6.	WOODEN RUNNER (100X100)	4	WOOD	
5.	LASHING CHAIN OR HEAVY DUTY STRAP	3	EN13247:2001	
4.	ANGLE STOPPER	3	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–4
3.	ISOLATION HOOK	3	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–3
2.	STEEL COIL (01 NO./ WAGON CENTER)	--	STEEL	(AS PER TABLE–A)
1.	STEEL COIL (01 NO./ BOLSTER CENTER)	--	STEEL	(AS PER TABLE–A & B)

① refers to items 3, 4, 5, 6.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
1	--	WD–24036	ITEM NO. 3 & 4 DRG. DELETED AND REFERENCE DRG. NO. ADDED IN DESCRIPTION TABLE. NOTE NO.–4.2,4.3 & 7 MODIFIED. NO. OFF STRAPS, ISOLATION HOOK & ANGLE STOPPER REDUCED FROM 6, 6 & 4 TO 3, 3 & 3 RESPECTIVELY.	04/24	

SUPERSEDED BY
SUPERSEDES DATE

SCALE			
PASSED	SD–R.SINGH	03/24	
CHECKED	SD–A.K.KUSHWAHA	03/24	
DRAWN	ASHUTOSH SINGH	03/24	
J.S.NO.	WD–24027	03/24	

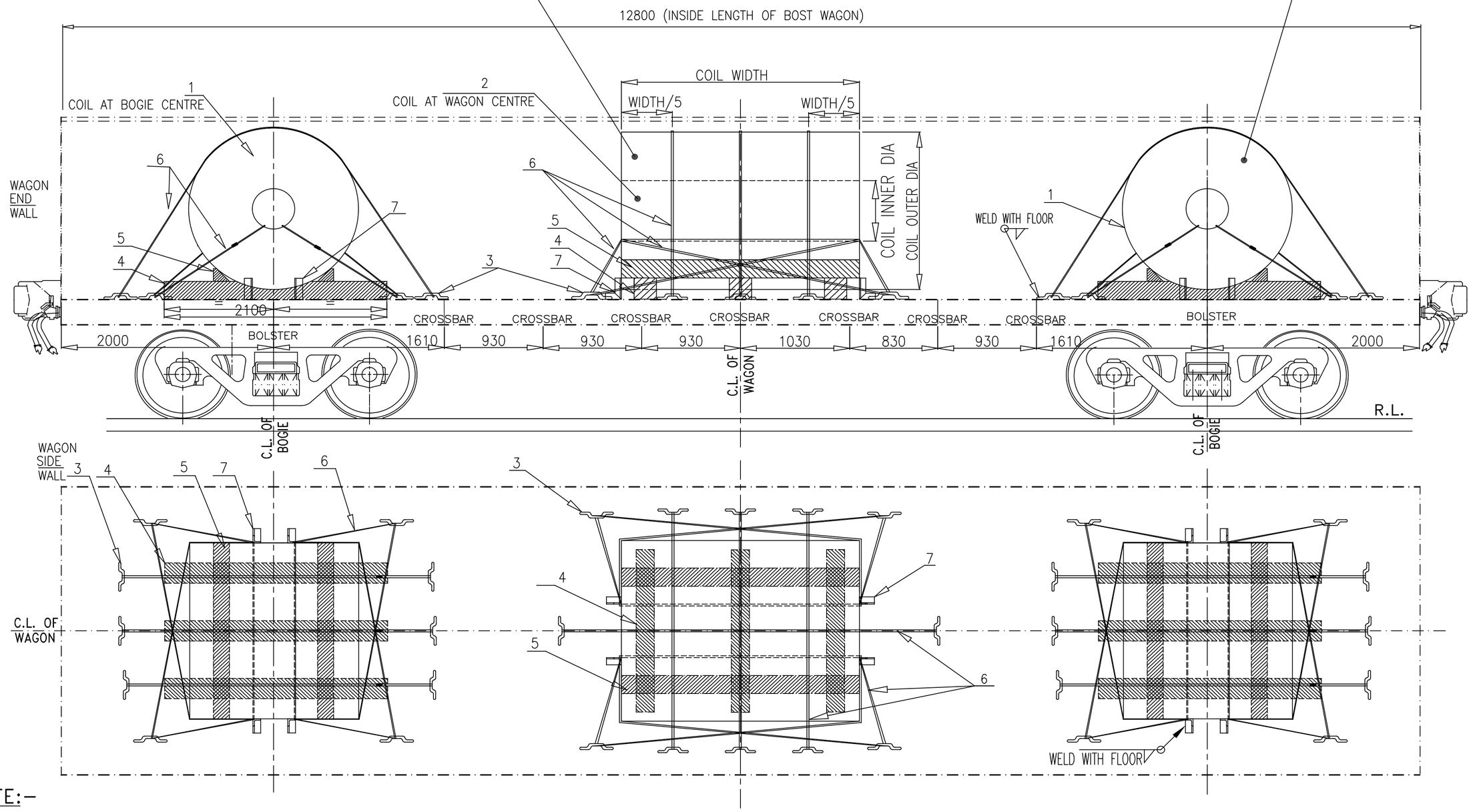
LOADING DIAGRAM OF VERTICAL LOADED STEEL COILS ON BOST WAGON & IT'S VARIANTS

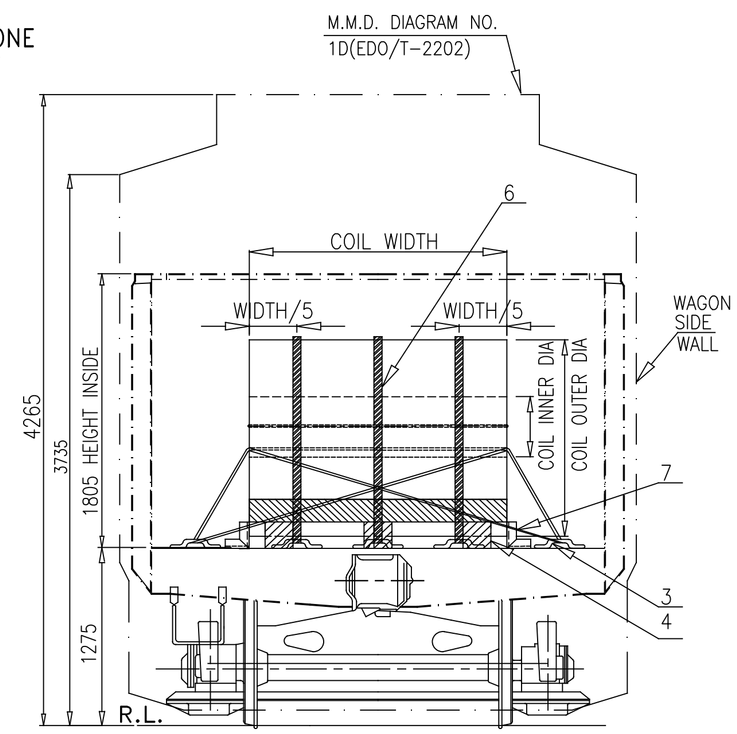
B.G. | R.D.S.O. [W] | GROUP | WD–24027–S–01

File No.RDSO-MWI/GENL(EOFC)/8/2023-O/o PED/SW/RDSO

ALTERNATIVELY COIL LOADING WITH METAL SADDLE DONE
AS PER LOADING DRAWING NO. WD-24036-S-05.

ALTERNATIVELY COIL LOADING WITH METAL SADDLE DONE
AS PER LOADING DRAWING NO. WD-23115-S-01.



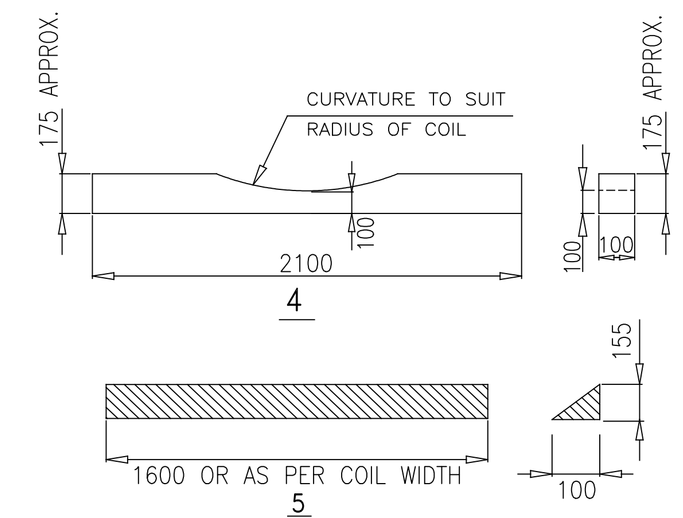


S.NO.	COIL WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 22 TON MAXIMUM	(TOTAL PAY LOAD-22 TON)/2

TABLE-A (LOADING SCHEME FOR 03 NO. STEEL COIL)

S.NO.	COIL WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	NO COIL LOADED AT CENTRE	TOTAL PAY LOAD/2

TABLE-B (LOADING SCHEME FOR 02 NO. STEEL COIL)



NOTE:-

1. ALL INDIVIDUAL COILS ARE TO BE LASHED BY USING HEAVY DUTY STRAPS AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. THE COIL LOADING ALONG THE WAGON WIDTH AT BOGIE /BOLSTER CENTRE AND THE COIL LOADING ALONG THE WAGON LENGTH AT WAGON CENTRE SHOULD BE SYMMETRICALLY ABOUT THE LONGITUDINAL CENTRE LINE AS WELL AS TRANSVERSE AXIS OF THE WAGON.
3. COIL LOADING COMPOSITION DEPENDING UPON THE COIL WEIGHT, CAN BE USED AS PER TABLE A AND B :-
   3.1 IF THREE COIL LOADED AS PER TABLE-A, 01 NO. COIL(EYE TO SIDE WALL) AT BOTH BOGIE/ BOLSTER CENTRE AND 01 COIL(EYE TO END WALL) AT MIDDLE OF WAGON, THEN MAXIMUM COIL WEIGHT AT CENTER SHOULD NOT EXCEED 22 TON IN ANY CONDITION.
   3.2 IF TWO COIL(EYE TO SIDE WALL) LOADED AS PER TABLE-B, 01 NO. COIL AT EACH BOGIE CENTRE AND NO COIL LOADING DONE ON AT MIDDLE OF WAGON.
4. LOADING OF COILS SHOULD BE SUCH THAT :-
   4.1 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   4.2 THE COILS WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   4.3 MAXIMUM DIFFERENCE IN COILS WEIGHT LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   4.4 TOTAL WEIGHT OF LOADED COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
5. BEFORE LOADING, ENSURE THAT WOODEN CRADLES ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT SHAL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY. TRIANGULAR WOODEN WEDGE USED ACROSS THE WIDTH OF COILS.
6. AFTER PLACING THE COIL ON WOODEN CRADLE, WOODEN WEDGE PLACED AND FIXED ON BOTH SIDE OF COIL ON WOODEN CRADLE. THEN USE THREE STRAPS ON EACH COIL FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF EACH COIL SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
7. EACH COILS AT BOGIE/BOLSTER CENTRE AFTER TIGHTENING BY THREE STRAP, SHALL BE TIGHTENED ADEQUATELY BY 04 NOs. OF LASHING CHAIN/ MENTIONED STEEL STRAP WITH ISOLATION HOOK AND COIL AT WAGON CENTRE AFTER TIGHTENING BY THREE STRAP, SHALL BE TIGHTENED ADEQUATELY BY 05 NOs. OF LASHING CHAIN/ MENTIONED STEEL STRAP WITH ISOLATION HOOK.
8. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.-EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5 TON)

9. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002-1.
10. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSION METER. ① CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT OF STEEL STRAP.
11. OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
12. THE ISOLATION HOOK (ITEM NO.3) SHOULD BE WELD WITH WAGON FLOOR TO ACCOMODATE COIL DIIA/ WIDTH AS SHOWN IN DRAWING.
13. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD-CS-01-LOAD SECURING CHECK SHEET (LATEST).
14. THIS RDSO DRAWING IS AN INDUCTIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
15. THE LOADING/UNLOADING OF COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
16. STEEL COIL SHOULD BE LOADED SLOWLY/GRADUALLY ON THE FLOOR OF THE WAGON. IMPACT LOADING NOT BE CARRIED OUT IN ANY CIRCUMSTANCE.

ITEM	DESCRIPTION	NO. OF PCS PER COIL	MTL&SPEC	REMARKS
7.	ANGLE STOPPER	4	---	AS PER DRAWING NO. WD-24036-S-01,ITEM NO.-4 ①
6.	LASHING CHAIN OR HEAVY DUTY STRAP	07 FOR COIL AT BOGIE CENTRE, 08 FOR COIL AT WAGON CENTRE	EN13247:2001	
5.	WOODEN WEDGE	2	WOOD	
4.	WOODEN CRADLE	3	WOOD	
3.	ISOLATION HOOK	10 FOR COIL AT BOGIE CENTRE, 12 FOR COIL AT WAGON CENTRE	---	AS PER DRAWING NO. WD-24036-S-01,ITEM NO.-3 ①
2.	STEEL COIL AT WAGON CENTER (01 NO./ WAGON)	--	STEEL	MAXIMUM COIL WEIGHT=22T (AS PER TABLE-A)
1.	STEEL COIL AT EACH BOGIE CENTER (01 NO./ BOGIE CENTER)	--	STEEL	(SEE TABLE-A & B)

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
1	--	WD-24036	ITEM NO. 3 & 7 DRG. DELETED AND REFERENCE DRG. NO. ADDED IN DESCRIPTION TABLE. NOTE NO.-10 MODIFIED.	04/24	

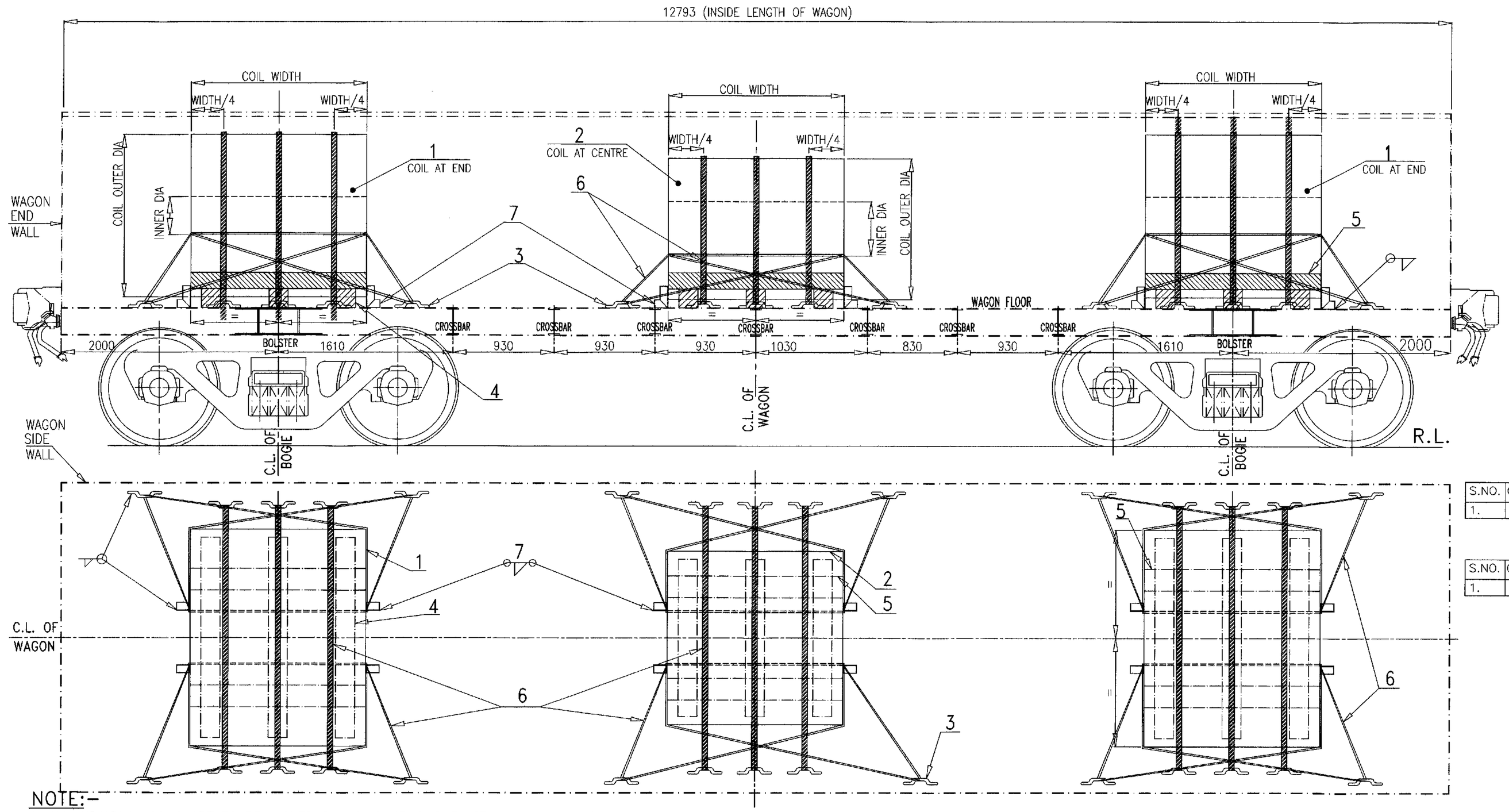
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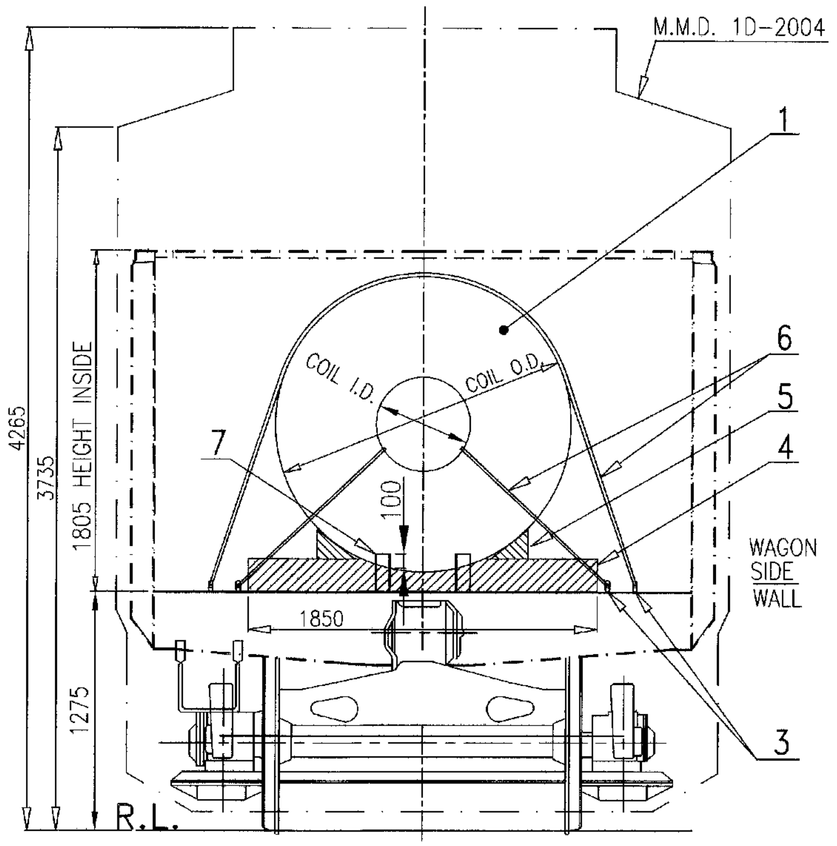
SCALE	PASSED	sd-R.SINGH	03/24
	CHECKED	sd-A.KUSHVAHA	03/24
	DRAWN	SACHIN KUMAR	03/24
	J.S.NO.	WD-24027	03/24

LOADING DIAGRAM FOR STEEL COIL ON BOST WAGON AND ITS VARIANTS WITH WOODEN CRADLE.

B.G. | R.D.S.O. [W] | GROUP | WD-24027-S-02

File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SWI/RDSO



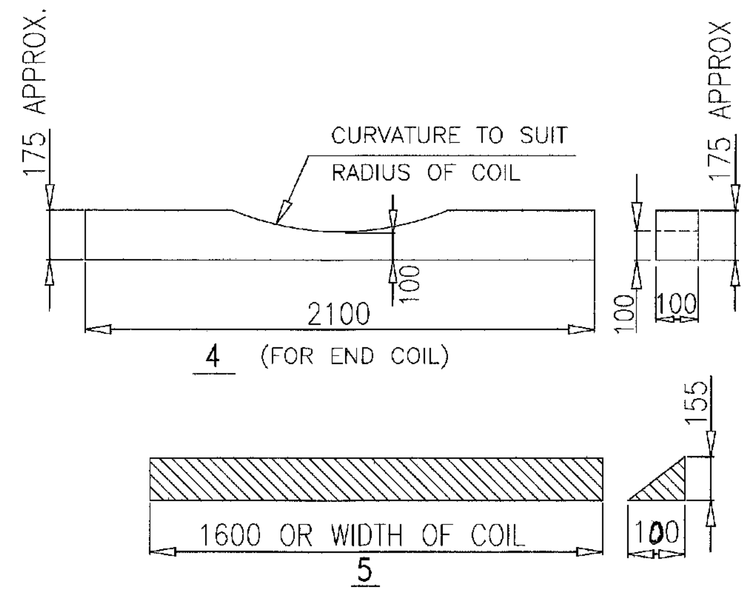


S.NO.	COIL WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 22 TON MAXIMUM	(TOTAL PAY LOAD–22 TON)/2

TABLE–A (LOADING SCHEME FOR 03 NO. STEEL COIL)

S.NO.	COIL WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	NO COIL LOADED AT CENTRE	TOTAL PAY LOAD/2

TABLE–B (LOADING SCHEME FOR 02 NO. STEEL COIL)



NOTE:–

1. ALL INDIVIDUAL COILS ARE TO BE LASHED BY USING HEAVY DUTY STRAPS AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. THE COIL LOADING ALONG THE WAGON LENGTH, SHOULD BE SYMMETRICALLY ABOUT THE LONGITUDINAL CENTRE LINE AS WELL AS TRANSVERSE AXIS OF THE WAGON.
3. COIL LOADING COMPOSITION DEPENDING UPON THE COIL WEIGHT, CAN BE USED AS PER TABLE A AND B :–
   3.1 IF THREE COIL LOADED AS PER TABLE–A, 01 NO. COIL AT BOTH SIDE ON EACH BOGIE/ BOLSTER CENTRE AND 01 COIL AT MIDDLE OF WAGON, THEN MAXIMUM COIL WEIGHT AT CENTER SHOULD NOT EXCEED 22 TON IN ANY CONDITION.
   3.2 IF TWO COIL LOADED AS PER TABLE–B, 01 NO. COIL AT EACH BOGIE/ BOLSTER CENTRE AND NO COIL LOADING DONE ON AT MIDDLE OF WAGON.
4. LOADING OF COILS SHOULD BE SUCH THAT :–
   4.1 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   4.2 THE COILS WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   4.3 MAXIMUM DIFFERENCE IN COILS WEIGHT LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   4.4 TOTAL WEIGHT OF LOADED COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
5. BEFORE LOADING, ENSURE THAT WOODEN CRADLES ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT SHAL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY.
6. AFTER PLACING THE COIL ON WOODEN CRADLE, WOODEN WEDGE PLACED AND FIXED ON BOTH SIDE OF COIL ON WOODEN CRADLE. THEN USE THREE STRAPS ON EACH COIL FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF EACH COIL SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
7. AFTER TIGHTENING BY THREE STRAP, EACH COILS SHALL BE TIGHTENED ADEQUATELY BY 04 NOs. OF LASHING CHAIN/ MENTIONED STEEL STRAP WITH ISOLATION HOOK.
8. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.–EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINAL THICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5 TON)

9. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1.
10. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSION METER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT OF STEEL STRAP.
11. OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL. FOR PROTECTION OF CR COILS, SUITABLE PACKING MAY BE USED.
12. THE LOADING PARTY SHOULD WELD ISOLATION HOOK (ITEM NO.–3) AND ANGLE STOPPERS (ITEM NO.–7) PROPERLY WITH WAGON FLOOR TO ACCOMMODATE COIL DIA/ WIDTH AS SHOWN IN DRAWING.
13. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD–CS–01–LOAD SECURING CHECK SHEET (LATEST).
14. THIS RDSO DRAWING IS AN INDUCTIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
15. THE LOADING/UNLOADING OF COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
16. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.
17. IF COIL LOADING DONE WITH METAL SADDLE, THEN LOADING SHALL BE DONE AS PER LOADING DRAWING NO. WD–24036–S–05.

File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED/SW/RDSO

ITEM	DESCRIPTION	NO. OF PCS PER COIL	REF. DRG.	MTL&SPEC	REMARKS
7	ANGLE STOPPER	4	WD–24036–S–01 ITEM–4	---	
6	LASHING CHAIN OR HEAVY DUTY STRAP	7	--	STEEL	
5	WOODEN WEDGE	2	--	WOOD	
4	WOODEN CRADLE	3	--	WOOD	
3	ISOLATION HOOK	10	WD–24036–S–01 ITEM–3	---	
2	STEEL COIL AT WAGON CENTRE (01 NO./ WAGON)	--	--	STEEL	MAXIMUM COIL WEIGHT=22T (AS PER TABLE–A)
1	STEEL COIL AT BOGIE CENTRE(01 NO./ BOGIE)	--	--	STEEL	(SEE TABLE–A & B)

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

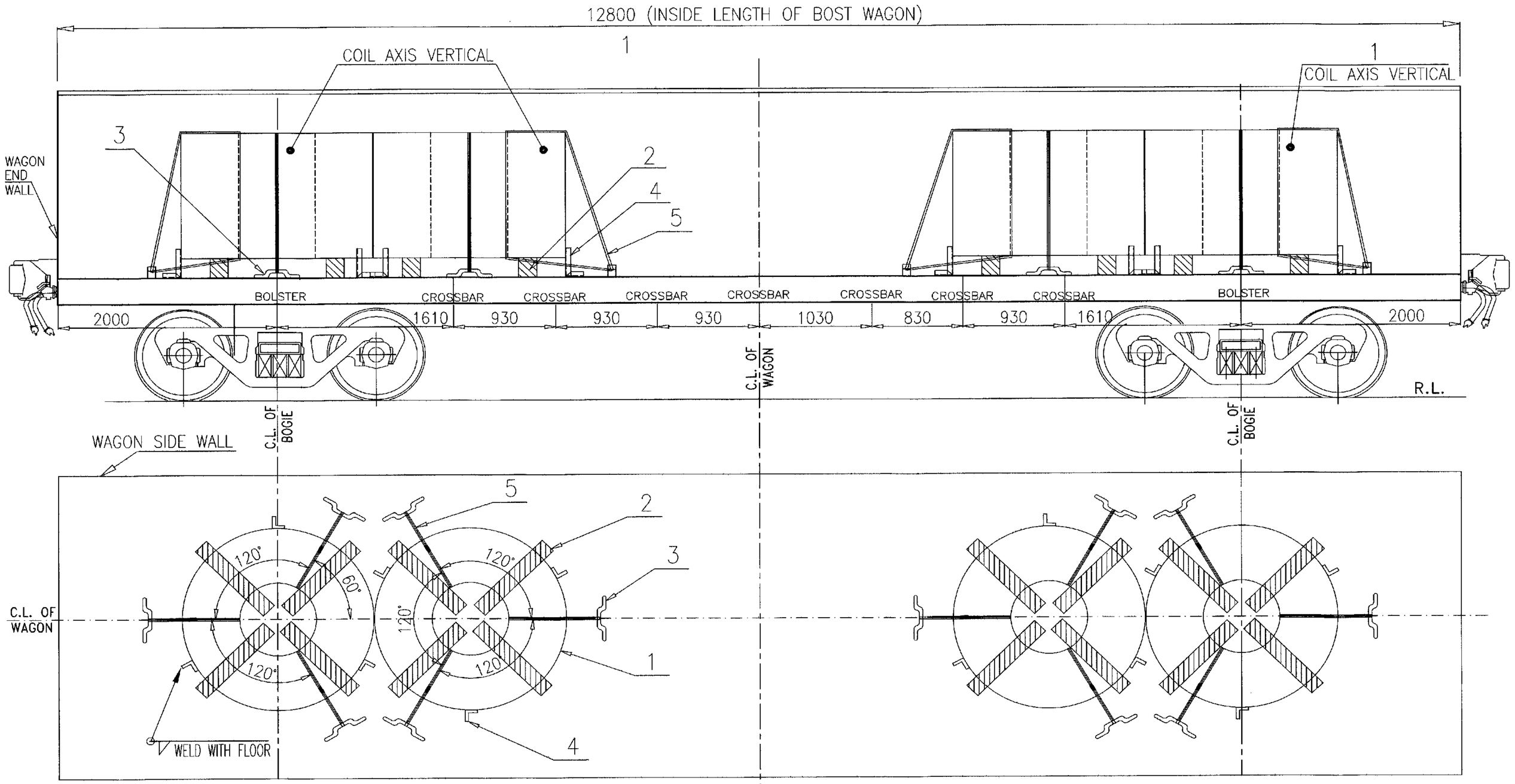
SUPERSEDED BY
SUPERSEDES
SCALE — DATE
PASSED — 05/24
CHECKED — 05/24
DRAWN ASHUTOSH SINGH 04/24
J.S.NO. WD–24036 04/24

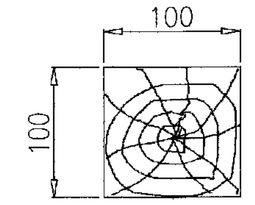
B.G. | R.D.S.O. [W]

LOADING DIAGRAM FOR STEEL COILS IN IN LONGITUDINAL DIRECTION (EYE TO ENGINE) ON BOST WAGON & ITS VARIANTS

GROUP

WD–24036–S–02





WOODEN RUNNER LENGTH SHALL BE AS PER COIL DIAMETER

2

NOTE:–

1. COILS ARE TO BE LASHED BY USING HEAVY DUTY STRAPS AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. THE STEEL COILS LOADED VERTICALLY (EYE TO SKY) SHOULD BE SYMMETRICAL ALONG LONGITUDINAL AND TRANSVERSE AXIS OF THE WAGON.
3. **LOADING PARAMETER OF STEEL COILS SHOULD BE SUCH THAT:–**
   - 3.1 ONE COIL PLACED AT BOGIE CENTRE AND SECOND COIL ADJACENT TO FIRST COIL, TOWARDS WAGON CENTRE AND BOTH COILS SHOULD BE IN CLOSEST TO EACH OTHER. IF COIL AT BOGIE CENTRE AND ADJACENT COIL HAVE SOME WEIGHT DIFFERENCE, THEN HEAVIER WEIGHT COIL PLACED ON BOGIE CENTRE.
   - 3.2 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   - 3.3 THE COILS WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   - 3.4 MAXIMUM WEIGHT DIFFERENCE AT BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   - 3.5 TOTAL WEIGHT OF LOADED COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
4. **PROCEDURE OF LOADING STEEL COIL ON WAGON ARE:–**
   - 4.1 BEFORE LOADING, ENSURE THAT WOODEN RUNNER ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY.
   - 4.2 AFTER PLACING THE COIL ON WOODEN RUNNER, EITHER 03 NO's STOPPERS OR 03 NO's STRAPS (TIGHTENED WITH ISOLATION HOOK) SHOULD BE APPLIED FOR SECURING EACH COIL AS SHOWN IN DRAWING, FOR SAFE OPERATION.
   - 4.3 DEPENDING UPON THE EXPERIENCE/ REPORT OF UNUSUAL INCIDENCE WITH THE ABOVE COIL SECURING ARRANGEMENT, CONCERNED RAILWAY/ CONSIGNEE MAY TAKE DECISION FOR APPLICATION OF STOPPER AND STRAPS (BOTH) TO SECURE THE LOAD PROPERLY TO AVOID ANY UNUSUAL INCIDENCE.
   - 4.4 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
5. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.–EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3 TON)

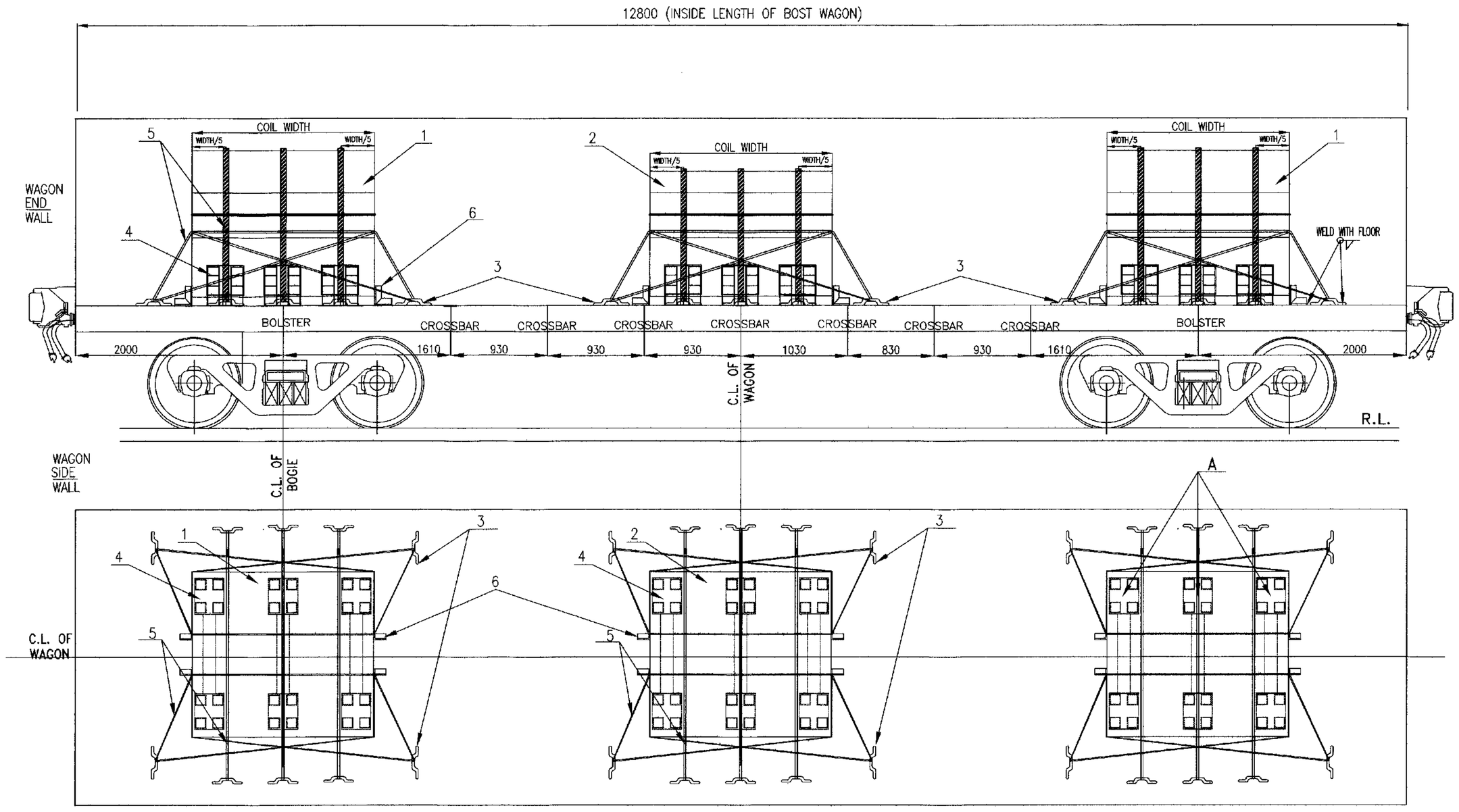
6. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1.
7. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSION METER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT OF STEEL STRAP.
8. THE ISOLATION HOOK (ITEM NO.3) SHOULD BE WELD WITH WAGON FLOOR TO ACCOMMODATE COIL DIA/ WIDTH AS SHOWN IN DRAWING.
9. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD–CS–01–LOAD SECURING CHECK SHEET (LATEST).
10. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE DIA AND WIDTH OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
11. THE LOADING/UNLOADING OF STEEL COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
12. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.
13. STEEL COIL SHOULD BE LOADED SLOWLY/ GRADUALLY ON THE FLOOR OF WAGON . IMPACT LOADING NOT TO BE CARRIED OUT IN ANY CIRCUMSTANCE.

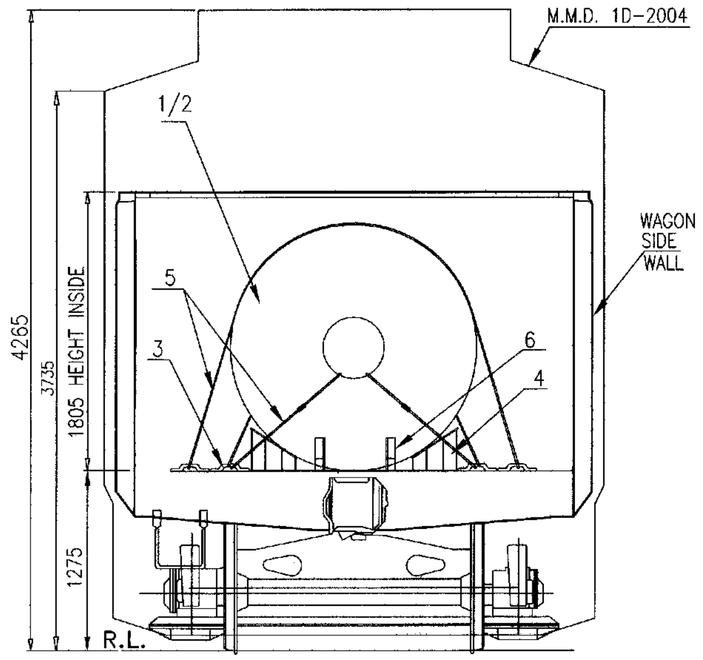
File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SW/RDSO

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS

ITEM	DESCRIPTION	No. OF PCS PER COIL	MTL&SPEC	REMARKS
5.	LASHING CHAIN OR HEAVY DUTY STRAP	3	EN13247:2001	
4.	ANGLE STOPPER	3	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–4
3.	ISOLATION HOOK	3	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–3
2.	WOODEN RUNNER	4	WOOD	
1.	STEEL COIL	---	STEEL	

SUPERSEDED BY			LOADING DIAGRAM FOR 04 NO. STEEL COILS (VERTICAL) ON BOST WAGON & IT'S VARIANTS
SUPERSEDES		DATE	
SCALE	PASSED	05/24	
	CHECKED	05/24	
	DRAWN SACHIN KUMAR	05/24	
	J.S.NO. WD–24036	04/24	
B.G.	R.D.S.O. [W]	GROUP	WD–24036–S–03





S.NO.	COIL WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 22 TON MAXIMUM	(TOTAL PAY LOAD-22 TON)/2

TABLE-A (LOADING SCHEME FOR 03 NO. STEEL COIL)

S.NO.	COIL WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	NO COIL LOADED AT CENTRE	TOTAL PAY LOAD/2

TABLE-B (LOADING SCHEME FOR 02 NO. STEEL COIL)

NOTE:-

1. THE COIL LOADING ALONG THE WAGON LENGTH, SHOULD BE SYMMETRICALLY ABOUT THE LONGITUDINAL CENTRE LINE AS WELL AS TRANSVERSE AXIS OF THE WAGON.
2. STEEL COIL LOADING COMPOSITION DEPENDING UPON THE COIL WEIGHT, CAN BE USED AS PER TABLE A AND B :-
   2.1 IF THREE COIL LOADED AS PER TABLE-A, 01 NO. COIL AT BOTH SIDE ON EACH BOGIE/ BOLSTER CENTRE AND 01 COIL AT MIDDLE OF WAGON, THEN MAXIMUM COIL WEIGHT AT CENTER SHOULD NOT EXCEED 22 TON IN ANY CONDITION.
   2.2 IF TWO COIL LOADED AS PER TABLE-B, 01 NO. COIL AT EACH BOGIE CENTRE AND NO COIL LOADING DONE ON AT MIDDLE OF WAGON.
3. LOADING OF COILS SHOULD BE SUCH THAT :-
   3.1 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   3.2 THE COILS WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   3.3 MAXIMUM DIFFERENCE IN COILS WEIGHT LOADED ON BOTH BOGIE/ BOLSTER CENTRE, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   3.4 TOTAL WEIGHT OF LOADED COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
4. BEFORE LOADING, ENSURE THAT NO. OF METAL SADDLE PER COIL SHALL NOT BE LESS THAN THREE AS INDICATED BY 'A'. SELECT METAL SADDLE ON THE BASIS OF COIL DIAMETER RANGE (AS DETAILED IN ITEM NO. 4 DRAWING), WHICH CAN ACCOMMODATE COIL DIA TO SUSTAIN THE LOAD.
5. AFTER PLACING THE COIL ON METAL SADDLE, THEN USE THREE STRAPS ON EACH COIL FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF EACH COIL SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
6. AFTER TIGHTENING BY THREE STRAP, EACH COILS SHALL BE TIGHTENED ADEQUATELY BY 04 NOs. OF LASHING CHAIN/ MENTIONED STEEL STRAP WITH ISOLATION HOOK.
7. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.-EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNESS	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5 TON)

8. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002-1.
9. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSOMETER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT OF THE STEEL STRAP.
10. OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER (ITEM NO.6) SHALL NOT BE LESS THAN 100 MM OVER COIL.
11. THE ISOLATION HOOK (ITEM NO.3) SHALL BE WELD WITH WAGON FLOOR TO ACCOMMODATE COIL DIA/ WIDTH AS SHOWN IN DRAWING.
12. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD-CS-01-LOAD SECURING CHECK SHEET (LATEST).
13. THIS RDSO DRAWING IS AN INDUCTIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
14. THE LOADING/UNLOADING OF COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
15. IF COIL LOADING IS DONE WITH WOODEN CRADLE THEN LOADING SHALL BE DONE AS PER LOADING DRAWING NO. WD-24036-S-02 .

File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SWIRDSO

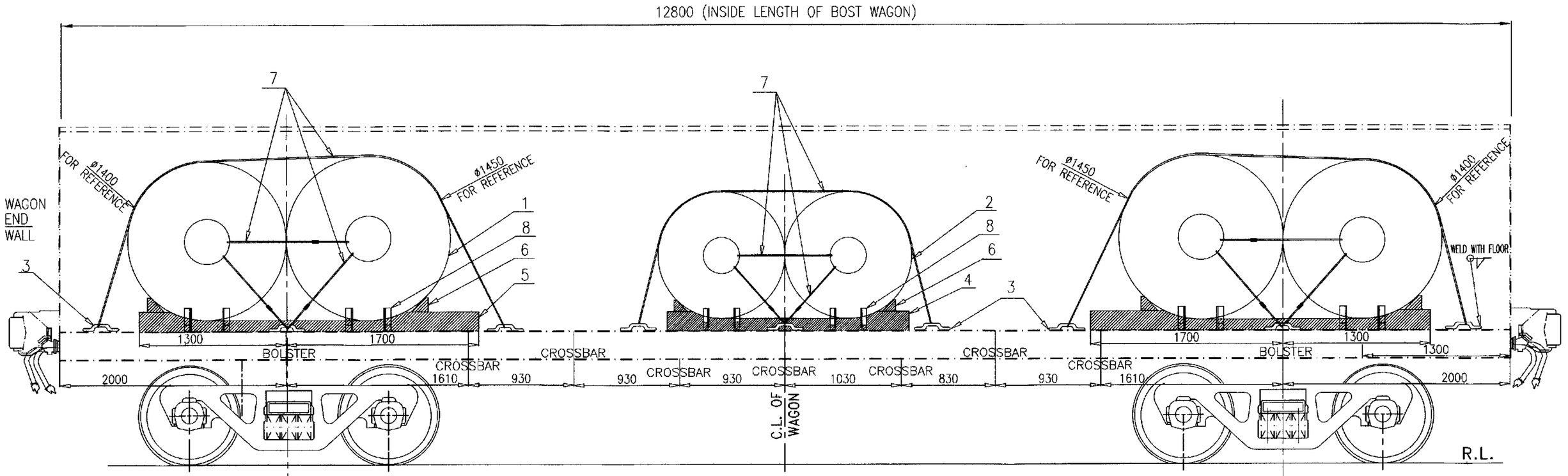
ITEM	DESCRIPTION	NO. OF PCS PER COIL	MTL&SPEC	REMARKS
6	ANGLE STOPPER	4	---	AS PER DRAWING NO. WD-24036-S-01,ITEM NO.-4
5	LASING CHAIN OR HEAVY DUTY STRAP	7	EN13247:2001	---
4	METAL SADDLE	3	---	AS PER DRAWING NO. WD-24036-S-01,ITEM NO.-1
3	ISOLATION HOOK	10	---	AS PER DRAWING NO. WD-24036-S-01,ITEM NO.-3
2	STEEL COIL AT WAGON CENTER (01 NO./WAGON CENTER)	--	STEEL	MAXIMUM COIL WEIGHT=22T (AS PER TABLE-A)
1	STEEL COIL AT EACH BOGIE CENTER (01 NO./ BOGIE CENTER)	--	STEEL	(SEE TABLE-A & B)

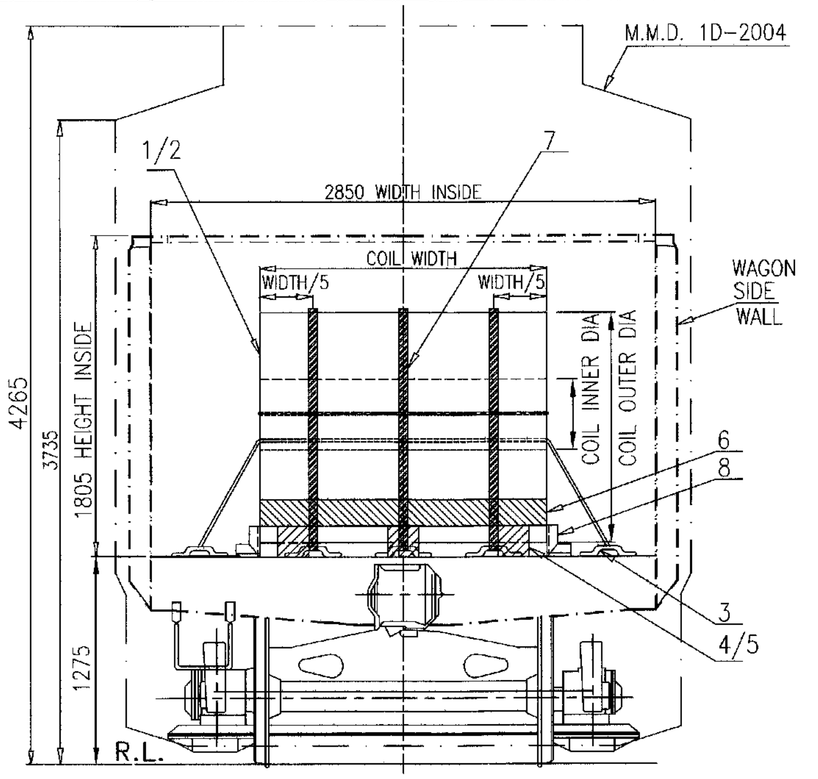
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS

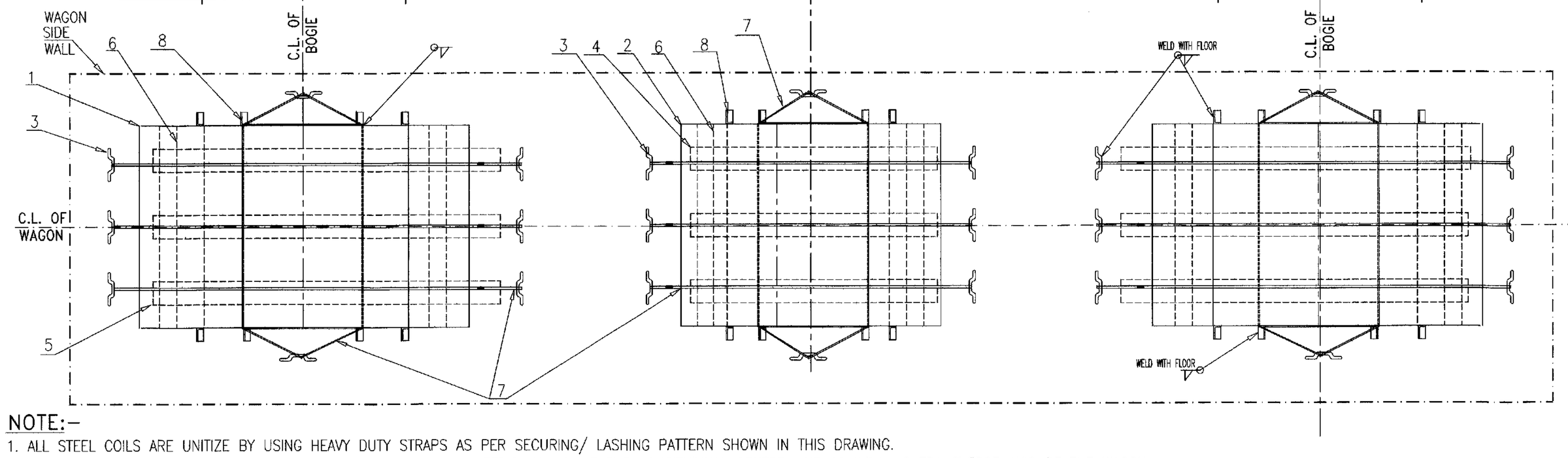
SUPERSEDED BY
SUPERSEDES
SCALE PASSED DATE 25/24
CHECKED 25/24
DRAWN KHARDI TEAM SMD 25/24
J.S.NO. WD-24036 24/24

LOADING DIAGRAM FOR HORIZONTAL STEEL COIL LOADED ALONG THE LENGTH OF WAGON ON BOST WAGON & IT'S VARIANTS WITH METAL SADDLE.

B.G. | R.D.S.O. [W] | GROUP | WD-24036-S-05





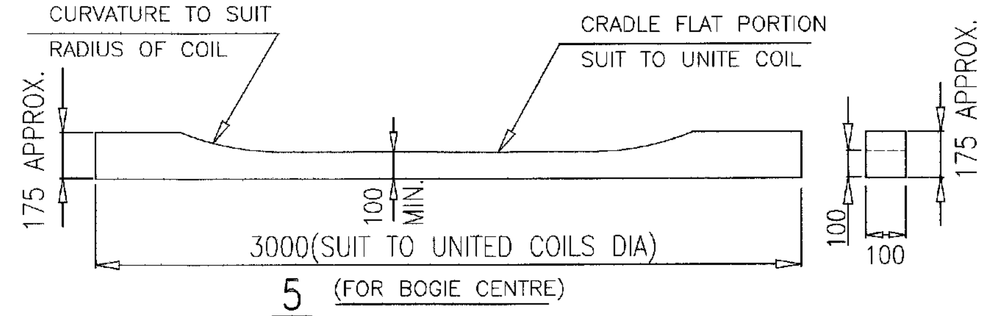


S.NO.	UNITED COIL WEIGHT AT CENTRE OF WAGON	UNITED COILS WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 16 TON MAXIMUM	(TOTAL PAY LOAD-16 TON)/2 (SEE NOTE-3)

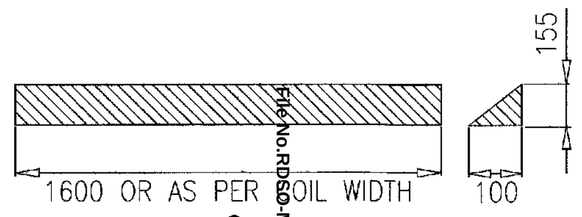
TABLE-A (LOADING SCHEME FOR 06 NO. STEEL COIL)

S.NO.	UNITED COIL WEIGHT AT CENTRE OF WAGON	UNITED COILS WEIGHT AT EACH BOGIE CENTRE
1.	NIL (NO COIL AT CENTRE)	TOTAL PAY LOAD/2 (SEE NOTE-3)

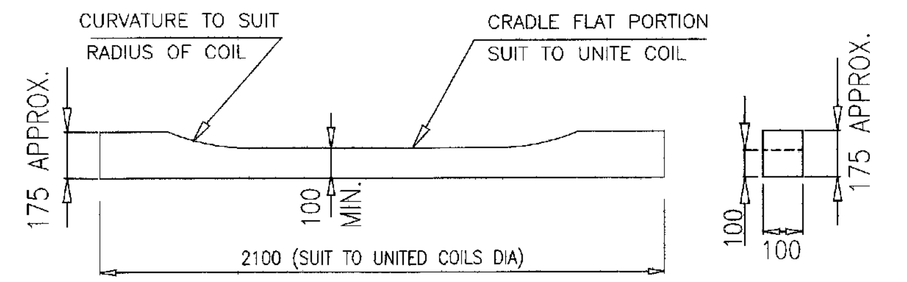
TABLE-B (LOADING SCHEME FOR 04 NO. STEEL COIL)



5 (FOR BOGIE CENTRE)



6



4 (FOR WAGON CENTER)

NOTE:-

1. ALL STEEL COILS ARE UNITIZE BY USING HEAVY DUTY STRAPS AS PER SECURING/ LASHING PATTERN SHOWN IN THIS DRAWING.
2. THE COILS LOADING ACROSS THE WAGON WIDTH, SHOULD BE SYMMETRICALLY ABOUT THE LONGITUDINAL CENTRE LINE AS WELL AS TRANSVERSE AXIS OF THE WAGON.
3. THE COIL LOADING COMPOSITION DEPENDING UPON THE COIL WEIGHT, CAN BE USED AS PER TABLE A AND B :-
   3.1 IF SIX COIL LOADED AS PER TABLE-A, 02 NO. UNITE COILS AT BOTH SIDE ON EACH BOGIE/ BOLSTER CENTRE AND 02 COIL AT MIDDLE OF WAGON, THEN MAXIMUM WEIGHT OF BOTH UNITIZED STEEL COIL AT CENTER SHOULD NOT EXCEED 16 TON IN ANY CONDITION.
   3.2 IF FOUR COIL LOADED AS PER TABLE-B, 02 NO. UNITE COILS AT EACH BOGIE CENTRE AND NO COIL LOADING DONE ON AT MIDDLE OF WAGON.
4. LOADING OF COILS SHOULD BE SUCH THAT :-
   4.1 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   4.2 THE COILS WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   4.3 MAXIMUM DIFFERENCE IN COILS WEIGHT LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   4.4 TOTAL WEIGHT OF LOADED COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
5. BEFORE LOADING, ENSURE THAT WOODEN CRADLES ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT, SHAL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY. TRIANGULAR WOODEN WEDGE USED ALONG THE WIDTH OF COILS.
6. AFTER PLACING THE UNITED COIL ON WOODEN CRADLE, FIRST USE ONE LASHING CHAIN/ STEEL STRAP BETWEEN EYE OF BOTH COILS TO TIGHTENED WITH EACH OTHER.
7. AFTER PLACING ON WOODEN CRADLE, WOODEN WEDGE PLACED AND FIXED ON BOTH SIDE OF UNITED COILS ON WOODEN CRADLE. THEN USE THREE STRAPS OVER EACH UNITED COILS FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF EACH COIL SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
8. AFTER TIGHTENING BY THREE STRAP, UNITED COILS SHALL BE TIGHTENED ADEQUATELY BY 2 NOs. LASHING CHAIN/STEEL STRAP WITH ISOLATION HOOK AS PER POSITION.
9. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.-EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5 TON)

10. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002-1.
11. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSION METER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT OF STEEL STRAP.
12. OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
13. THE ISOLATION HOOK (ITEM NO.3) SHOULD BE WELD WITH WAGON FLOOR TO ACCOMMODATE COIL DIA/ WIDTH AS SHOWN IN DRAWING.
14. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD-CS-01-LOAD SECURING CHECK SHEET (LATEST).
15. THIS RDSO DRAWING IS AN INDUCTIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
16. THE LOADING/UNLOADING OF COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.

ITEM	DESCRIPTION	NO. OF PCS PER UNITE COIL	MTL&SPEC	REMARKS
8.	ANGLE STOPPER	8	---	AS PER DRAWING NO. WD-24036-S-01,ITEM NO.-4
7.	LASHING CHAIN OR HEAVY DUTY STRAP	6	EN13247:2001	
6.	WOODEN WEDGE	2	WOOD	SEE NOTE NO.-7
5.	WOODEN CRADLE(LONG)	3	WOOD	
4.	WOODEN CRADLE(SHORT)	3	WOOD	
3.	ISOLATION HOOK	8	---	AS PER DRAWING NO. WD-24036-S-01,ITEM NO.-3
2.	STEEL COIL AT CENTRE (02 NO./ WAGON)	--	STEEL	MAXIMUM UNITE COIL WEIGHT=16T AT CENTRE OF WAGON(SEE TABLE-A)
1.	STEEL COIL AT END (02 NO./ BOGIE)	--	STEEL	SEE TABLE-A & B

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

SUPERSEDED BY
SUPERSEDES

SCALE			DATE
	PASSED		05/24
	CHECKED		05/24
	DRAWN	ASHUTOSH KUMAR SINGH	05/24
	J.S.NO.	WD-24036	04/24

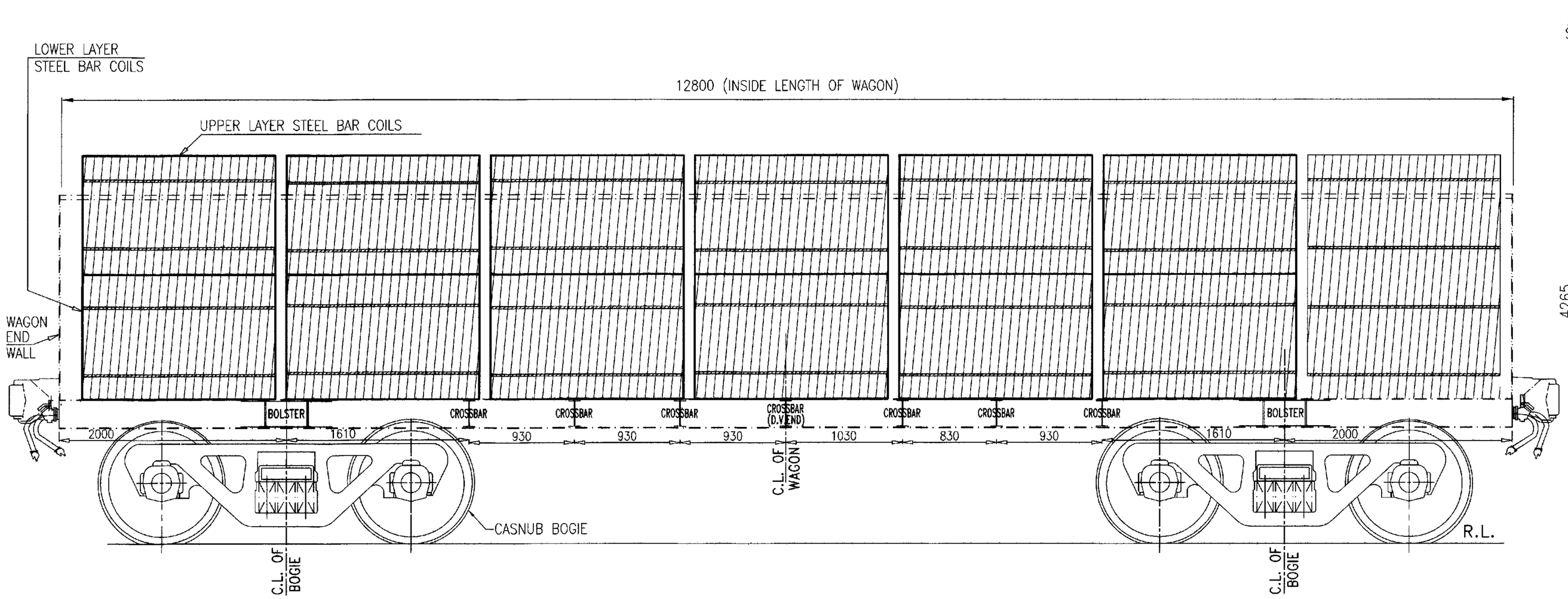
B.G. | R.D.S.O. [W]

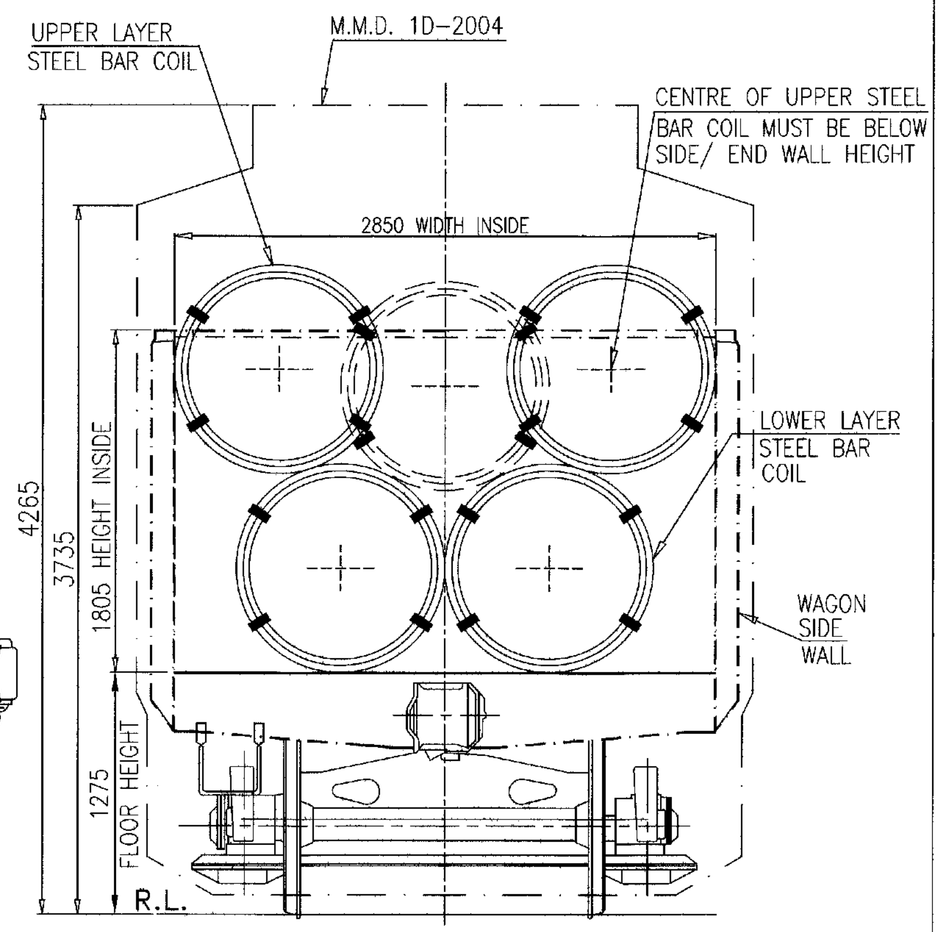
LOADING OF UNITIZED STEEL COILS IN LATERAL DIRECTION ON BOST WAGON & ITS VARIANTS

GROUP

WD-24036-S-06

File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED/SW/RDSO





NOTE:-

1. STEEL WIRE BAR COILS HAVING OUTER DIAMETER MAXIMUM UP TO 1200 MM CAN BE STACKED IN TWO LAYER AS SHOWN IN LOADING DIAGRAM.
2. THE STEEL BAR COILS LOADING SHOULD BE SYMMETRICAL WITH RESPECT TO LENGTH OF WAGON AS WELL AS TRANSVERSE AXIS(WIDTH) OF WAGON. LOADING SHALL BE UNIFORMLY DISTRIBUTED INSIDE OF WAGON AS PER LOADING PATTERN SHOWN IN DRAWING.
3. EACH STEEL BAR COILS SHALL BE UNITISED AND TIGHTENED ADEQUATELY WITH MINIMUM FOUR NO. STRAPS.
4. IN CASE OF VARIATION IN OUTER DIAMETER STEEL BAR COILS, THE LARGER OUTER DIAMETER STEEL BAR COILS SHALL BE LOADED AT UPPER LAYER ON THE WAGON.
5. THE MAXIMUM HEIGHT OF LOADED STEEL BAR COILS AT UPPER LAYER SHALL BE IN SUCH A WAY THAT THE CENTRE OF UPPER LAYER STEEL BAR COILS SHALL NOT BE MORE THAN THE TOP HEIGHT OF SIDE WALL TOP COPING AND END WALL TOP COPING.
6. LOADING SHALL BE DONE IN SUCH WAY THAT STEEL BAR COILS ARE LOADED IN UNIFORMLY DISTRIBUTED FASHION INSIDE THE WAGON AND WEIGHT DIFFERENCE AT BOTH BOGIE CENTERS SHOULD NOT BE MORE THAN 2 MT.
7. TOTAL WEIGHT OF LOADED STEEL WIRE COILS IN WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
8. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD-CS-01-LOAD SECURING CHECK SHEET (LATEST).
9. THE LOADING/UNLOADING OF STEEL BAR COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON.
10. THIS RDSO LOADING DIAGRAM IS AN INDICATIVE DRAWING AS THE DIA, LENGTH AND WEIGHT OF STEEL WIRE COILS VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO INSURE THE SYMMETRICAL LOADING & TOTAL HEIGHT OF THE LOADED STEEL WIRE COILS FOR SECURE & SAFE OPERATION.

File No.RDSO/MW0GENL(EOFC)/8/2023-O/o PED/SW/RDSO

ITEM	DESCRIPTION	NO. OF PCS PER/ WAGON	MTL.&SPEC.	REMAKS
1	STEEL WIRE BUNDLES	AS PER STEEL BAR COIL DIA/ LENGTH	STEEL	SEE THE NOTE FOR MAXIMUM HEIGHT & DIAMETER OF STEEL BAR COIL

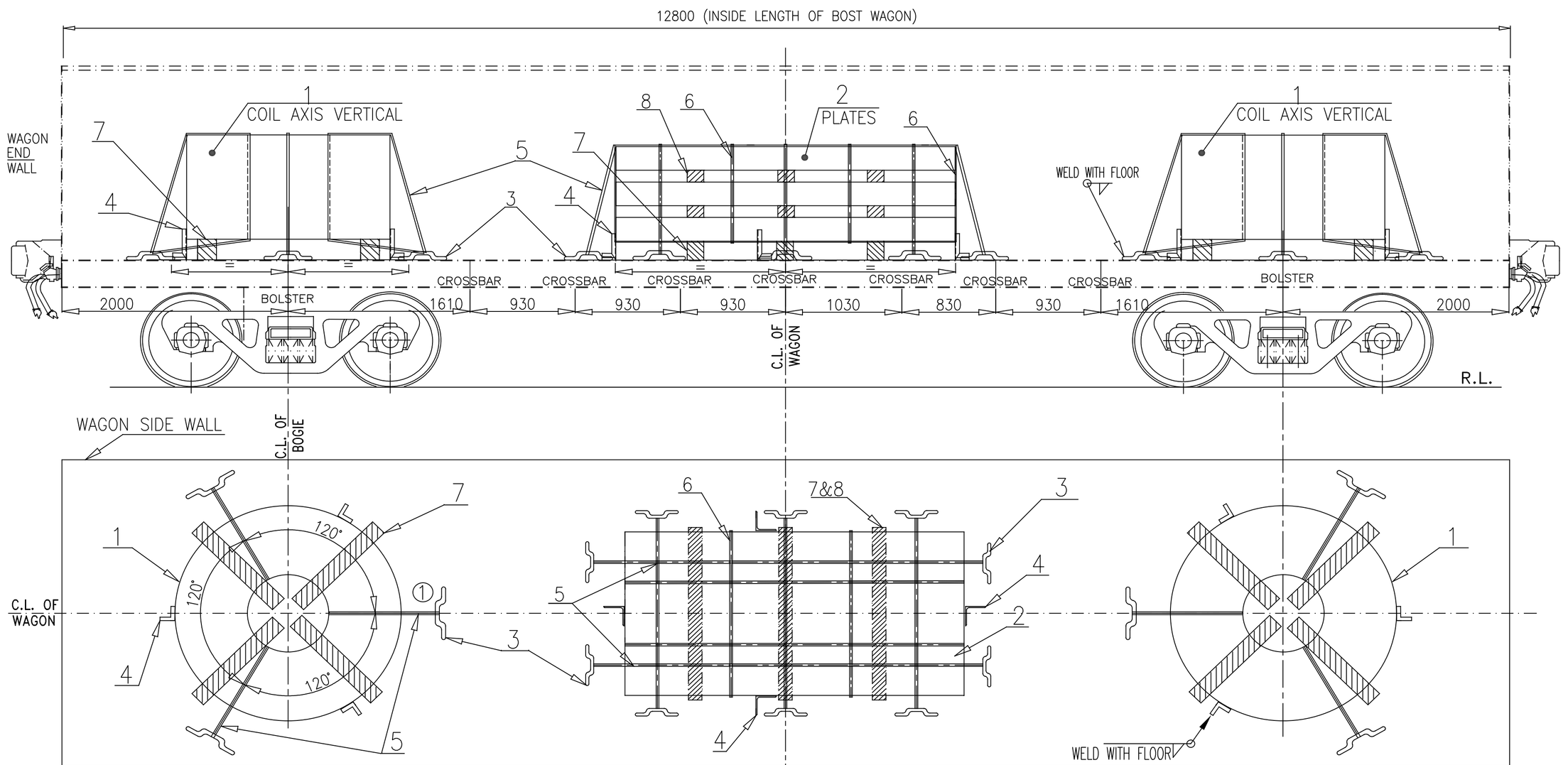
SUPERSEDED BY			
SUPERSEDES		DATE	
SCALE	PASSED		02/24
	CHECKED		02/24
	DRAWN	A.K.KUSHVAHA	02/24
	J.S.NO.	WD-23059	06/23

LOADING DIAGRAM FOR STEEL BAR COILS ON BOST WAGON & ITS VARIANTS

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

B.G.	R.D.S.O. [W]	GROUP	WD-23059-S-03

A1
02/24

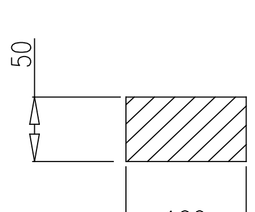


S.NO.	PLATES WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 20 TON MAXIMUM	(TOTAL PAY LOAD–20 TON)/2

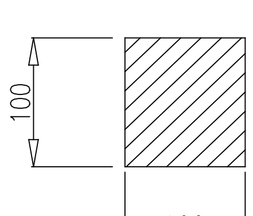
TABLE–A (LOADING SCHEME FOR STEEL COIL & BUNDLE OF STEEL PLATES)

S.NO.	PLATE WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	NO STEEL PLATES LOADED AT CENTRE	TOTAL PAY LOAD/2

TABLE–B (LOADING SCHEME FOR STEEL COILS)



8



7

NOTE:–

1. INDIVIDUAL COIL AND BUNDLES OF STEEL PLATES ARE TO BE LASHED BY USING HEAVY DUTY STRAPS AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. THE STEEL COILS LOADED VERTICALLY & BUNDLES OF STEEL PLATES LOADED ALONG THE WAGON LENGTH, SHOULD BE SYMMETRICAL ALONG LONGITUDINAL AND TRANSVERSE AXIS OF WAGON.
3. **LOADING PARAMETER OF STEEL COILS AND BUNDLES OF STEEL PLATES SHOULD BE SUCH THAT:–**
   - 3.1 THE VERTICAL LOADED STEEL COILS & BUNDLES OF STEEL PLATES LOADING COMPOSITION DEPENDING UPON WEIGHT, CAN BE DESCRIBED BY TABLE A & B.
   - 3.1(a) IF LOADING IS DONE AS PER TABLE–A, STEEL COIL LOADED AT EACH BOGIE/ BOLSTER CENTRE & BUNDLES OF STEEL PLATES LOADED AT MIDDLE OF THE WAGON, THEN MAXIMUM WEIGHT OF BUNDLES OF STEEL PLATES AT CENTER SHOULD NOT EXCEED BY 20 TON IN ANY CONDITION.
   - 3.1(b) AS PER TABLE–B, STEEL COIL ARE LOADED AT EACH BOGIE/ BOLSTER CENTRE AND NO BUNDLES OF STEEL PLATES ARE LOADED AT MIDDLE OF THE WAGON.
   - 3.2 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   - 3.3 THE COIL WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   - 3.4 MAXIMUM WEIGHT DIFFERENCE IN COIL LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   - 3.5 TOTAL WEIGHT OF LOADED COILS AND BUNDLES OF STEEL PLATES ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
4. **PROCEDURE OF LOADING STEEL COIL ON WAGON ARE:–**
   - 4.1 BEFORE LOADING, ENSURE THAT WOODEN RUNNER ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY.
   - 4.2 AFTER PLACING THE COIL ON WOODEN RUNNER, EITHER 03 NO's STOPPERS OR 03 NO's STRAPS (TIGHTENED WITH ISOLATION HOOK) SHOULD BE APPLIED FOR SECURING OF EACH COIL AS SHOWN IN DRAWING, FOR SAFE OPERATION. ①
   - 4.3 DEPENDING UPON THE EXPERIENCE/ REPORT OF UNUSUAL INCIDENCE WITH THE ABOVE COIL SECURING ARRANGEMENT, CONCERNED RAILWAY/ CONSIGNEE MAY TAKE DECISION FOR APPLICATION OF STOPPER AND STRAPS (BOTH) TO SECURE THE COIL PROPERLY TO AVOID ANY UNUSUAL INCIDENCE.
   - 4.4 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
5. **PROCEDURE OF LOADING STEEL PLATES ON WAGON ARE:–**
   - 5.1 THE STEEL PLATES SHALL BE UNITIZED IN BUNDLE FORM.
   - 5.2 BEFORE LOADING, ENSURE THAT WOODEN RUNNER ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT SHAL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY.
   - 5.3 AFTER PLACING THE FIRST BUNDLE OF STEEL PLATES ON WOODEN RUNNER, INTERMEDIATE WOODEN RUNNER PLACED AT CORRECT POSITION BETWEEN STEEL PLATES BUNDLE AS SHOWN IN DRAWING. AFTER THAT UNITIZING THE ALL BUNDLES OF PLATES BY FOUR STRAPS ITSELF.THEN USE FIVE STRAP ON STEEL PLATES BUNDLES FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF BUNDLES OF STEEL PLATES SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
   - 5.4 AFTER TIGHTENING BY FIVE STRAP, BUNDLE OF STEEL PLATES SHALL BE SECURE BY PROVIDING EIGHT NO. OF ANGLE STOPPER AS SHOWN IN DRAWING.
   - 5.5 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER BUNDLES OF STEEL PLATES.
6. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.–EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3 TON)

7. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1.
8. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSION METER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT OF STEEL STRAP. ①
9. THE ISOLATION HOOK (ITEM NO.3) SHOULD BE WELD WITH WAGON FLOOR TO ACCOMODATE COIL DIA/ WIDTH AS SHOWN IN DRAWING.
10. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD–CS–01–LOAD SECURING CHECK SHEET (LATEST).
11. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
12. THE LOADING/UNLOADING OF COIL AND BUNDLES OF STEEL PLATES TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
13. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
1	--	WD–24036	ITEM NO. 3 & 4 DRG. DELETED AND REFERENCE DRG. NO. ADDED IN DESCRIPTION TABLE. NOTE NO.–4,2,4,3 & 8 MODIFIED. NO. OFF STRAPS, ISOLATION HOOK & ANGLE STOPPER FOR COIL REDUCED FROM 4 TO 3 RESPECTIVELY. FOR PLATE, ANGLE STOPPER REDUCED FROM 8 TO 4 .	04/24	

8.	INTERMEDIATE WOODEN RUNNER (50X100)FOR STEEL PLATES	6	--	WOOD	NO. OF INTERMEDIATE WOODEN RUNNER AS PER BUNDLES
7.	WOODEN RUNNER (100X100)	3	4	WOOD	
6.	LASHING CHAIN OR HEAVY DUTY STRAP FOR SELF UNITIZATION	4	--	EN13247:2001	
5.	LASHING CHAIN OR HEAVY DUTY STRAP TIGHTEN WITH ISOLATION HOOK	5	3	EN13247:2001	
① 4.	ANGLE STOPPER	4	3	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–4
3.	ISOLATION HOOK	10	3	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–3
2.	STEEL PLATES (01 NO./ BOLSTER CENTER)	--	--	STEEL	(AS PER TABLE–A)
1.	STEEL COIL (01 NO./ WAGON CENTER)	--	--	STEEL	(AS PER TABLE–A & B)
ITEM	DESCRIPTION	NO. OF PCS PER PLATES	NO. OF PCS PER COIL	MTL&SPEC	REMARKS

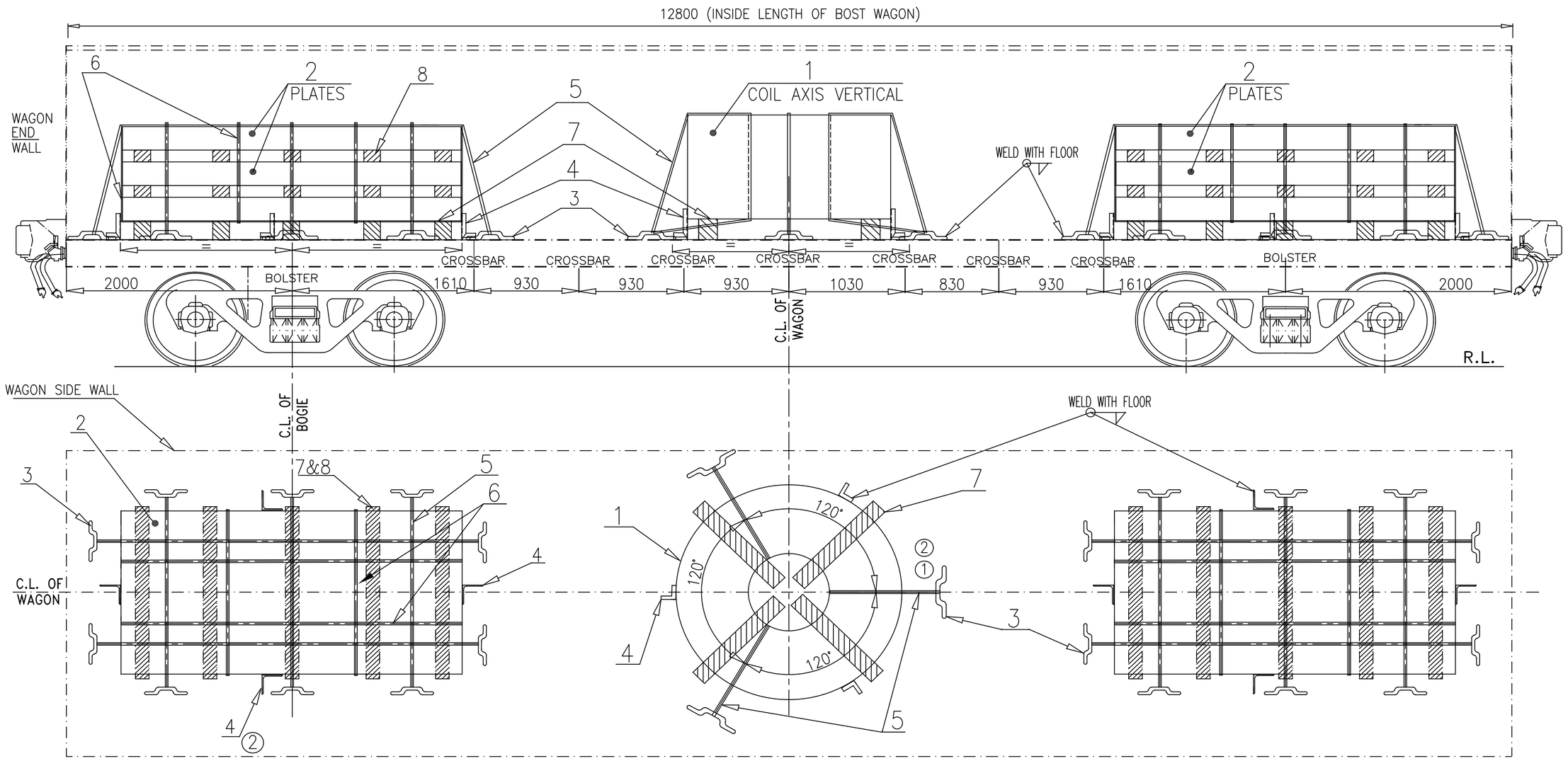
SUPERSEDED BY
SUPERSEDES DATE

SCALE	PASSED	sd–S.M.TRIPATHI	01/24
	CHECKED	sd–A.K.KUSHWAHA	01/24
	DRAWN	KSHITOSH KUMAR SINGH	01/24
	J.S.NO.	WD–24001	01/24

LOADING OF STEEL PLATES ON WAGON CENTRE & STEEL COILS LOADED VERTICALLY ON BOGIE CENTER ON BOST WAGON & IT'S VARIANTS

B.G. | R.D.S.O. [W] | GROUP | WD–24001–S–01

File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED(SW/RDSO



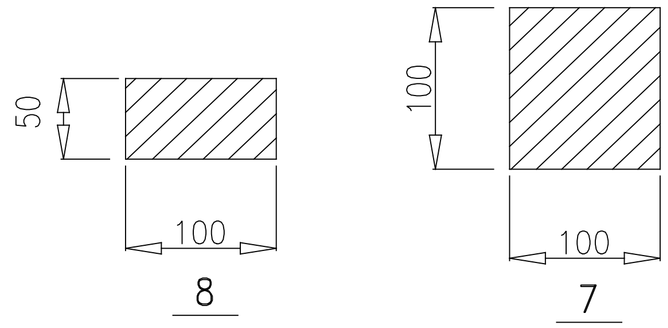
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S.NO.	COIL WEIGHT AT CENTRE OF WAGON	PLATE WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 22 TON MAXIMUM	(TOTAL PAY LOAD−22 TON)/2

TABLE−A (LOADING SCHEME FOR STEEL COIL & STEEL PLATES)

S.NO.	COIL WEIGHT AT CENTRE OF WAGON	PLATE WEIGHT AT EACH BOGIE CENTRE
1.	NO COIL LOADED AT CENTRE	TOTAL PAY LOAD/2

TABLE−B (LOADING SCHEME FOR STEEL PLATES)



NOTE:−

1. INDIVIDUAL COIL AND BUNDLES OF STEEL PLATES ARE TO BE LASHED BY USING HEAVY DUTY STRAPS AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. THE BUNDLES OF STEEL PLATES ALONG THE WAGON LENGTH AND STEEL COIL LOADED VERTICALLY, SHOULD BE SYMMETRICAL ALONG LONGITUDINAL AND TRANSVERSE AXIS OF WAGON.
3. **LOADING PARAMETER OF COIL AND BUNDLES OF STEEL PLATES SHOULD BE SUCH THAT:−**
   - 3.1 BUNDLES OF STEEL PLATES AND STEEL COIL LOADING COMPOSITION DEPENDING UPON WEIGHT, CAN BE DESCRIBED BY TABLE A & B.
     - 3.1(a) IF LOADING IS DONE AS PER TABLE−A, BUNDLES OF STEEL PLATES LOADED AT EACH BOGIE/ BOLSTER CENTRE & STEEL COIL LOADED VERTICAL AT MIDDLE OF WAGON, THEN MAXIMUM WEIGHT OF STEEL COIL AT CENTER SHOULD NOT EXCEED BY 22 TON IN ANY CONDITION.
     - 3.1(b) AS PER TABLE−B, BUNDLES OF STEEL PLATES LOADED AT EACH BOGIE/ BOLSTER CENTRE AND NO VERTICAL COIL LOADING DONE AT MIDDLE OF WAGON.
   - 3.2 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   - 3.3 THE STEEL PLATES BUNDLE WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   - 3.4 MAXIMUM WEIGHT DIFFERENCE IN STEEL PLATES BUNDLE LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   - 3.5 TOTAL WEIGHT OF LOADED COIL AND BUNDLES OF STEEL PLATES ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
4. **PROCEDURE OF LOADING STEEL COIL ON WAGON ARE:−** ①
   - 4.1 BEFORE LOADING, ENSURE THAT WOODEN RUNNER ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY.
   - 4.2 AFTER PLACING THE COIL ON WOODEN RUNNER, EITHER 03 NO's STOPPERS OR 03 NO's STRAPS (TIGHTENED WITH ISOLATION HOOK) SHOULD BE APPLIED FOR SECURING OF COIL AS SHOWN IN DRAWING, FOR SAFE OPERATION. ②
   - 4.3 DEPENDING UPON THE EXPERIENCE/ REPORT OF UNUSUAL INCIDENCE WITH THE ABOVE COIL SECURING ARRANGEMENT, CONCERNED RAILWAY/ CONSIGNEE MAY TAKE DECISION FOR APPLICATION OF STOPPER AND STRAPS (BOTH) TO SECURE THE COIL PROPERLY TO AVOID ANY UNUSUAL INCIDENCE.
   - 4.4 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
5. **PROCEDURE OF LOADING STEEL PLATES ON WAGON ARE:−**
   - 5.1 THE STEEL PLATES SHALL BE UNITIZED IN BUNDLE FORM.
   - 5.2 BEFORE LOADING, ENSURE THAT WOODEN RUNNER ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT SHAL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY.
   - 5.3 AFTER PLACING THE FIRST BUNDLE OF STEEL PLATES ON WOODEN RUNNER, INTERMEDIATE WOODEN RUNNER PLACED AT CORRECT POSITION BETWEEN STEEL PLATES BUNDLE AS SHOWN IN DRAWING. AFTER THAT UNITIZING THE ALL BUNDLES OF PLATES BY FOUR STRAPS ITSELF.THEN USE FIVE STRAP ON STEEL PLATES BUNDLES FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF BUNDLES OF STEEL PLATES SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
   - 5.4 AFTER TIGHTENING BY FIVE STRAP, BUNDLE OF STEEL PLATES SHALL BE SECURE BY PROVIDING EIGHT NO. OF ANGLE STOPPER AS SHOWN IN DRAWING.
   - 5.5 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER BUNDLES OF STEEL PLATES.
6. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N. PARAMETERS	PHYSICAL PROPERTIES (Ref.−EN13247:2001)
1. NOMINAL WIDTH	31.75
2. NOMINALTHICKNEES	1.27
3. MINIMUM BRAKING STRENGTH	43KN (4.3 TON)

7. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002−1.
8. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSION METER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT OF STEEL STRAP. ②
9. THE ISOLATION HOOK (ITEM NO.3) SHOULD BE WELD WITH WAGON FLOOR TO ACCOMODATE COIL DIA/ WIDTH AS SHOWN IN DRAWING.
10. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD−CS−01−LOAD SECURING CHECK SHEET (LATEST).
11. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
12. THE LOADING/UNLOADING OF COIL AND BUNDLES OF STEEL PLATES TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
13. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.

ITEM	DESCRIPTION	NO. OF PCS PER PLATES	NO. OF PCS PER COIL	MTL&SPEC	REMARKS
8.	INTERMEDIATE WOODEN RUNNER (50X100)FOR STEEL PLATES	10	−−	WOOD	NO. OF INTERMEDIATE WOODEN RUNNER AS PER BUNDLES
7.	WOODEN RUNNER (100X100)	5	4	WOOD	
6.	LASHING CHAIN OR HEAVY DUTY STRAP FOR SELF UNITIZATION	4	−−	EN13247:2001	
5.	LASHING CHAIN OR HEAVY DUTY STRAP TIGHTEN WITH ISOLATION HOOK	5	3	EN13247:2001	
4.	ANGLE STOPPER	4	3	STEEL	AS PER DRAWING NO. WD−24036−S−01,ITEM NO.−4
3.	ISOLATION HOOK	10	3	STEEL	AS PER DRAWING NO. WD−24036−S−01,ITEM NO.−3
2.	STEEL PLATES (01 NO./ EACH BOLSTER CENTER)	−−	−−	STEEL	(AS PER TABLE−A & B)
1.	STEEL COIL (01 NO./ WAGON CENTER)	−−	−−	STEEL	(AS PER TABLE−A)

①

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
2	−−	WD−24036	ITEM NO. 3 & 4 DRG. DELETED AND REFERENCE DRG. NO. ADDED IN DESCRIPTION TABLE. NOTE NO.−4.2,4.3 & 8 MODIFIED. NO. OFF STRAPS, ISOLATION HOOK & ANGLE STOPPER FOR COIL REDUCED FROM 6, 6 & 4 TO 3, 3 & 3 RESPECTIVELY. FOR PLATE, ANGLE STOPPER REDUCED FROM 8 TO 4.	04/24	
1	−−	WD−24029	STEEL COIL WEIGHT INCREASED 16T TO 22T. STEEL STRAP & ISOLATION HOOK FOR COIL INCREASED FROM 4 TO 6.	03/24	−

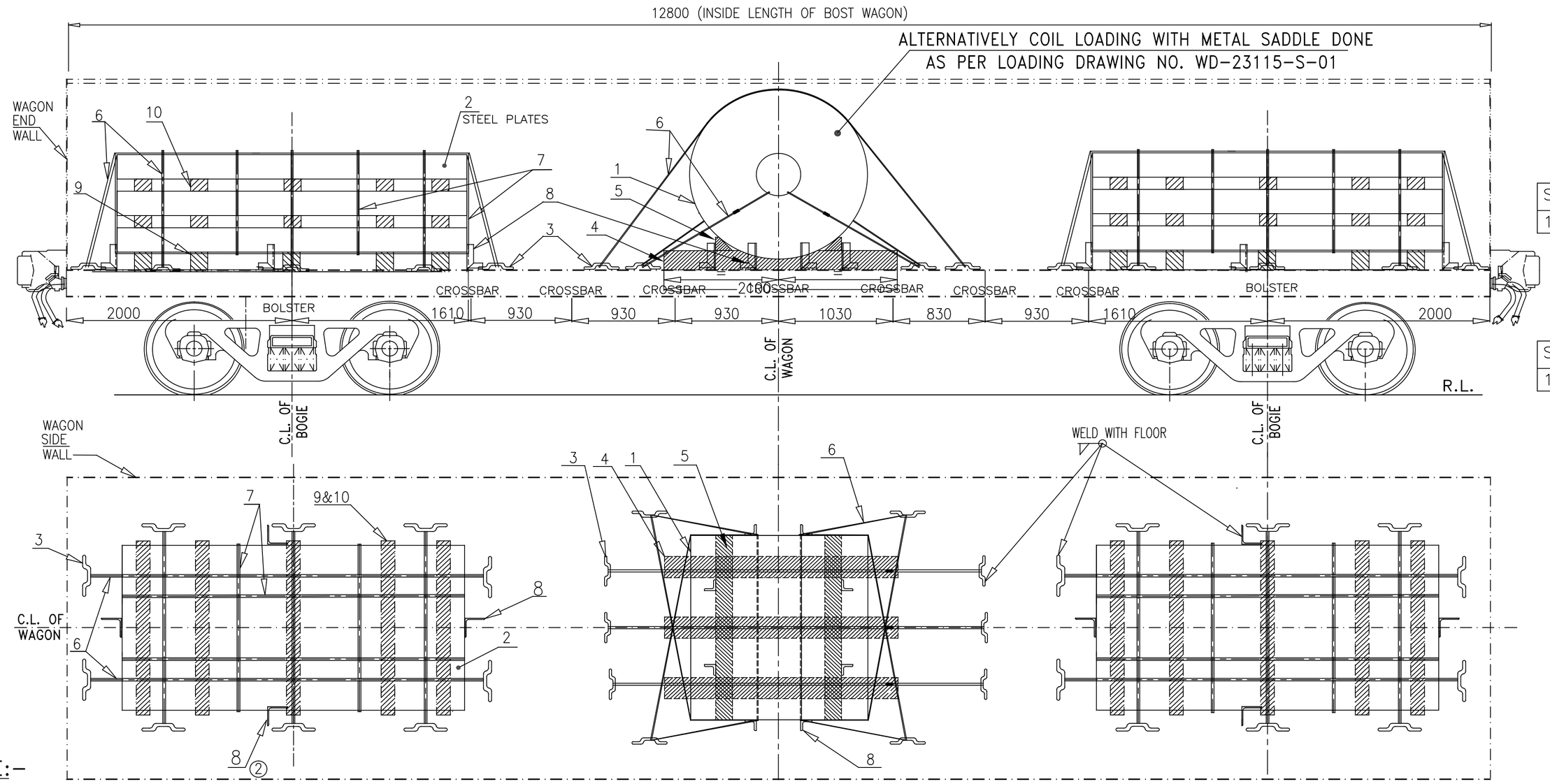
SUPERSEDED BY
SUPERSEDES

			DATE
SCALE	PASSED	sd−S.M.Tripathi	01/24
	CHECKED	sd−A.K.Kushvaha	01/24
	DRAWN	KSHITOSH KUMAR SINGH	01/24
	J.S.NO.	WD−24001	01/24

LOADING OF VERTICAL STEEL COIL ON WAGON CENTER & STEEL PLATES ON BOGIE CENTER ON BOST WAGON & IT'S VARIANTS

B.G. | R.D.S.O. [W] | GROUP | WD−24001−S−02

File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SWIRDSO

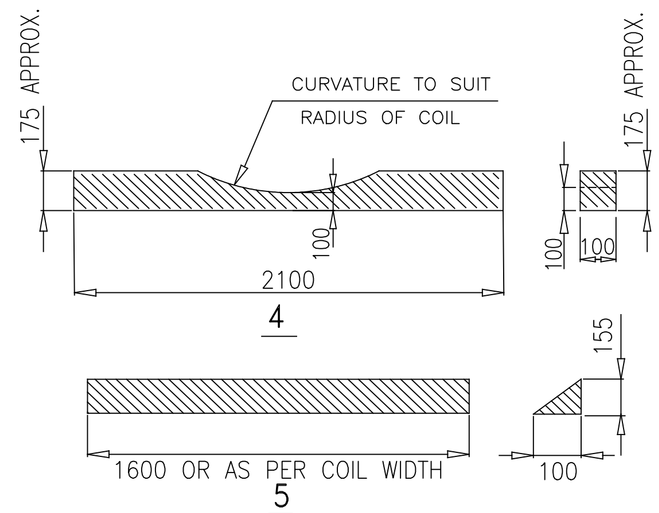


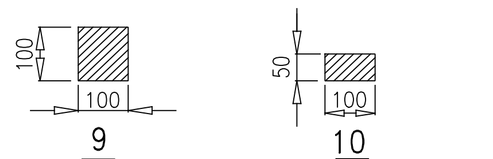
S.NO.	COIL WEIGHT AT CENTRE OF WAGON	PLATES WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 16 TON MAXIMUM	(TOTAL PAY LOAD−16 TON)/2

TABLE−A (LOADING SCHEME FOR STEEL COIL & STEEL PLATES)

S.NO.	COIL WEIGHT AT CENTRE OF WAGON	PLATES WEIGHT AT EACH BOGIE CENTRE
1.	NO COIL LOADED AT CENTRE	TOTAL PAY LOAD/2

TABLE−B (LOADING SCHEME FOR STEEL PLATES AT BOGIE CENTRE)





(FOR ITEM NO. 9 & 10 LENGTH AS PER WIDTH OF PLATES)

NOTE:−

1. INDIVIDUAL COIL AND BUNDLES OF STEEL PLATES ARE TO BE LASHED BY USING HEAVY DUTY STRAPS AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. THE BUNDLES OF STEEL PLATES LOADED ALONG THE WAGON LENGTH AND STEEL COIL LOADED ALONG THE WAGON WIDTH, SHOULD BE SYMMETRICAL ALONG LONGITUDINAL AND TRANSVERSE AXIS OF WAGON.
3. **LOADING PARAMETER OF COIL AND BUNDLES OF STEEL PLATES SHOULD BE SUCH THAT:−**
   - 3.1 STEEL COIL AND BUNDLES OF STEEL PLATES LOADING COMPOSITION DEPENDING UPON THE WEIGHT OF COIL AS WELL AS WEIGHT OF BUNDLES OF STEEL PLATES, CAN BE USED AS PER TABLE A & B.
     - 3.1(a) IF LOADING IS DONE AS PER TABLE−A, BUNDLES OF STEEL PLATES AT BOTH SIDE ON EACH BOGIE/ BOLSTER CENTRE AND COIL AT CENTRE OF WAGON, THEN MAXIMUM WEIGHT OF COIL AT CENTRE SHOULD NOT EXCEED 16 TON IN ANY CONDITION.
     - 3.1(b) AS PER TABLE−B, BUNDLES STEEL PLATES LOADED AT BOTH SIDE ON EACH BOGIE/ BOLSTER CENTRE AND NO COIL LOADED AT WAGON CENTRE.
   - 3.2 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   - 3.3 THE STEEL PLATE BUNDLES WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   - 3.4 MAXIMUM WEIGHT DIFFERENCE IN STEEL PLATE BUNDLES LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   - 3.5 TOTAL WEIGHT OF LOADED COIL AND BUNDLES OF STEEL PLATES ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
4. **PROCEDURE OF LOADING STEEL COIL ON WAGON ARE:−**
   - 4.1 BEFORE LOADING, ENSURE THAT WOODEN CRADLE ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT SHAL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY. TRIANGULAR WOODEN WEDGE USED ACROSS THE WIDTH OF COIL.
   - 4.2 AFTER PLACING THE COIL ON WOODEN CRADLE, WOODEN WEDGE PLACED AND FIXED ON BOTH SIDE OF COIL BY FOUR NOs. OF ANGLE STOPPER OR SUITABLE METHOD. THEN USE THREE STRAPS ON COIL FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF COIL SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
   - 4.3 AFTER TIGHTENING BY THREE STRAP, COIL SHALL BE TIGHTENED ADEQUATELY BY 04 NOs. OF LASHING CHAIN/ MENTIONED STEEL STRAP WITH ISOLATION HOOK.
   - 4.4 AFTER TIGHTENING BY FOUR STRAP, COIL SHALL BE SECURE BY PROVIDING FOUR NO. OF ANGLE STOPPER AS SHOWN IN DRAWING.
   - 4.5 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
5. **PROCEDURE OF LOADING STEEL PLATES ON WAGON ARE:−**
   - 5.1 THE STEEL PLATES SHALL BE UNITIZED IN BUNDLE FORM.
   - 5.2 BEFORE LOADING, ENSURE THAT WOODEN RUNNER ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT SHAL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY.
   - 5.3 AFTER PLACING THE FIRST BUNDLE OF STEEL PLATES ON WOODEN RUNNER, INTERMEDIATE WOODEN RUNNER PLACED AT CORRECT POSITION BETWEEN STEEL PLATES BUNDLE AS SHOWN IN DRAWING. AFTER THAT UNITIZING THE ALL BUNDLES OF PLATES BY FOUR STRAPS ITSELF, THEN USE FIVE STRAP ON STEEL PLATES BUNDLES FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF BUNDLES OF STEEL PLATES SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
   - 5.4 AFTER TIGHTENING BY FIVE STRAP, BUNDLE OF STEEL PLATES SHALL BE SECURE BY PROVIDING EIGHT NO. OF ANGLE STOPPER AS SHOWN IN DRAWING.
   - 5.5 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER BUNDLES OF STEEL PLATES.
6. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

STEEL STRAP USED FOR COIL (SPECIFICATION EN13247:2001.)

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.−EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5 TON)

AND

STEEL STRAP USED FOR PLATE (SPECIFICATION EN13247:2001.)

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.−EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3 TON)

7. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002−1.
8. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSION METER. ① CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT OF STEEL STRAP.
9. THE ISOLATION HOOK (ITEM NO.3) SHOULD BE WELD WITH WAGON FLOOR TO ACCOMODATE COIL DIA/ WIDTH AS SHOWN IN DRAWING.
10. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD−CS−01−LOAD SECURING CHECK SHEET (LATEST).
11. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
12. THE LOADING/UNLOADING OF COIL AND BUNDLES OF STEEL PLATES TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
13. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.

ITEM	DESCRIPTION	NO. OF PCS PER PLATES	NO. OF PCS PER COIL	MTL&SPEC	REMARKS
10.	INTERMEDIATE WOODEN RUNNER (50X100)FOR STEEL PLATES	10*	--	WOOD	*NOs. OF INTERMEDIATE WOODEN RUNNER AS PER NOs. OF BUNDLE
9.	WOODEN RUNNER (100X100) FOR STEEL PLATES	05	--	WOOD	
8.	ANGLE STOPPER	04	08	---	AS PER DRAWING NO. WD−24036−S−01,ITEM NO.−4 ①
7.	LASHING CHAIN OR HEAVY DUTY STRAP FOR SELF UNITIZATION	04	--	EN13247:2001	
6.	LASHING CHAIN OR HEAVY DUTY STRAP	05	07	EN13247:2001	SEE NOTE NO.−6
5.	WOODEN WEDGE FOR COIL	--	02	WOOD	
4.	WOODEN CRADLE FOR COIL	--	03	WOOD	
3.	ISOLATION HOOK	10	10	---	AS PER DRAWING NO. WD−24036−S−01,ITEM NO.−3 ①
2.	STEEL PLATES (01 NO./ EACH BOGIE CENTRE)	--	--	STEEL	(AS PER TABLE−A&B)
1.	STEEL COIL AT WAGON CENTRE (01 NO./ WAGON CENTRE)	--	--	STEEL	(AS PER TABLE−A)

SUPERSEDED BY

SUPERSEDES

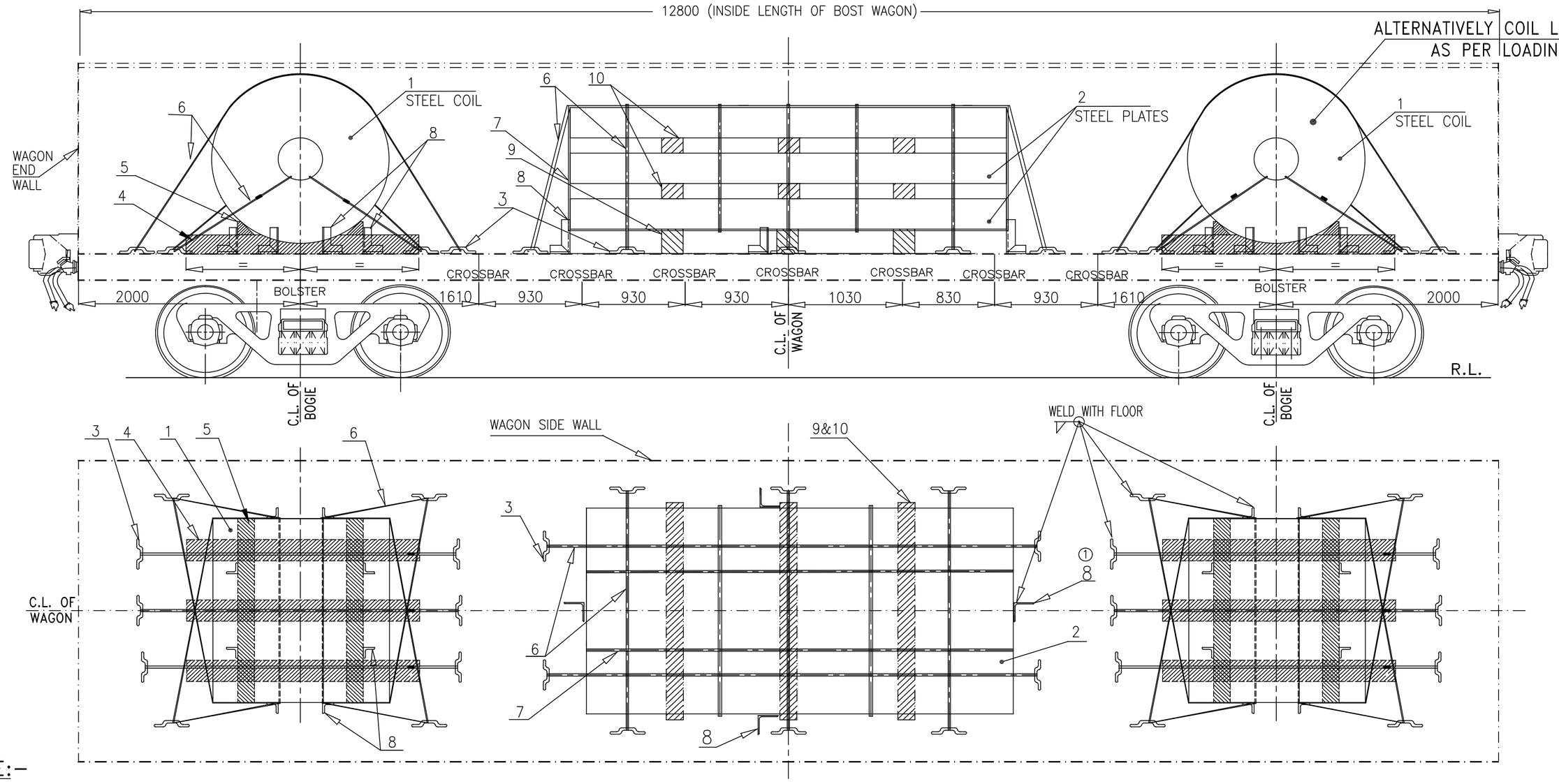
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
1	--	WD−24036	ITEM NO. 3 & 8 DRG. DELETED AND REFERENCE DRG. NO. ADDED IN DESCRIPTION TABLE. NOTE NO.−8 MODIFIED. FOR PLATE, ANGLE STOPPER REDUCED FROM 8 TO 4.	04/24	

SCALE	PASSED	sd−S.M.Tripathi	01/24
	CHECKED	sd−A.K.Kushvaha	01/24
	DRAWN	SACHIN KUMAR	01/24
	J.S.NO.	WD−24001	01/24

LOADING OF STEEL COIL ALONG WAGON WIDTH ON WAGON CENTER & STEEL PLATES ON BOGIE CENTER ON BOST WAGON & IT'S VARIANTS

B.G. | R.D.S.O. [W] | GROUP | WD−24001−S−03

File No.RDSO-MWOGENL(EOFC)/8/2023-O/O PED/SWR/DSO

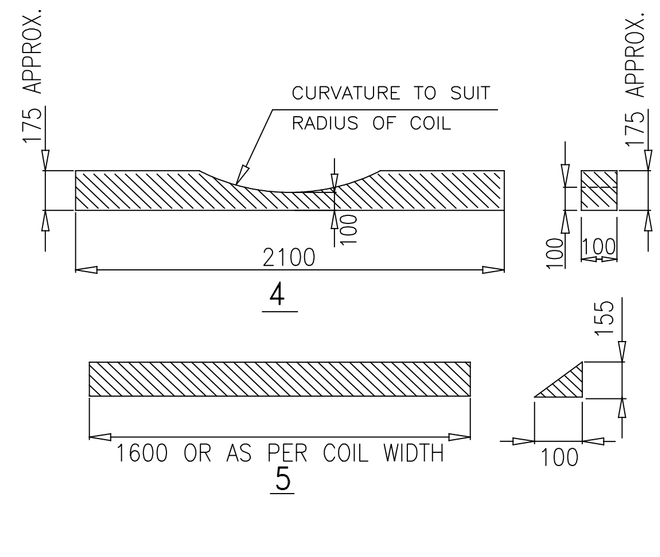


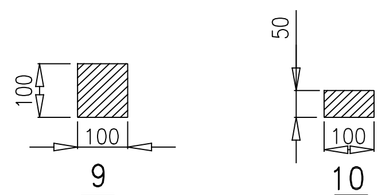
S.NO.	PLATES WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 20 TON MAXIMUM	(TOTAL PAY LOAD−20 TON)/2

TABLE−A (LOADING SCHEME FOR STEEL COIL & STEEL PLATES)

S.NO.	PLATES WEIGHT AT CENTRE OF WAGON	COILS WEIGHT AT EACH BOGIE CENTRE
1.	NO PLATES LOADED AT CENTRE	TOTAL PAY LOAD/2

TABLE−B (LOADING SCHEME FOR STEEL COILS AT BOGIE CENTRE)





(FOR ITEM NO. 9 & 10 LENGTH AS PER WIDTH OF PLATES)

NOTE:−

1. INDIVIDUAL COIL AND BUNDLES OF STEEL PLATES ARE TO BE LASHED BY USING HEAVY DUTY STRAPS AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. THE STEEL COILS LOADED ALONG THE WAGON WIDTH & BUNDLES OF STEEL PLATES LOADED ALONG THE WAGON LENGTH, SHOULD BE SYMMETRICAL ALONG LONGITUDINAL AND TRANSVERSE AXIS OF WAGON.
3. **LOADING PARAMETER OF COIL AND BUNDLES OF STEEL PLATES SHOULD BE SUCH THAT:−**
   - 3.1 COILS AND BUNDLES OF STEEL PLATES LOADING COMPOSITION DEPENDING UPON THE WEIGHT OF COIL AS WELL AS WEIGHT OF BUNDLES OF STEEL PLATES, CAN BE USED AS PER TABLE A & B.
   - 3.1(a) IF LOADING IS DONE AS PER TABLE−A, COIL AT EACH BOGIE/ BOLSTER CENTRE AND BUNDLES OF STEEL PLATES AT CENTRE OF WAGON, THEN MAXIMUM WEIGHT OF BUNDLES OF STEEL PLATES SHOULD NOT EXCEED 20 TON IN ANY CONDITION.
   - 3.1(b) AS PER TABLE−B, COIL LOADED AT BOTH SIDE ON EACH BOGIE/ BOLSTER CENTRE AND NO BUNDLE OF STEEL PLATES LOADED AT WAGON CENTRE.
   - 3.2 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   - 3.3 THE COIL WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   - 3.4 MAXIMUM WEIGHT DIFFERENCE IN COILS LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   - 3.5 TOTAL WEIGHT OF LOADED COILS AND BUNDLES OF STEEL PLATES ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
4. **PROCEDURE OF LOADING STEEL COIL ON WAGON ARE:−**
   - 4.1 BEFORE LOADING, ENSURE THAT WOODEN CRADLE ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT SHAL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY. TRIANGULAR WOODEN WEDGE USED ACROSS THE WIDTH OF COIL.
   - 4.2 AFTER PLACING THE COIL ON WOODEN CRADLE, WOODEN WEDGE PLACED AND FIXED ON BOTH SIDE OF COIL BY FOUR NOs. OF ANGLE STOPPER, THEN USE THREE STRAPS ON EACH COIL FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF EACH COIL SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
   - 4.3 AFTER TIGHTENING BY THREE STRAP, EACH COIL SHALL BE TIGHTENED ADEQUATELY BY 04 NOs. OF LASHING CHAIN/ MENTIONED STEEL STRAP WITH ISOLATION HOOK.
   - 4.4 AFTER TIGHTENING BY FOUR STRAP, EACH COIL SHALL BE SECURE BY PROVIDING FOUR NO. OF ANGLE STOPPER AS SHOWN IN DRAWING.
   - 4.5 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
5. **PROCEDURE OF LOADING STEEL PLATES ON WAGON ARE:−**
   - 5.1 THE STEEL PLATES SHALL BE UNITIZED IN BUNDLE FORM.
   - 5.2 BEFORE LOADING, ENSURE THAT WOODEN RUNNER ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT SHAL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY.
   - 5.3 AFTER PLACING THE FIRST BUNDLE OF STEEL PLATES ON WOODEN RUNNER, INTERMEDIATE WOODEN RUNNER PLACED AT CORRECT POSITION BETWEEN STEEL PLATES BUNDLE AS SHOWN IN DRAWING .AFTER THAT UNITIZING THE ALL BUNDLES OF PLATES BY FOUR STRAPS ITSELF.THEN USE FIVE STRAP ON STEEL PLATES BUNDLES FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF BUNDLES OF STEEL PLATES SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
   - 5.4 AFTER TIGHTENING BY FIVE STRAP, BUNDLE OF STEEL PLATES SHALL BE SECURE BY PROVIDING EIGHT NO. OF ANGLE STOPPER AS SHOWN IN DRAWING.
   - 5.5 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER BUNDLES OF STEEL PLATES.
6. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

STEEL STRAP USED FOR COIL (SPECIFICATION EN13247:2001.)

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.−EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5 TON)

AND

STEEL STRAP USED FOR PLATE (SPECIFICATION EN13247:2001.)

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.−EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3 TON)

7. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002−1.
8. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSION METER. ① CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT OF STEEL STRAP.
9. THE ISOLATION HOOK (ITEM NO.3) SHOULD BE WELD WITH WAGON FLOOR TO ACCOMMODATE COIL DIA/ WIDTH AS SHOWN IN DRAWING.
10. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD−CS−01−LOAD SECURING CHECK SHEET (LATEST).
11. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
12. THE LOADING/UNLOADING OF COIL AND BUNDLES OF STEEL PLATES TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
13. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
1	--	WD−24036	ITEM NO. 3 & 8 DRG. DELETED AND REFERENCE DRG. NO. ADDED IN DESCRIPTION TABLE. NOTE NO.−8 AND DIMENSION OF ITEM 4 & 5 MODIFIED. ANGLE STOPPER FOR PLATE REDUCED FROM 8 TO 4.	04/24	

ITEM	DESCRIPTION	NO. OF PCS PER PLATES	NO. OF PCS PER COIL	MTL&SPEC	REMARKS
10.	INTERMEDIATE WOODEN RUNNER (50X100)FOR STEEL PLATES	06	--	WOOD	NOs. OF INTERMEDIATE WOODEN RUNNER AS PER NOs. OF BUNDLE
9.	WOODEN RUNNER (100X100) FOR STEEL PLATES	03	--	WOOD	
8.	ANGLE STOPPER	04	08	---	AS PER DRAWING NO. WD−24036−S−01, ITEM NO.−4 ①
7.	LASHING CHAIN OR HEAVY DUTY STRAP FOR SELF UNITIZATION	04	--	EN13247:2001	
6.	LASHING CHAIN OR HEAVY DUTY STRAP WITH ISOLATION HOOK	05	07	EN13247:2001	
5.	WOODEN WEDGE FOR COIL	--	02	WOOD	
4.	WOODEN CRADLE FOR COIL	--	03	WOOD	
3.	ISOLATION HOOK	10	10	---	AS PER DRAWING NO. WD−24036−S−01, ITEM NO.−3 ①
2.	STEEL PLATES BUNDLE (01 NO./ WAGON CENTRE)	--	--	STEEL	(AS PER TABLE−A)
1.	STEEL COIL AT EACH BOGIE CENTRE (01 NO./ BOGIE CENTRE)	--	--	STEEL	(AS PER TABLE−A&B)

SUPERSEDED BY

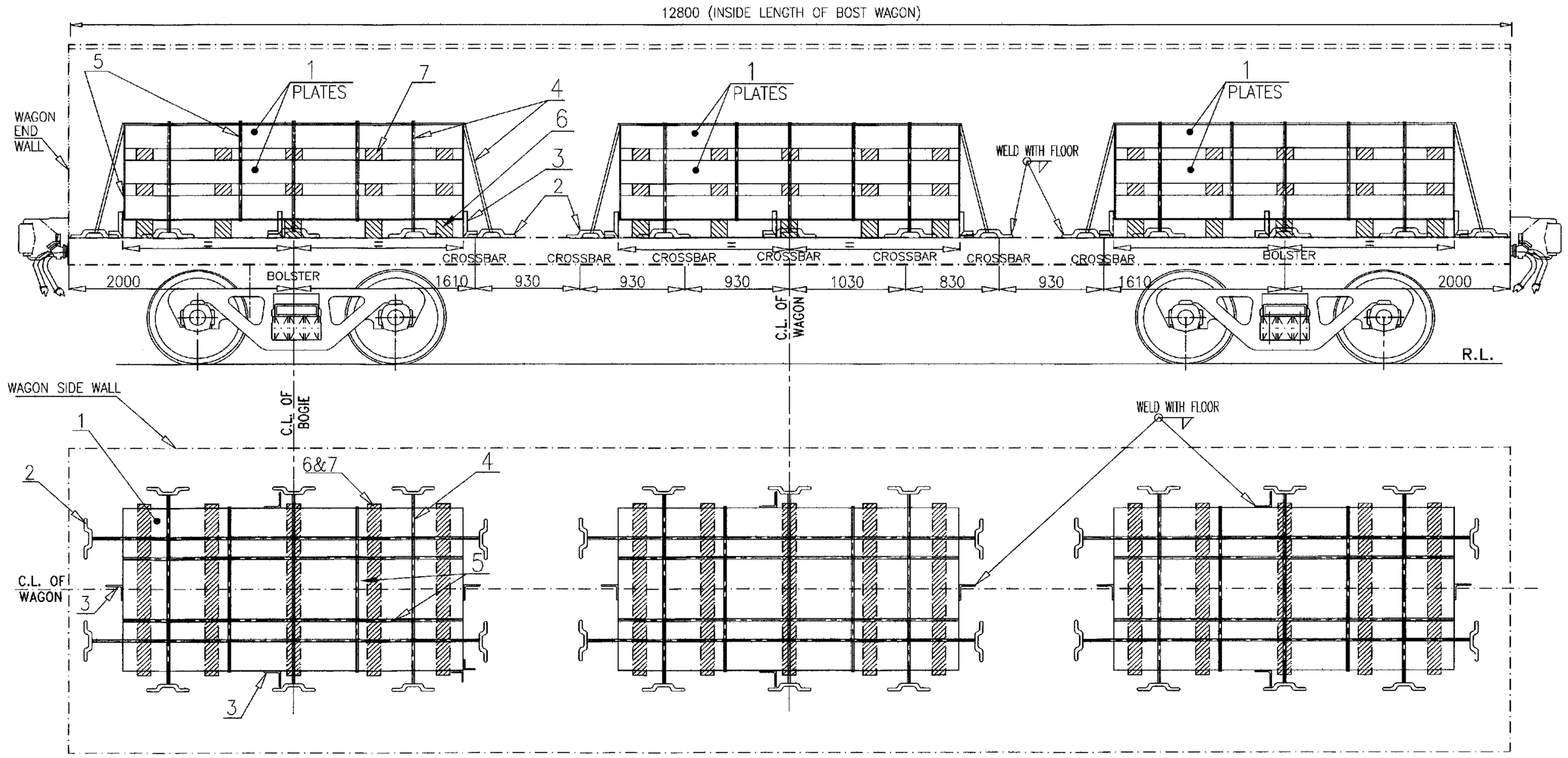
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SCALE			
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	CHECKED	sd−A.K.Kushvaha	01/24
	DRAWN	SACHIN KUMAR	01/24
	J.S.NO.	WD−24001	01/24

LOADING OF STEEL PLATES ON WAGON CENTRE & STEEL COILS ALONG WAGON WIDTH ON BOGIE CENTER ON BOST WAGON & IT'S VARIANTS

B.G. | R.D.S.O. [W] | GROUP | WD−24001−S−04

File No:RDSO-MW0GENE(EOFC)/8/2023-Gr6 PED/SWIR/RDSO

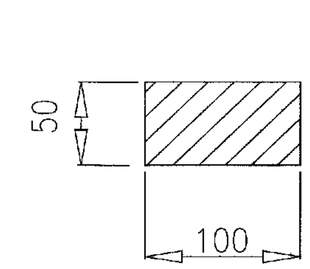


S.NO.	PLATE WEIGHT AT CENTRE OF WAGON	PLATE WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 20 TON MAXIMUM	(TOTAL PAY LOAD−20 TON)/2

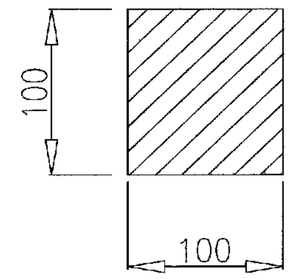
TABLE−A (LOADING SCHEME FOR STEEL PLATES)

S.NO.	PLATE WEIGHT AT CENTRE OF WAGON	PLATE WEIGHT AT EACH BOGIE CENTRE
1.	NO STEEL PLATE LOADED AT CENTRE	TOTAL PAY LOAD/2

TABLE−B (LOADING SCHEME FOR STEEL PLATES)



7



6

NOTE:−

1. INDIVIDUAL BUNDLES OF STEEL PLATES ARE TO BE UNITIZED BY USING HEAVY DUTY STRAPS AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. THE BUNDLES OF STEEL PLATES LOADED ALONG THE WAGON LENGTH, SHOULD BE SYMMETRICAL ALONG LONGITUDINAL AND TRANSVERSE AXIS OF WAGON.
3. **LOADING PARAMETER OF BUNDLES OF STEEL PLATES SHOULD BE SUCH THAT:−**
   - 3.1 BUNDLES OF STEEL PLATES LOADING COMPOSITION DEPENDING UPON WEIGHT, CAN BE DESCRIBED BY TABLE A & B.
     - 3.1(a) IF LOADING IS DONE AS PER TABLE−A, ONE BUNDLES OF STEEL PLATES LOADED AT EACH BOGIE/ BOLSTER CENTRE AND ONE AT MIDDLE OF WAGON, THEN MAXIMUM WEIGHT OF STEEL PLATE AT CENTER SHOULD NOT EXCEED BY 20 TON IN ANY CONDITION.
     - 3.1(b) AS PER TABLE−B, BUNDLES OF STEEL PLATES LOADED AT EACH BOGIE/ BOLSTER CENTRE AND NO STEEL PLATE LOADING DONE AT MIDDLE OF WAGON.
   - 3.2 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   - 3.3 THE STEEL PLATES BUNDLE WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   - 3.4 MAXIMUM WEIGHT DIFFERENCE IN STEEL PLATES BUNDLE LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   - 3.5 TOTAL WEIGHT OF BUNDLES OF STEEL PLATES ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
4. **PROCEDURE OF LOADING STEEL PLATES ON WAGON ARE:−**
   - 4.1 THE STEEL PLATES SHALL BE UNITIZED IN BUNDLE FORM.
   - 4.2 BEFORE LOADING, ENSURE THAT WOODEN RUNNER ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT SHAL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY.
   - 4.3 AFTER PLACING THE FIRST BUNDLE OF STEEL PLATES ON WOODEN RUNNER, INTERMEDIATE WOODEN RUNNER PLACED AT CORRECT POSITION BETWEEN STEEL PLATES BUNDLES AS SHOWN IN DRAWING. AFTER THAT UNITIZING THE ALL BUNDLES OF PLATES BY FOUR STRAPS ITSELF, THEN USE FIVE STRAP ON STEEL PLATES BUNDLES FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF BUNDLES OF STEEL PLATES SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
   - 4.4 AFTER TIGHTENING BY FIVE STRAP, BUNDLE OF STEEL PLATES SHALL BE SECURE BY PROVIDING EIGHT NO. OF ANGLE STOPPER AS SHOWN IN DRAWING.
   - 4.5 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER BUNDLES OF STEEL PLATES.
5. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.−EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3 TON)

6. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002−1.
7. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSION METER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT OF STEELSTRAP.
8. THE LOADING PARTY SHOULD WELD ISOLATION HOOK (ITEM NO.2) WITH WAGON FLOOR TO ACCOMODATE PLATE LENGTH/ WIDTH AS SHOWN IN DRAWING.
9. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD−CS−01−LOAD SECURING CHECK SHEET (LATEST).
10. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION
11. THE LOADING/UNLOADING OF BUNDLES OF STEEL PLATES TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
12. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.

File No.RDSO-MWGENL(EOFC)/8/2023-O/o PED/SWRDSO

ITEM	DESCRIPTION	NO. OF PCS PER PLATES	MTL&SPEC	REMARKS
7.	INTERMEDIATE WOODEN RUNNER (50X100)FOR STEEL PLATES	10	WOOD	NO. OF INTERMEDIATE WOODEN RUNNER AS PER BUNDLES
6.	WOODEN RUNNER (100X100)	5	WOOD	
5.	LASHING CHAIN OR HEAVY DUTY STRAP FOR SELF UNITIZATION	4	EN13247:2001	
4.	LASHING CHAIN OR HEAVY DUTY STRAP TIGHTEN ISOLATION HOOK	5	EN13247:2001	
3.	ANGLE STOPPER	4	---	AS PER DRAWING NO. WD−24036−S−01,ITEM NO.−4
2.	ISOLATION HOOK	10	---	AS PER DRAWING NO. WD−24036−S−01,ITEM NO.−3
1.	STEEL PLATES	--	STEEL	(AS PER TABLE−A & B)

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS

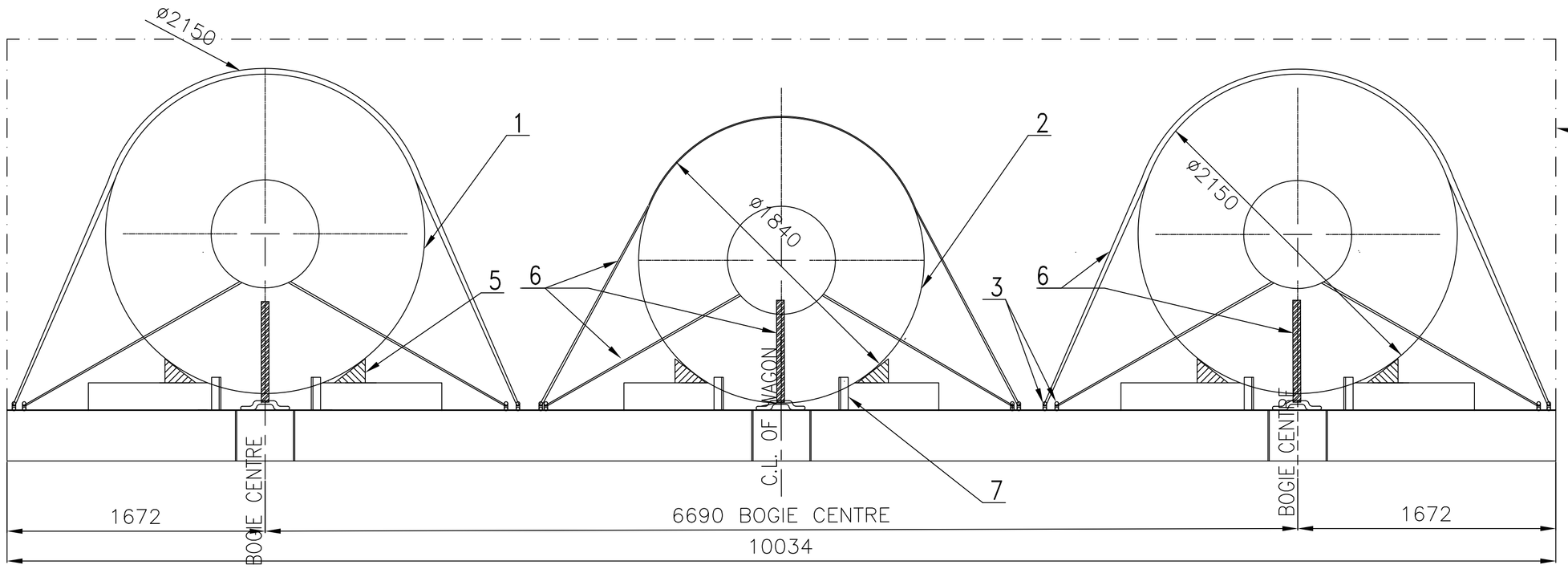
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SUPERSEDES
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CHECKED [illegible] 05/24
DRAWN ASHUTOSH SINGH 05/24
J.S.NO. WD−24036 04/24

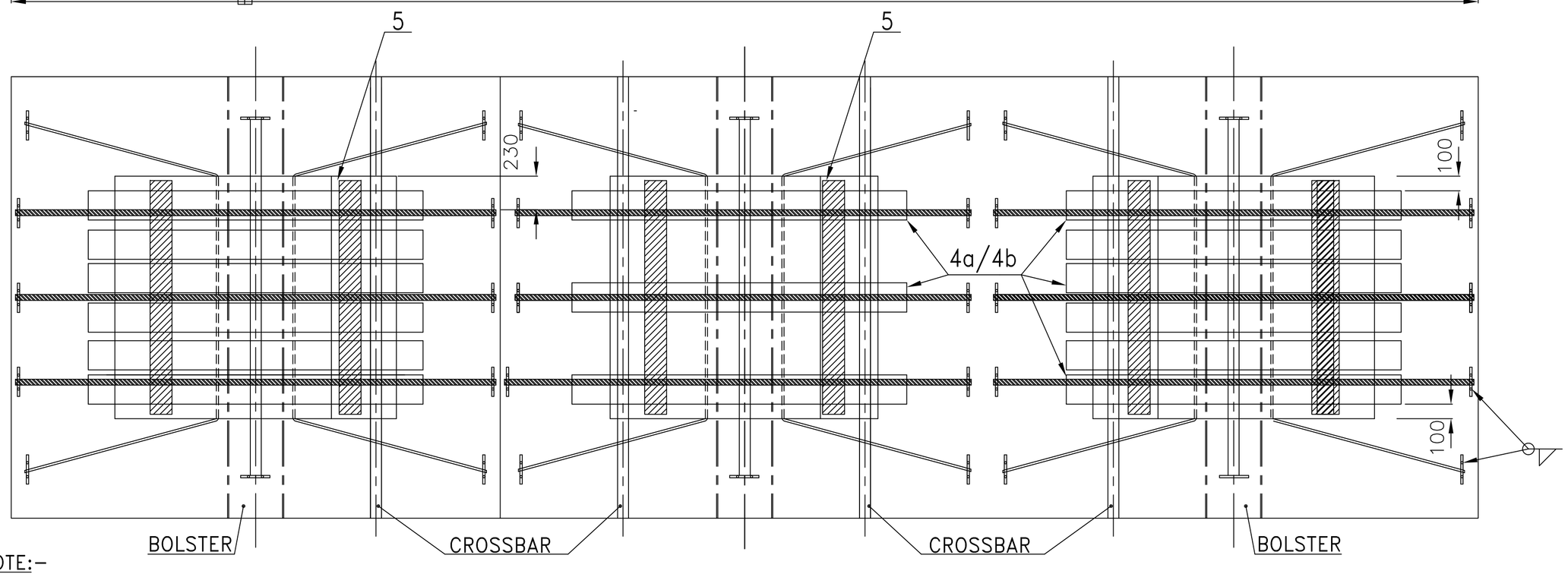
B.G. | R.D.S.O. [W]

LOADING OF STEEL PLATES ON BOST WAGON AND IT'S VARIANTS

GROUP

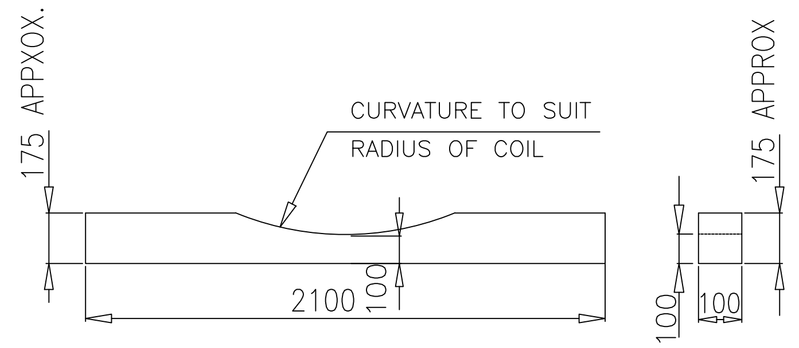
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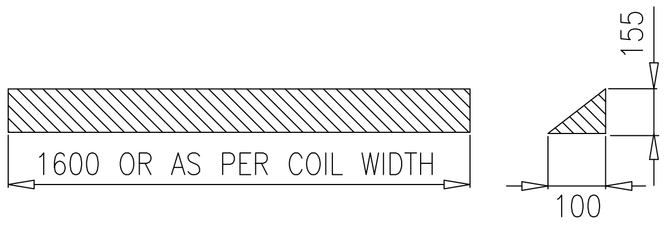


TABLE–A :

S.NO.	COIL WEIGHT AT EACH BOGIE CENTRE	NUMBER OF SADDLES/CRADLES AT EACH BOGIE CENTRE
1.	28 TONNES	06
2	LESS THAN 28 TONNES	NUMBER OF SADDLES AS PER WIDTH OF COIL BUT NOT LESS THAN THREE



4a (CRADLE)



5

NOTE:–

1. STEEL COILS SHOULD BE STRICTLY LOADED ON THE WAGON AS PER LOADING PATTERN SHOWN IN DRAWING.
2. THE STEEL COILS LOADING ALONG THE WAGON WIDTH SHOULD BE SYMMETRICALLY ABOUT THE LONGITUDINAL CENTRE LINE AS WELL AS TRANSVERSE AXIS OF WAGON.
3. THE DIAMETER OF THE COIL SHOWN IN DRAWING IS THE MAXIMUM LOADABLE DIAMETER. LOWER DIAMETER COILS CAN ALSO BE LOADED.
4. LOADING OF COILS SHOULD BE SUCH THAT :–
   - 4.1 THE MAXIMUM WEIGHT OF INDIVIDUAL COIL AT EACH BOGIE SHOULD NOT EXCEED 28 TONNES AND AT MIDDILE SHOULD NOT EXCEED 8 TONNES.
   - 4.2 THE COILS WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   - 4.3 MAXIMUM DIFFERENCE IN COILS WEIGHT LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   - 4.4 THE MAXIMUM NO OF COILS AT EACH BOGIE AND AT CENTRE IN CASE OF UNITIZATION OF COILS SHOULD NOT EXCEED TWO. FOR WEIGHT REFER POINT 4.1
5. USE OF SADDLES/CRADLE:
   - 5.1 NUMBER OF SADDLE/CRADLE AT EACH BOGIE SHOULD BE AS PER TABLE–A.
   - 5.2 USE EITHER WOODEN CRADLES (AS PER ITEM–4a) OR METALLIC SADDLES (AS PER ITEM–4b).
6. BEFORE LOADING, ENSURE THAT METALLIC SADDLE/WOODEN CRADLE ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY OF HARD WOOD IS THE RESPONSIBILITY OF LOADING PARTY.
7. AFTER PLACING THE COIL ON METALLIC SADDLE/WOODEN CRADLE, PLACE WOODEN WEDGE ON BOTH SIDE OF COIL AT THE SADDLE/CRADLE AND THEN USE THREE STRAPS ON EACH COIL FOR TIGHTENED WITH WAGON FLOOR AS SHOWN IN DRAWING, FOR SAFE OPERATION .
8. AFTER TIGHTENING BY THREE STRAP, EACH COILS SHALL BE TIGHTENED ADEQUATELY BY 04 NOs. OF LASHING CHAIN/ MENTIONED STEEL STRAP WITH ISOLATION HOOK.
9. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (REF.–EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5 TON)

10. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1.
11. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSOMETER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT.
12. OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
13. THE LOADING PARTY SHOULD WELD ISOLATION HOOK WITH WAGON FLOOR TO ACCOMODATE COIL DIIA/ WIDTH AS SHOWN IN DRAWING.
14. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD–CS–01–LOAD SECURING CHECK SHEET (LATEST).
15. THIS RDSO DRAWING IS AN INDUCTIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
16. THE LOADING/UNLOADING OF COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
17. IT SHOULD BE ENSURED THAT THE CRADLES/SADDLE SHALL BE PLACED OVER LOAD BEARING MEMBERS OF THE WAGON AS PER THE DRAWING.

ITEM	DESCRIPTION	NO. OF PCS PER COIL	MTL&SPEC	REMARKS
7.	ANGLE STOPPER	4	–	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–4
6.	LASHING CHAIN OR HEAVY DUTY STRAP	6	EN13247:2001	–
5.	WOODEN WEDGE	2	WOOD	–
4b.	SADDLE	06 (AT END) 03 (AT CENTRE)	–	AS PER DRAWING NO. WD–24036–S–01, ITEM NO.–2
4a.	CRADLE	06 (AT END) 03 (AT CENTRE)	WOOD	(SEE TABLE–A)
3.	ISOLATION HOOK	12	–	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–3
2.	STEEL COIL AT CENTER (01 NO./ WAGON)	––	STEEL	(SEE TABLE–A)
1.	STEEL COIL AT EACH BOGIE CENTER (01 NO./ BOGIE CENTER)	––	STEEL	(SEE TABLE–A)

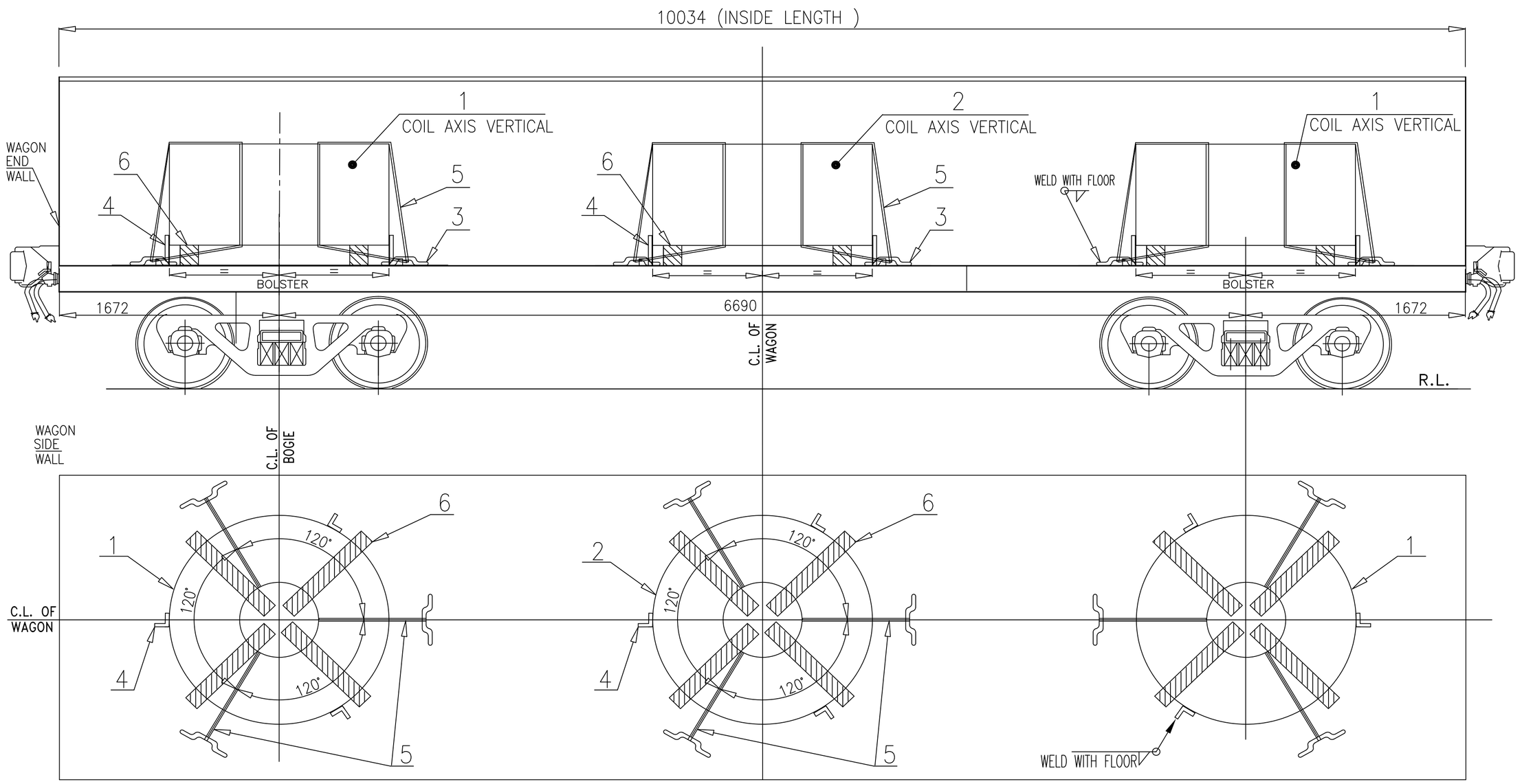
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
①	–	–	SKETCH REVISED & REDRAWN	04/24	

SUPERSEDED BY
SUPERSEDES — DATE
SCALE — PASSED
CHECKED
DRAWN L. MOHAN
J.S.NO.

LOADING DIAGRAM FOR STEEL COIL ON BOXNHL WAGON (EYE TO SIDE)

B.G. | R.D.S.O. [W] | GROUP | SKETCH/WD–II/10

File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED(SW)RDSO

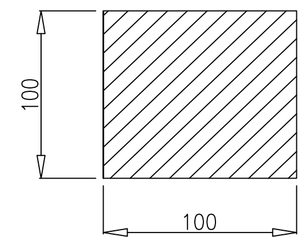


S.NO.	COIL WEIGHT AT WAGON CENTRE	COIL WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 08 TON MAXIMUM	28 TON (MAXIMUM)

TABLE–A (LOADING SCHEME FOR STEEL COIL AT BOGIE AND WAGON CENTER)

S.NO.	COIL WEIGHT AT WAGON CENTRE	COIL WEIGHT AT EACH BOGIE CENTRE
1.	NO STEEL COIL LOADED AT CENTRE	28 TON (MAXIMUM)

TABLE–B (LOADING SCHEME FOR STEEL COILS AT BOGIE CENTER)



(LENGTH AS PER COIL DIA)

6

NOTE:–

1. INDIVIDUAL COIL ARE TO BE UNITIZED BY USING HEAVY DUTY STRAPS AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. THE STEEL COILS LOADED VERTICALLY SHOULD BE SYMMETRICAL ALONG LONGITUDINAL AND TRANSVERSE AXIS OF WAGON.
3. **LOADING PARAMETER OF STEEL COILS SHOULD BE SUCH THAT:–**
   - 3.1 THE VERTICAL LOADED STEEL COILS LOADING COMPOSITION DEPENDING UPON WEIGHT, CAN BE DESCRIBED BY TABLE A & B.
   - 3.1(a) IF LOADING IS DONE AS PER TABLE–A, STEEL COIL LOADED AT BOTH SIDE ON EACH BOGIE/ BOLSTER CENTRE AND AT MIDDLE OF WAGON, THEN MAXIMUM WEIGHT OF STEEL COIL AT WAGON CENTER SHOULD NOT EXCEED BY 8 TON IN ANY CONDITION.
   - 3.1(b) IF LOADING IS DONE AS PER TABLE–B, STEEL COILS ARE LOADED AT EACH BOGIE/ BOLSTER CENTRE AND NO STEEL COIL IS LOADED AT MIDDLE OF WAGON.
   - 3.2 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED 28 TON.
   - 3.3 THE COIL WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   - 3.4 MAXIMUM WEIGHT DIFFERENCE IN COIL LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   - 3.5 TOTAL WEIGHT OF LOADED COILS ON WAGON SHOULD NOT EXCEED 64 TON AS PER TABLE 'A' AND 56 TON AS PER TABLE 'B'.
   - 3.6 RESTRICTION W≤1.5D.
4. **PROCEDURE OF LOADING STEEL COIL ON WAGON ARE:–**
   - 4.1 BEFORE LOADING, ENSURE THAT WOODEN RUNNER ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY.
   - 4.2 AFTER PLACING THE COIL ON WOODEN RUNNER, EITHER 03 NO's STOPPERS OR 03 NO's STRAPS (TIGHTENED WITH ISOLATION HOOK) SHOULD BE APPLIED FOR SECURING OF EACH COIL AS SHOWN IN DRAWING, FOR SAFE OPERATION.
   - 4.3 DEPENDING UPON THE EXPERIENCE/ REPORT OF UNUSUAL INCIDENCE WITH THE ABOVE COIL SECURING ARRANGEMENT, CONCERNED RAILWAY/ CONSIGNEE MAY TAKE DECISION FOR APPLICATION OF STOPPER AND STRAPS (BOTH) TO SECURE THE LOAD PROPERLY TO AVOID ANY UNUSUAL INCIDENCE.
   - 4.4 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
5. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.–EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3 TON)

6. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1.
7. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500 kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSOMETER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT.
8. THE LOADING PARTY SHOULD WELD ISOLATION HOOK (ITEM NO.3) WITH WAGON FLOOR TO ACCOMODATE COIL DIA/ WIDTH AS SHOWN IN DRAWING.
9. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD–CS–01–LOAD SECURING CHECK SHEET (LATEST).
10. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
11. THE LOADING/UNLOADING OF STEEL COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
12. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.
13. STEEL COIL SHOULD BE LOADED SLOWLY/ GRADUALLY ON THE FLOOR OF WAGON . IMPACT LOADING NOT TO BE CARRIED OUT IN ANY CIRCUMSTANCE.

ITEM	DESCRIPTION	No. OF PCS PER COIL	MTL&SPEC	REMARKS
6.	WOODEN RUNNER	4	WOOD	
5.	LASHING CHAIN OR HEAVY DUTY STRAP	3	EN13247:2001	
4.	ANGLE STOPPER	3	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–4
3.	ISOLATION HOOK	3	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–3
2.	STEEL COIL (01 NO./ WAGON CENTER)	--	STEEL	(AS PER TABLE–A)
1.	STEEL COIL (01 NO./ BOLSTER CENTER)	--	STEEL	(AS PER TABLE–A & B)

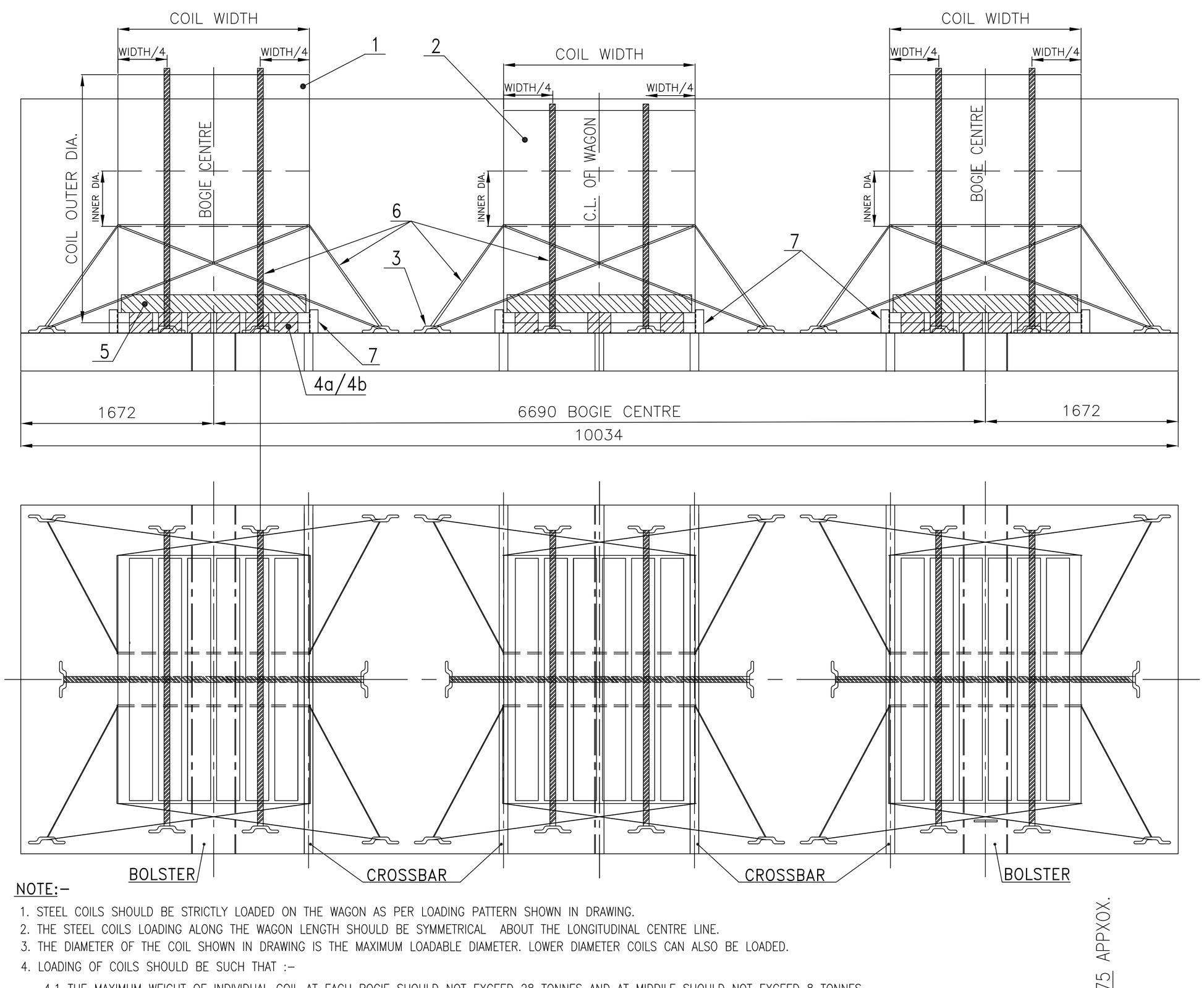
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY.	DRGS
①	–	WD–24038	VIEWS OF ITEM NO. 3 & 4 DRG. DELETED AND REFERENCE DRG. NO. ADDED IN DESCRIPTION TABLE. NOTE NO.–4.2,4.3 & 7 MODIFIED. NO. OFF STRAPS, ISOLATION HOOK & ANGLE STOPPER REDUCED FROM 6, 6 & 4 TO 3, 3 & 3 RESPECTIVELY.			

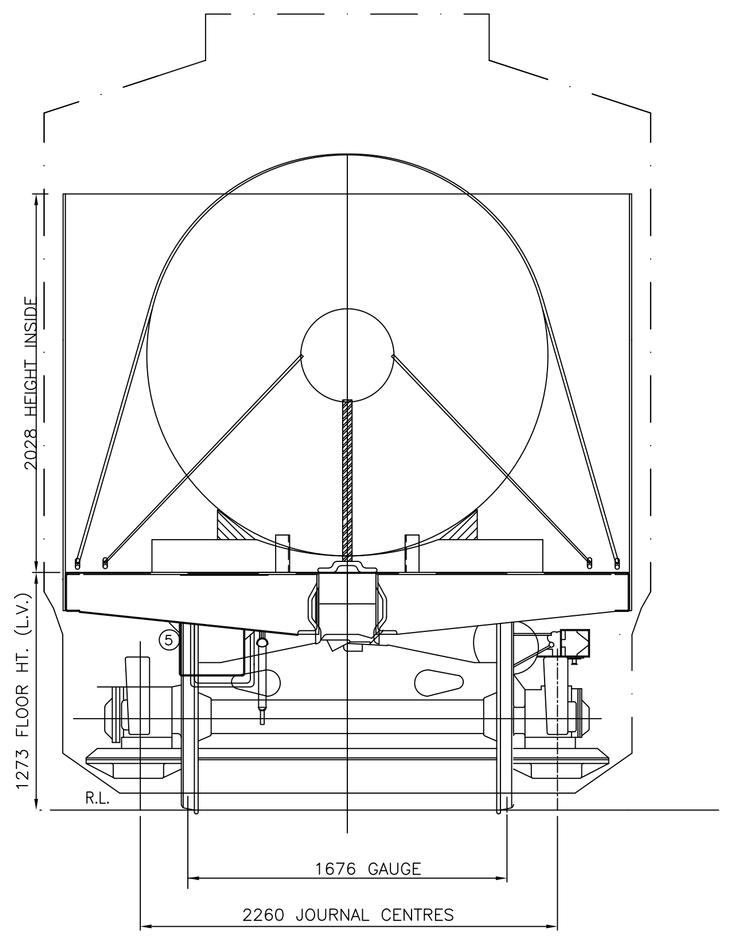
SUPERSEDED BY
SUPERSEDES DATE
SCALE PASSED
CHECKED
DRAWN D. KUMAR 03/24
J.S.NO.

LOADING DIAGRAM OF VERTICAL LOADED STEEL COILS ON BOXNHL WAGON

B.G. | R.D.S.O. [W] | GROUP | SKETCH/WD–II/11

File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SW/RDSO





TABLE–A :

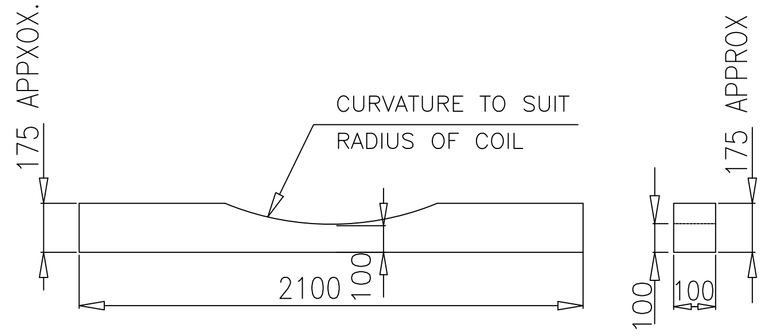
S.NO.	COIL WEIGHT AT EACH BOGIE CENTRE	NUMBER OF SADDLES/CRADLES AT EACH BOGIE CENTRE
1.	28 TONNES	06
2	LESS THAN 28 TONNES	NUMBER OF SADDLES AS PER WIDTH OF COIL BUT NOT LESS THAN THREE

NOTE:–

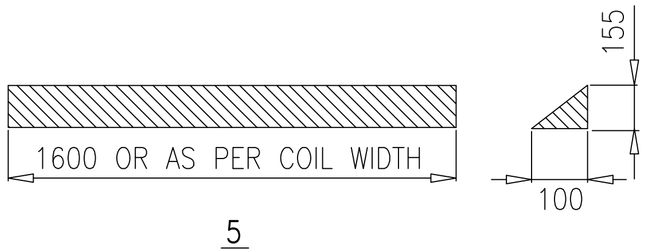
1. STEEL COILS SHOULD BE STRICTLY LOADED ON THE WAGON AS PER LOADING PATTERN SHOWN IN DRAWING.
2. THE STEEL COILS LOADING ALONG THE WAGON LENGTH SHOULD BE SYMMETRICAL ABOUT THE LONGITUDINAL CENTRE LINE.
3. THE DIAMETER OF THE COIL SHOWN IN DRAWING IS THE MAXIMUM LOADABLE DIAMETER. LOWER DIAMETER COILS CAN ALSO BE LOADED.
4. LOADING OF COILS SHOULD BE SUCH THAT :–
   - 4.1 THE MAXIMUM WEIGHT OF INDIVIDUAL COIL AT EACH BOGIE SHOULD NOT EXCEED 28 TONNES AND AT MIDDILE SHOULD NOT EXCEED 8 TONNES.
   - 4.2 THE COILS WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   - 4.3 MAXIMUM DIFFERENCE IN COILS WEIGHT LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
5. USE OF SADDLES/CRADLE:
   - 5.1 NUMBER OF SADDLE/CRADLE AT EACH BOGIE SHOULD BE AS PER TABLE–A.
   - 5.2 USE EITHER WOODEN CRADLES (AS PER ITEM–4a) OR METALLIC SADDLES (AS PER ITEM–4b).
6. BEFORE LOADING, ENSURE THAT METALLIC SADDLE/WOODEN CRADLE ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY OF HARD WOOD IS THE RESPONSIBILITY OF LOADING PARTY.
7. AFTER PLACING THE COIL ON METALLIC SADDLE/WOODEN CRADLE, PLACE WOODEN WEDGE ON BOTH SIDE OF COIL AT THE SADDLE/CRADLE AND THEN USE THREE STRAPS ON EACH COIL FOR TIGHTENED WITH WAGON FLOOR AS SHOWN IN DRAWING, FOR SAFE OPERATION .
8. AFTER TIGHTENING BY THREE STRAP, EACH COILS SHALL BE TIGHTENED ADEQUATELY BY 04 NOs. OF LASHING CHAIN/ MENTIONED STEEL STRAP WITH ISOLATION HOOK.
9. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (REF.–EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5 TON)

10. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1.
11. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSOMETER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT.
12. OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
13. THE LOADING PARTY SHOULD WELD ISOLATION HOOK WITH WAGON FLOOR TO ACCOMODATE COIL DIIA/ WIDTH AS SHOWN IN DRAWING.
14. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD–CS–01–LOAD SECURING CHECK SHEET (LATEST).
15. THIS RDSO DRAWING IS AN INDUCTIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
16. THE LOADING/UNLOADING OF COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
17. IT SHOULD BE ENSURED THAT THE CRADLES/SADDLE SHALL BE PLACED OVER LOAD BEARING MEMBERS OF THE WAGON AS PER THE DRAWING.



4a (WOODEN CRADLE)



5

ITEM	DESCRIPTION	NO. OF PCS PER COIL	MTL&SPEC	REMARKS
7.	ANGLE STOPPER	4	–	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–4
6.	LASHING CHAIN OR HEAVY DUTY STRAP	5	EN13247:2001	
5.	WOODEN WEDGE	2	WOOD	
4b.	SADDLE	06 (AT END) 03 (AT CENTRE)	WOOD	AS PER DRAWING NO. WD–24036–S–01 ITEM NO.–01
4a.	CRADLE	06 (AT END) 03 (AT CENTRE)	WOOD	(SEE TABLE–A)
3.	ISOLATION HOOK	10		AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–3
2.	STEEL COIL AT CENTER (01 NO./ WAGON)	––	STEEL	(SEE TABLE–A)
1.	STEEL COIL AT EACH BOGIE CENTER (01 NO./ BOGIE CENTER)	––	STEEL	(SEE TABLE–A)

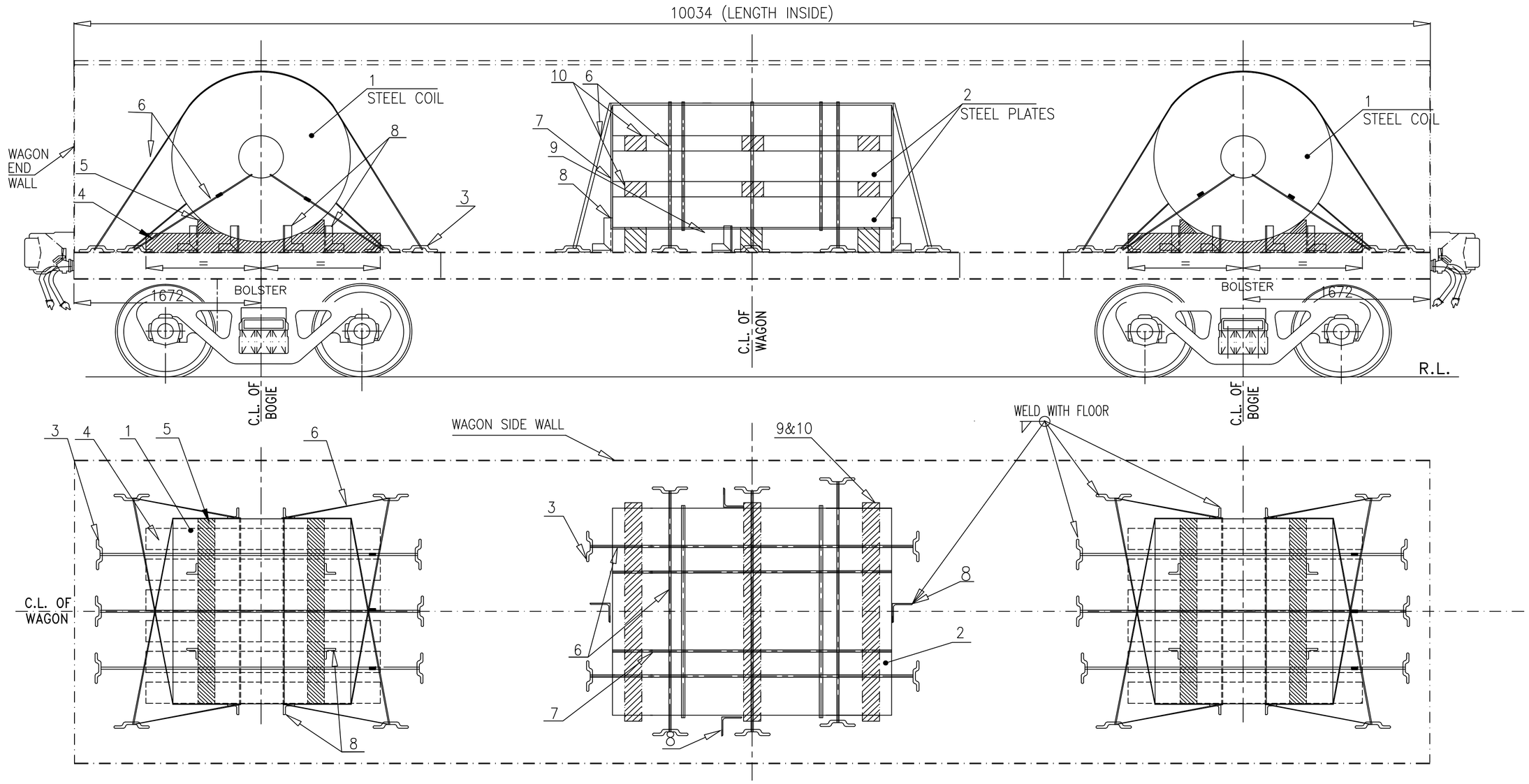
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

SUPERSEDED BY
SUPERSEDES — DATE
SCALE — PASSED
CHECKED
DRAWN K. PAL 04/24
J.S.NO.

LOADING DIAGRAM FOR STEEL COIL ON BOXNHL WAGON (EYE TO ENGINE)

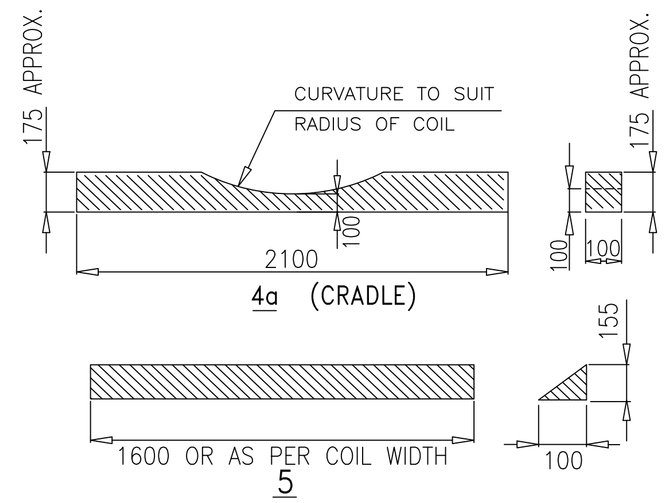
B.G. | R.D.S.O. [W] | GROUP | SKETCH/WD–II/12

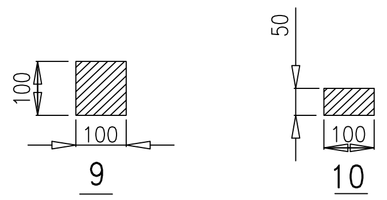
File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED/SW/RDSO



TABLE–A :

S.NO.	COIL WEIGHT AT EACH BOGIE CENTRE	NUMBER OF SADDLES/CRADLES AT EACH BOGIE CENTRE
1.	28 TONNES	06
2	LESS THAN 28 TONNES	NUMBER OF SADDLES AS PER WIDTH OF COIL BUT NOT LESS THAN THREE





(FOR ITEM NO. 9 & 10 LENGTH AS PER WIDTH OF PLATES)

NOTE:–

1. STEEL COILS SHOULD BE STRICTLY LOADED ON THE WAGON AS PER LOADING PATTERN SHOWN IN DRAWING.
2. THE STEEL COILS LOADED ALONG THE WAGON WIDTH & BUNDLES OF STEEL PLATES LOADED ALONG THE WAGON LENGTH, SHOULD BE SYMMETRICAL ALONG LONGITUDINAL AND TRANSVERSE AXIS OF WAGON.
3. THE DIAMETER OF THE COIL SHOWN IN DRAWING IS THE MAXIMUM LOADABLE DIAMETER. LOWER DIAMETER COILS CAN ALSO BE LOADED.
4. LOADING OF COILS SHOULD BE SUCH THAT :–
   - 4.1 THE MAXIMUM WEIGHT OF INDIVIDUAL COIL AT EACH BOGIE SHOULD NOT EXCEED 28 TONNES AND AT MIDDILE MAXIMUM WEIGHT OF PLATES SHOULD NOT EXCEED 8 TONNES.
   - 4.2 THE COILS WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   - 4.3 MAXIMUM DIFFERENCE IN COILS WEIGHT LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   - 4.4 THE MAXIMUM NO OF COILS IN CASE OF UNITIZATION IS NOT TO EXCEED TWO AT EACH BOGIE AND CENTRE. WEIGHT TO NOT EXCEED 28 & 8 TONNES RESPECTIVELY.
5. USE OF METAL SADDLES/WOODEN CRADLE:
   - 5.1 NUMBER OF METAL SADDLE/WOODEN CRADLE AT EACH BOGIE SHOULD BE AS PER TABLE–A.
   - 5.2 USE EITHER WOODEN CRADLES (AS PER ITEM–4a) OR METALLIC SADDLES (AS PER ITEM–4b) FOR COIL LOADING AT BOLSTER.
   - 5.3 WOODEN RUNNERS/INTERMEDIATE RUNNERS SHALL BE USED FOR SECURING OF STEEL PLATES AT CENTRE OF WAGON ONLY.
6. **PROCEDURE OF LOADING STEEL COIL ON WAGON ARE:–**
   - 6.1 BEFORE LOADING, ENSURE THAT METALLIC SADDLE/WOODEN CRADLE/RUNNERS ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY OF HARD WOOD IS THE RESPONSIBILITY OF LOADING PARTY.
   - 6.2 AFTER PLACING THE COIL ON METALLIC SADDLE/WOODEN CRADLE & STEEL PLATE ON RUNNER, PLACE WOODEN WEDGE ON BOTH SIDE OF COIL AT THE CRADLE AND THEN USE THREE STRAPS ON EACH COIL FOR TIGHTENED WITH WAGON FLOOR AS SHOWN IN DRAWING, FOR SAFE OPERATION .
   - 6.3 AFTER TIGHTENING BY THREE STRAP, EACH COILS SHALL BE TIGHTENED ADEQUATELY BY 04 NOs. OF LASHING CHAIN/ MENTIONED STEEL STRAP WITH ISOLATION HOOK.
7. **PROCEDURE OF LOADING STEEL PLATES ON WAGON ARE:–**

STEEL STRAP USED FOR COIL (SPECIFICATION EN13247:2001.)

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.–EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5 TON)

AND

STEEL STRAP USED FOR PLATE (SPECIFICATION EN13247:2001.)

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.–EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3 TON)

8. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1.
9. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSOMETER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT.
10. OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
11. THE LOADING PARTY SHOULD WELD ISOLATION HOOK WITH WAGON FLOOR TO ACCOMODATE COIL DIIA/ WIDTH AS SHOWN IN DRAWING.
12. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD–CS–01–LOAD SECURING CHECK SHEET (LATEST).
13. THIS RDSO DRAWING IS AN INDUCTIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
14. THE LOADING/UNLOADING OF COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
15. IT SHOULD BE ENSURED THAT THE CRADLES/SADDLE SHALL BE PLACED OVER LOAD BEARING MEMBERS OF THE WAGON AS PER THE DRAWING.
16. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.

ITEM	DESCRIPTION	NO. OF PCS PER PLATES	NO. OF PCS PER COIL	MTL&SPEC	REMARKS
10.	INTERMEDIATE WOODEN RUNNER (50X100)FOR STEEL PLATES	06	--	WOOD	NOs. OF INTERMEDIATE WOODEN RUNNER AS PER NOs. OF BUNDLE
9.	WOODEN RUNNER (100X100) FOR STEEL PLATES	03	--	WOOD	
8.	ANGLE STOPPER	04	08	---	AS PER DRAWING NO. WD–24036–S–01, ITEM NO.–4
7.	LASHING CHAIN OR HEAVY DUTY STRAP FOR SELF UNITIZATION	04	--	EN13247:2001	
6.	LASHING CHAIN OR HEAVY DUTY STRAP WITH ISOLATION HOOK	05	07	EN13247:2001	
5.	WOODEN WEDGE FOR COIL	---	02	WOOD	
4b.	SADDLE	06 (AT END) 03 (AT CENTRE)	–	AS PER DRAWING NO WD–24036–S–01, ITEM NO.–2	
4a.	CRADLE	06 (AT END) 03 (AT CENTRE)		WOOD	(SEE TABLE–A)
3.	ISOLATION HOOK	10	10	---	AS PER DRAWING NO. WD–24036–S–01, ITEM NO.–3
2.	STEEL PLATES BUNDLE (01 NO./ WAGON CENTRE)	--	--	STEEL	(AS PER TABLE–A)
1.	STEEL COIL AT EACH BOGIE CENTRE (01 NO./ BOGIE CENTRE)	--	--	STEEL	(AS PER TABLE–A)

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS

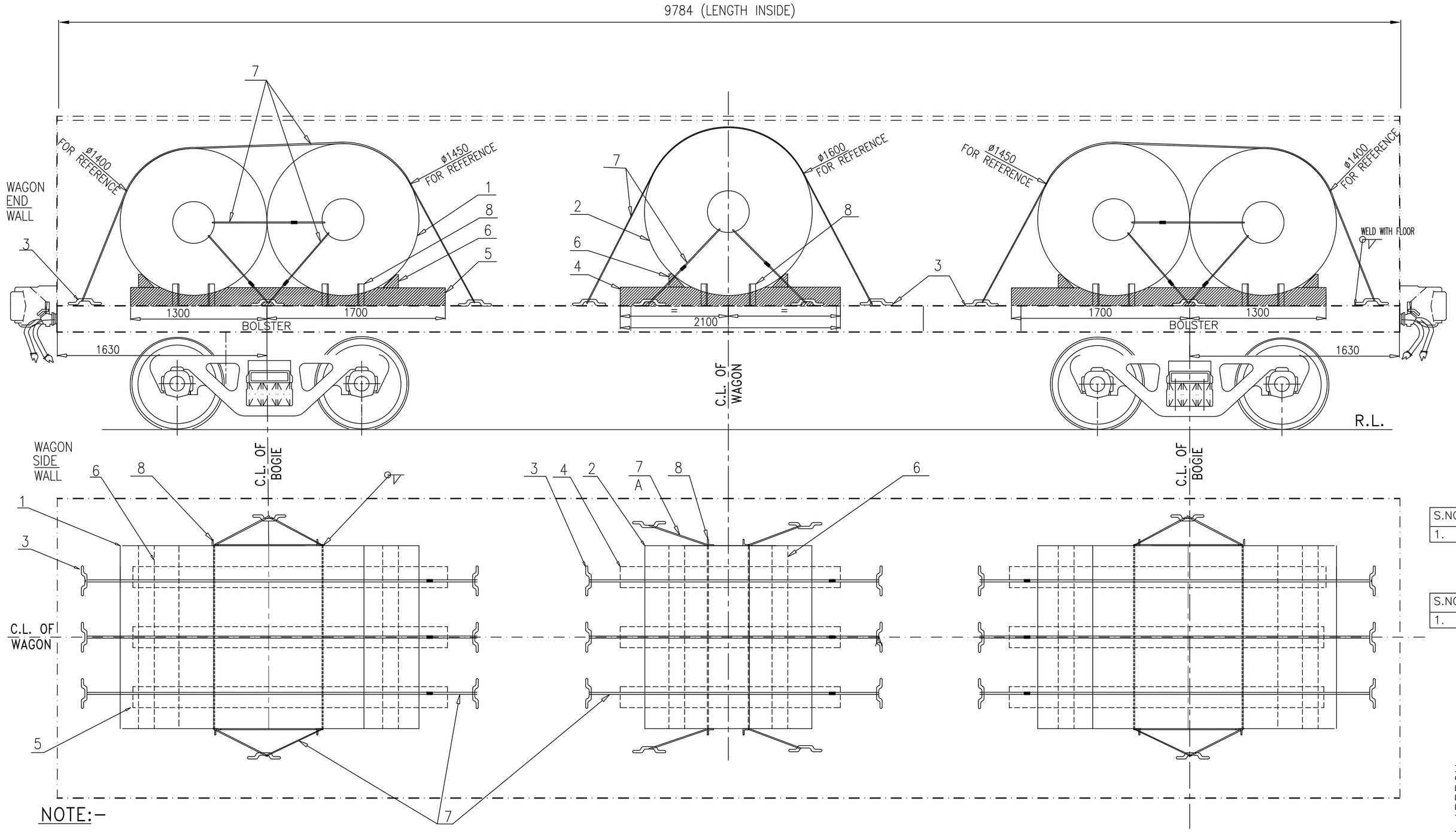
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DRAWN — L. MOHAN — 05/24
J.S.NO.

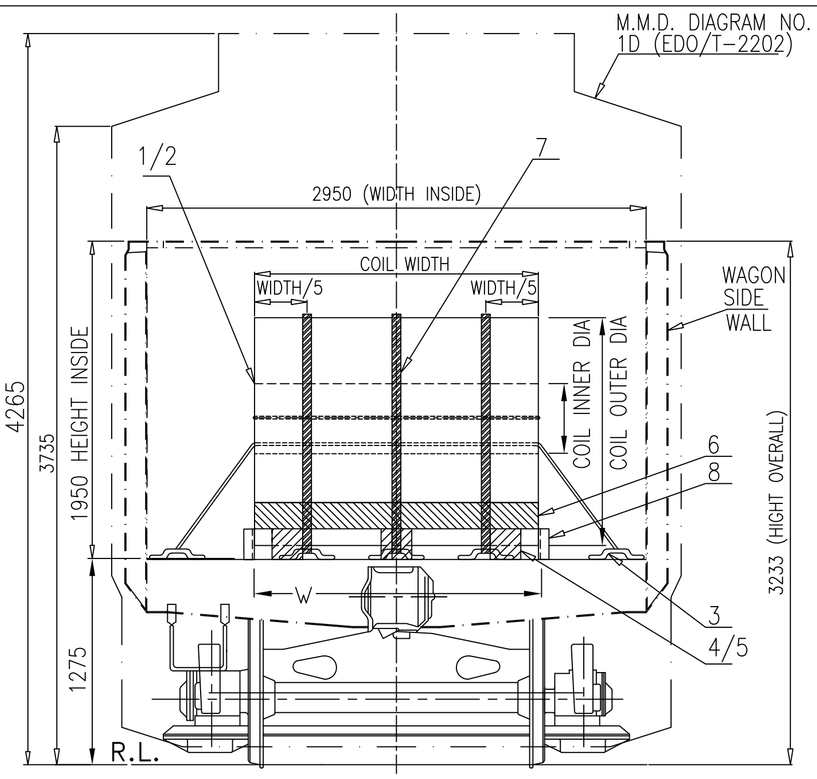
B.G. | R.D.S.O. [W] | GROUP

LOADING OF STEEL PLATES ON WAGON CENTRE & STEEL COILS ALONG WAGON WIDTH ON BOGIE CENTER ON BOXNHL WAGON & IT'S VARIANTS

SKETCH/WD–II/13

File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SW/RDSO



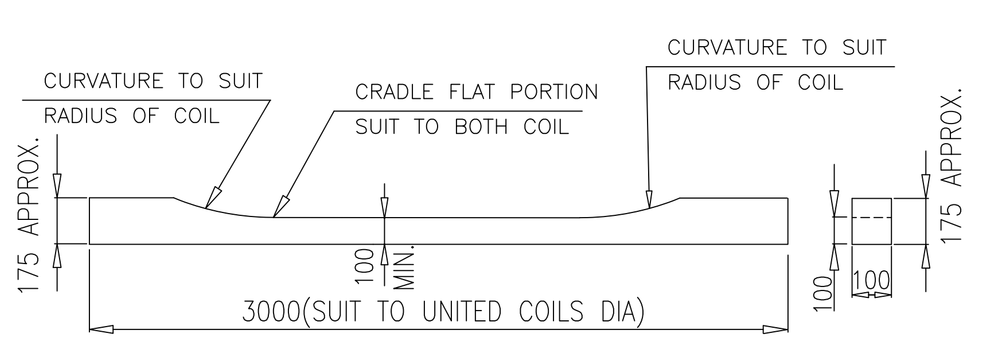


S.NO.	ONE COIL WEIGHT AT CENTRE OF WAGON	UNITED COILS WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 16 TON MAXIMUM	(TOTAL PAY LOAD–16 TON)/2 (SEE NOTE–3)

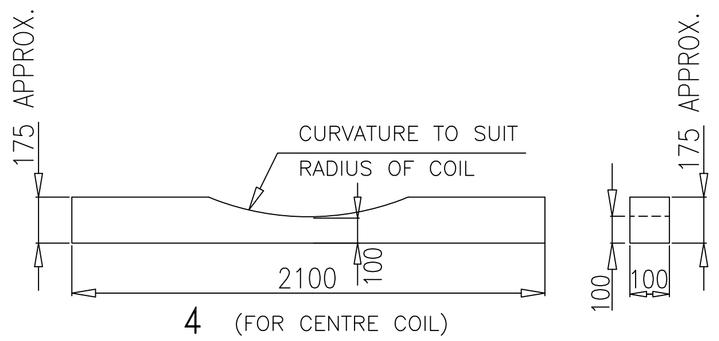
TABLE–A (LOADING SCHEME FOR 05 NO. STEEL COIL)

S.NO.	COIL WEIGHT AT CENTRE OF WAGON	UNITED COILS WEIGHT AT EACH BOGIE CENTRE
1.	NIL (NO COIL AT CENTRE)	TOTAL PAY LOAD/2 (SEE NOTE–3)

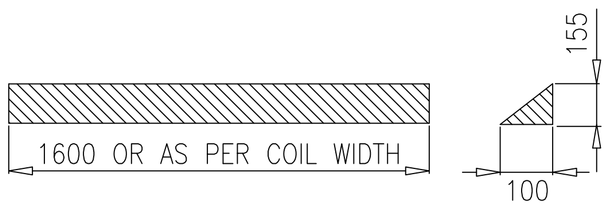
TABLE–B (LOADING SCHEME FOR 04 NO. STEEL COIL)



5 (FOR END COIL)



4 (FOR CENTRE COIL)



6

NOTE:–

1. ALL INDIVIDUAL COILS ARE TO BE UNITIZED BY USING HEAVY DUTY STRAPS AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. THE COILS LOADING ACROSS THE WAGON LENGTH, SHOULD BE SYMMETRICALLY ABOUT THE LONGITUDINAL CENTRE LINE AS WELL AS TRANSVERSE AXIS OF THE WAGON.
3. TWO COIL LOADING COMPOSITION DEPENDING UPON THE COIL WEIGHT, CAN BE USED AS PER TABLE A AND B :–
   3.1 IF FIVE COIL LOADED AS PER TABLE–A, 02 NO. COIL AT BOTH SIDE ON EACH BOGIE/ BOLSTER CENTRE AND 01 COIL AT MIDDLE OF WAGON, THEN MAXIMUM COIL WEIGHT AT CENTER SHOULD NOT EXCEED 16 TON IN ANY CONDITION.
   3.2 IF FOUR COIL LOADED AS PER TABLE–B, 02 NO. UNITE COILS AT EACH BOGIE CENTRE AND NO COIL LOADING DONE ON AT MIDDLE OF WAGON.
4. LOADING OF COILS SHOULD BE SUCH THAT :–
   4.1 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   4.2 THE COILS WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   4.3 MAXIMUM DIFFERENCE IN COILS WEIGHT LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   4.4 TOTAL WEIGHT OF LOADED COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
5. BEFORE LOADING, ENSURE THAT WOODEN CRADLES ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT, SHAL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY. TRIANGULAR WOODEN WEDGE MUST BE USED ALONG THE WIDTH OF COILS.
6. AFTER PLACING THE COIL ON WOODEN CRADLE, WOODEN WEDGE TO BE PLACED AND FIXED ON BOTH SIDE OF COIL ON WOODEN CRADLE. THEN USE THREE STRAPS ON EACH COIL FOR TIGHTENING WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF EACH COIL SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION. WOODEN CRADLE SHORT ITEM–4 CAN ALSO BE USED AS ALTERNATIVE IN PLACE OF WOODEN SADDLE (LONG) ON EACH COIL.
7. AFTER TIGHTENING BY THREE STRAP, UNITED COILS/COIL SHALL BE TIGHTENED ADEQUATELY BY 3/2 NOs. LASHING CHAIN/STEEL STRAP WITH ISOLATION HOOK AS PER POSITION.
8. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.–EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5 TON)

9. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1.
10. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500 kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSOMETER.
    CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT. ①
11. OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
12. THE LOADING PARTY SHOULD WELD ISOLATION HOOK (ITEM NO.3) WITH WAGON FLOOR TO ACCOMODATE COIL DIIA/ WIDTH AS SHOWN IN DRAWING.
13. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD–CS–01–LOAD SECURING CHECK SHEET (LATEST).
14. THIS RDSO DRAWING IS AN INDUCTIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
15. THE LOADING/UNLOADING OF COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
16. THE CONCERNED RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.

ITEM	DESCRIPTION	NO. OF PCS PER COIL	MTL&SPEC	REMARKS
8.	ANGLE STOPPER	4 AT MIDDLE 8 AT END	–	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–4
7.	LASHING CHAIN OR HEAVY DUTY STRAP	5 AT MIDDLE 6 AT END	EN13247:2001	
6.	WOODEN WEDGE	2	WOOD	
5.	WOODEN CRADLE(LONG)	3	WOOD	
4.	WOODEN CRADLE(SHORT)	3	WOOD	
3.	ISOLATION HOOK	10 AT MIDDLE 8 AT END	–	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–3
2.	STEEL COIL AT CENTRE (01 NO./ WAGON)	--	STEEL	MAXIMUM COIL WEIGHT=16T SEE TABLE–A
1.	STEEL COIL AT END (02 NO./ BOGIE)	--	STEEL	SEE TABLE–A & B

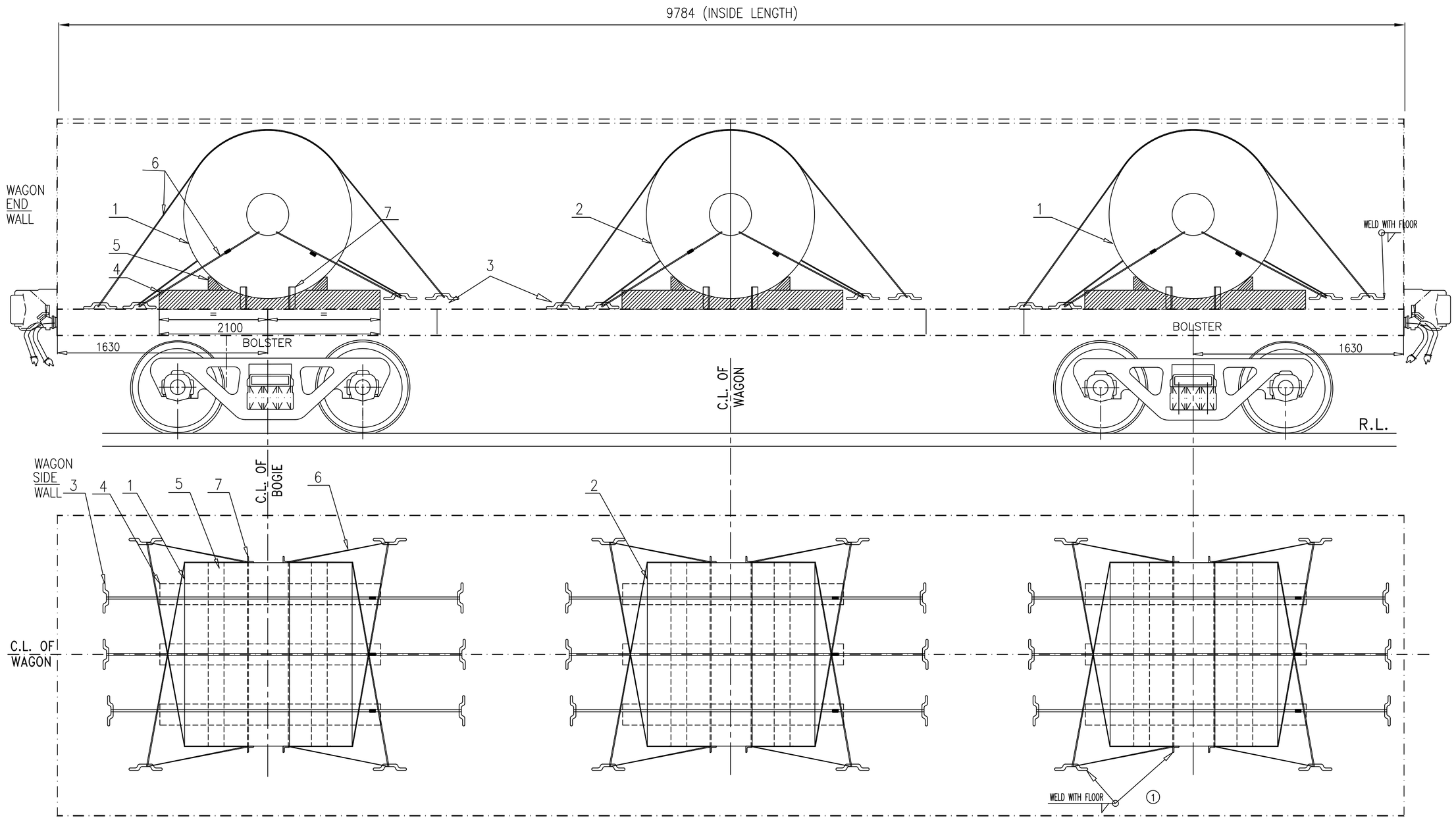
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
①	–	WD–24038	VIEW OF ITEM NO. 3 DELETED . REFERENCE DRG. NO. OF ITEM–3 & 8 ADDED IN DESCRIPTION TABLE. NOTE NO.–10 MODIFIED.	04/24	

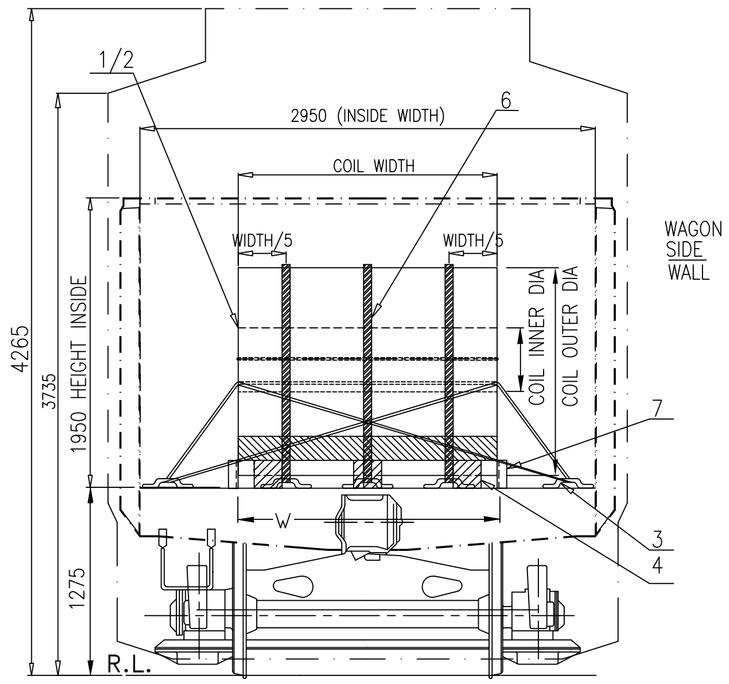
SUPERSEDED BY
SUPERSEDES DATE
SCALE PASSED ARVIND KUMAR 03/24
CHECKED KALINDRA PAL 03/24
DRAWN DINESH KR. YADAV 03/24
J.S.NO. WD–24028 03/24

LOADING DIAGRAM FOR STEEL COIL ON BOXN WAGON & IT'S VARIANTS

B.G. | R.D.S.O. [W] | GROUP | WD–24028–S–01

File No.RDSO-MW0GENEL(EOFC)/8/2023-O/o PED/SWR/DSO





S.NO.	COIL WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 16 TON MAXIMUM	(TOTAL PAY LOAD−16 TON)/2

TABLE−A (LOADING SCHEME FOR 03 NO. STEEL COIL)

S.NO.	COIL WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	NO COIL LOADED AT CENTRE	TOTAL PAY LOAD/2

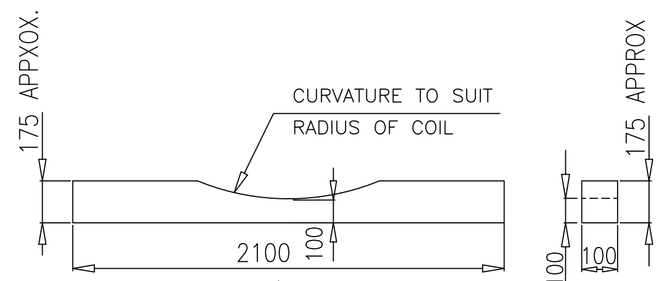
TABLE−B (LOADING SCHEME FOR 02 NO. STEEL COIL)

NOTE:−

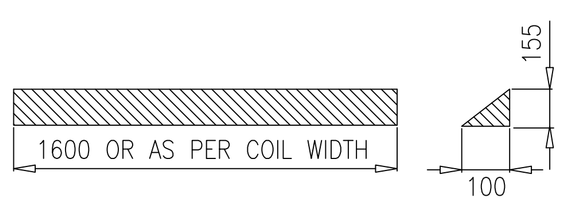
1. ALL INDIVIDUAL COILS ARE TO BE LASHED BY USING HEAVY DUTY STRAPS AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. THE COIL LOADING ALONG THE WAGON WIDTH, SHOULD BE SYMMETRICALLY ABOUT THE LONGITUDINAL CENTRE LINE AS WELL AS TRANSVERSE AXIS OF THE WAGON.
3. TWO COIL LOADING COMPOSITION DEPENDING UPON THE COIL WEIGHT, CAN BE USED AS PER TABLE A AND B :−
   - 3.1 IF THREE COIL LOADED AS PER TABLE−A, 01 NO. COIL AT BOTH SIDE ON EACH BOGIE/ BOLSTER CENTRE AND 01 COIL AT MIDDLE OF WAGON, THEN MAXIMUM COIL WEIGHT AT CENTER SHOULD NOT EXCEED 16 TON IN ANY CONDITION.
   - 3.2 IF TWO COIL LOADED AS PER TABLE−B, 01 NO. COIL AT EACH BOGIE CENTRE AND NO COIL LOADING DONE ON AT MIDDLE OF WAGON.
4. LOADING OF COILS SHOULD BE SUCH THAT :−
   - 4.1 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   - 4.2 THE COILS WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   - 4.3 MAXIMUM DIFFERENCE IN COILS WEIGHT LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   - 4.4 TOTAL WEIGHT OF LOADED COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
5. BEFORE LOADING, ENSURE THAT WOODEN CRADLES ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT SHAL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY. TRIANGULAR WOODEN WEDGE USED ACROSS THE WIDTH OF COILS.
6. AFTER PLACING THE COIL ON WOODEN CRADLE, WOODEN WEDGE PLACED AND FIXED ON BOTH SIDE OF COIL ON WOODEN CRADLE. THEN USE THREE STRAPS ON EACH COIL FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF EACH COIL SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
7. AFTER TIGHTENING BY THREE STRAP, EACH COILS SHALL BE TIGHTENED ADEQUATELY BY 04 NOs. OF LASHING CHAIN/ MENTIONED STEEL STRAP WITH ISOLATION HOOK.
8. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.−EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5 TON)

9. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002−1.
10. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSOMETER.
    (1) CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT. (1)
11. OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
12. THE LOADING PARTY SHOULD WELD ISOLATION HOOK (ITEM NO.3) WITH WAGON FLOOR TO ACCOMODATE COIL DIIA/ WIDTH AS SHOWN IN (3) DRAWING.
13. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD−CS−01−LOAD SECURING CHECK SHEET (LATEST).
14. THIS RDSO DRAWING IS AN INDUCTIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
15. THE LOADING/UNLOADING OF COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
16. THE CONCERNED RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.



4



5

ITEM	DESCRIPTION	NO. OF PCS PER COIL	MTL&SPEC	REMARKS
(1) 7.	ANGLE STOPPER	4	---	AS PER DRAWING NO. WD−24036−S−01,ITEM NO.−4
6.	LASHING CHAIN OR HEAVY DUTY STRAP	7	EN13247:2001	
5.	WOODEN WEDGE	2	WOOD	
4.	WOODEN RUNNER	3		
(1) 3.	ISOLATION HOOK	10	−	AS PER DRAWING NO. WD−24036−S−01,ITEM NO.−3
2.	STEEL COIL AT CENTER (01 NO./ WAGON)	−−	STEEL	MAXIMUM COIL WEIGHT=16T (AS PER TABLE−A)
1.	STEEL COIL AT EACH BOGIE CENTER (01 NO./ BOGIE CENTER)	−−	STEEL	(SEE TABLE−A & B)

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
(1)	−	WD−24038	VIEWS OF ITEM NO. 3 & 7 DELETED AND REFERENCE DRG. NO. ADDED IN DESCRIPTION TABLE . NOTE NO.−10 MODIFIED.	04/24	

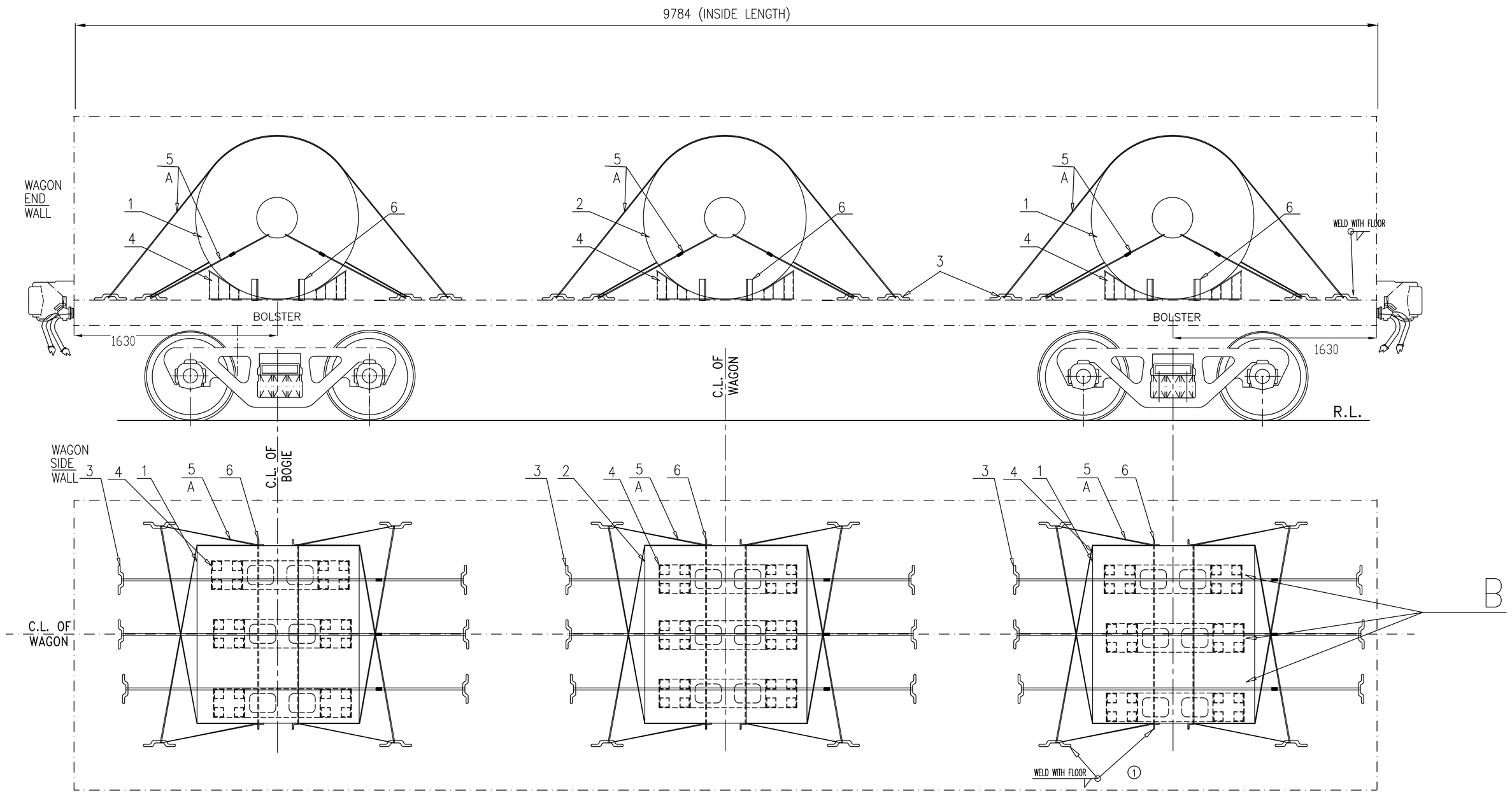
SUPERSEDED BY
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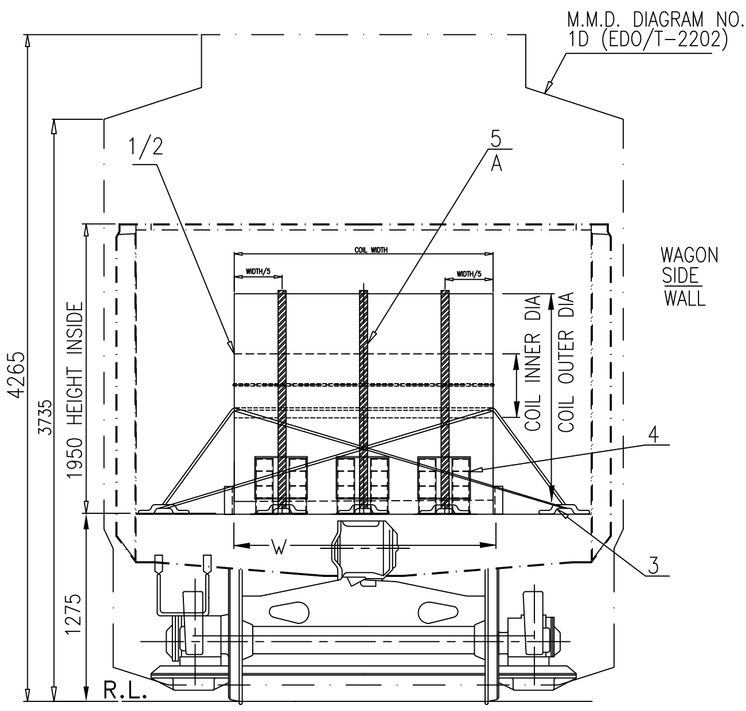
SCALE			
	PASSED	ARVIND KUMAR	03/24
	CHECKED	KALINDRA PAL	03/24
	DRAWN	DINESH KR. YADAV	03/24
	J.S.NO.	WD−24028	03/24

LOADING DIAGRAM FOR STEEL COIL ON BOXN WAGON AND IT'S VARIANTS WITH WOODEN CRADLE.

B.G. | R.D.S.O. [W] | GROUP | WD−24028−S−02

File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PEDISWRDSO





S.NO.	COIL WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 16 TON MAXIMUM	(TOTAL PAY LOAD–16 TON)/2

TABLE–A (LOADING SCHEME FOR 03 NO. STEEL COIL)

S.NO.	COIL WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	NO COIL LOADED AT CENTRE	TOTAL PAY LOAD/2

TABLE–B (LOADING SCHEME FOR 02 NO. STEEL COIL)

NOTE:–

1. ALL INDIVIDUAL COILS ARE TO BE UNITIZED BY USING HEAVY DUTY STRAPS AS INDICATED BY 'A' AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. THE COIL LOADING ALONG THE WAGON WIDTH, SHOULD BE SYMMETRICALLY ABOUT THE LONGITUDINAL CENTRE LINE AS WELL AS TRANSVERSE AXIS OF THE WAGON.
3. TWO COIL LOADING COMPOSITION DEPENDING UPON THE COIL WEIGHT, CAN BE USED AS PER TABLE A AND B :–
   3.1 IF THREE COIL LOADED AS PER TABLE–A, 01 NO. COIL AT BOTH SIDE ON EACH BOGIE/ BOLSTER CENTRE AND 01 COIL AT MIDDLE OF WAGON, THEN MAXIMUM COIL WEIGHT AT CENTER SHOULD NOT EXCEED 16 TON IN ANY CONDITION.
   3.2 IF TWO COIL LOADED AS PER TABLE–B, 01 NO. COIL AT EACH BOGIE CENTRE AND NO COIL LOADING DONE ON AT MIDDLE OF WAGON.
4. LOADING OF COILS SHOULD BE SUCH THAT :–
   4.1 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   4.2 THE COILS WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   4.3 MAXIMUM DIFFERENCE IN COILS WEIGHT LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   4.4 TOTAL WEIGHT OF LOADED COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
5. BEFORE LOADING, ENSURE THAT NO. OF METAL SADDLE PER COIL SHALL NOT BE LESS THAN THREE AS INDICATED BY 'B'. SELECT METAL SADDLE ON THE BASIS OF PART DRAWING NO. 4 WITH PROPER MATERIAL SPECIFICATION & LENGTH OF BOTTOM PLATE 'A' ON THE BASIS OF COIL DIAMETER RANGE WHICH CAN SUSTAIN THE LOAD.
6. AFTER PLACING THE COIL ON METAL SADDLE, THEN USE THREE STRAPS ON EACH COIL FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF EACH COIL SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
7. AFTER TIGHTENING BY THREE STRAP, EACH COILS SHALL BE TIGHTENED ADEQUATELY BY 04 NOs. OF LASHING CHAIN/ MENTIONED STEEL STRAP WITH ISOLATION HOOK.
8. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.–EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5 TON)

9. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1.
10. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSOMETER.
(1) CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT.
11. OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
12. THE LOADING PARTY SHOULD WELD ISOLATION HOOK (ITEM NO.3) WITH WAGON FLOOR TO ACCOMODATE COIL DIIA/ WIDTH AS SHOWN IN DRAWING.
13. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD–CS–01–LOAD SECURING CHECK SHEET (LATEST).
14. THIS RDSO DRAWING IS AN INDUCTIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
15. THE LOADING/UNLOADING OF COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
16. IF COIL LOADING IS DONE WITH WOODEN CRADLE THEN LOADING SHALL BE DONE AS PER LOADING DRAWING NO. WD–24028–S–02.
17. THE CONCERNED RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.

ITEM	DESCRIPTION	NO. OF PCS PER COIL	MTL&SPEC	REMARKS
6	ANGLE STOPPER	4	–	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–4
5	LASING CHAIN OR HEAVY DUTY STRAP	7	EN13247:2001	–
4	METAL SADDLE	3	–	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–2
3	ISOLATION HOOK	10	–	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–3
2	STEEL COIL AT CENTER (01 NO./ WAGON)	–	STEEL	MAXIMUM COIL WEIGHT=16T (AS PER TABLE–A)
1	STEEL COIL AT EACH BOGIE CENTER (01 NO./ BOGIE CENTER)	–	STEEL	(SEE TABLE–A & B)

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
(1)	–	WD–24038	VIEWS ITEM NO. 3, 4 & 6 DELETED AND REFERENCE DRG. NO. ADDED IN DESCRIPTION TABLE. NOTE NO.–10 MODIFIED.	04/24	

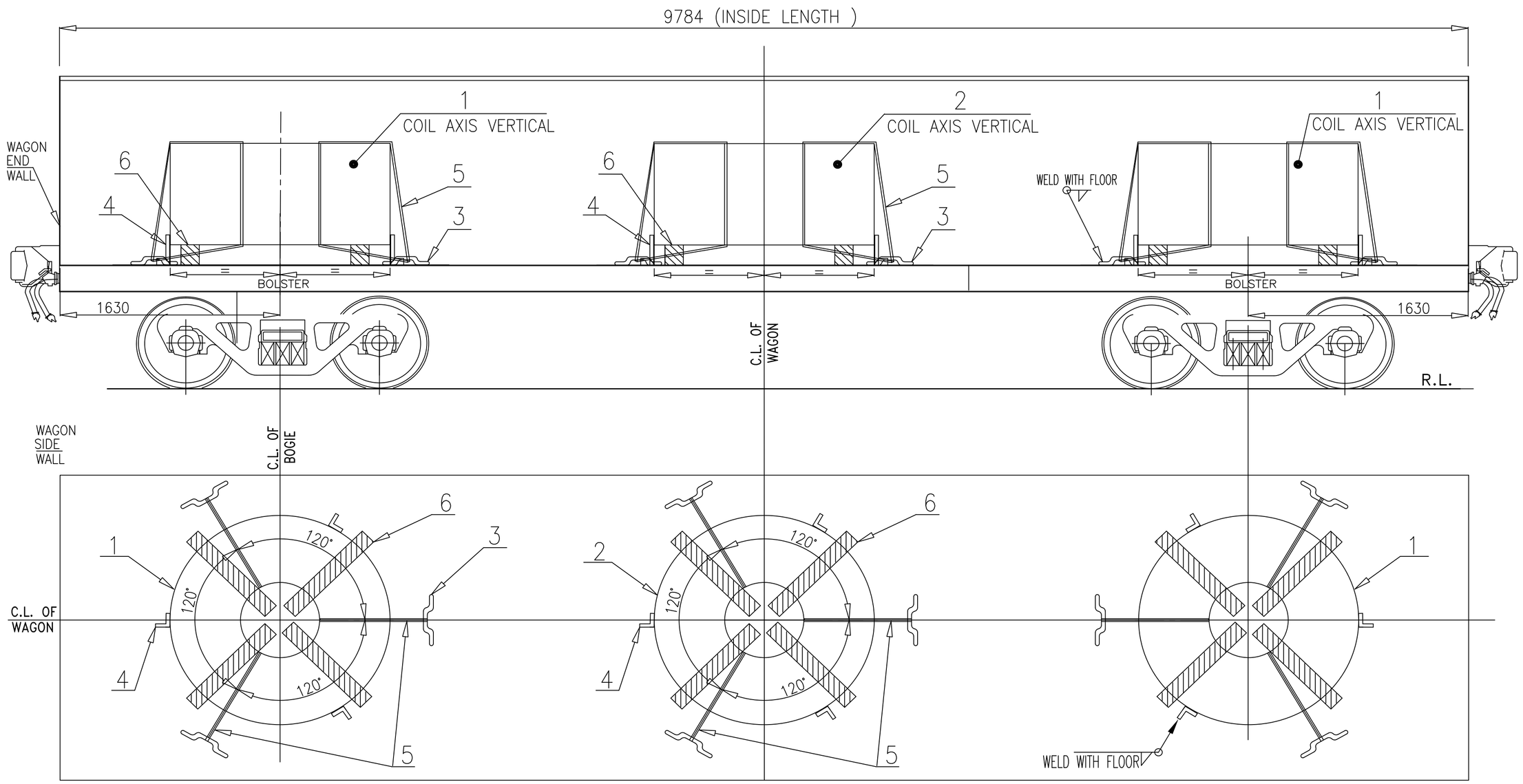
SUPERSEDED BY
SUPERSEDES

			DATE
SCALE	PASSED	ARVIND KUMAR	03/24
	CHECKED	KALINDRA PAL	03/24
	DRAWN	DINESH KR. YADAV	03/24
	J.S.NO.	WD–24028	03/24

LOADING DIAGRAM FOR STEEL COIL ON BOXN WAGON & IT'S VARIANTS WITH METAL SADDLE.

B.G. | R.D.S.O. [W] | GROUP | WD–24028–S–03

File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SWIRDSO

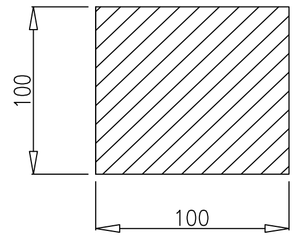


S.NO.	COIL WEIGHT AT WAGON CENTRE	COIL WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 22 TON MAXIMUM	(TOTAL PAY LOAD−22 TON)/2

TABLE−A (LOADING SCHEME FOR STEEL COIL AT BOGIE AND WAGON CENTER)

S.NO.	COIL WEIGHT AT WAGON CENTRE	COIL WEIGHT AT EACH BOGIE CENTRE
1.	NO STEEL COIL LOADED AT CENTRE	TOTAL PAY LOAD/2

TABLE−B (LOADING SCHEME FOR STEEL COILS AT BOGIE CENTER ONLY)



(LENGTH AS PER COIL DIA)

6

NOTE:−

1. INDIVIDUAL COIL ARE TO BE UNITIZED BY USING HEAVY DUTY STRAPS AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. THE STEEL COILS LOADED VERTICALLY (EYE TO SKY) SHOULD BE SYMMETRICAL ALONG LONGITUDINAL AND TRANSVERSE AXIS OF WAGON.
3. **LOADING PARAMETER OF STEEL COILS SHOULD BE SUCH THAT:−**
   - 3.1 THE VERTICAL LOADED STEEL COILS LOADING COMPOSITION DEPENDING UPON WEIGHT, AS PER TABLE A & B.
   - 3.1(a) IF LOADING IS DONE AS PER TABLE−A, STEEL COIL LOADED AT BOTH SIDE ON EACH BOGIE/ BOLSTER CENTRE AND AT MIDDLE OF WAGON, THEN MAXIMUM WEIGHT OF STEEL COIL AT WAGON CENTER SHOULD NOT EXCEED BY 22 TON IN ANY CONDITION.
   - 3.1(b) AS PER TABLE−B, STEEL COIL ARE LOADED AT EACH BOGIE/ BOLSTER CENTRE ONLY AND NO STEEL COIL IS LOADED AT MIDDLE OF WAGON.
   - 3.2 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   - 3.3 THE COIL WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   - 3.4 MAXIMUM WEIGHT DIFFERENCE IN COIL LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   - 3.5 TOTAL WEIGHT OF LOADED COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
   - 3.6 RESTRICTION: COIL WIDTH W<=1.5D .
4. **PROCEDURE OF LOADING STEEL COIL ON WAGON ARE:−**
   - 4.1 BEFORE LOADING, ENSURE THAT WOODEN RUNNER ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY.
   - 4.2 AFTER PLACING THE COIL ON WOODEN RUNNER, EITHER 03 NO's STOPPERS OR 03 NO's STRAPS (TIGHTENED WITH ISOLATION HOOK) SHOULD BE APPLIED FOR SECURING OF EACH COIL AS SHOWN IN DRAWING, FOR SAFE OPERATION.
   - 4.3 DEPENDING UPON THE EXPERIENCE/ REPORT OF UNUSUAL INCIDENCE WITH THE ABOVE COIL SECURING ARRANGEMENT, CONCERNED RAILWAY/ CONSIGNEE MAY TAKE DECISION FOR APPLICATION OF STOPPER AND STRAPS (BOTH) TO SECURE THE LOAD PROPERLY TO AVOID ANY UNUSUAL INCIDENCE.
   - 4.4 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
5. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.−EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3 TON)

6. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002−1.
7. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSOMETER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT.
8. THE LOADING PARTY SHOULD WELD ISOLATION HOOK (ITEM NO.3) WITH WAGON FLOOR TO ACCOMODATE COIL DIIA/ WIDTH AS SHOWN IN DRAWING.
9. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD−CS−01−LOAD SECURING CHECK SHEET (LATEST).
10. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE DIA AND WIDTH OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
11. THE LOADING/UNLOADING OF STEEL COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
12. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.
13. STEEL COIL SHOULD BE LOADED SLOWLY/ GRADUALLY ON THE FLOOR OF WAGON . IMPACT LOADING NOT TO BE CARRIED OUT IN ANY CIRCUMSTANCE.
15. THE CONCERNED RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.

ITEM		DESCRIPTION	No. OF PCS PER COIL	MTL&SPEC	REMARKS
6.		WOODEN RUNNER	4	WOOD	
5.		LASHING CHAIN OR HEAVY DUTY STRAP TIGHTEN WITH ISOLATION HOOK	3	EN13247:2001	
4.	①	ANGLE STOPPER	3	---	AS PER DRAWING NO. WD−24036−S−01,ITEM NO.−4
3.	①	ISOLATION HOOK	3	---	AS PER DRAWING NO. WD−24036−S−01,ITEM NO.−3
2.		STEEL COIL (01 NO./ WAGON CENTER)	--	STEEL	(AS PER TABLE−A)
1.		STEEL COIL (01 NO./ BOLSTER CENTER)	--	STEEL	(AS PER TABLE−A & B)

SUPERSEDED BY
SUPERSEDES DATE

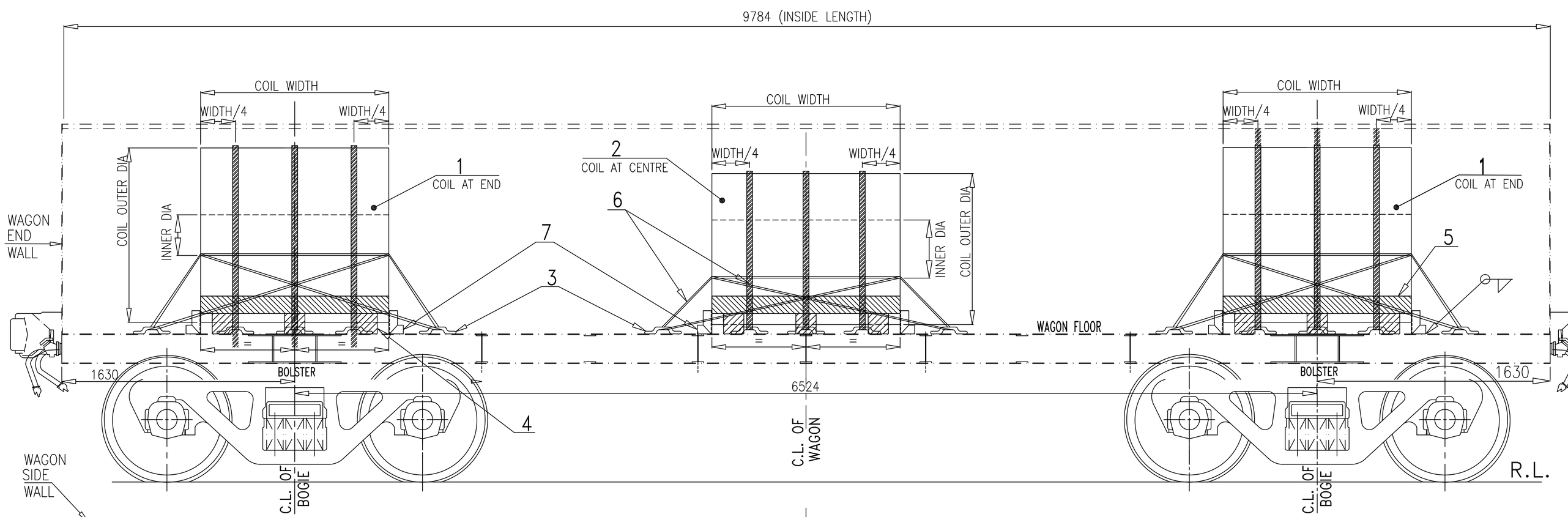
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
①	−	WD−24038	ITEM NO. 3 & 4 DRG. DELETED AND REFERENCE DRG. NO. ADDED IN DESCRIPTION TABLE. NOTE NO.−4.2,4.3 & 7 MODIFIED. NO. OFF STRAPS, ISOLATION HOOK & ANGLE STOPPER REDUCED FROM 6, 6 & 4 TO 3, 3 & 3 RESPECTIVELY.	04/24	

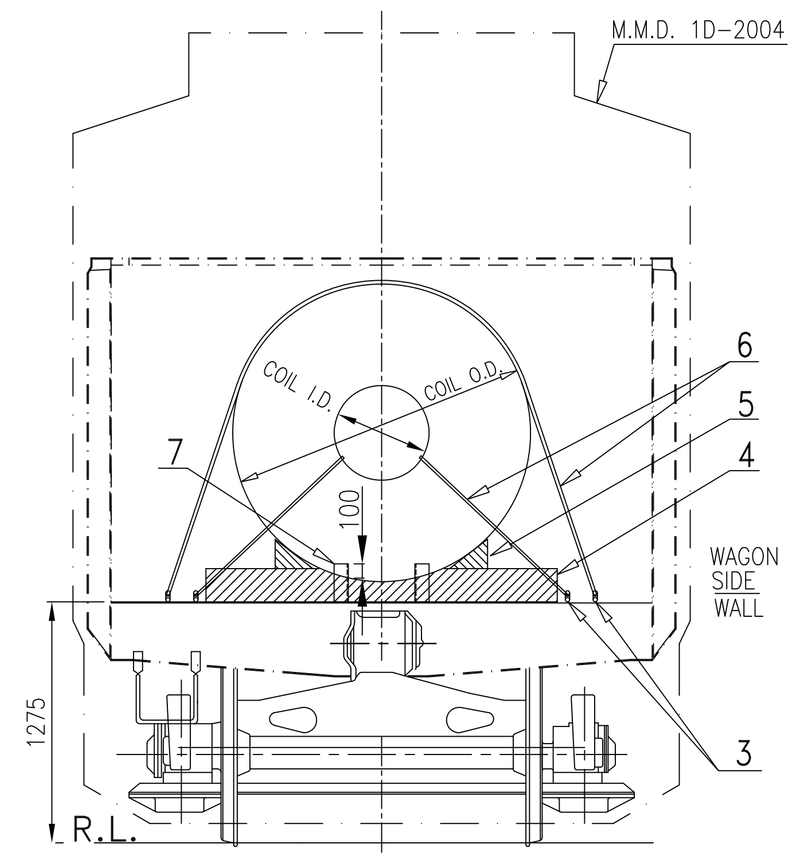
SCALE	PASSED	ARVIND KUMAR 03/24
	CHECKED	KALINDRA PAL 03/24
	DRAWN	DINESH KR. YADAV 03/24
	J.S.NO.	WD−24028 03/24

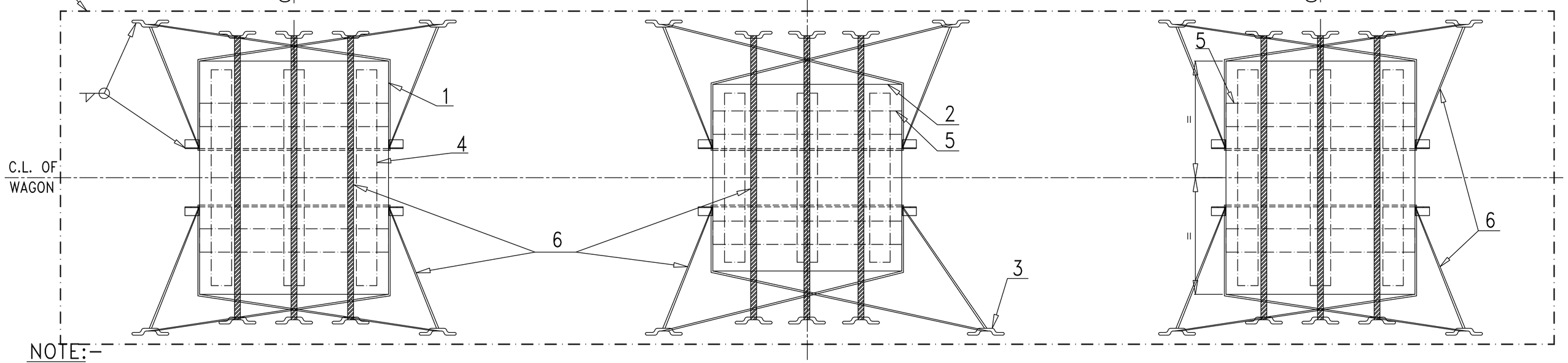
LOADING DIAGRAM OF VERTICAL LOADED STEEL COILS ON BOXN WAGON & IT'S VARIANTS

B.G. | R.D.S.O. [W] | GROUP | WD−24028−S−04

File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED/SWR/DSO





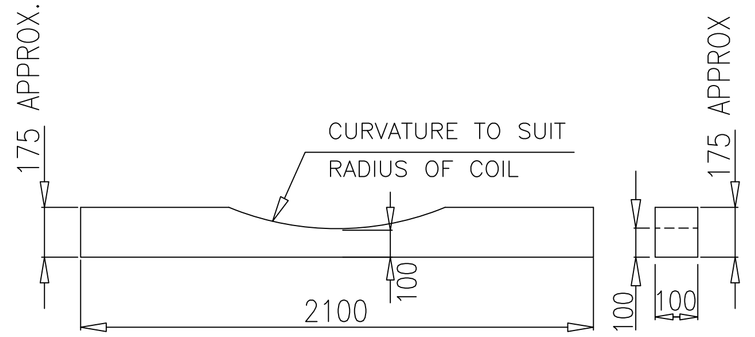


S.NO.	COIL WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 22 TON MAXIMUM	(TOTAL PAY LOAD–22 TON)/2

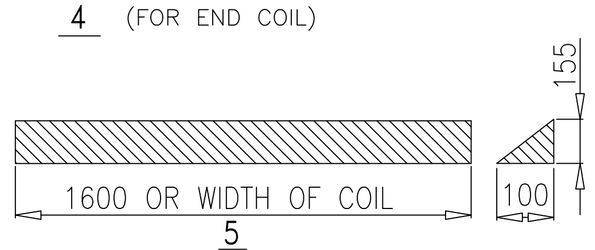
TABLE–A (LOADING SCHEME FOR 03 NO. STEEL COIL)

S.NO.	COIL WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	NO COIL LOADED AT CENTRE	TOTAL PAY LOAD/2

TABLE–B (LOADING SCHEME FOR 02 NO. STEEL COIL)



4 (FOR END COIL)



5

NOTE:–

1. ALL INDIVIDUAL COILS ARE TO BE LASHED BY USING HEAVY DUTY STRAPS AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. THE COIL LOADING ALONG THE WAGON LENGTH, SHOULD BE SYMMETRICALLY ABOUT THE LONGITUDINAL CENTRE LINE AS WELL AS TRANSVERSE AXIS OF THE WAGON.
3. COIL LOADING COMPOSITION DEPENDING UPON THE COIL WEIGHT, CAN BE USED AS PER TABLE A AND B :–
   3.1 IF THREE COIL LOADED AS PER TABLE–A, 01 NO. COIL AT BOTH SIDE ON EACH BOGIE/ BOLSTER CENTRE AND 01 COIL AT MIDDLE OF WAGON, THEN MAXIMUM COIL WEIGHT AT CENTER SHOULD NOT EXCEED 22 TON IN ANY CONDITION.
   3.2 IF TWO COIL LOADED AS PER TABLE–B, 01 NO. COIL AT EACH BOGIE/ BOLSTER CENTRE AND NO COIL LOADING DONE ON AT MIDDLE OF WAGON.
4. LOADING OF COILS SHOULD BE SUCH THAT :–
   4.1 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   4.2 THE COILS WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   4.3 MAXIMUM DIFFERENCE IN COILS WEIGHT LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   4.4 TOTAL WEIGHT OF LOADED COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
5. BEFORE LOADING, ENSURE THAT WOODEN CRADLES ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT SHAL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY.
6. AFTER PLACING THE COIL ON WOODEN CRADLE, WOODEN WEDGE PLACED AND FIXED ON BOTH SIDE OF COIL ON WOODEN CRADLE. THEN USE THREE STRAPS ON EACH COIL FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF EACH COIL SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
7. AFTER TIGHTENING BY THREE STRAP, EACH COILS SHALL BE TIGHTENED ADEQUATELY BY 04 NOs. OF LASHING CHAIN/ MENTIONED STEEL STRAP WITH ISOLATION HOOK.
8. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.–EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5 TON)

9. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1.
10. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSION METER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT OF STEEL STRAP.
11. OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL. FOR PROTECTION OF CR COILS, SUITABLE PACKING MAY BE USED.
12. THE LOADING PARTY SHOULD WELD ISOLATION HOOK (ITEM NO.–3) AND ANGLE STOPPERS (ITEM NO.–7) PROPERLY WITH WAGON FLOOR TO ACCOMMODATE COIL DIA/ WIDTH AS SHOWN IN DRAWING.
13. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD–CS–01–LOAD SECURING CHECK SHEET (LATEST).
14. THIS RDSO DRAWING IS AN INDUCTIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
15. THE LOADING/UNLOADING OF COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
16. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.

ITEM	DESCRIPTION	NO. OF PCS PER COIL	REF. DRG.	MTL&SPEC	REMARKS
7	ANGLE STOPPER	4	WD–24036–S–01 ITEM–4	---	
6	LASHING CHAIN OR HEAVY DUTY STRAP	7	--	STEEL	
5	WOODEN WEDGE	2	--	WOOD	
4	WOODEN CRADLE	3	--	WOOD	
3	ISOLATION HOOK	10	WD–24036–S–01 ITEM–3	---	
2	STEEL COIL AT WAGON CENTRE (01 NO./ WAGON)	--	--	STEEL	MAXIMUM COIL WEIGHT=22T (AS PER TABLE–A)
1	STEEL COIL AT BOGIE CENTRE(01 NO./ BOGIE)	--	--	STEEL	(SEE TABLE–A & B)

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS

SUPERSEDED BY
SUPERSEDES

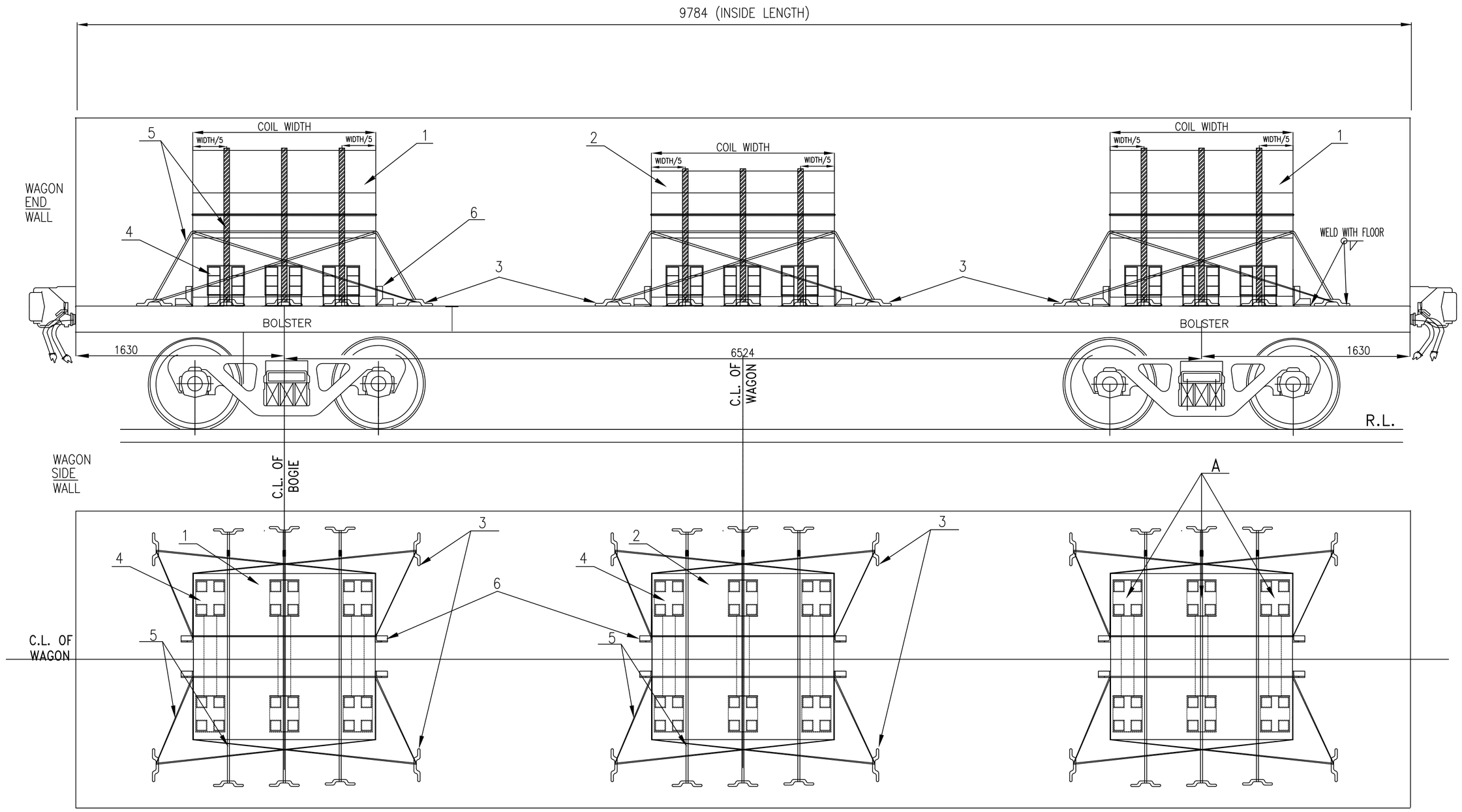
SCALE			DATE
	PASSED	ARVIND KUMAR	05/24
	CHECKED	L MOHAN	05/24
	DRAWN	K.PAL	04/24
	J.S.NO.	WD–24038	04/24

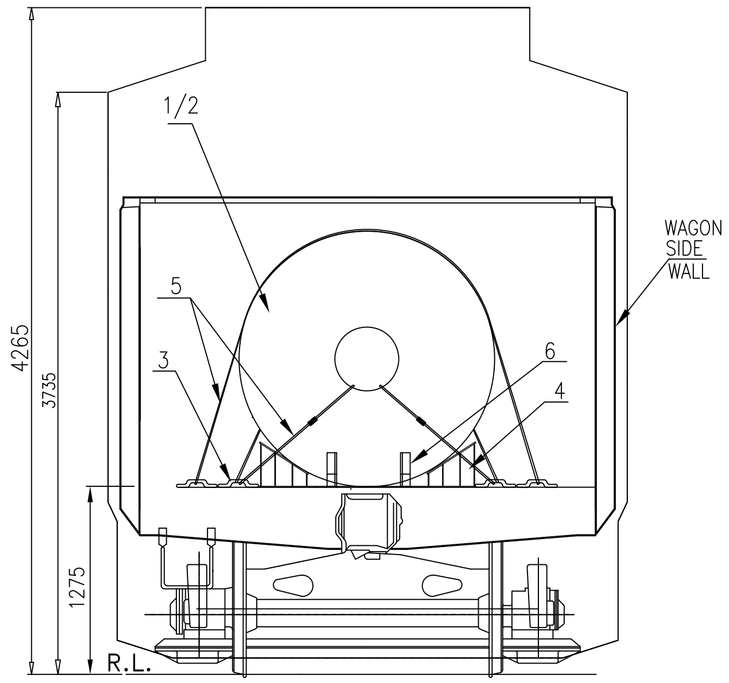
B.G. | R.D.S.O. [W] | GROUP

LOADING DIAGRAM FOR STEEL COILS IN LONGITUDINAL DIRECTION (EYE TO ENGINE) ON BOXN WAGON & ITS VARIANTS

WD–24038–S–01

File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SW/RDSO





S.NO.	COIL WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 22 TON MAXIMUM	(TOTAL PAY LOAD–22 TON)/2

TABLE–A (LOADING SCHEME FOR 03 NO. STEEL COIL)

S.NO.	COIL WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	NO COIL LOADED AT CENTRE	TOTAL PAY LOAD/2

TABLE–B (LOADING SCHEME FOR 02 NO. STEEL COIL)

NOTE:–

1. THE COIL LOADING ALONG THE WAGON LENGTH, SHOULD BE SYMMETRICALLY ABOUT THE LONGITUDINAL CENTRE LINE AS WELL AS TRANSVERSE AXIS OF THE WAGON.
2. STEEL COIL LOADING COMPOSITION DEPENDING UPON THE COIL WEIGHT, CAN BE USED AS PER TABLE A AND B :–
   2.1 IF THREE COIL LOADED AS PER TABLE–A, 01 NO. COIL AT BOTH SIDE ON EACH BOGIE/ BOLSTER CENTRE AND 01 COIL AT MIDDLE OF WAGON, THEN MAXIMUM COIL WEIGHT AT CENTER SHOULD NOT EXCEED 22 TON IN ANY CONDITION.
   2.2 IF TWO COIL LOADED AS PER TABLE–B, 01 NO. COIL AT EACH BOGIE CENTRE AND NO COIL LOADING DONE ON AT MIDDLE OF WAGON.
3. LOADING OF COILS SHOULD BE SUCH THAT :–
   3.1 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   3.2 THE COILS WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   3.3 MAXIMUM DIFFERENCE IN COILS WEIGHT LOADED ON BOTH BOGIE/ BOLSTER CENTRE, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   3.4 TOTAL WEIGHT OF LOADED COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
4. BEFORE LOADING, ENSURE THAT NO. OF METAL SADDLE PER COIL SHALL NOT BE LESS THAN THREE AS INDICATED BY 'A'. SELECT METAL SADDLE ON THE BASIS OF COIL DIAMETER RANGE (AS DETAILED IN ITEM NO. 4 DRAWING), WHICH CAN ACCOMMODATE COIL DIA TO SUSTAIN THE LOAD.
5. AFTER PLACING THE COIL ON METAL SADDLE, THEN USE THREE STRAPS ON EACH COIL FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF EACH COIL SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
6. AFTER TIGHTENING BY THREE STRAP, EACH COILS SHALL BE TIGHTENED ADEQUATELY BY 04 NOs. OF LASHING CHAIN/ MENTIONED STEEL STRAP WITH ISOLATION HOOK.
7. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.–EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5 TON)

8. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1.
9. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSOMETER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT OF THE STEEL STRAP.
10. OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER (ITEM NO.6) SHALL NOT BE LESS THAN 100 MM OVER COIL.
11. THE ISOLATION HOOK (ITEM NO.3) SHALL BE WELD WITH WAGON FLOOR TO ACCOMMODATE COIL DIA/ WIDTH AS SHOWN IN DRAWING.
12. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD–CS–01–LOAD SECURING CHECK SHEET (LATEST).
13. THIS RDSO DRAWING IS AN INDUCTIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
14. THE LOADING/UNLOADING OF COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
15. IF COIL LOADING IS DONE WITH WOODEN CRADLE THEN LOADING SHALL BE DONE AS PER LOADING DRAWING NO. WD–24038–S–01 .
16. THE LOADING/UNLOADING OF COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.

ITEM	DESCRIPTION	NO. OF PCS PER COIL	MTL&SPEC	REMARKS
6	ANGLE STOPPER	4	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–4
5	LASING CHAIN OR HEAVY DUTY STRAP	7	EN13247:2001	---
4	METAL SADDLE	3	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–1
3	ISOLATION HOOK	10	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–3
2	STEEL COIL AT WAGON CENTER (01 NO./WAGON CENTER)	––	STEEL	MAXIMUM COIL WEIGHT=22T (AS PER TABLE–A)
1	STEEL COIL AT EACH BOGIE CENTER (01 NO./ BOGIE CENTER)	––	STEEL	(SEE TABLE–A & B)

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS

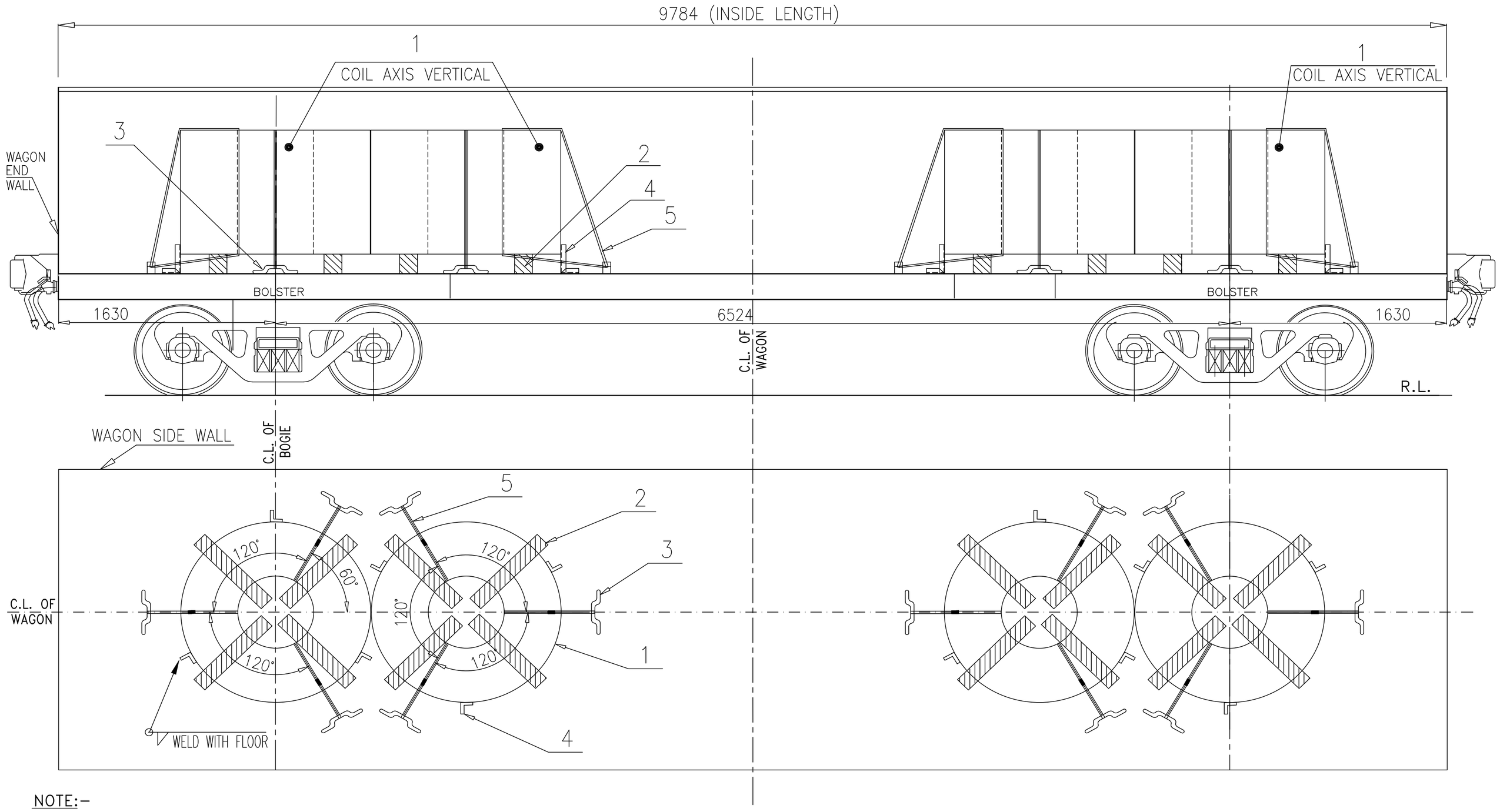
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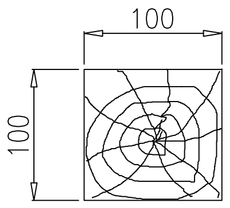
SCALE			
	PASSED	ARVIND KUMAR	05/24
	CHECKED	L. MOHAN	05/24
	DRAWN	K.PAL	04/24
	J.S.NO.	WD–24038	04/24

LOADING DIAGRAM FOR STEEL COILS IN LONGITUDINAL DIRECTION (EYE TO ENGINE) ON BOXN WAGON & ITS VARIANTS WITH METAL SADDLE

B.G. | R.D.S.O. [W] | GROUP | WD–24038–S–02

File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SWRDSO





WOODEN RUNNER LENGTH SHALL BE AS PER COIL DIAMETER

2

NOTE:–

1. COILS ARE TO BE UNITIZED BY USING HEAVY DUTY STRAPS AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. THE STEEL COILS LOADED VERTICALLY (EYE TO SKY) SHOULD BE SYMMETRICAL ALONG LONGITUDINAL AND TRANSVERSE AXIS OF WAGON.
3. **LOADING PARAMETER OF STEEL COILS SHOULD BE SUCH THAT:–**
   - 3.1 ONE COIL PLACED AT BOGIE CENTRE AND SECOND COIL ADJACENT TO FIRST COIL, TOWARDS WAGON CENTRE AND BOTH COILS SHOULD IN CLOSEST TO EACH OTHER. IF COIL AT BOGIE CENTRE AND ADJACENT COIL HAVE SOME WEIGHT DIFFERENCE, THEN HEAVIER WEIGHT COIL PLACED ON BOGIE CENTRE..
   - 3.2 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   - 3.3 THE COILS WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   - 3.4 MAXIMUM WEIGHT DIFFERENCE IN COILS LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   - 3.5 TOTAL WEIGHT OF LOADED COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
4. **PROCEDURE OF LOADING STEEL COIL ON WAGON ARE:–**
   - 4.1 BEFORE LOADING, ENSURE THAT WOODEN RUNNER ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY.
   - 4.2 AFTER PLACING THE COIL ON WOODEN RUNNER, EITHER 03 NO's STOPPERS OR 03 NO's STRAPS (TIGHTENED WITH ISOLATION HOOK) SHOULD BE APPLIED FOR SECURING EACH COIL AS SHOWN IN DRAWING, FOR SAFE OPERATION.
   - 4.3 DEPENDING UPON THE EXPERIENCE/ REPORT OF UNUSUAL INCIDENCE WITH THE ABOVE COIL SECURING ARRANGEMENT, CONCERNED RAILWAY/ CONSIGNEE MAY TAKE DECISION FOR APPLICATION OF STOPPER AND STRAPS (BOTH) TO SECURE THE LOAD PROPERLY TO AVOID ANY UNUSUAL INCIDENCE.
   - 4.4 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
5. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.–EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3 TON)

6. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1.
7. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSOMETER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT.
8. THE LOADING PARTY SHOULD WELD ISOLATION HOOK (ITEM NO.3) WITH WAGON FLOOR TO ACCOMODATE COIL DIIA/ WIDTH AS SHOWN IN DRAWING.
9. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD–CS–01–LOAD SECURING CHECK SHEET (LATEST).
10. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE DIA AND WIDTH OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
11. THE LOADING/UNLOADING OF STEEL COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
12. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.
13. STEEL COIL SHOULD BE LOADED SLOWLY/ GRADUALLY ON THE FLOOR OF WAGON . IMPACT LOADING NOT TO BE CARRIED OUT IN ANY CIRCUMSTANCE.
14. THE CONCERNED RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.

ITEM	DESCRIPTION	No. OF PCS PER COIL	MTL&SPEC	REMARKS
5.	LASHING CHAIN OR HEAVY DUTY STRAP	3	EN13247:2001	
4.	ANGLE STOPPER	3	–	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–4
3.	ISOLATION HOOK	3	–	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–3
2.	WOODEN RUNNER	4	WOOD	
1.	STEEL COIL	––	STEEL	

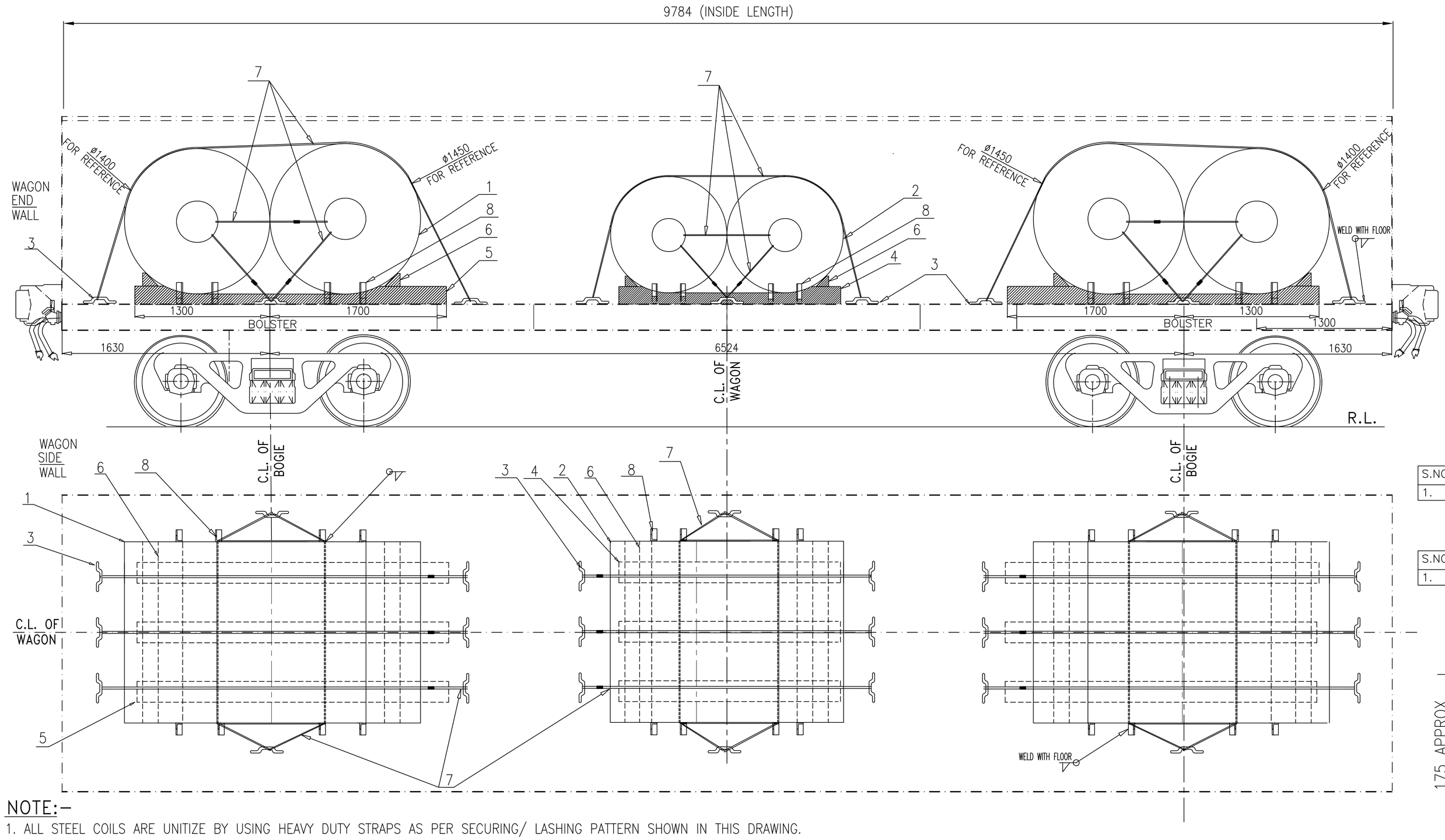
SUPERSEDED BY			
SUPERSEDES		DATE	
SCALE	PASSED	ARVIND KUMAR	05/24
	CHECKED	L MOHAN	05/24
	DRAWN	K PAL	04/24
	J.S.NO.	WD–24038	04/24

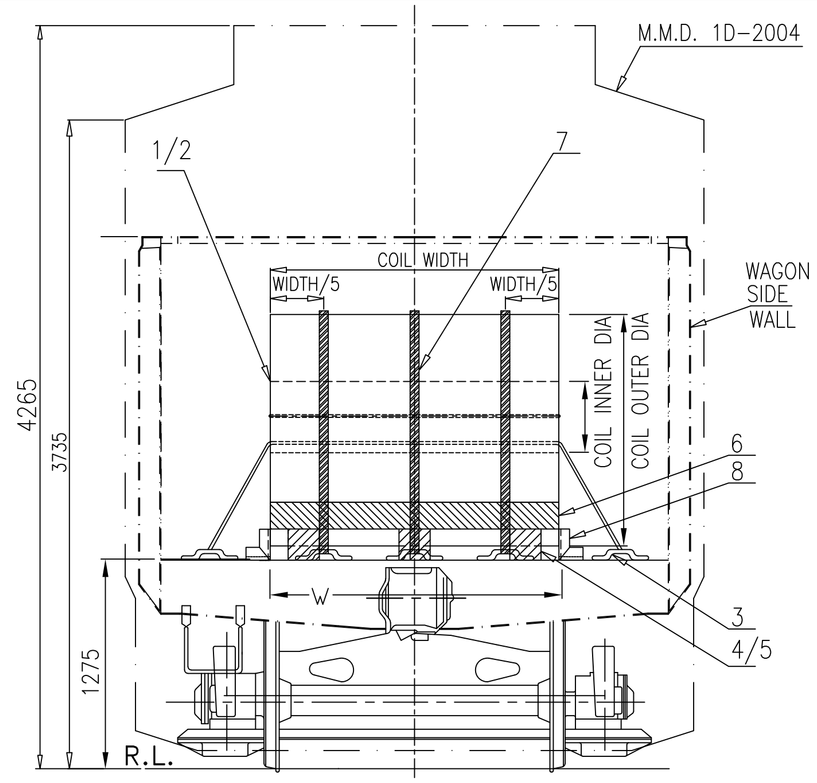
LOADING DIAGRAM FOR 04 NO. STEEL COILS (VERTICAL) ON BOXN WAGON & IT'S VARIANTS

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS

B.G. | R.D.S.O. [W] | GROUP | WD–24038–S–03

File No.RDSO-MWOGENL(EOF-C)/8/2023-O/o PED/SW/RDSO



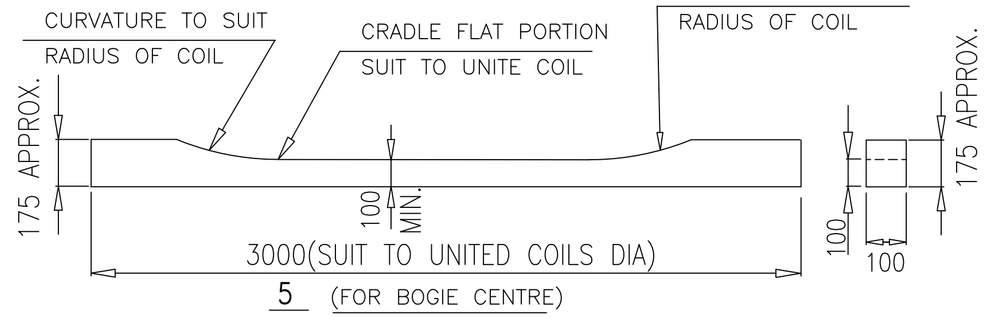


S.NO.	UNITED COIL WEIGHT AT CENTRE OF WAGON	UNITED COILS WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 16 TON MAXIMUM	(TOTAL PAY LOAD–16 TON)/2 (SEE NOTE–3)

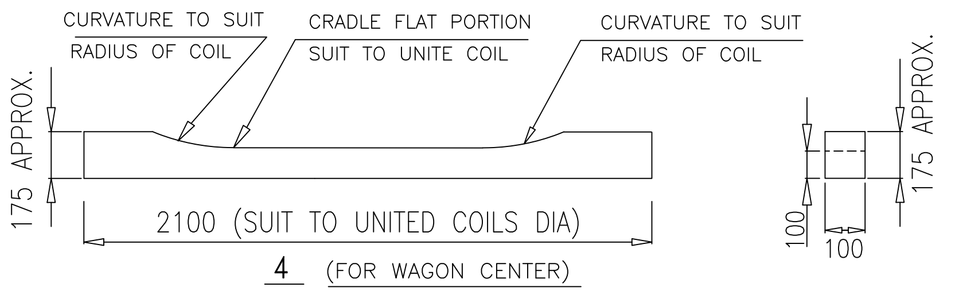
TABLE–A (LOADING SCHEME FOR 06 NO. STEEL COIL)

S.NO.	UNITED COIL WEIGHT AT CENTRE OF WAGON	UNITED COILS WEIGHT AT EACH BOGIE CENTRE
1.	NIL (NO COIL AT CENTRE)	TOTAL PAY LOAD/2 (SEE NOTE–3)

TABLE–B (LOADING SCHEME FOR 04 NO. STEEL COIL)



5 (FOR BOGIE CENTRE)



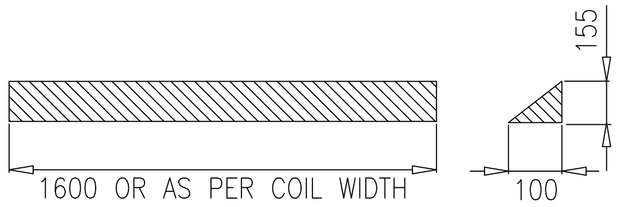
4 (FOR WAGON CENTER)

NOTE:–

1. ALL STEEL COILS ARE UNITIZE BY USING HEAVY DUTY STRAPS AS PER SECURING/ LASHING PATTERN SHOWN IN THIS DRAWING.
2. THE COILS LOADING ACROSS THE WAGON WIDTH, SHOULD BE SYMMETRICALLY ABOUT THE LONGITUDINAL CENTRE LINE AS WELL AS TRANSVERSE AXIS OF THE WAGON.
3. THE COIL LOADING COMPOSITION DEPENDING UPON THE COIL WEIGHT, CAN BE USED AS PER TABLE A AND B :–
   - 3.1 IF SIX COIL LOADED AS PER TABLE–A, 02 NO. UNITE COILS AT BOTH SIDE ON EACH BOGIE/ BOLSTER CENTRE AND 02 COIL AT MIDDLE OF WAGON, THEN MAXIMUM WEIGHT OF BOTH UNITIZED STEEL COIL AT CENTER SHOULD NOT EXCEED 16 TON IN ANY CONDITION.
   - 3.2 IF FOUR COIL LOADED AS PER TABLE–B, 02 NO. UNITE COILS AT EACH BOGIE CENTRE AND NO COIL LOADING DONE ON AT MIDDLE OF WAGON.
4. LOADING OF COILS SHOULD BE SUCH THAT :–
   - 4.1 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   - 4.2 THE COILS WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   - 4.3 MAXIMUM DIFFERENCE IN COILS WEIGHT LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   - 4.4 TOTAL WEIGHT OF LOADED COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
5. BEFORE LOADING, ENSURE THAT WOODEN CRADLES ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT, SHAL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY. TRIANGULAR WOODEN WEDGE USED ALONG THE WIDTH OF COILS.
6. AFTER PLACING THE UNITED COIL ON WOODEN CRADLE, FIRST USE ONE LASHING CHAIN/ STEEL STRAP BETWEEN EYE OF BOTH COILS TO TIGHTENED WITH EACH OTHER.
7. AFTER PLACING ON WOODEN CRADLE, WOODEN WEDGE PLACED AND FIXED ON BOTH SIDE OF UNITED COILS ON WOODEN CRADLE. THEN USE THREE STRAPS OVER EACH UNITED COILS FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF EACH COIL SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
8. AFTER TIGHTENING BY THREE STRAP, UNITED COILS SHALL BE TIGHTENED ADEQUATELY BY 2 NOs. LASHING CHAIN/STEEL STRAP WITH ISOLATION HOOK AS PER POSITION.
9. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.–EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5 TON)

10. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1.
11. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSION METER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT OF STEEL STRAP.
12. OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
13. THE ISOLATION HOOK (ITEM NO.3) SHOULD BE WELD WITH WAGON FLOOR TO ACCOMMODATE COIL DIA/ WIDTH AS SHOWN IN DRAWING.
14. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD–CS–01–LOAD SECURING CHECK SHEET (LATEST).
15. THIS RDSO DRAWING IS AN INDUCTIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
16. THE LOADING/UNLOADING OF COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.



6

ITEM	DESCRIPTION	NO. OF PCS PER UNITE COIL	MTL&SPEC	REMARKS
8.	ANGLE STOPPER	8	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–4
7.	LASHING CHAIN OR HEAVY DUTY STRAP	6	EN13247:2001	
6.	WOODEN WEDGE	2	WOOD	SEE NOTE NO.–7
5.	WOODEN CRADLE(LONG)	3	WOOD	
4.	WOODEN CRADLE(SHORT)	3	WOOD	
3.	ISOLATION HOOK	8	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–3
2.	STEEL COIL AT CENTRE (02 NO./ WAGON)	--	STEEL	MAXIMUM UNITE COIL WEIGHT=16T AT CENTRE OF WAGON(SEE TABLE–A)
1.	STEEL COIL AT END (02 NO./ BOGIE)	--	STEEL	SEE TABLE–A & B

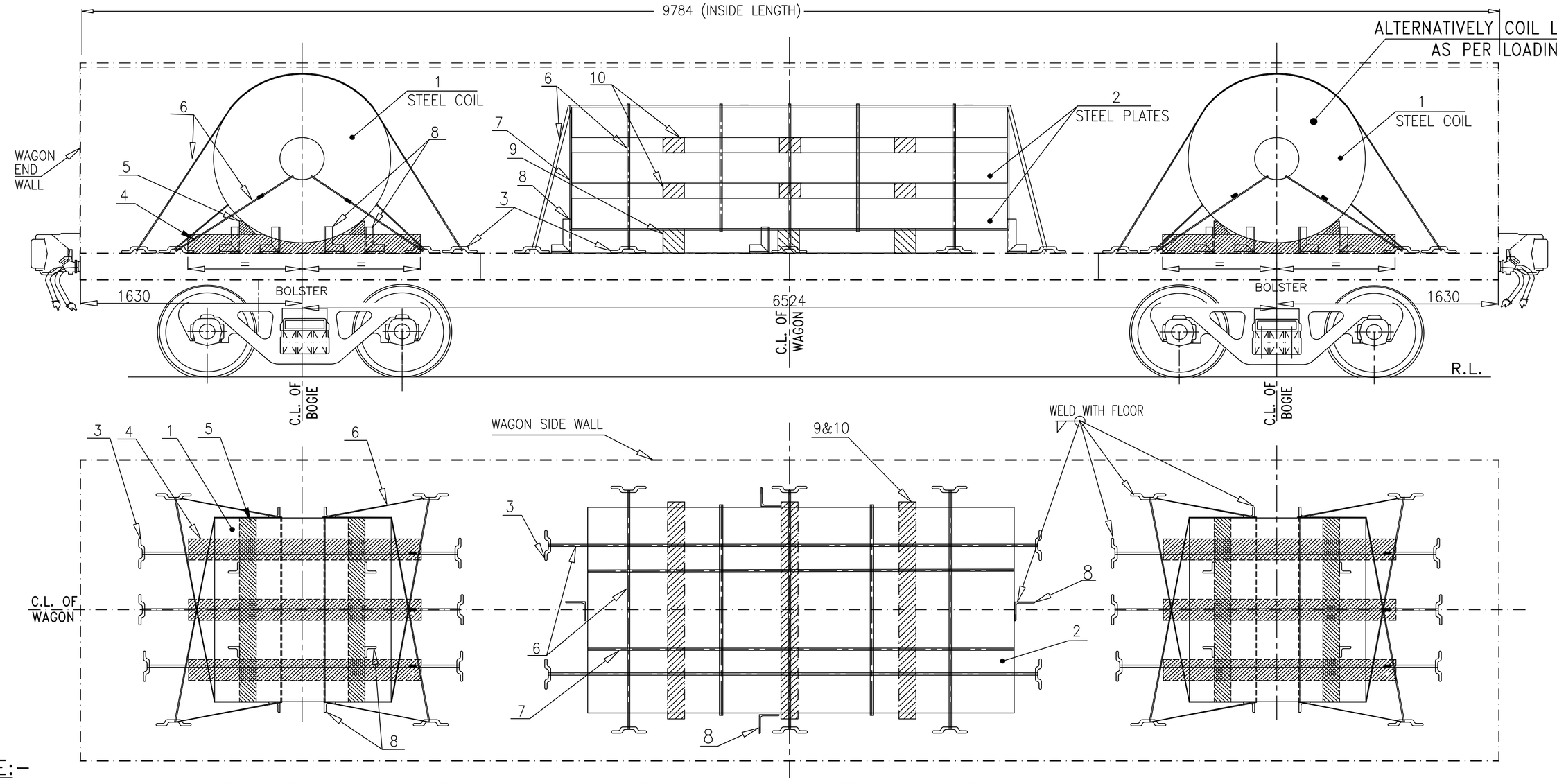
SUPERSEDED BY			
SUPERSEDES			DATE
SCALE	PASSED	ARVIND KUMAR	05/24
	CHECKED	K PAL	05/24
	DRAWN	D. KUMAR	05/24
	J.S.NO.	WD–24038	04/24

LOADING OF UNITIZED STEEL COILS ON BOXN WAGON & ITS VARIANTS

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

B.G.	R.D.S.O. [W]	GROUP	WD–24038–S–04

File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED/SWR/DSO

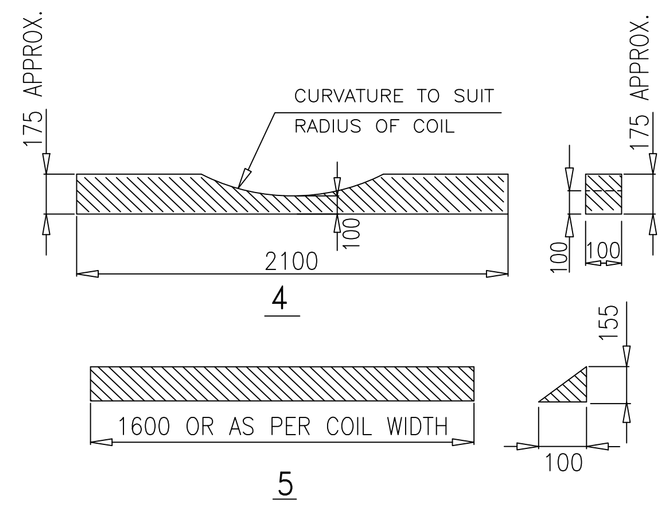


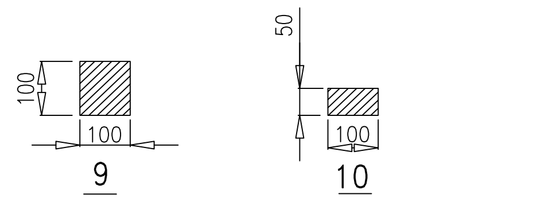
S.NO.	PLATES WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 20 TON MAXIMUM	(TOTAL PAY LOAD-20 TON)/2

TABLE-A (LOADING SCHEME FOR STEEL COIL & STEEL PLATES)

S.NO.	PLATES WEIGHT AT CENTRE OF WAGON	COILS WEIGHT AT EACH BOGIE CENTRE
1.	NO PLATES LOADED AT CENTRE	TOTAL PAY LOAD/2

TABLE-B (LOADING SCHEME FOR STEEL COILS AT BOGIE CENTRE)





(FOR ITEM NO. 9 & 10 LENGTH AS PER WIDTH OF PLATES)

NOTE:-

1. INDIVIDUAL COIL AND BUNDLES OF STEEL PLATES ARE TO BE LASHED BY USING HEAVY DUTY STRAPS AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. THE STEEL COILS LOADED ALONG THE WAGON WIDTH & BUNDLES OF STEEL PLATES LOADED ALONG THE WAGON LENGTH, SHOULD BE SYMMETRICAL ALONG LONGITUDINAL AND TRANSVERSE AXIS OF WAGON.
3. **LOADING PARAMETER OF COIL AND BUNDLES OF STEEL PLATES SHOULD BE SUCH THAT:-**
   - 3.1 COILS AND BUNDLES OF STEEL PLATES LOADING COMPOSITION DEPENDING UPON THE WEIGHT OF COIL AS WELL AS WEIGHT OF BUNDLES OF STEEL PLATES, CAN BE USED AS PER TABLE A & B.
   - 3.1(a) IF LOADING IS DONE AS PER TABLE-A, COIL AT EACH BOGIE/ BOLSTER CENTRE AND BUNDLES OF STEEL PLATES AT CENTRE OF WAGON, THEN MAXIMUM WEIGHT OF BUNDLES OF STEEL PLATES SHOULD NOT EXCEED 20 TON IN ANY CONDITION.
   - 3.1(b) AS PER TABLE-B, COIL LOADED AT BOTH SIDE ON EACH BOGIE/ BOLSTER CENTRE AND NO BUNDLE OF STEEL PLATES LOADED AT WAGON CENTRE.
   - 3.2 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   - 3.3 THE COIL WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   - 3.4 MAXIMUM WEIGHT DIFFERENCE IN COILS LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   - 3.5 TOTAL WEIGHT OF LOADED COILS AND BUNDLES OF STEEL PLATES ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
4. **PROCEDURE OF LOADING STEEL COIL ON WAGON ARE:-**
   - 4.1 BEFORE LOADING, ENSURE THAT WOODEN CRADLE ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT SHAL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY. TRIANGULAR WOODEN WEDGE USED ACROSS THE WIDTH OF COIL.
   - 4.2 AFTER PLACING THE COIL ON WOODEN CRADLE, WOODEN WEDGE PLACED AND FIXED ON BOTH SIDE OF COIL BY FOUR NOs. OF ANGLE STOPPER, THEN USE THREE STRAPS ON EACH COIL FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF EACH COIL SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
   - 4.3 AFTER TIGHTENING BY THREE STRAP, EACH COIL SHALL BE TIGHTENED ADEQUATELY BY 04 NOs. OF LASHING CHAIN/ MENTIONED STEEL STRAP WITH ISOLATION HOOK.
   - 4.4 AFTER TIGHTENING BY FOUR STRAP, EACH COIL SHALL BE SECURE BY PROVIDING FOUR NO. OF ANGLE STOPPER AS SHOWN IN DRAWING.
   - 4.5 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
5. **PROCEDURE OF LOADING STEEL PLATES ON WAGON ARE:-**
   - 5.1 THE STEEL PLATES SHALL BE UNITIZED IN BUNDLE FORM.
   - 5.2 BEFORE LOADING, ENSURE THAT WOODEN RUNNER ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH, WHICH SUSTAIN THE LOAD IMPARTED ON IT SHAL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY.
   - 5.3 AFTER PLACING THE FIRST BUNDLE OF STEEL PLATES ON WOODEN RUNNER, INTERMEDIATE WOODEN RUNNER PLACED AT CORRECT POSITION BETWEEN STEEL PLATES BUNDLE AS SHOWN IN DRAWING .AFTER THAT UNITIZING THE ALL BUNDLES OF PLATES BY FOUR STRAPS ITSELF.THEN USE FIVE STRAP ON STEEL PLATES BUNDLES FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF BUNDLES OF STEEL PLATES SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
   - 5.4 AFTER TIGHTENING BY FIVE STRAP, BUNDLE OF STEEL PLATES SHALL BE SECURE BY PROVIDING EIGHT NO. OF ANGLE STOPPER AS SHOWN IN DRAWING.
   - 5.5 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER BUNDLES OF STEEL PLATES.
6. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

STEEL STRAP USED FOR COIL (SPECIFICATION EN13247:2001.)

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.-EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5 TON)

AND

STEEL STRAP USED FOR PLATE (SPECIFICATION EN13247:2001.)

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.-EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3 TON)

7. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002-1.
8. INITIAL TENSION IN STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSION METER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING POINT OF STEEL STRAP.
9. THE ISOLATION HOOK (ITEM NO.3) SHOULD BE WELD WITH WAGON FLOOR TO ACCOMMODATE COIL DIA/ WIDTH AS SHOWN IN DRAWING.
10. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD-CS-01-LOAD SECURING CHECK SHEET (LATEST).
11. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
12. THE LOADING/UNLOADING OF COIL AND BUNDLES OF STEEL PLATES TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
13. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.

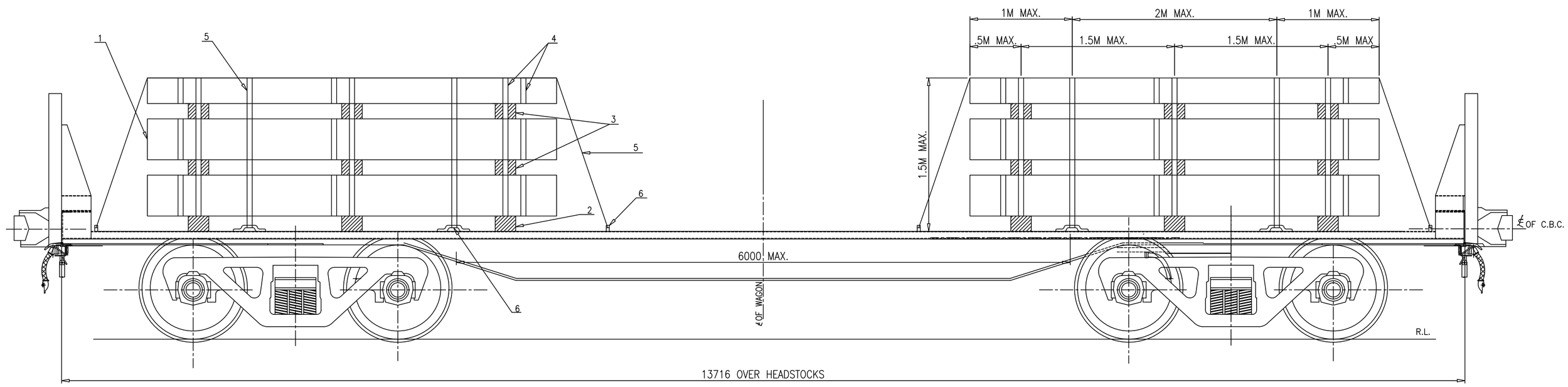
ITEM	DESCRIPTION	NO. OF PCS PER PLATES	NO. OF PCS PER COIL	MTL&SPEC	REMARKS
10.	INTERMEDIATE WOODEN RUNNER (50X100)FOR STEEL PLATES	06	--	WOOD	NOs. OF INTERMEDIATE WOODEN RUNNER AS PER NOs. OF BUNDLE
9.	WOODEN RUNNER (100X100) FOR STEEL PLATES	03	--	WOOD	
8.	ANGLE STOPPER	04	08	---	AS PER DRAWING NO. WD-24036-S-01, ITEM NO.-4
7.	LASHING CHAIN OR HEAVY DUTY STRAP FOR SELF UNITIZATION	04	--	EN13247:2001	
6.	LASHING CHAIN OR HEAVY DUTY STRAP WITH ISOLATION HOOK	05	07	EN13247:2001	
5.	WOODEN WEDGE FOR COIL	--	02	WOOD	
4.	WOODEN CRADLE FOR COIL	--	03	WOOD	
3.	ISOLATION HOOK	10	10	---	AS PER DRAWING NO. WD-24036-S-01, ITEM NO.-3
2.	STEEL PLATES BUNDLE (01 NO./ WAGON CENTRE)	--	--	STEEL	(AS PER TABLE-A)
1.	STEEL COIL AT EACH BOGIE CENTRE (01 NO./ BOGIE CENTRE)	--	--	STEEL	(AS PER TABLE-A&B)

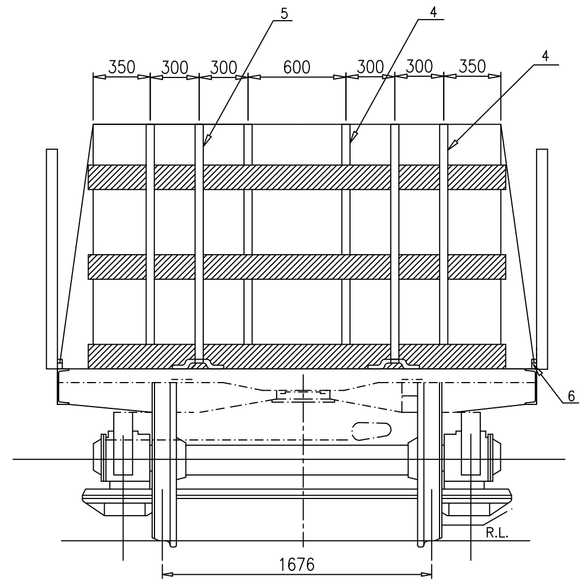
SUPERSEDED BY			
SUPERSEDES		DATE	LOADING OF STEEL PLATES ON WAGON CENTRE & STEEL COILS ALONG WAGON WIDTH ON BOGIE CENTER ON BOXN WAGON & IT'S VARIANTS
SCALE	PASSED ARVIND KUMAR	05/24	
	CHECKED K PAL	05/24	
	DRAWN DK YADAV	04/24	
	J.S.NO. WD-24038	04/24	

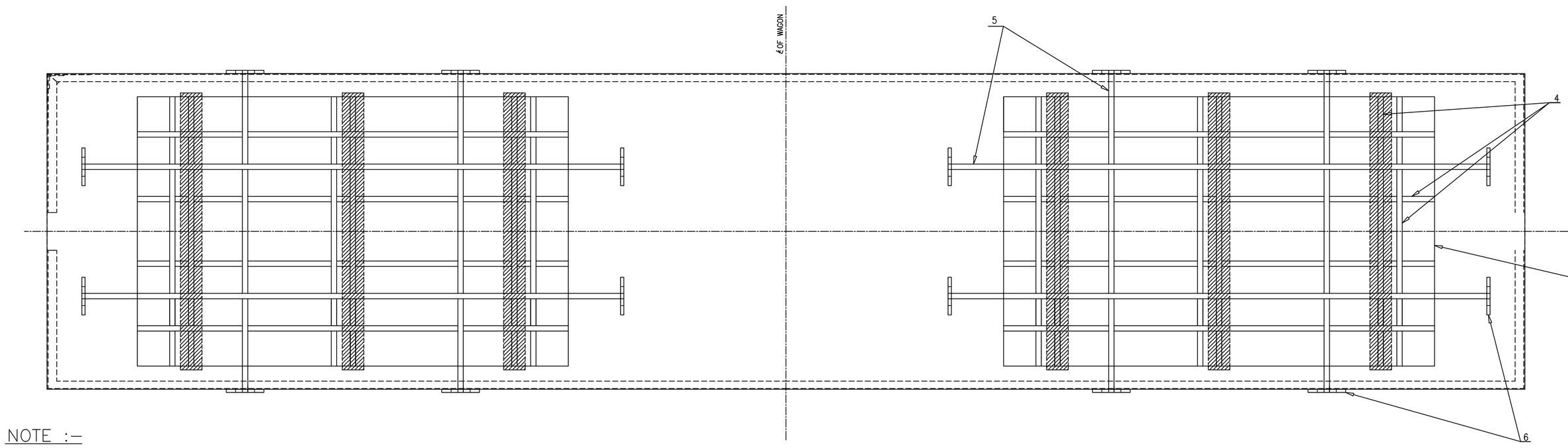
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS

B.G. | R.D.S.O. [W] | GROUP | WD-24038-S-05

File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SW/RDSO







NOTE :–

1. LOADING SHOULD BE SYMMETRICAL W.R.T. LONGITUDINAL AXIS AS WELL AS TRANSVERSE AXIS PASSING THROUGH CENTRE OF WAGON FLOOR AND ENSURING EVEN LOAD ON ALL WHEELS.
2. IN CASE HR SHEETS /PLATES ARE LOADED IN LAYERS SEPARATED WITH WOODEN RUNNERS, WOODEN RUNNERS OF SIZE 100MMX50MM SHALL BE PROVIDED IN INTERMEDIATE LAYERS IN ADDITION TO THE BOTTOM WOODEN RUNNER OF SIZE 100MMX100 MM.
3. ~~HEIGHT TO WIDTH RATIO OF CONSIGNMENT SHOULD NOT EXCEED 1.5 IN ANY CASE.~~
4. LENGTH OF WOODEN RUNNER MUST BE MORE THAN WIDTH OF LAYERS.
5. STRAPPING SHOULD BE SYMMETRICAL AND THE END STRAPS SHOULD NOT BE MORE THAN 0.5M AWAY FROM EDGES AND MAXIMUM DISTANCE BETWEEN IMMEDIATE STRAPS IS 1.5 M.
6. ALL HR SHEETS/PLATES ARE TO BE SECURED USING HEAVY DUTY STEEL STRAPS AS INDICATED IN THE DRAWING.
7. NO. OF WOODEN RUNNER PER SHALL NOT BE LESS THAN AS INDICATED IN THE DRAWING.
8. LOADING OF HR SHEETS/PLATE SHOULD BE SUCH THAT :–
   - 8.1 THE LOAD SHOULD NOT EXCEED WAGON'S MAXIMUM PERMISSIBLE PAY LOAD.
   - 8.2 THE WEIGHT IMPOSED ON BOTH THE BOGIES SHOULD BE IDENTICAL (EVEN IN CASE OF NON STANDARD HR SHEETS/PLATES).
9. STEEL STRAP SHALL BE CONFIRMING TO EN 13246 TYPE 3.2 OR EQUIVALENT.
10. H.R. SHEETS/PLATES SHOULD BE IN BUNDLE NOT LESS THAN 1 TONNE.
11. SIDE STANCHION (L.H. & R.H.) MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING AND IN DOWNWARD POSITION DURING LOADING/UNLOADING.
12. THE MINIMUM NO. OF EACH TYPE OF LONGITUDINAL/LATERAL STRAPS SHALL BE AS INDICATED IN THE DRAWING.
13. THE INITIAL TENSION IN THE STRAP SHALL BE IN THE RANGE OF 500kg TO 800kg.
14. WOOD OF ADEQUATE STRENGTH WHICH CAN SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED.
15. SECURING ARRANGEMENT SHALL BE CERTIFIED BY THE CONCERN RAILWAY.
16. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
17. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.

① SPECIFICATION FOR STEEL STRAP

S. No.	PURPOSE	WIDTH (IN MM)	THICKNESS (IN MM)	PERCENTAGE ELONGATION MIN.	TENSILE ST. (N/MM^2)	PHYSICAL
1.	FOR BUNDLING & UNITISING	31.75	1.0	6	925	DEBURRED EDGE PAINTED & WAXED
2.	FOR SECURING WITH WAGON BODY	31.75	1.0	6	925	DEBURRED EDGE PAINTED BROWN & WAXED

ITEM	DESCRIPTION	NO.OFF	MTL&SPEC	REMARKS
③ 6	ISOLATION HOOK	AS PER REQUIREMENT	WD–24036–S–01 ITEM–3	
① 5	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	AS PER REQUIREMENT	EN 13246 TYPE 3.2	
4	HIGH TENSILE STEEL STRAP (FOR BUNDLING & UNITIZATION)	AS PER REQUIREMENT	EN 13246 TYPE 3.2	
3	INTERMEDIATE WOODEN RUNNER	AS PER REQUIREMENT	WOOD	
2	WOODEN RUNNER	AS PER REQUIREMENT	WOOD	
1	HR SHEETS/PLATES	AS PER REQUIREMENT	STEEL	

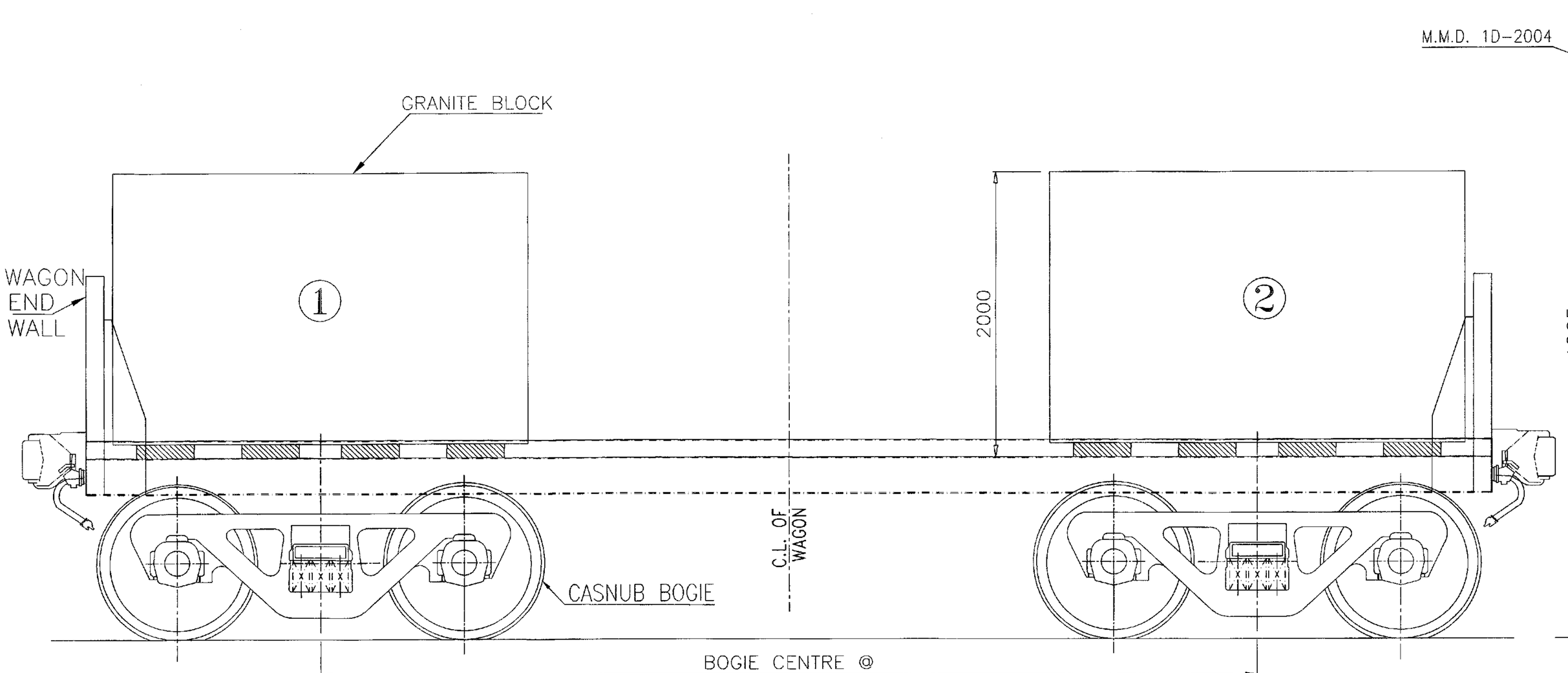
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
③.	–	WD–24036	INITIAL TENSION OF STRAP CHANGED&ISOLATION HOOK REFERENCE DRAWING NO. CHANGED	05/24	–
②.	–	WD–24029	NOTE NO. 3 REMOVED	03/24	–
①.	–	WD–23075	NOTE NO. 11 TO 16 ADDED.	08/23	–

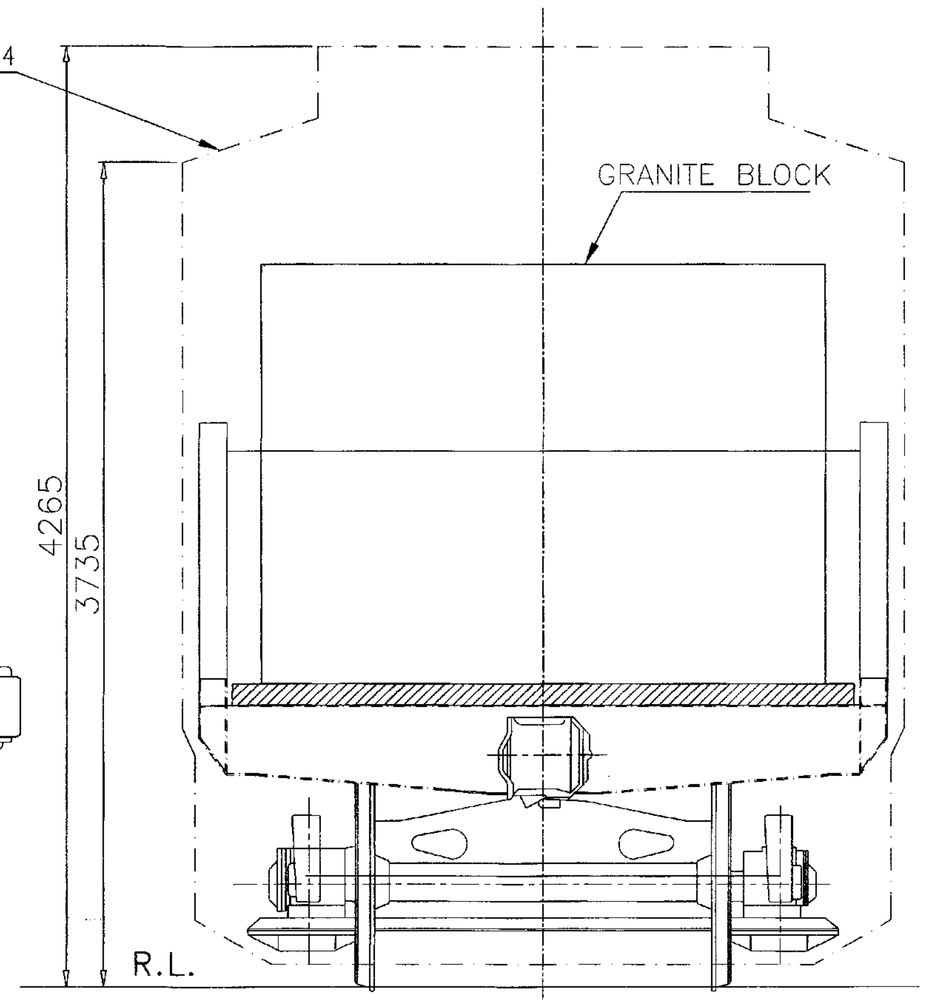
SUPERSEDED BY			
SUPERSEDES		DATE	
SCALE	PASSED	S.M.TRIPATH	01/22
	CHECKED	A.P.SINGH	01/22
	DRAWN	SACHIN KUMAR	01/22
	TRACED		
	COMPARED		
	J.S.NO.	WD–21112	12/21

LOADING AND SECURING ARRANGEMENT OF HR SHEETS/PLATES ON BRN & ITS VARIANTS

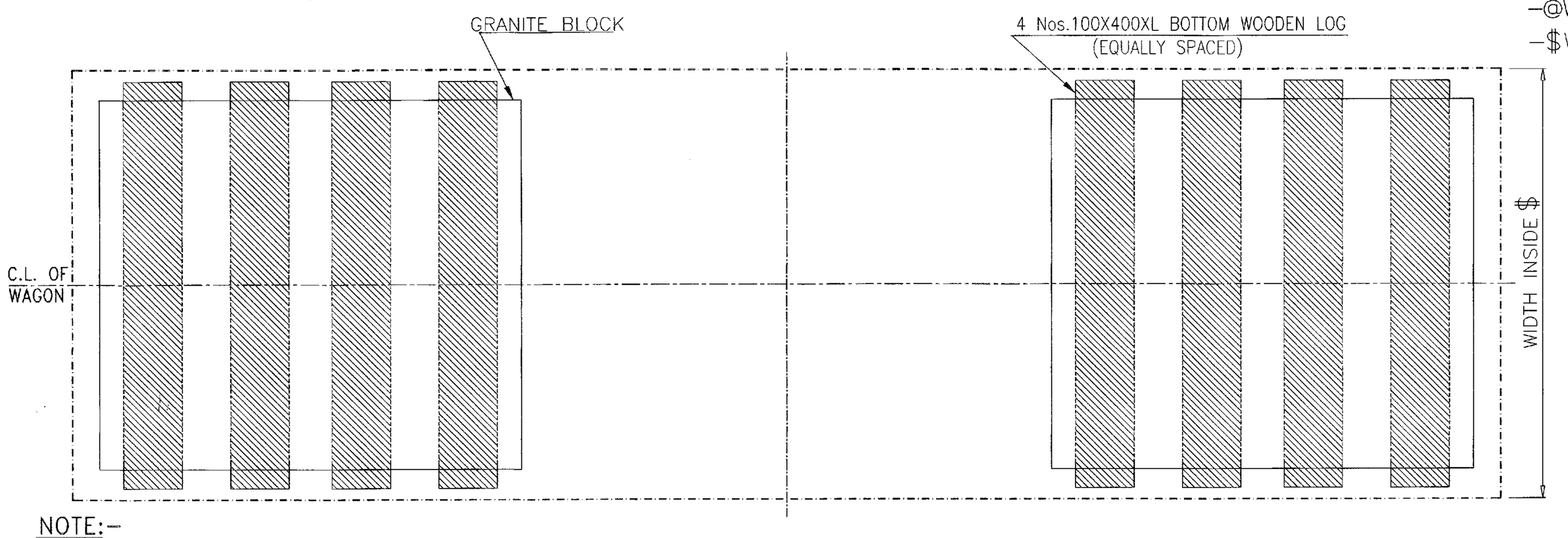
B.G.	R.D.S.O. [W]	GROUP	WD–21112–S–03

File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SW/RDSO





-@WAGON BOGIE CENTRE (AS PER USED WAGON)
-$WAGON WIDTH INSIDE (AS PER USED WAGON)



NOTE:-

1. THE DIFFERENCE IN WEIGHT OF GRANITE BLOCK 1 & 2 SHOULD NOT BE MORE THAN 6t.
2. THE TOTAL LOAD ON ONE BOGIE SHOULD NOT EXCEED THE CARRYING CAPACITY OF THE BOGIE.
3. THE TOTAL GRANITE BLOCKS WEIGHT SHOULD NOT BE MORE THAN CARRYING CAPACITY OF THE WAGON.
4. THE GRANITE BLOCKS SHOULD BE KEPT CENTRALLY COINCIDE WITH BOGIE CENTER LATERALLY .
5. IN ANY CASE, THE HEIGHT OF GRANITE BLOCK ON ANY LOADED WAGON SHOULD NOT INFRINGE MMD.
6. THE LENGTH OF WOODEN LOGS 'L' SHOULD BE MORE THAN WIDTH OF THE GRANITE BLOCKS.
7. THE LOADING/UNLOADING OF GRANITE BLOCKS IN WAGON TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON.
8. THE MAX. PERMISSIBLE LATERAL MOVEMENT OF LOAD IS LIMITING TO 100 mm FROM CENTRE.
9. BEFORE LOADING, IT MUST BE ENSURED THAT WAGON IS FREE FROM SAGGING.
10. ALL DIMENSIONS ARE IN mm.
11. SECURING ARRANGEMENT AS DEEMED FIT AT THE SITE TO BE ENSURED.

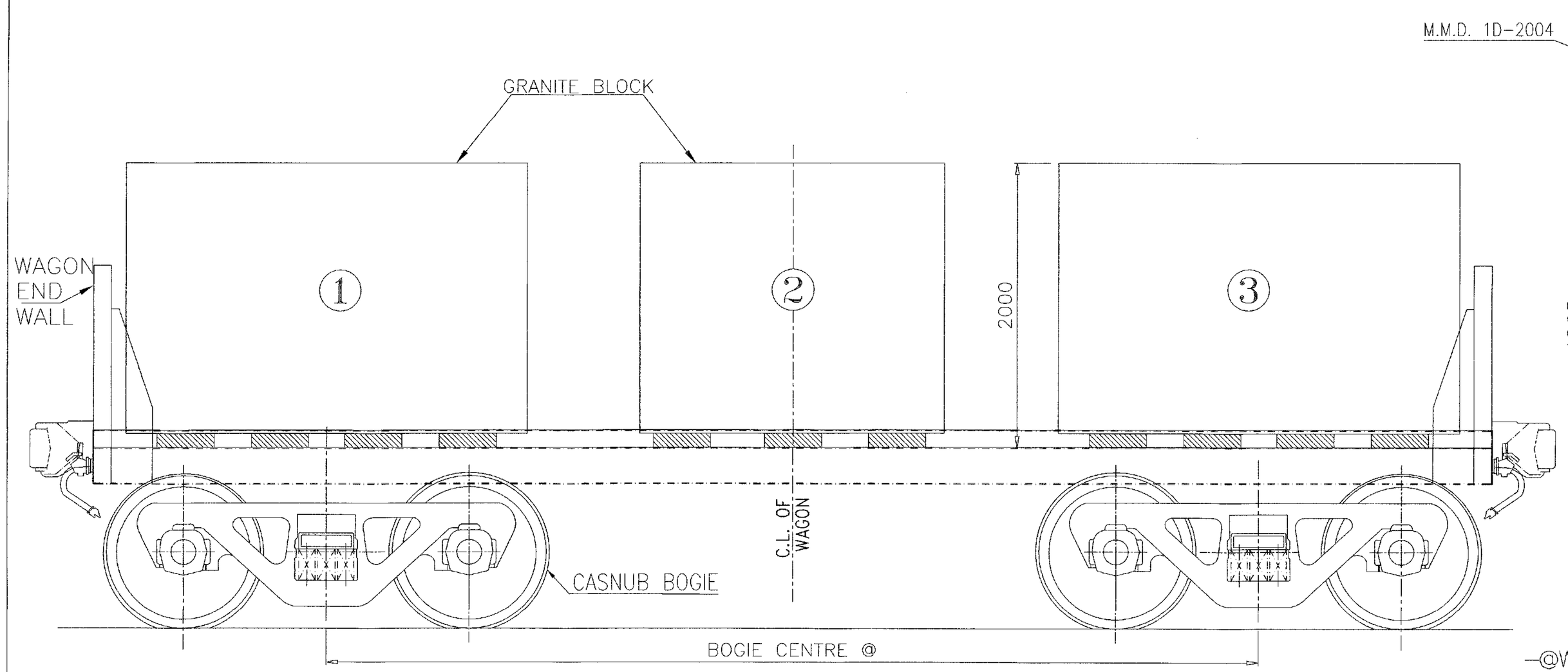
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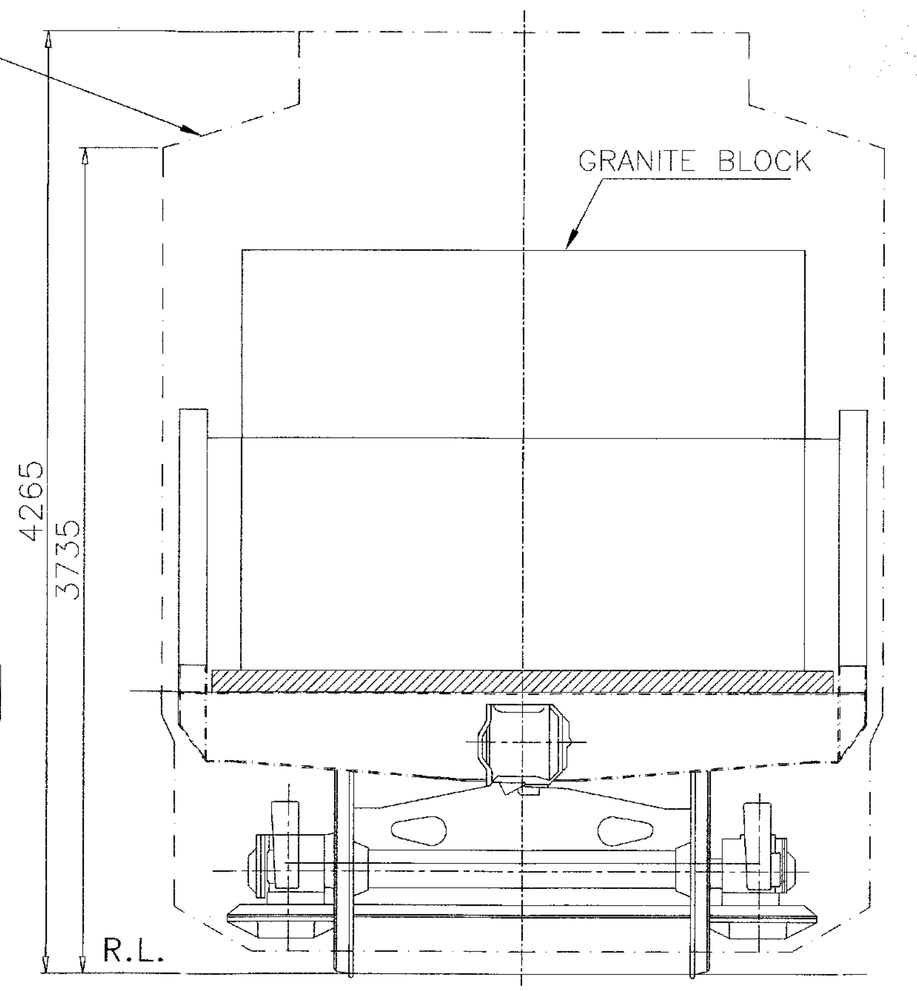
File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED/SW/RDSO

SUPERSEDED BY		
SUPERSEDES		DATE
SCALE PASSED		06/21
CHECKED		06/21
DRAWN		06/21
J.S.NO.	WD-21048	06/21

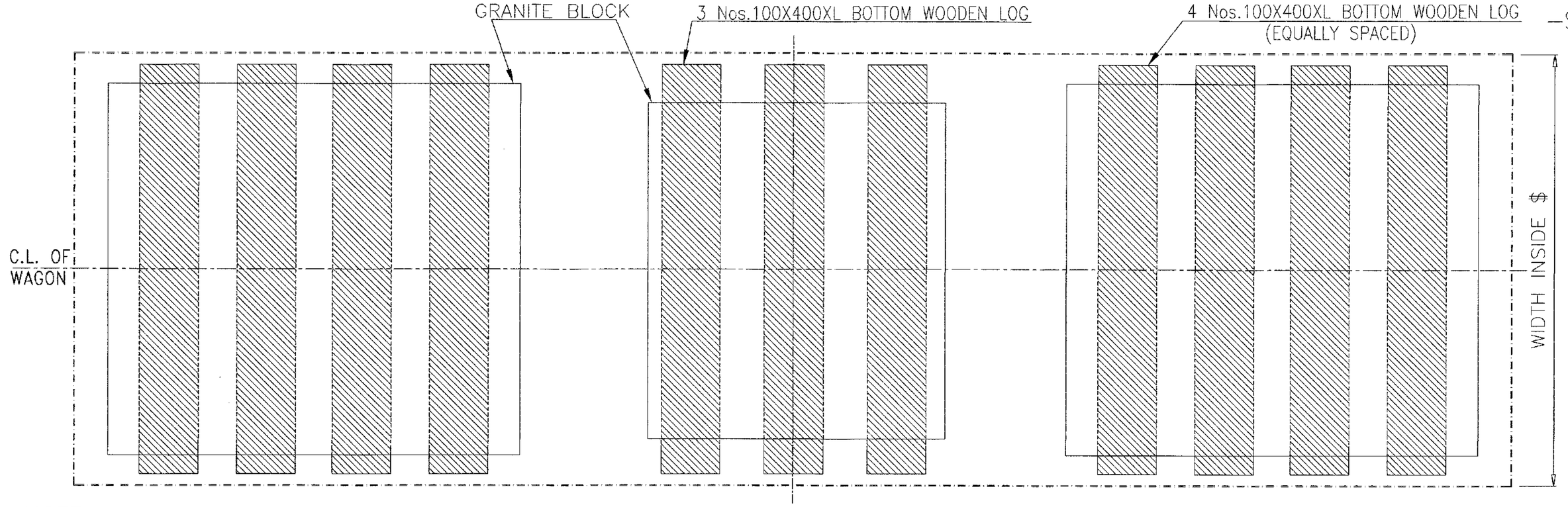
LOADING DIAGRAM OF GRANITE STONES IN BRN22.9/BRN22.9M1 WAGON (FOR 02 NO. GRANITE STONE BLOCKS)

B.G.	R.D.S.O. [W]	GROUP	WD-21048-S-01





-@WAGON BOGIE CENTRE (AS PER USED WAGON)
-$WAGON WIDTH INSIDE (AS PER USED WAGON)



NOTE:-

1. THE DIFFERENCE IN WEIGHT OF GRANITE BLOCK 1 & 3 SHOULD NOT BE MORE THAN 6t.
2. THE TOTAL LOAD ON ONE BOGIE SHOULD NOT EXCEED THE CARRYING CAPACITY OF THE BOGIE.
3. THE GRANITE BLOCKS LOADED AT CENTER SHOULD NOT BE MORE THAN 15t.
4. THE GRANITE BLOCKS SHOULD BE KEPT CENTRALLY COINCIDE WITH WAGON/ BOGIE CENTER LATERALLY .
5. IN ANY CASE, THE HEIGHT OF GRANITE BLOCK ON ANY LOADED WAGON SHOULD NOT INFRINGE MMD.
6. THE LENGTH OF WOODEN LOGS 'L' SHOULD BE MORE THAN WIDTH OF THE GRANITE BLOCKS.
7. THE LOADING/UNLOADING OF GRANITE BLOCKS IN WAGON TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON.
8. THE MAX. PERMISSIBLE LATERAL MOVEMENT OF LOAD IS LIMITING TO 100 mm FROM CENTRE.
9. BEFORE LOADING, IT MUST BE ENSURED THAT WAGON IS FREE FROM SAGGING.
10. ALL DIMENSIONS ARE IN mm.
11. SECURING ARRANGEMENT AS DEEMED FIT AT THE SITE TO BE ENSURED.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

SUPERSEDED BY		
SUPERSEDES		DATE
SCALE PASSED		06/21
CHECKED		06/21
DRAWN		06/21
J.S.NO.	WD-21048	06/21

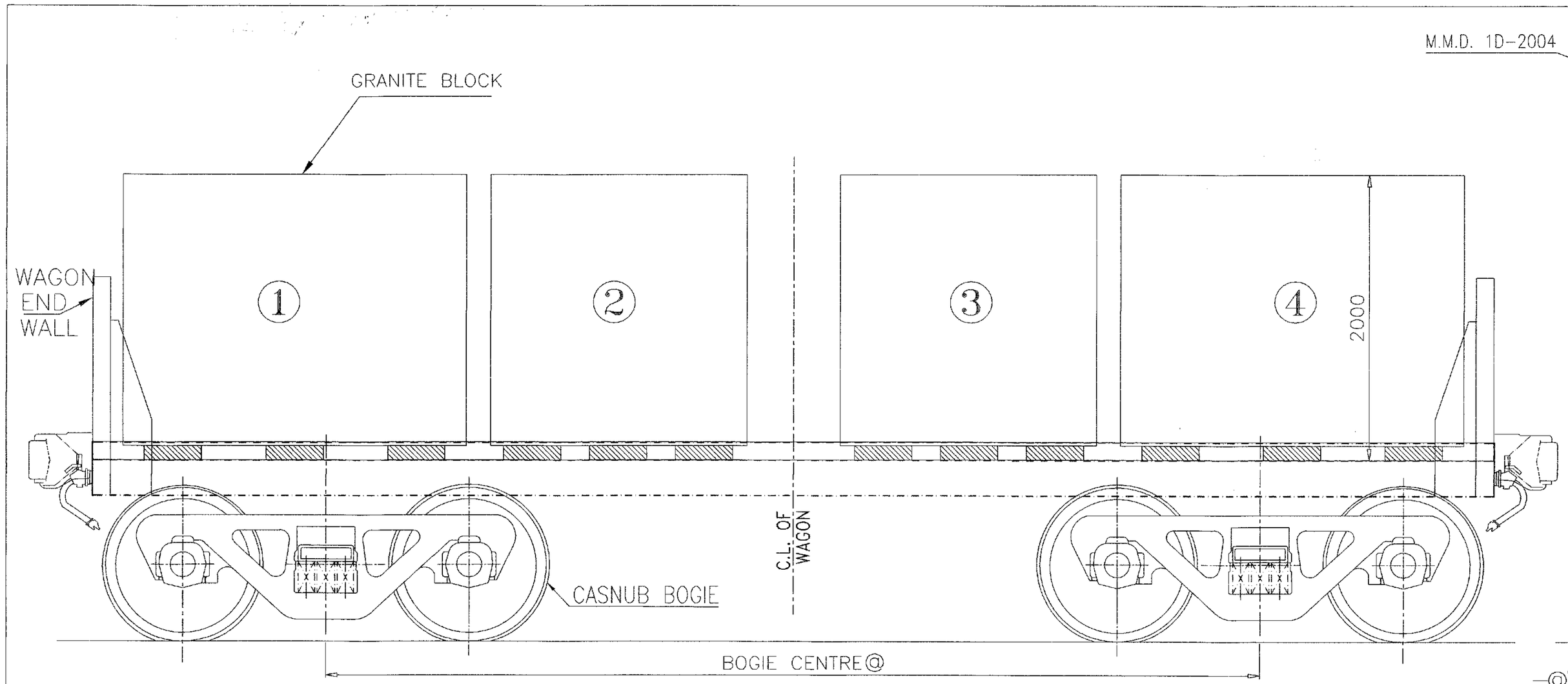
B.G. | R.D.S.O. [W] | GROUP

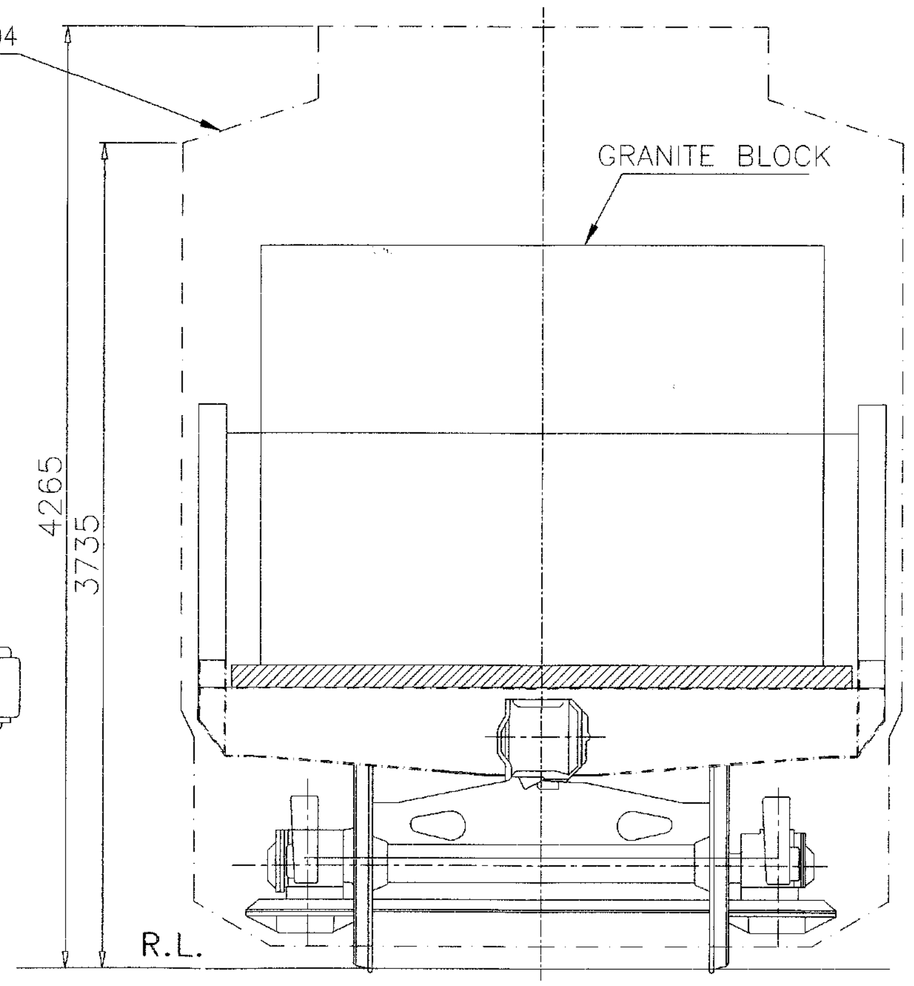
LOADING DIAGRAM OF GRANITE STONES IN BRN22.9/BRN22.9M1 WAGON (FOR 03 NO. GRANITE STONE BLOCKS)

WD-21048-S-02

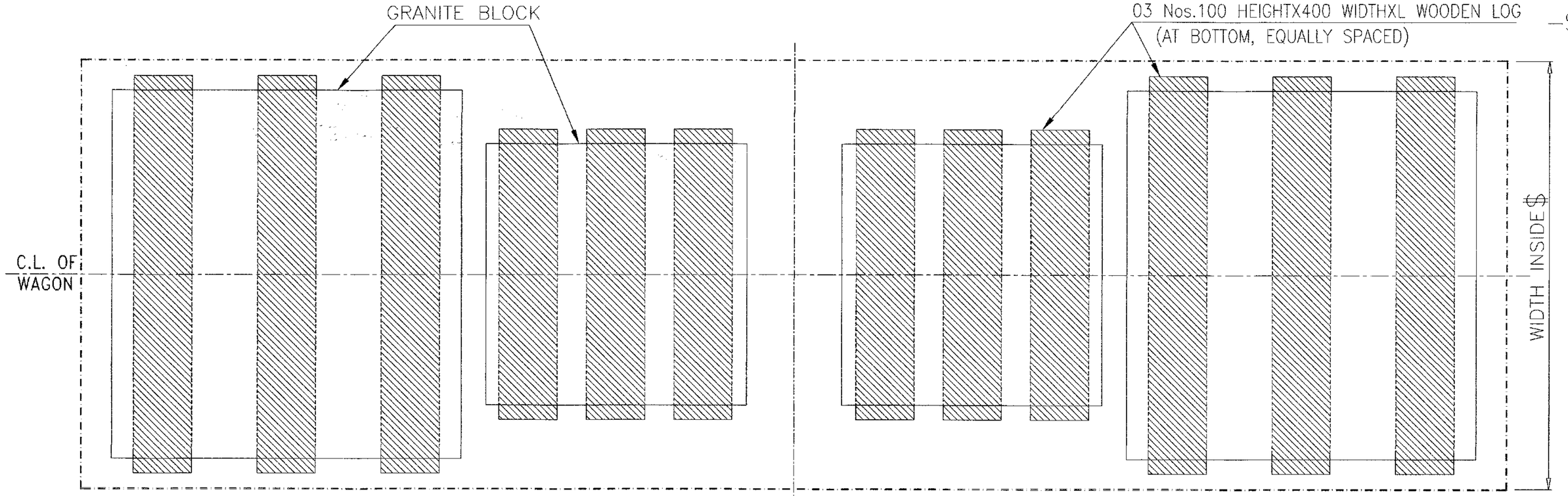
A1

File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SWR/RDSO





-@WAGON BOGIE CENTRE (AS PER USED WAGON)
-$WAGON WIDTH INSIDE (AS PER USED WAGON)



NOTE:-

1. THE DIFFERENCE IN WEIGHT OF GRANITE BLOCK 1+2 & 3+4 SHOULD NOT BE MORE THAN 6t.
2. THE TOTAL LOAD ON ONE BOGIE SHOULD NOT EXCEED THE CARRYING CAPACITY OF THE BOGIE.
3. THE TOTAL GRANITE BLOCKS WEIGHT SHOULD NOT BE MORE THAN CARRYING CAPACITY(PAY LOAD) OF THE WAGON.
4. IN ANY CASE, THE WEIGHT OF BOTH MIDDLE GRANITE BLOCK, SHOULD NOT MORE THAN 15 t.
5. IN ANY CASE, THE HEIGHT OF GRANITE BLOCK ON ANY LOADED WAGON SHOULD NOT INFRINGE MMD.
6. THE GRANITE BLOCKS SHOULD BE KEPT CENTRALLY COINCIDE WITH WAGON/ BOGIE CENTER .
7. THE LENGTH OF WOODEN LOGS 'L' SHOULD BE MORE THAN WIDTH OF THE GRANITE BLOCKS.
8. THE LOADING/UNLOADING OF GRANITE BLOCKS IN WAGON TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON.
9. THE MAX. PERMISSIBLE LATERAL MOVEMENT OF LOAD IS LIMITING TO 100 mm FROM CENTRE.
10. BEFORE LOADING, IT MUST BE ENSURED THAT WAGON IS FREE FROM SAGGING.
11. ALL DIMENSIONS ARE IN mm.
12. SECURING ARRANGEMENT AS DEEMED FIT AT THE SITE TO BE ENSURED.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

File No.RDSO-MWDGENL(EOFC)/8/2023-O/o PED/SW/RDSO

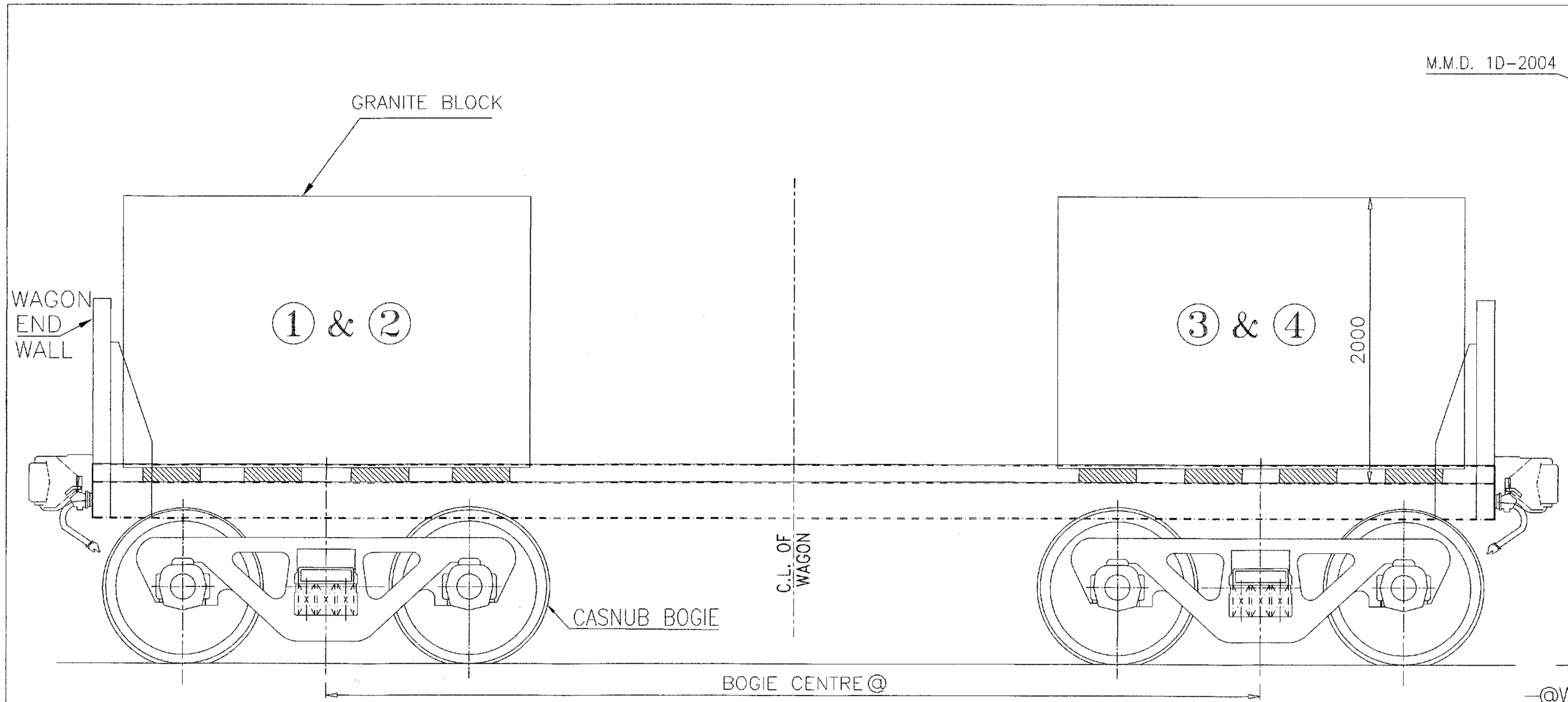
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	CHECKED	06/21
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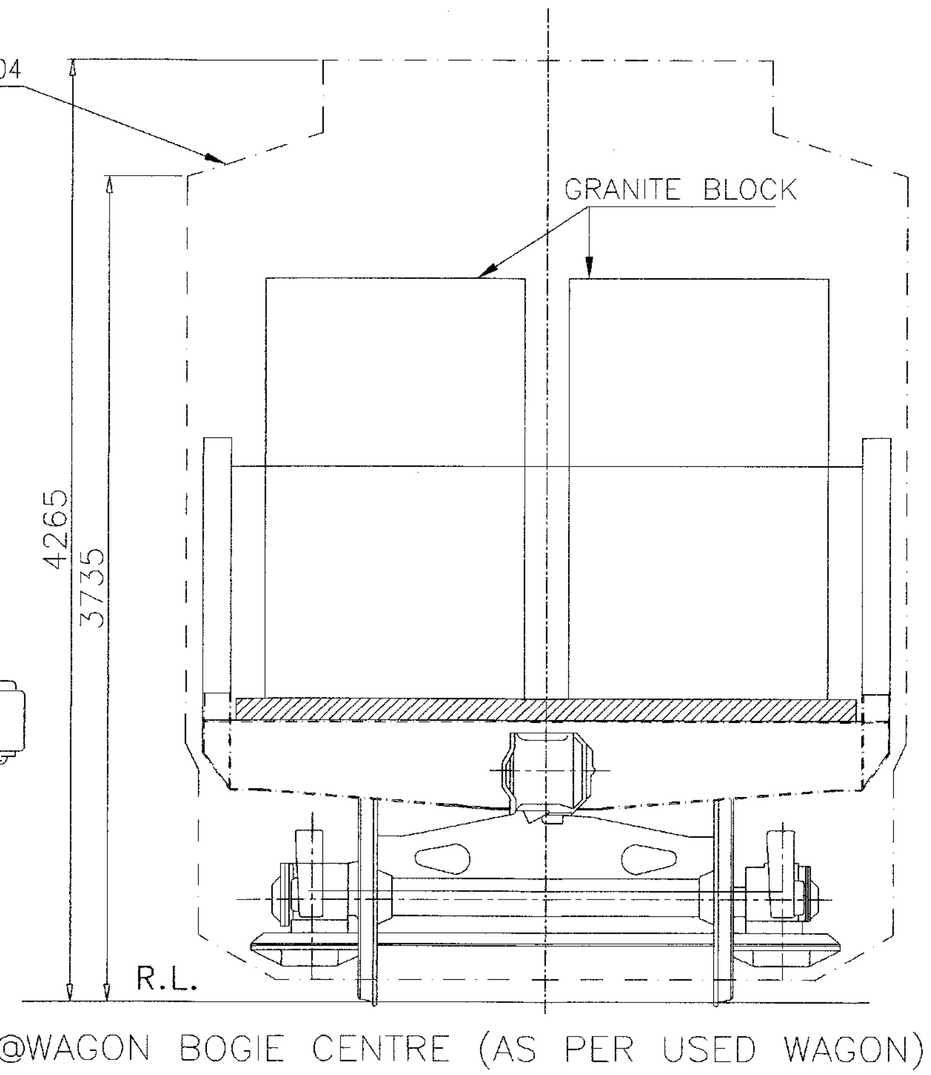
LOADING DIAGRAM OF GRANITE STONES IN BRN22.9/BRN22.9M1 WAGON (FOR 04 NO. GRANITE STONE BLOCKS)

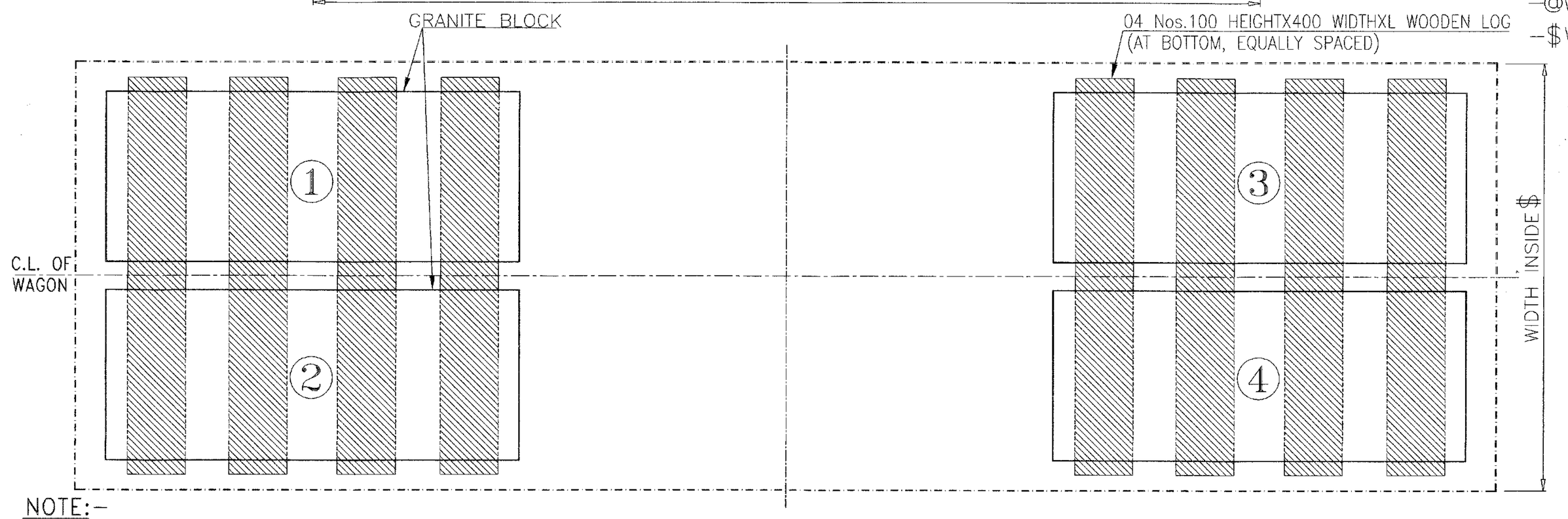
B.G.	R.D.S.O. [W]	GROUP	WD-21048-S-03

A1

472
1/56







-@WAGON BOGIE CENTRE (AS PER USED WAGON)
-$WAGON WIDTH INSIDE (AS PER USED WAGON)

NOTE:-

1. THE DIFFERENCE IN WEIGHT OF GRANITE BLOCK 1+2 & 3+4 SHOULD NOT BE MORE THAN 6t.
2. THE TOTAL LOAD ON ONE BOGIE SHOULD NOT EXCEED THE CARRYING CAPACITY OF THE BOGIE.
3. THE TOTAL GRANITE BLOCKS WEIGHT SHOULD NOT BE MORE THAN CARRYING CAPACITY(PAY LOAD) OF THE WAGON.
4. THE RATIO BETWEEN THE WHEEL LOADS OF A SAME AXLE IN TRANSVERSE DIRECTION IS LIMITING TO MAX. 1.25:1.
5. IN ANY CASE, THE HEIGHT OF GRANITE BLOCK ON ANY LOADED WAGON SHOULD NOT INFRINGE MMD.
6. THE GRANITE BLOCKS SHOULD BE KEPT CENTRALLY COINCIDE WITH BOGIE CENTER LATERALLY .
7. THE LENGTH OF WOODEN LOGS 'L' SHOULD BE MORE THAN WIDTH OF THE GRANITE BLOCKS.
8. THE LOADING/UNLOADING OF GRANITE BLOCKS IN WAGON TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON.
9. THE MAX. PERMISSIBLE LATERAL MOVEMENT OF LOAD IS LIMITING TO 100 mm FROM CENTRE.
10. BEFORE LOADING, IT MUST BE ENSURED THAT WAGON IS FREE FROM SAGGING.
11. ALL DIMENSIONS ARE IN mm.
12. SECURING ARRANGEMENT AS DEEMED FIT AT THE SITE TO BE ENSURED.

File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED/SWRDSO

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

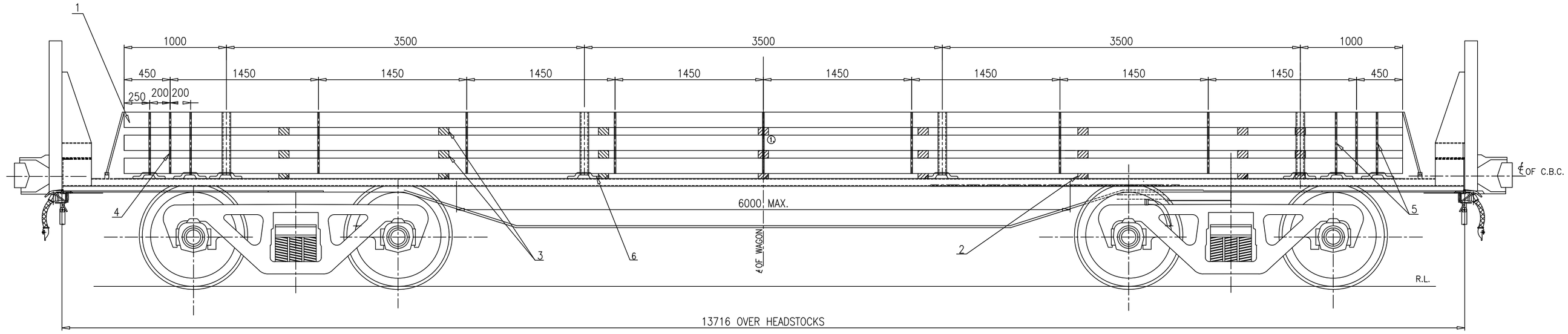
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	CHECKED	06/21
	DRAWN	06/21
	J.S.NO. WD-21048	06/21

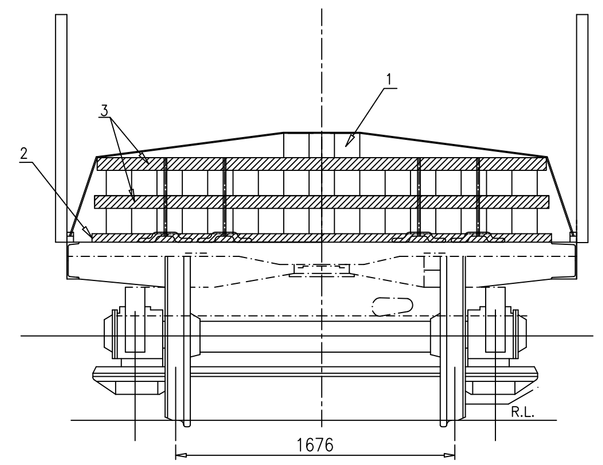
B.G. | R.D.S.O. [W] | GROUP

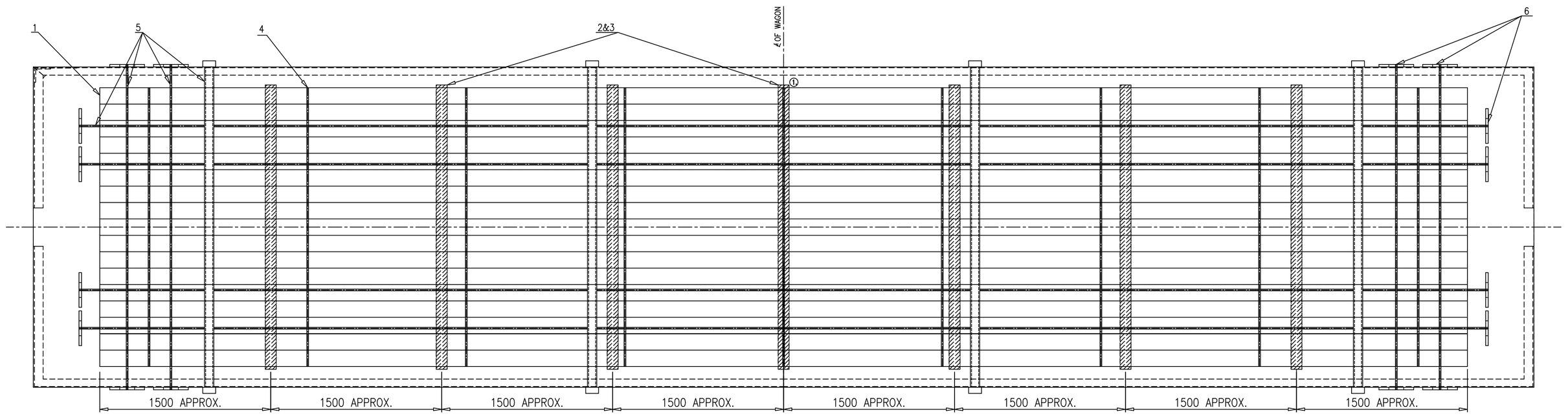
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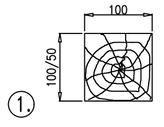
WD-21048-S-04

A1









1. WOODEN LONGITUDINAL RUNNER SECTIONAL VIEW

NOTE :–

1. LOADING SHOULD BE SYMMETRICAL W.R.T. LONGITUDINAL AXIS AS WELL AS TRANSVERSE AXIS PASSING THROUGH CENTRE OF WAGON FLOOR AND ENSURING EVEN LOAD ON ALL WHEELS.
3. IN CASE BILLETS ARE LOADED IN LAYERS SEPARATED WITH WOODEN RUNNERS, WOODEN RUNNERS OF SIZE 100MMX50MM SHALL BE PROVIDED IN INTERMEDIATE LAYERS IN ADDITION TO THE BOTTOM WOODEN RUNNER OF SIZE 100MMX100 MM.
2. ~~3. HEIGHT TO WIDTH RATIO OF CONSIGNMENT SHOULD NOT EXCEED 1.5 IN ANY CASE.~~
4. LENGTH OF WOODEN RUNNER MUST BE MORE THAN WIDTH OF LAYERS.
5. STRAPPING SHOULD BE SYMMETRICAL AND THE END STRAPS SHOULD NOT BE MORE THAN 450 MM AWAY FROM EDGES AND MAXIMUM DISTANCE BETWEEN IMMEDIATE STRAPS IS 1450 MM.
3. 6. ALL BILLETS ARE TO BE SECURED USING HEAVY DUTY STEEL STRAPS AS INDICATED IN THE DRAWING.
3. 7. NO. OF WOODEN RUNNER SHALL NOT BE LESS THAN AS INDICATED IN THE DRAWING.
8. LOADING OF BILLETS SHOULD BE SUCH THAT :–
   2. 8.1 THE LOAD SHOULD NOT EXCEED WAGON'S MAXIMUM PERMISSIBLE PAY LOAD.
   1. 8.2 THE WEIGHT IMPOSED ON BOTH THE BOGIES SHOULD BE IDENTICAL (EVEN IN CASE OF NON STANDARD STEEL BILLETS).
9. STEEL STRAP SHALL BE CONFIRMING TO EN 13246 TYPE 3.2 OR EQUIVALENT.
10. SIDE STANCHION (L.H. & R.H.) MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING AND IN DOWNWARD POSITION DURING LOADING/UNLOADING.
11. THE MINIMUM NO. OF EACH TYPE OF LONGITUDINAL/LATERAL STRAPS SHALL BE AS INDICATED IN THE DRAWING.
1. 3. 12. THE INITIAL TENSION IN THE STRAP SHALL BE IN THE RANGE OF 500kg TO 800kg.
13. WOOD OF ADEQUATE STRENGTH WHICH CAN SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED.
14. SECURING ARRANGEMENT SHALL BE CERTIFIED BY THE CONCERN RAILWAY.
15. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
3. 16. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.

1. SPECIFICATION FOR STEEL STRAP

S. No.	PURPOSE	WIDTH (IN MM)	THICKNESS (IN MM)	PERCENTAGE ELONGATION MIN.	TENSILE ST. (N/MM^2)	PHYSICAL
1.	FOR BUNDLING & UNITISING	31.75	1.0	6	925	DEBURRED EDGE PAINTED & WAXED
2.	FOR SECURING WITH WAGON BODY	31.75	1.0	6	925	DEBURRED EDGE PAINTED BROWN & WAXED

File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED/SWIRDSO

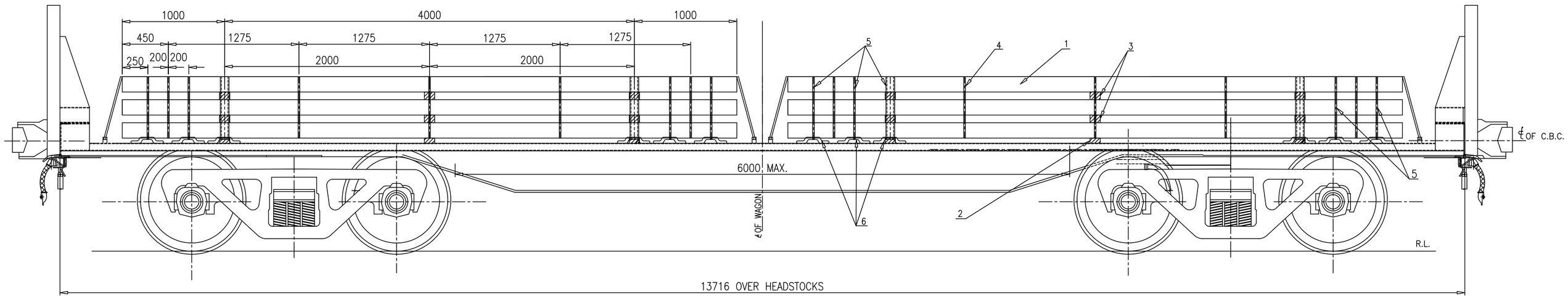
ITEM	DESCRIPTION	NO.OFF	MTL&SPEC	REMARKS
3. 6	ISOLATION HOOK	AS PER REQUIREMENT	WD–24036–S–01 ITEM–3	
1. 5	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	AS PER REQUIREMENT	EN 13246 TYPE 3.2	
1. 4	HIGH TENSILE STEEL STRAP (FOR BUNDLING & UNITIZATION)	AS PER REQUIREMENT	EN 13246 TYPE 3.2	
3	INTERMEDIATE WOODEN RUNNER	AS PER REQUIREMENT	WOOD	
2	WOODEN RUNNER	AS PER REQUIREMENT	WOOD	
1	BILLETS	AS PER REQUIREMENT	STEEL	

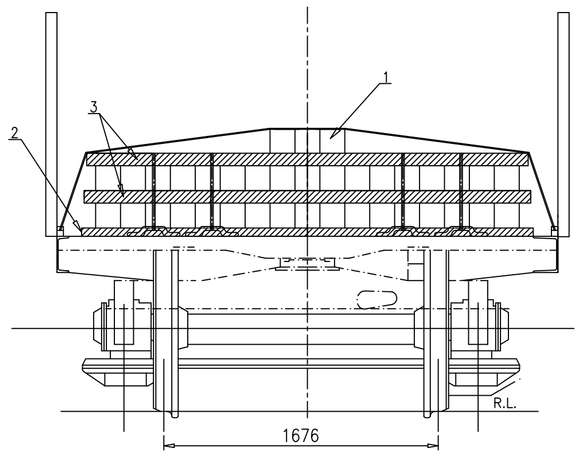
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
3.	–	WD–24036	INITIAL TENSION OF STRAP CHANGED&ISOLATION HOOK REFERENCE DRAWING NO. CHANGED	05/24	–
2.	–	WD–24029	NOTE NO. 3 REMOVED	03/24	–
1.	–	WD–23075	NOTE NO. 10 TO 15 ADDED.	08/23	–

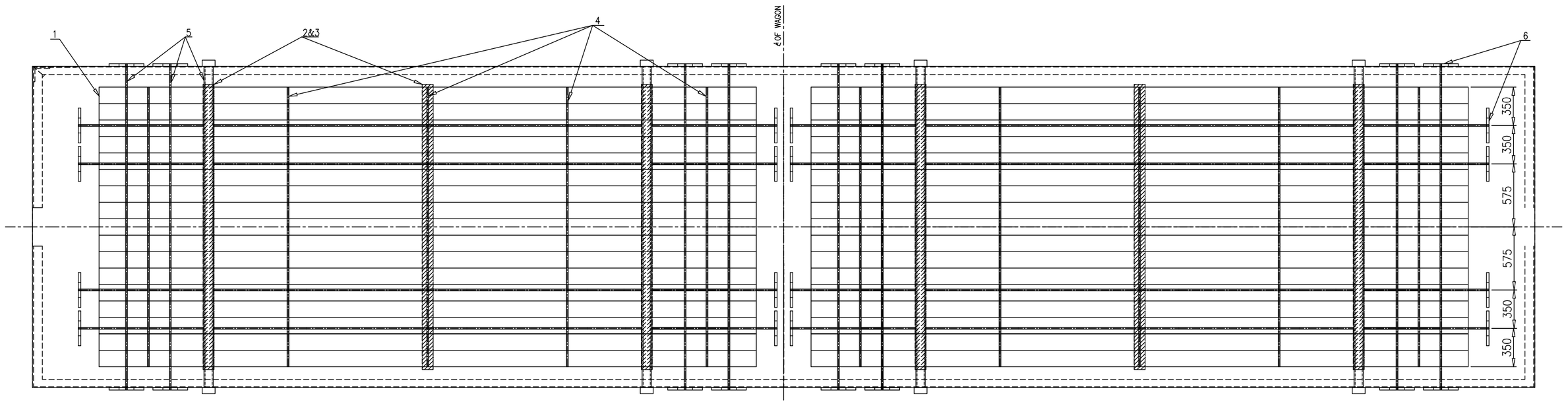
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SUPERSEDES		DATE	
SCALE	PASSED	S.M.TRIPATHI	01/22
	CHECKED	A.P.SINGH	01/22
	DRAWN	SACHIN KUMAR	01/22
	TRACED		
	COMPARED		
	J.S.NO.	WD–21112	12/21

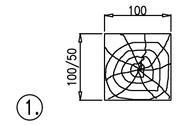
LOADING AND SECURING ARRANGEMENT OF STEEL SLABS/BILLETS (12MTRS) ON BRN & ITS VARIANTS

B.G.	R.D.S.O. [W]	GROUP	WD–21112–S–01









WOODEN LONGITUDINAL RUNNER
SECTIONAL VIEW

NOTE :–

1. LOADING SHOULD BE SYMMETRICAL W.R.T. LONGITUDINAL AXIS AS WELL AS TRANSVERSE AXIS PASSING THROUGH CENTRE OF WAGON FLOOR AND ENSURING EVEN LOAD ON ALL WHEELS.
3. IN CASE BILLETS ARE LOADED IN LAYERS SEPARATED WITH WOODEN RUNNERS, WOODEN RUNNERS OF SIZE 100MMX50MM SHALL BE PROVIDED IN INTERMEDIATE LAYERS IN ADDITION TO THE BOTTOM WOODEN RUNNER OF SIZE 100MMX100 MM.
2. ~~3. HEIGHT TO WIDTH RATIO OF CONSIGNMENT SHOULD NOT EXCEED 1.5 IN ANY CASE.~~
4. LENGTH OF WOODEN RUNNER MUST BE MORE THAN WIDTH OF LAYERS.
5. STRAPPING SHOULD BE SYMMETRICAL AND THE END STRAPS SHOULD NOT BE MORE THAN 450 MM AWAY FROM EDGES AND MAXIMUM DISTANCE BETWEEN IMMEDIATE STRAPS IS 1450 MM.
3. 6. ALL BILLETS ARE TO BE SECURED USING HEAVY DUTY STEEL STRAPS AS INDICATED IN THE DRAWING.
7. NO. OF WOODEN RUNNER SHALL NOT BE LESS THAN AS INDICATED IN THE DRAWING.
8. LOADING OF BILLETS SHOULD BE SUCH THAT :–
   2. 8.1 THE LOAD SHOULD NOT EXCEED WAGON'S MAXIMUM PERMISSIBLE PAY LOAD.
   1. 8.2 THE WEIGHT IMPOSED ON BOTH THE BOGIES SHOULD BE IDENTICAL (EVEN IN CASE OF NON STANDARD STEEL BILLETS).
9. STEEL STRAP SHALL BE CONFIRMING TO EN 13246 TYPE 3.2 OR EQUIVALENT.
10. SIDE STANCHION (L.H. & R.H.) MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING AND IN DOWNWARD POSITION DURING LOADING/UNLOADING.
11. THE MINIMUM NO. OF EACH TYPE OF LONGITUDINAL/LATERAL STRAPS SHALL BE AS INDICATED IN THE DRAWING.
1. 3. 12. THE INITIAL TENSION IN THE STRAP SHALL BE IN THE RANGE OF 500kg TO 800kg.
13. WOOD OF ADEQUATE STRENGTH WHICH CAN SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED.
14. SECURING ARRANGEMENT SHALL BE CERTIFIED BY THE CONCERN RAILWAY.
15. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
3. 16. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.

1. SPECIFICATION FOR STEEL STRAP

S. No.	PURPOSE	WIDTH (IN MM)	THICKNESS (IN MM)	PERCENTAGE ELONGATION MIN.	TENSILE ST. (N/MM^2)	PHYSICAL
1.	FOR BUNDLING & UNITISING	31.75	1.0	6	925	DEBURRED EDGE PAINTED & WAXED
2.	FOR SECURING WITH WAGON BODY	31.75	1.0	6	925	DEBURRED EDGE PAINTED BROWN & WAXED

File No.RDSO-MWOGENL(EOFCJ)8/2023-O/o PED/SWIRDSO

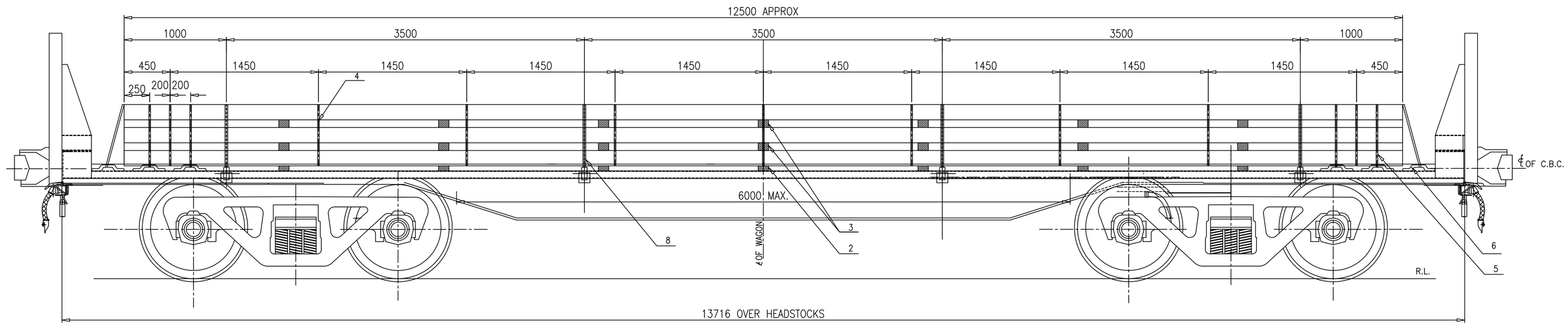
ITEM	DESCRIPTION	NO.OFF	MTL&SPEC	REMARKS
3 6	ISOLATION HOOK	AS PER REQUIREMENT	WD-24036-S-01 ITEM-3	
1 5	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	AS PER REQUIREMENT	EN 13246 TYPE 3.2	
1 4	HIGH TENSILE STEEL STRAP (FOR BUNDLING & UNITIZATION)	AS PER REQUIREMENT	EN 13246 TYPE 3.2	
3	INTERMEDIATE WOODEN RUNNER	AS PER REQUIREMENT	WOOD	
2	WOODEN RUNNER	AS PER REQUIREMENT	WOOD	
1	BILLETS	AS PER REQUIREMENT	STEEL	

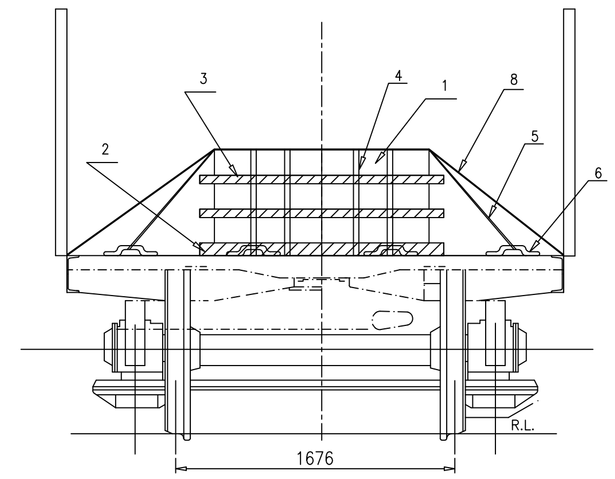
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
3.	–	WD-24036	INITIAL TENSION OF STRAP CHANGED&ISOLATION HOOK REFERENCE DRAWING NO. CHANGED	05/24	-
2.	–	WD-24029	NOTE NO. 3 REMOVED	03/24	-
1.	–	WD-23075	NOTE NO. 10 TO 15 ADDED.	08/23	-

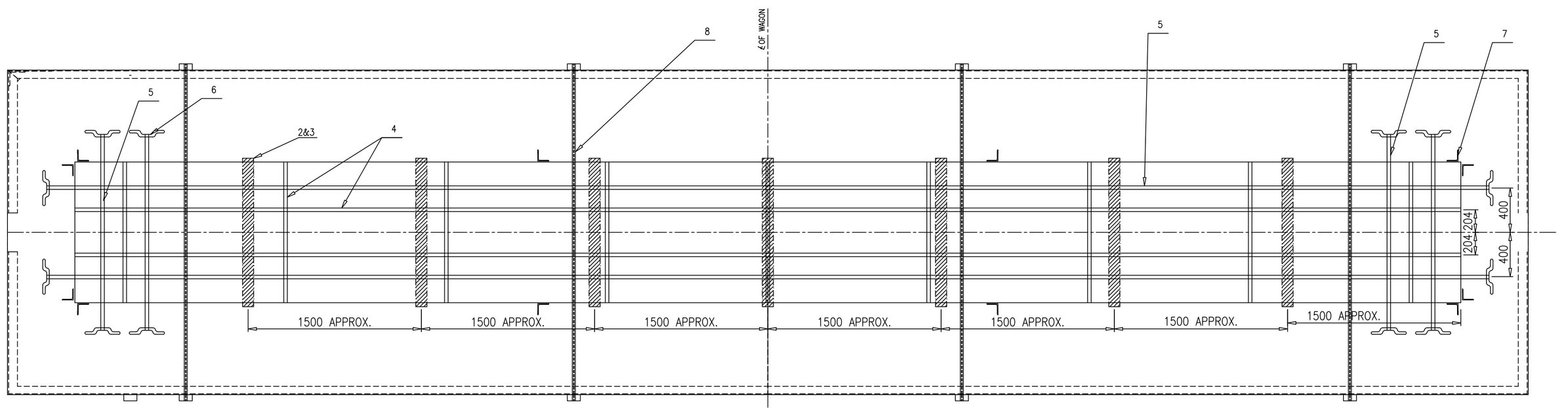
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SUPERSEDES		DATE	
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	CHECKED	A.P.SINGH	01/22
	DRAWN	SACHIN KUMAR	01/22
	TRACED		
	COMPARED		
	J.S.NO.	WD-21112	12/21

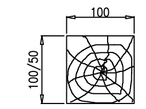
LOADING AND SECURING ARRANGEMENT OF STEEL SLABS/ BILLETS (6MTRS) ON BRN & ITS VARIANTS

B.G.	R.D.S.O. [W]	GROUP	WD-21112-S-02









WOODEN LONGITUDINAL RUNNER
SECTIONAL VIEW

NOTE :–

1. LOADING SHOULD BE SYMMETRICAL W.R.T. LONGITUDINAL AXIS AS WELL AS TRANSVERSE AXIS PASSING THROUGH CENTRE OF WAGON FLOOR.
2. IN CASE STEEL SLABS ARE LOADED IN LAYERS SEPARATED WITH WOODEN RUNNERS AS PER CUSTOMER'S REQUIREMENT, WOODEN RUNNERS OF SIZE 100MMX50 MM. ARE PROVIDED IN INTERMEDIATE LAYERS IN ADDITION TO THE BOTTOM WOODEN RUNNER OF SIZE 100MMX100 MM. (3)
3. ~~HEIGHT TO WIDTH RATIO OF CONSIGNMENT SHOULD NOT EXCEED 1.5 IN ANY CASE.~~ (4)
4. LENGTH OF WOODEN RUNNER MUST BE MORE THAN WIDTH OF LAYERS.
5. STRAPPING SHOULD BE SYMMETRICAL TO EXTENT POSSIBLE MAINTAINING LIMITS AS INDICATED.
6. ALL SLABS ARE TO BE SECURED USING HEAVY DUTY STEEL STRAPS AS INDICATED (3)
7. THE END STRAPS SHOULD NOT MORE THAN 450 MM AWAY FROM EDGES AND MAXIMUM DISTANCE BETWEEN IMMEDIATE STRAPS IS 1450 mm.
8. NO. OF LAYERS SHOULD BE AS PER CONVENIENCE AND REQUIREMENT.
9. ALL SLABS ARE TO BE SECURED USING HEAVY DUTY STEEL STRAPS AS INDICATED
10. NO. OF WOODEN LONGITUDINAL RUNNER PER SLAB SHALL NOT BE LESS THAN AS INDICATED
11. LOADING OF SLABS SHOULD BE SUCH THAT :–
    - 11.1 THE LOAD SHOULD NOT EXCEED WAGON'S MAXIMUM PERMISSIBLE PAY LOAD. (4)
    - 11.2 THE WEIGHT IMPOSED ON BOTH THE BOGIES SHOULD BE IDENTICAL (EVEN IN CASE OF NON STANDARDS STEEL SLABS). (3)
12. STEEL STRAP SHALL BE CONFIRMING TO EN 13246 TYPE 3.2 OR EQUIVALENT.
13. ITEM NO. 7 I.E. STEEL ANGLES OF SUITABLE HEIGHT (APPROX. 300mm. TO 500mm.) ARE TO BE PROVIDED AS INDICATED
14. FOR BOST WAGON, SLAB LENGTH SHOULD BE RESTRICTED TO MAX. 12.5 MTRS.
15. ITEM NO. 5 (04 NOS) FOR STRAPING BETWEEN SOLEBAR TO SOLEBAR SHALL NOT BE USED IN BOST WAGON LOADING.
16. SIDE STANCHION (L.H. & R.H.) MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING AND IN DOWNWARD POSITION DURING LOADING/UNLOADING.
17. THE MINIMUM NO. OF EACH TYPE OF LONGITUDINAL/LATERAL STRAPS SHALL BE AS INDICATED IN THE DRAWING.
18. THE INITIAL TENSION IN THE STRAP SHALL BE IN THE RANGE OF 500kg TO 800kg. (3)(5)
19. WOOD OF ADEQUATE STRENGTH WHICH CAN SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED.
20. SECURING ARRANGEMENT SHALL BE CERTIFIED BY THE CONCERN RAILWAY.
21. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
22. (5) CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.

① SPECIFICATION FOR STEEL STRAP

S. No.	PURPOSE	WIDTH (IN MM)	THICKNESS (IN MM)	PERCENTAGE ELONGATION MIN.	TENSILE ST. (N/MM^2)	PHYSICAL
1.	FOR BUNDLING & UNITISING	31.75	1.0	6	925	DEBURRED EDGE PAINTED & WAXED
2.	FOR SECURING WITH WAGON BODY	31.75	1.0	6	925	DEBURRED EDGE PAINTED BROWN & WAXED

File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED/SW/RDSO

ITEM	DESCRIPTION	NO.OFF	MTL&SPEC	REMARKS
8	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	AS PER REQUIREMENT	EN 13246 TYPE 3.2	ONLY FOR BRN WAGON VARIANTS
(5) 7	ANGLE STOPPER	AS PER REQUIREMENT	WD–24036–S–01 PART–4	
6	ISOLATION HOOK	AS PER REQUIREMENT	WD–24036–S–01 PART–3	
5	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	AS PER REQUIREMENT	EN 13246 TYPE 3.2 (3)	
4	HIGH TENSILE STEEL STRAP (FOR BUNDLING & UNITIZATION)	AS PER REQUIREMENT	EN 13246 TYPE 3.2 (3)	
3	INTERMEDIATE WOODEN RUNNER	AS PER REQUIREMENT	WOOD	
2	WOODEN RUNNER	AS PER REQUIREMENT	WOOD	
1	STEEL SLABS	AS PER REQUIREMENT	STEEL	

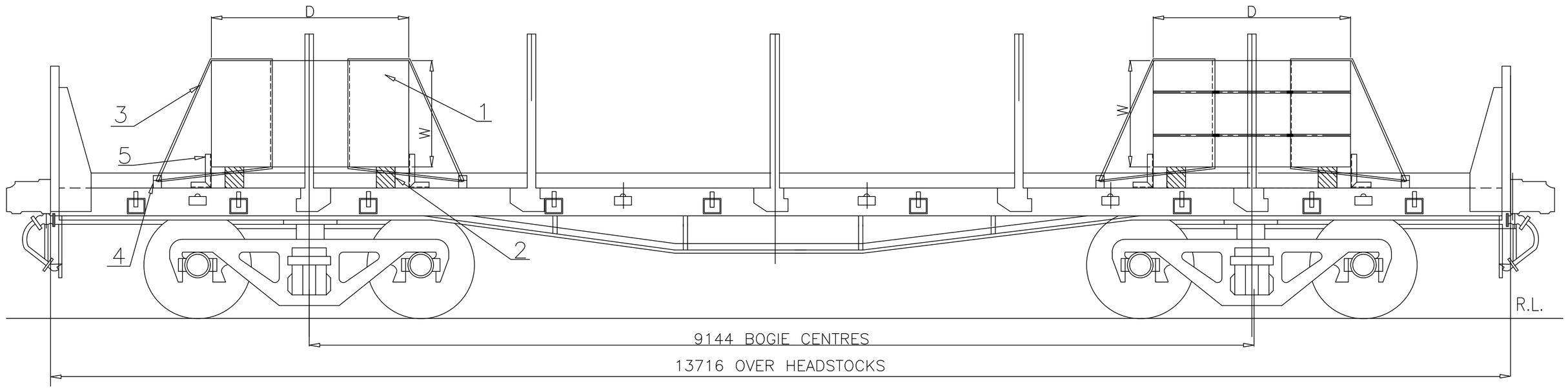
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
(5)	–	WD–24036	DRAWING REVISED	05/24	–
(4)	–	WD–24029	NOTE NO. 3 REMOVED	03/24	–
(3)	–	WD–23075	NOTE NO. 16 TO 21 ADDED.	08/23	–
(2)	–	WD–21112	NOTE NO. 16 ADDED	01/22	
(1)	–	WD–21119	NOTE NO. 14 & 15 ADDED AND BOST WAGON & ITS VARIANTS ADDED IN TITLE BLOCK.	12/21	

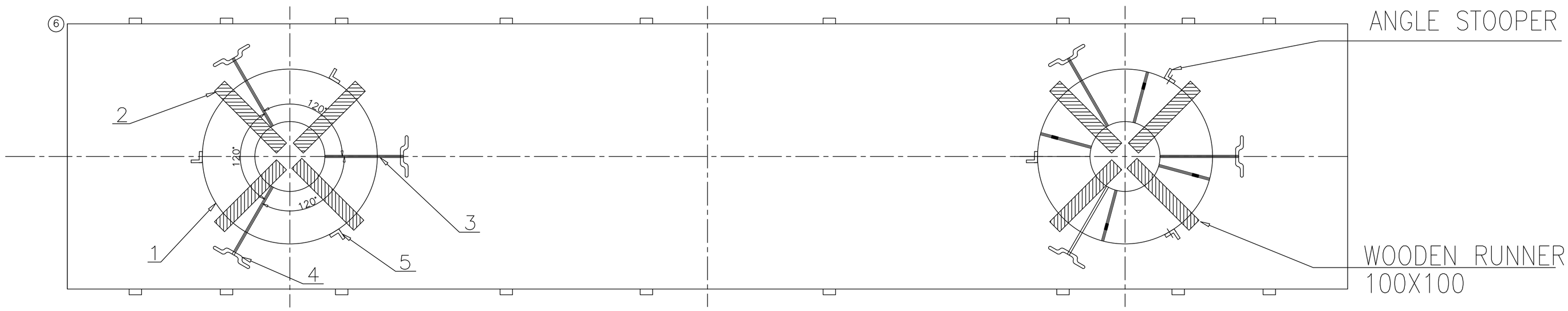
SUPERSEDED BY
SUPERSEDES
SCALE

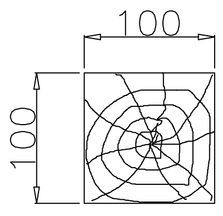
PASSED	G.R.SHARMA	10/21
CHECKED	A.P.SINGH	10/21
DRAWN	DINESH	10/21
TRACED		
COMPARED		
J.S.NO.	WD–21095	10/21

LOADING AND SECURING OF STEEL SLABS/BILLETS (9–13MTRS) ON BRN AND BOST WAGON & ITS VARIANTS ①

B.G. | R.D.S.O. [W] | GROUP | WD–21095–S–01







2

NOTE: LOADING OF COILS SHOULD BE SUCH THAT :–

④ 1. MAX INDIVIDUAL WEIGHT OF THE COIL ON EACH BOGIE = UP TO PAY LOAD/2
⑤ 2. THE LOAD SHOULD NOT EXCEED WAGON'S MAXIMUM PERMISSIBLE PAY LOAD.
⑥ 3. SIDE STANCHION (L.H. & R.H.) MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING AND IN DOWNWARD POSITION DURING LOADING & UNLOADING OF CONSIGNMENT.
⑥ 4. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.
5. METHOD OF LOADING – COIL AXIS VERTICAL
6. RESTRICTION W<=1.5D
④ 7. OVERLAPPING LENGTH/HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100MM
8. THE MAXIMUM DIFFERENCE IN WEIGHT OF TWO BOGIE SHALL NOT EXCEED MORE THAN 2 TON.
9. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001
THE DIMENSIONAL AND PHYSICAL PROPERTIES ARE MENTIONED IN THE TABLE BELOW (Ref–EN13247:2001)

⑤ ④

SN	PARAMETERS	PHYSICAL PROPERTIES
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3TON)

10. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1
11. THE INITIAL TENSION IN THE STRAP SHALL BE IN THE RANGE OF 500kg TO 800kg.
12. WOOD OF ADEQUATE STRENGTH WHICH CAN SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED.
13. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
⑥ 14. EITHER 03 NO. OF ANGLE STOPPER OR 03 NO. OF HIGH TENSILE STEEL STRAPS SHOULD BE APPLIED FOR SECURING THE LOAD.
15. DEPENDING UPON THE EXPERIENCE/REPORT OF UNUSUAL INCIDENCE WITH THE ABOVE ARRANGEMENT, CONCERNED RAILWAY/CONSIGNEE MAY TAKE DECISION FOR APPLICATION OF BOTH STOPPER AND STRAPS TO SECURE THE LOAD PROPERLY TO AVOID ANY UNUSUAL INCIDENCE.

⑥ ITEM	DESCRIPTION	NO.OFF	MTL&SPEC	REMARKS
5	ANGLE STOPPER	03 NO FOR EACH COIL	WD-24036-S-01 ITEM-4	
4	ISOLATION HOOK	03 NO FOR EACH COIL	WD-24036-S-01 ITEM-3	
3	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	03 NO FOR EACH COIL	EN13247:2001	
2	WOODEN RUNNER	04 NO FOR EACH COIL	WOOD	
1	HR/CR COILS	02	STEEL	

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
⑥	–	WD–24036	NO. OF STRAPS AND NO. OF STOPPER PER COIL ARE CHANGE FROM 04 TO 03 & NOTE 4,15 AND 16 ADDED	05/24	–
⑤	–	WD–24029	STRAP THICKNESS CHANGED FROM 1.45 TO 1.27 & NOTE NO. 2 MODIFIED	03/24	–
④	–	WD–23075	DRG. MODIFIED,DESCRIPTION TABLE MODIFIED & NOTE 8 TO 13 ADDED	08/23	–
③	–	WD–22094	ITEMS NO 4,5 AND 6 ADDED	11/22	
②	–	WD–21112	NOTE–3 ADDED	01/22	–
①	–	WD–15048	DRAWING REVISED	10/15	–

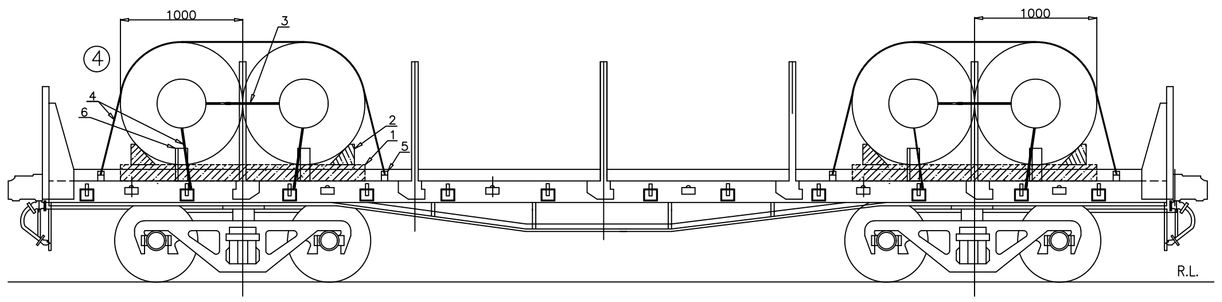
SUPERSEDED BY
SUPERSEDES
SCALE

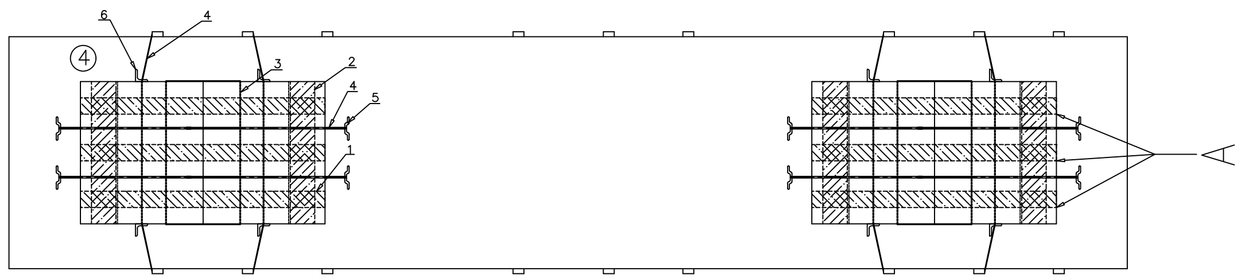
		DATE
PASSED	A.N.MEHTA –Sd–	07/94
CHECKED	MANJEET SINGH –Sd–	07/94
DRAWN	S.K.KHARE –Sd–	02/94
TRACED		
COMPARED		
J.S.NO.	WD3–94/66	02/94

LOADING OF H.R./C.R. COILS ON BRH/BRN/BRNA/BRNAHS WAGONS (COIL AXIS VERTICAL)

B.G. | R.D.S.O. [W] | GROUP | WD–94019–S–01

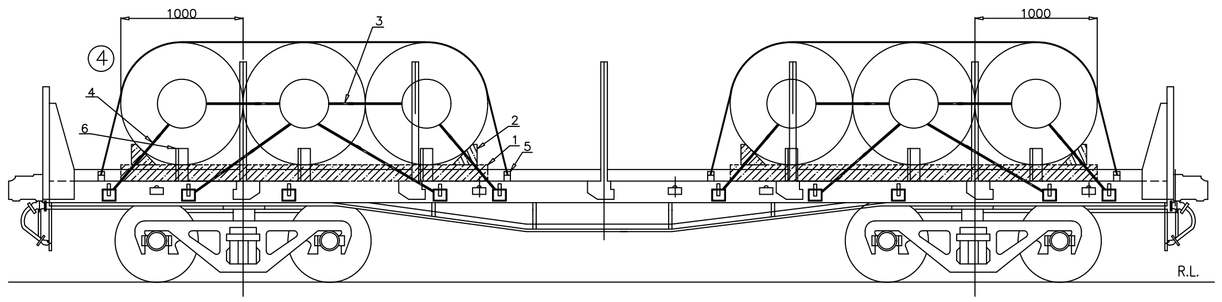
File No.RDSO-MWDGENL(EOFC)/8/2023-O/o PED/S/WDRSO

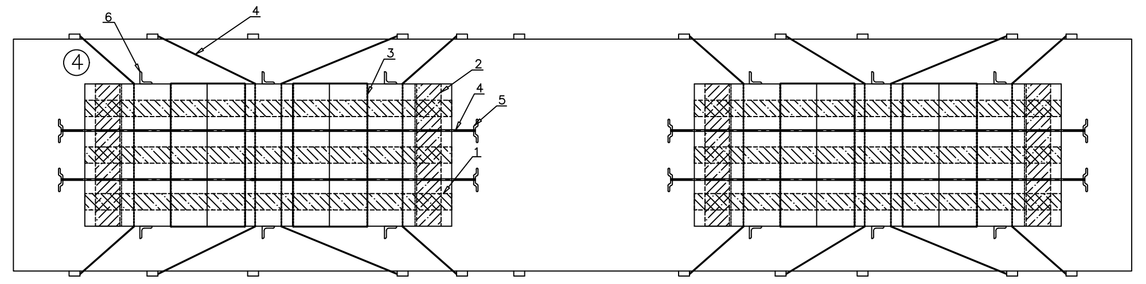




UNITISED IN 2 COILS PACK

FIG.1





UNITISED IN 3 COILS PACK

FIG.2

METHOD OF LOADING

④ 1. UNITIZED IN PACKS OF 2/3 COILS
2. COIL AXIS PERPENDICULAR TO THE LENGTH OF WAGON.
3. RESTRICTION D<=1.5W

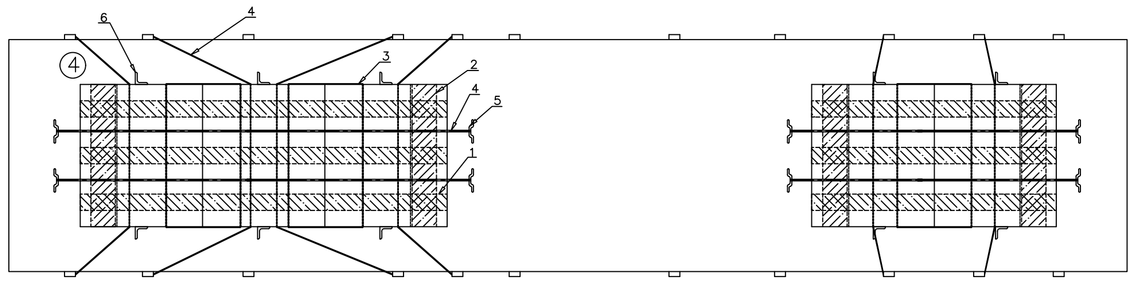
NOTE :–

④ 1. ALL INDIVIDUAL COILS ARE TO BE UNITIZED BY USING HEAVY DUTY STRAPS AS INDICATED BY 'A'.
2. COILS PACKED TO BE PLACED SYMMETRICALLY ABOUT THE LONGITUDINAL CENTRE LINE OF THE WAGON.
3. TRIANGULAR WOODEN BATTENS SHOULD BE CONTINUOUS ACROSS LONG, RUNNERS.
4. LOADING OF COILS TO BE AT THE RATE INDICATED BELOW DEPENDING UPON THE WEIGHT OF THE COILS EACH WEIGHING UPTO 14T MAX.:–
4.1 4 PER WAGON (2+2)
4.2 5 PER WAGON (3+2)
4.3 6 PER WAGON (3+3)
⑤ 5. LOADING OF COILS SHOULD BE SUCH THAT :–
④ 5.1 MAX. WEIGHT ON EACH BOGIE = UP TO PAY LOAD/2.
5.2 THE LOAD SHOULD NOT EXCEED WAGON'S MAXIMUM PERMISSIBLE PAY LOAD.
④ ② 6. SIDE STANCHION (L.H. & R.H.) MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING AND DOWNWORD POSITION DURING LOADING/UNLOADING.
⑥ 7. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.
8. THE MAXIMUM DIFFERENCE IN WEIGHT OF TWO BOGIE SHALL NOT EXCEED MORE THAN 2 TON.
9. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001 THE DIMENSIONAL AND PHYSICAL PROPERTIES ARE MENTIONED IN THE TABLE BELOW (Ref–EN13247:2001)

④

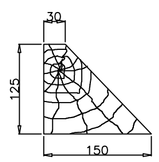
SN	PARAMETERS	PHYSICAL PROPERTIES
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5TON)

10. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1
11. THE INITIAL TENSION IN THE STRAP SHALL BE IN THE RANGE OF 500kg TO 800 kg.
12. WOOD OF ADEQUATE STRENGTH WHICH CAN SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED.
13. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.

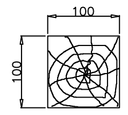


UNITISED IN 2 AND 3 COILS PACK(5 PER WAGON)

FIG.3



WOODEN TRIANGULAR BATTEN
SECTIONAL VIEW



WOODEN LONGITUDINAL RUNNER
SECTIONAL VIEW

File No.RDSO/SWWOGEN/(EOFC)/8/2023-O/o PED/SWIRDSO

	ITEM	DESCRIPTION	NO.OFF	MTL&SPEC.	REMARKS
⑥	6	ANGLE STOPPER	AS PER REQUIREMENT	WD–24036–S–01 PART–4	
	5	ISOLATION HOOK	AS PER REQUIREMENT	WD–24036–S–01 PART–3	
	4	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	AS PER REQUIREMENT	EN13247:2001	
	3	HIGH TENSILE STEEL STRAP (FOR BUNDLING & UNITIZATION)	AS PER REQUIREMENT	EN13247:2001	
	2	WOODEN WEDGE	02 ON. PER BUNDLE	WOOD	
	1	WOODEN RUNNER	03 ON. PER BUNDLE	WOOD	

④

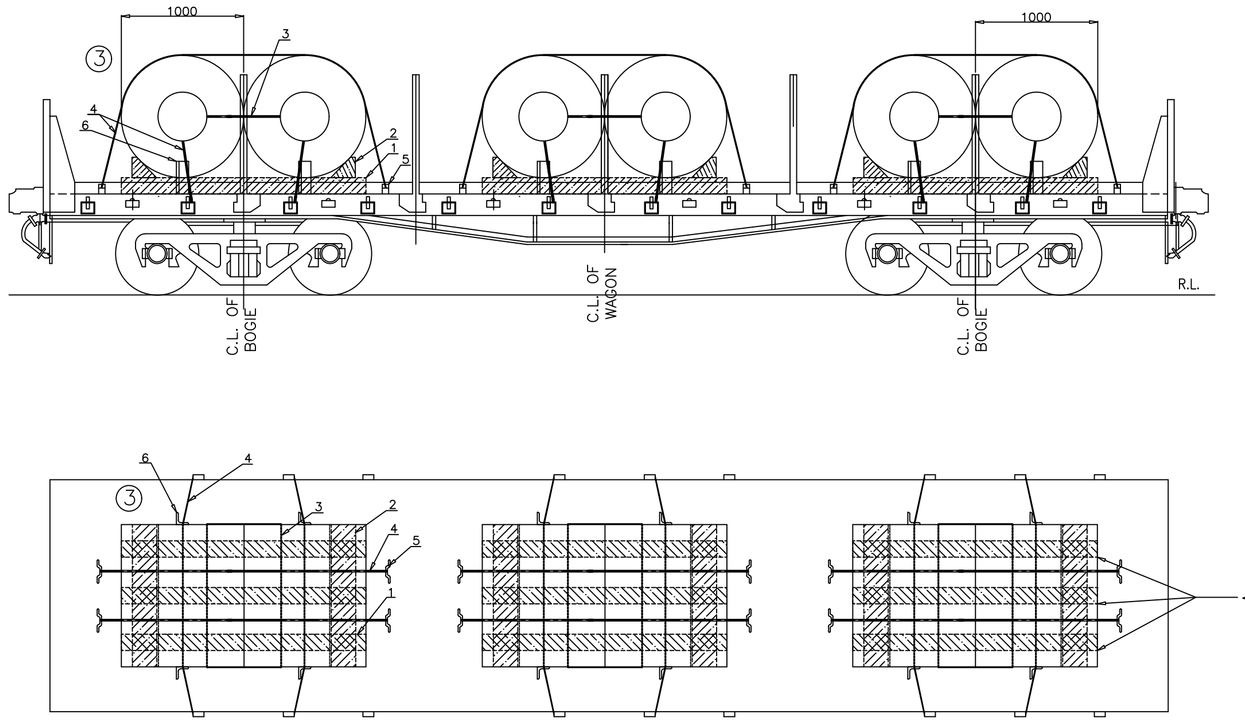
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
⑥	–	WD–24036	DRAWING REVISED	05/24	–
⑤	–	WD–24029	NOTE NO. 5 MODIFIED	03/24	–
④	–	WD–23075	DRG. REVISED, DESCRIPTION TABLE ADDED AND NOTE NO – 8 TO 13 ADDED	08/23	–
③	–	WD–22096	METAL SADDLE, TABLE 1 AND NOTE NO – 7 ADDED	11/22	–
②	–	WD–21112	NOTE–6 ADDED	01/22	–
①	–	WD–15048	DRAWING REVISED	10/15	–

SUPERSEDED BY			
SUPERSEDES		DATE	
SCALE	PASSED	A.N.MEHTA	05/94
	CHECKED	MANJEET SINGH	
	DRAWN	S.K.KHARE	05/94
	TRACED		
	COMPARED		
	J.S.NO.	WD3–94/10	05/94

BOGIE FLAT WAGON TYPE 'BRN', 'BRHC','BRHT', 'BRNA' & 'BRNAHS'

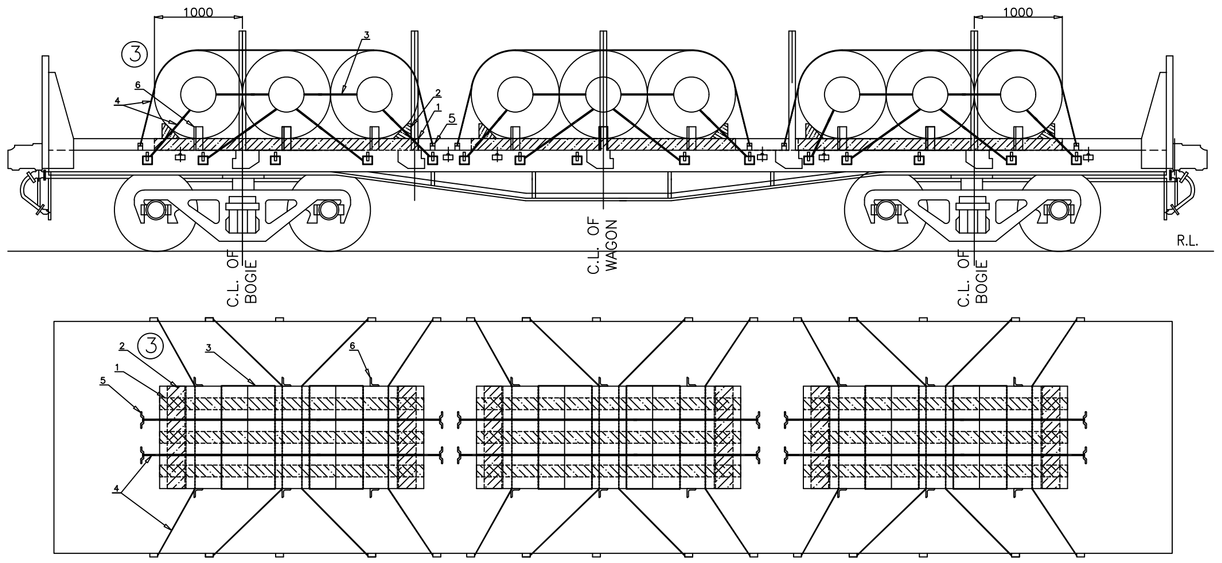
LOADING AND SECURING OF HR/CR COILS IN UNITISED PACKS

B.G.	R.D.S.O. [W]	GROUP	WD–94038–S–02



UNITISED IN 2 COILS PACK

FIG.1



UNITISED IN 3 COILS PACK

FIG.2

NOTE :–

③ 1. ALL INDIVIDUAL COILS ARE TO BE UNITIZED BY HEAVY DUTY STRAPS AS INDICATED BY 'A'.
2. COILS PACKED TO BE PLACED SYMMETRICALLY ABOUT THE LONGITUDINAL CENTRE LINE OF THE WAGON.
3. TRIANGULAR WOODEN BATTENS SHOULD BE CONTINUOUS ACROSS LONG RUNNERS.
4. LOADING OF COILS TO BE AT THE RATE INDICATED BELOW DEPENDING UPON THE WEIGHT OF THE COILS.

4.1 4 PER WAGON (2+2)
4.2 5 PER WAGON (3+2)
4.3 6 PER WAGON (3+3)/(2+2+2)
4.4 7 PER WAGON (2+3+2)
4.5 8 PER WAGON (3+2+3)
4.6 9 PER WAGON (3+3+3)

④ 5. LOADING OF COILS SHOULD BE SUCH THAT :–

③ 5.1 MAX. WEIGHT ON EACH BOGIE = UP TO PAY LOAD/2.
5.2 THE LOAD SHOULD NOT EXCEED WAGON'S MAXIMUM PERMISSIBLE PAY LOAD.

③① 6. SIDE STANCHION (L.H. & R.H.) MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING AND DOWNWARD POSITION DURING LOADING/UNLOADING.

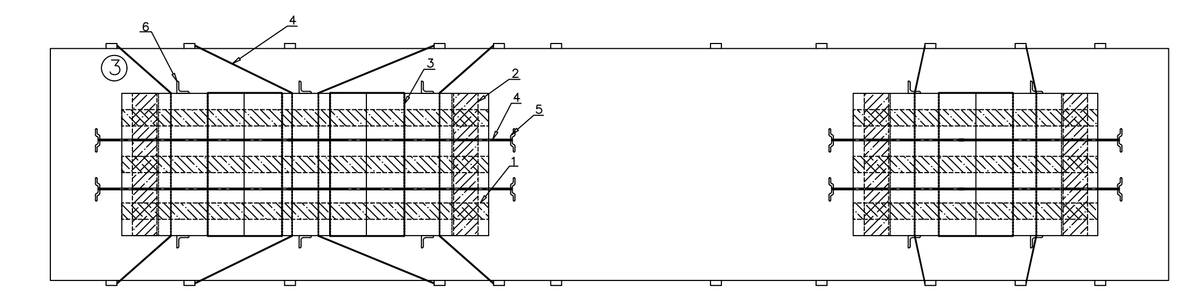
⑤ 7. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.

8. THE MAXIMUM DIFFERENCE IN WEIGHT OF TWO BOGIE SHALL NOT EXCEED MORE THAN 2 TON.
9. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001 THE DIMENSIONAL AND PHYSICAL PROPERTIES ARE MENTIONED IN THE TABLE BELOW (Ref–EN13247:2001)

③

SN	PARAMETERS	PHYSICAL PROPERTIES
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5TON)

10. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1
11. THE INITIAL TENSION IN THE STRAP SHALL BE IN THE RANGE OF 500kg TO 800kg.
12. WOOD OF ADEQUATE STRENGTH WHICH CAN SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED.
13. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.

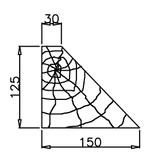


UNITISED IN 2 AND 3 COILS PACK(5 PER WAGON)

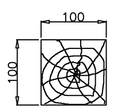
FIG.3

METHOD OF LOADING

③ 1. UNITIZED IN PACKS OF 2/3 COILS
2. COIL AXIS PERPENDICULAR TO THE LENGTH OF WAGON.
3. RESTRICTION D<=1.5W



WOODEN TRIANGULAR BATTEN
SECTIONAL VIEW



WOODEN LONGITUDINAL RUNNER
SECTIONAL VIEW

File No.RDSO-MWG-ENL(EOFC)/8/2023-O/o PED/SWI/RDSO

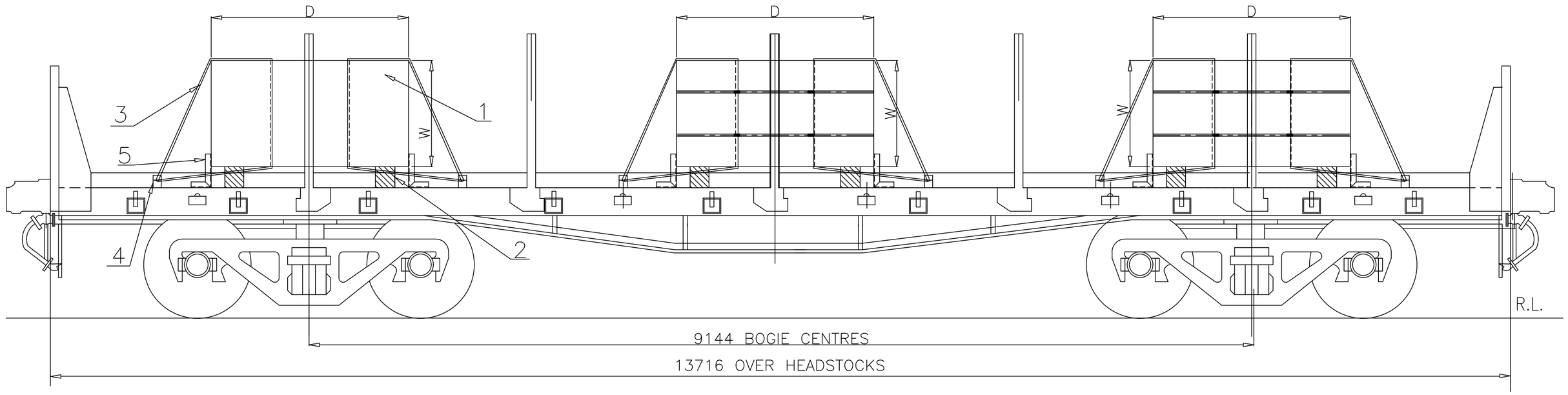
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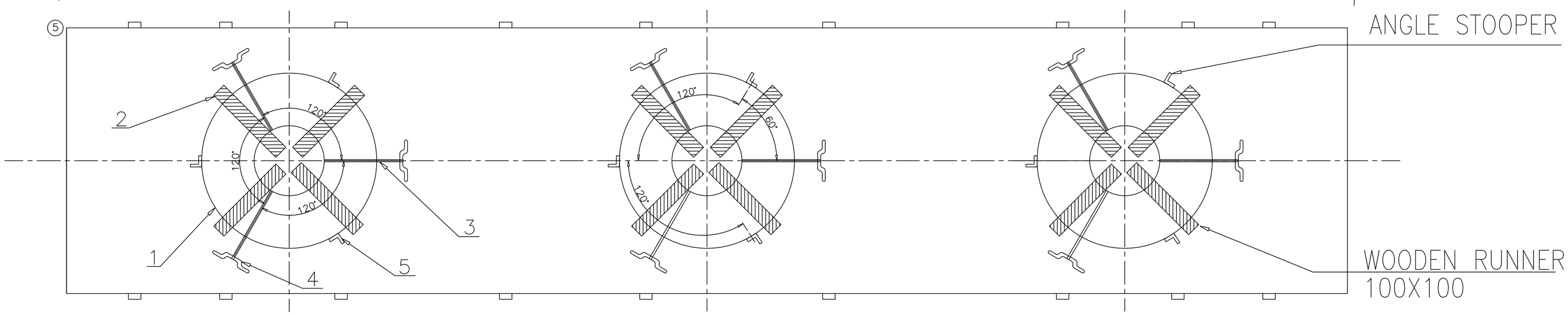
ITEM	DESCRIPTION	NO.OFF	MTL&SPEC.	REMARKS
6	ANGLE STOPPER	AS PER REQUIREMENT	WD–24036–S–01 PART–4	
5	ISOLATION HOOK	AS PER REQUIREMENT	WD–24036–S–01 PART–3	
4	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	AS PER REQUIREMENT	EN13247:2001	
3	HIGH TENSILE STEEL STRAP (FOR BUNDLING & UNITIZATION)	AS PER REQUIREMENT	EN13247:2001	
2	WOODEN WEDGE	02 NO. PER BUNDLE	WOOD	
1	WOODEN RUNNER	03 NO.PER BUNDLE	WOOD	

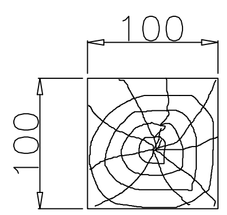
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
⑤	–	WD–24036	DRAWING REVISED	05/24	–
④	–	WD–24029	NOTE NO. 5 MODIFIED	03/24	–
③	–	WD–23075	DRG. REVISED, DESCRIPTION TABLE ADDED AND NOTE NO – 8 TO 13 ADDED	08/23	–
②	–	WD–22096	METAL SADDLE, TABLE 1 AND NOTE NO – 8 ADDED	11/22	–
①	–	WD–21112	NOTE–7 ADDED	01/22	–

SUPERSEDED BY			BOGIE FLAT WAGON TYPE 'BRN 22.9'
SUPERSEDES		DATE	
SCALE	PASSED	V.SINGHAL 11/15	LOADING AND SECURING OF HR/CR COILS IN UNITISED PACKS
	CHECKED	D.KUMAR 11/15	
	DRAWN	A.P.SINGH 11/15	
	TRACED		
	COMPARED		
	J.S.NO.	WD–15060 11/15	

B.G.	R.D.S.O. [W]	GROUP	WD–15060–S–01







2

NOTE: LOADING OF COILS SHOULD BE SUCH THAT :–

④③. 1. MAXIMUM WEIGHT ON EACH BOGIE = UP TO PAY LOAD/2

④ 2. THE LOAD SHOULD NOT EXCEED WAGON'S MAXIMUM PERMISSIBLE PAY LOAD.

⑤ 3. SIDE STANCHION (L.H. & R.H.) MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING AND IN DOWNWARD POSITION DURING LOADING & UNLOADING OF CONSIGNMENT.

4. METHOD OF LOADING – COIL AXIS VERTICAL

5. RESTRICTION W<=1.5D

⑤ 6. INDIVIDUAL WEIGHT = 15 TO 22.5 T (IN CASE OF 3 COILS LOADING)
INDIVIDUAL WEIGHT = 15 TO 34 T (IN CASE OF 2 COILS, LOADING AT BOGIE CENTRE)

7. THE MAXIMUM DIFFERENCE IN WEIGHT OF TWO BOGIE SHALL NOT EXCEED MORE THAN 2 TON.

8. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001 THE DIMENSIONAL AND PHYSICAL PROPERTIES ARE MENTIONED IN THE TABLE BELOW (Ref–EN13247:2001)

④ ③.

SN	PARAMETERS	PHYSICAL PROPERTIES
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3TON)

9. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1

10. THE INITIAL TENSION IN THE STRAP SHALL BE IN THE RANGE OF 500kg TO 800kg.

11. WOOD OF ADEQUATE STRENGTH WHICH CAN SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED.

12. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.

13. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.

⑤ 14. EITHER 03 NO. OF ANGLE STOPPER OR 03 NO. OF HIGH TENSILE STEEL STRAPS SHOULD BE APPLIED FOR SECURING THE LOAD.

15. DEPENDING UPON THE EXPERIENCE/REPORT OF UNUSUAL INCIDENCE WITH THE ABOVE ARRANGEMENT, CONCERNED RAILWAY/CONSIGNEE MAY TAKE DECISION FOR APPLICATION OF BOTH STOPPER AND STRAPS TO SECURE THE LOAD PROPERLY TO AVOID ANY UNUSUAL INCIDENCE.

⑤ ITEM	DESCRIPTION	NO.OFF	MTL&SPEC	REMARKS
5	ANGLE STOPPER	03 NO FOR EACH COIL	WD–24036–S–01 ITEM–4	
4	ISOLATION HOOK	03 NO FOR EACH COIL	WD–24036–S–01 ITEM–3	
3	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	03 NO FOR EACH COIL	EN13247:2001	
2	WOODEN RUNNER	04 NO FOR EACH COIL	WOOD	
1	HR/CR COILS	03 OR 02	STEEL	

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
⑤	–	WD–24036	NO. OF STRAPS AND NO. OF STOPPER PER COIL ARE CHANGE FROM 04 TO 03 & NOTE 13 TO 15 ADDED	05/24	–
④	–	WD–24029	STRAP THICKNESS CHANGED FROM 1.45 TO 1.27 & NOTE NO. 2 MODIFIED	03/24	–
③.	–	WD–23075	DRG. MODIFIED,DESCRIPTION TABLE MODIFIED & NOTE 7 TO 12 ADDED	08/23	–
②.	–	WD–22095	ITEM NO 4,5 AND 6 ADDED	11/22	–
①.	–	WD–21112	NOTE–3 ADDED	01/22	–

SUPERSEDED BY

SUPERSEDES

DATE

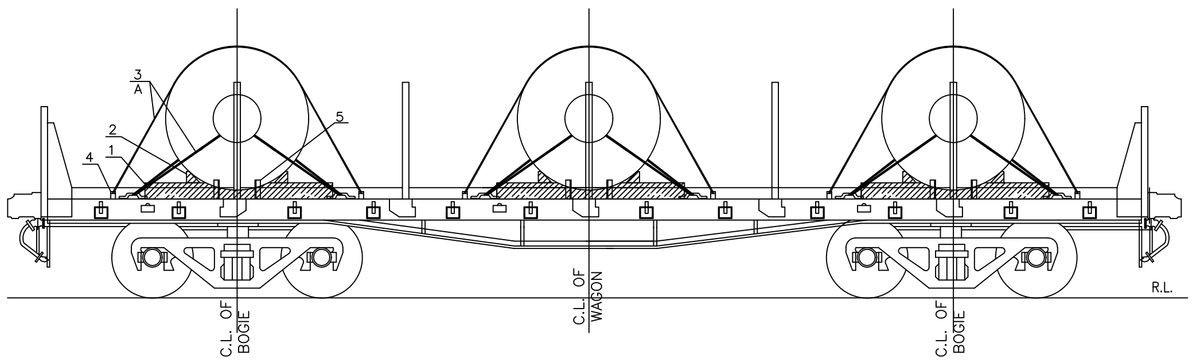
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	PASSED	A.K.ROY	11/15
	CHECKED	A.P.SINGH	11/15
	DRAWN	D.KUMAR	11/15
	TRACED		
	COMPARED		
	J.S.NO.	WD–15060	11/15

LOADING OF H.R./C.R. COILS ON BRN 22.9 WAGONS (COIL AXIS VERTICAL)

B.G. | R.D.S.O. [W] | GROUP

WD–15060–S–02

File No.RDSO-MW0GENL(EOFC)/8/2023/O/O PERSONALISED



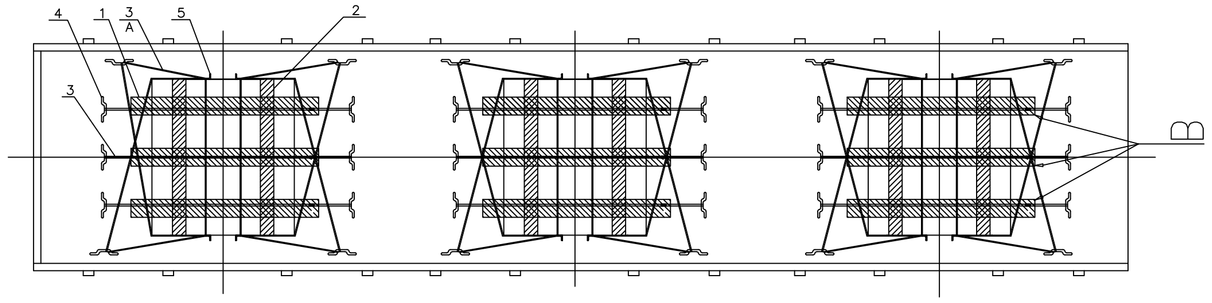
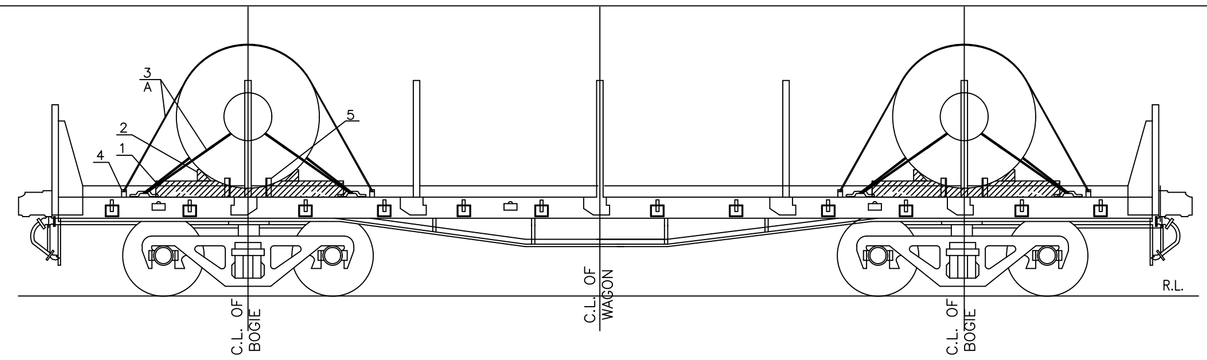


DIAGRAM OF 3 COIL LOADING ON BRN 22.9 WAGON

MAX. WEIGHT OF INDIVIDUAL COIL < 23T

FIG.1



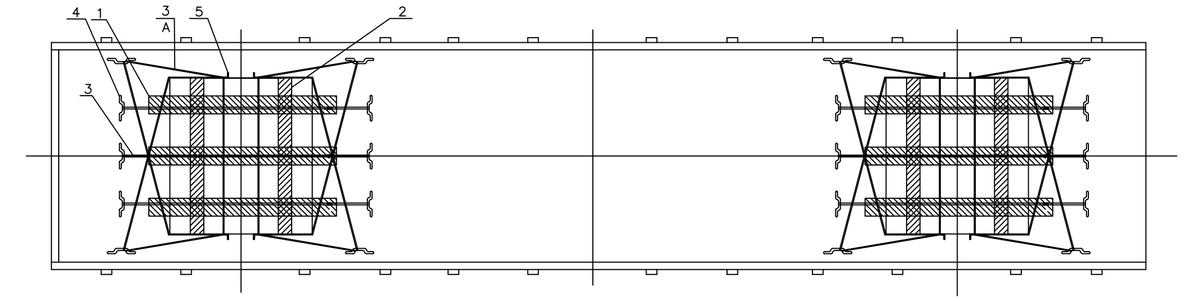
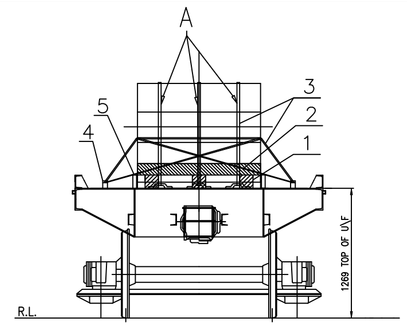
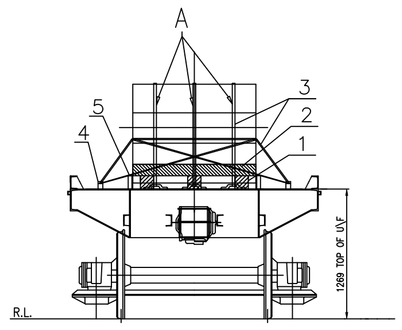


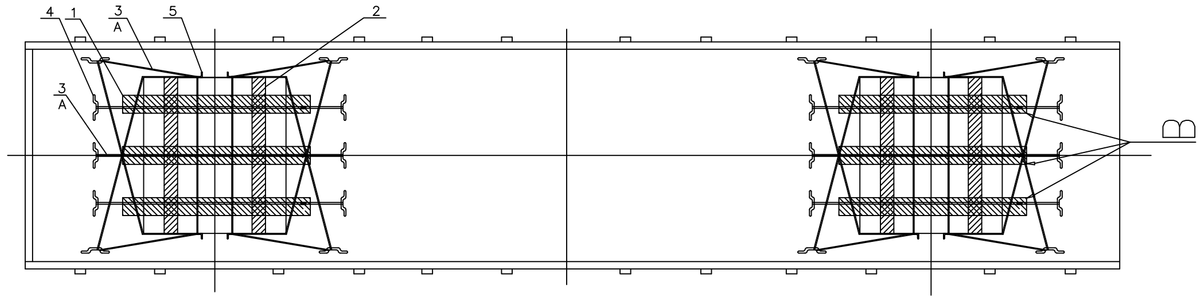
DIAGRAM OF 2 COIL LOADING ON BRN 22.9 WAGON

MAX. WEIGHT OF INDIVIDUAL COIL <= 34T

FIG.2



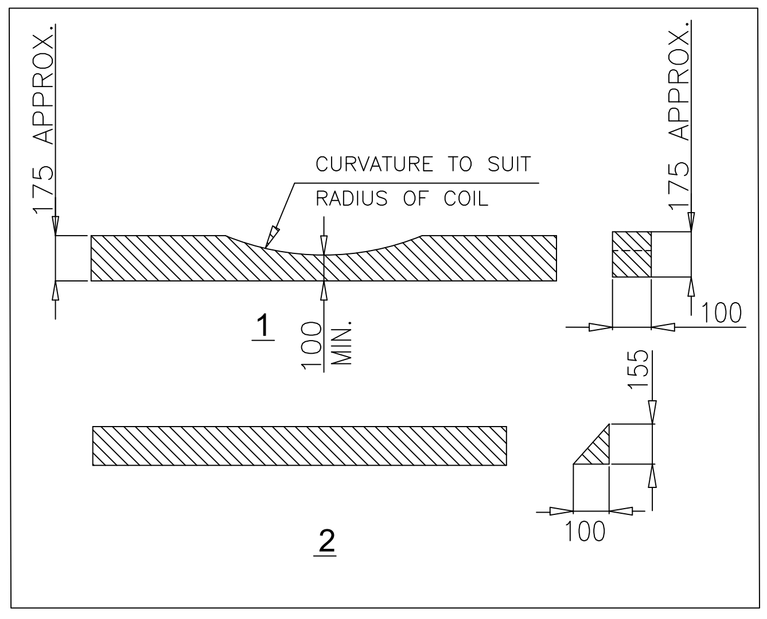




LOADING DIAGRAM OTHER THAN BRN 22.9 WAGON

MAX. WEIGHT OF INDIVIDUAL COIL <= 28T

FIG.3



NOTE :-

④ 1. ALL INDIVIDUAL COILS ARE TO BE STRAPPED USING HEAVY DUTY STRAPS AS INDICATED BY 'A'.

⑤① 2. COIL AXIS ALONG THE WIDTH OF WAGON

3. RESTRICTION D <= 1.5 W

① 4. NO. OF WOODEN LONGITUDINAL RUNNER PER COIL SHALL NOT BE LESS THAN THREE AS INDICATED BY 'B'.

⑥5. LOADING OF COILS SHOULD BE SUCH THAT :-

④5.1 MAX. WEIGHT ON EACH BOGIE = UP TO PAY LOAD/2.

5.2 THE LOAD SHOULD NOT EXCEED WAGON'S MAXIMUM PERMISSIBLE PAY LOAD.

6. CONSIGNMENTS SHALL BE PROPERLY SECURED BY USING ITEM NO. 01 & ITEM NO. 02 OF DRAWING NO. WD-94038-S-01. ITEM NO. 02 SHALL BE WELDED OR RIVETED WITH FLOOR OR SOLE BAR OF THE WAGON WHERE IT IS REQUIRED AS PER CONSIGNMENT.

① 7. STEEL STRAPES SHOULD BE UNIFORMLY TIGHTEND AT EACH STAGE BY TENSOMETER.

④② 8. SIDE STANCHION (L.H. & R.H.) MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING AND DOWNWARD POSITION DURING LOADING/UNLOADING.

9. THE MAXIMUM DIFFERENCE IN WEIGHT OF TWO BOGIE SHALL NOT EXCEED MORE THAN 2 TON.

10. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001 THE DIMENSIONAL AND PHYSICAL PROPERTIES ARE MENTIONED IN THE TABLE BELOW (Ref-EN13247:2001)

④

SN	PARAMETERS	PHYSICAL PROPERTIES
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5TON)

11. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002-1

12. THE INITIAL TENSION IN THE STRAP SHALL BE IN THE RANGE OF 500kg TO 800kg.

13. WOOD OF ADEQUATE STRENGTH WHICH CAN SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED.

14. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.

⑤ 15. IF COIL LOADING IS DONE WITH METAL SADDLE THEN LOADING SHALL BE DONE AS PER DRAWING NO. WD-23115-S-02 .

⑦ 16. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.

File:IPR\2023\MOGENL\EOFC\8\2023-O\o PED\SW\RDSO

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
⑦	-	WD-24036	DRAWING REVISED	05/24	-
⑥	-	WD-24029	NOTE NO. 5 MODIFIED	03/24	-
⑤	-	WD-23115	COIL AXIS ALONG THE WIDTH OF WAGON WITH WOODEN WEDGE & BATTON DETAILS ACCORDINGLY DRAWING REVISED	11/23	-
④	-	WD-23075	DRG. MODIFIED,DESCRIPTION TABLE ADDED & NOTE 11 TO 16 ADDED	08/23	-
③	-	WD-22096	METAL SADDLE, TABLE 1 AND NOTE NO - 10 ADDED	11/22	-
②	-	WD-21112	NOTE NO. 9 ADDED	01/22	-
①	-	WD-18006	COIL AXIS ALONG THE LENGTH OF WAGON	02/18	-

ITEM	DESCRIPTION	NO.OFF	MTL&SPEC.	REMARKS ⑦
5	ANGLE STOPPER	04 NO. PER COIL	WD-24036-S-01PART-4	
4	ISOLATION HOOK	10 NO. PER COIL	WD-24036-S-01PART-3	
3	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	07 NO. PER COIL	EN13247:2001	
2	WOODEN WEDGE	02 NO. PER COIL	WOOD	
1	WOODEN CRADLE	03 NO. PER COIL	WOOD	

④

SUPERSEDED BY

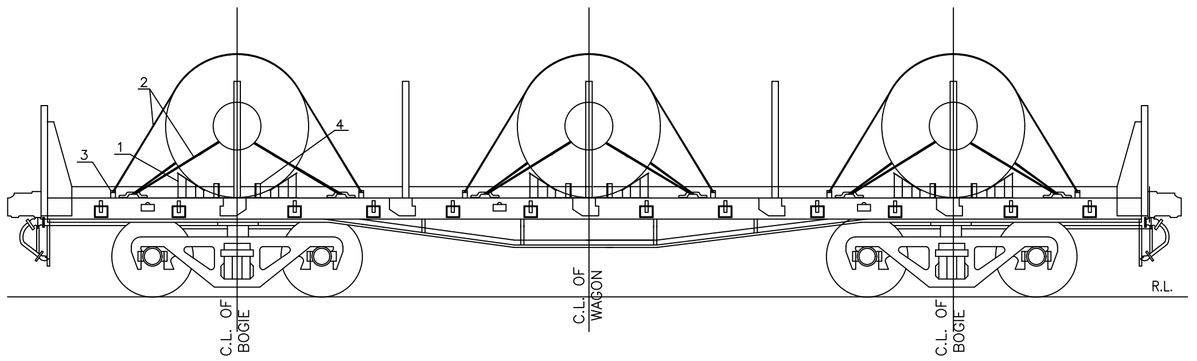
SUPERSEDES — DATE

SCALE	PASSED	A.K.ROY	10/16
	CHECKED	R.K.TAMRKAR	10/16
	DRAWN	A.P.SINGH	10/16
	TRACED		
	COMPARED		
	J.S.NO.	WD-16042	07/16

BOGIE FLAT WAGON

LOADING AND SECURING OF HR/CR COILS IN NON UNITISED PACKS ON BRN & ITS VARIANTS (BY USING WOODEN WEDGE AND BATTON)

B.G.	R.D.S.O. [W]	GROUP	WD-16042-S-01



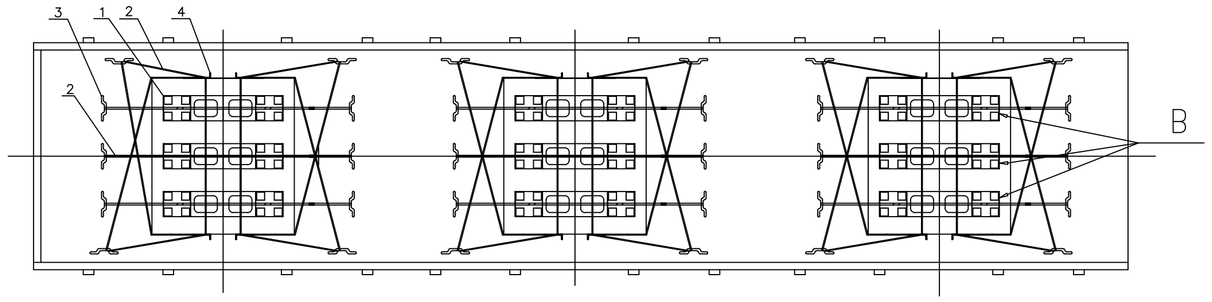
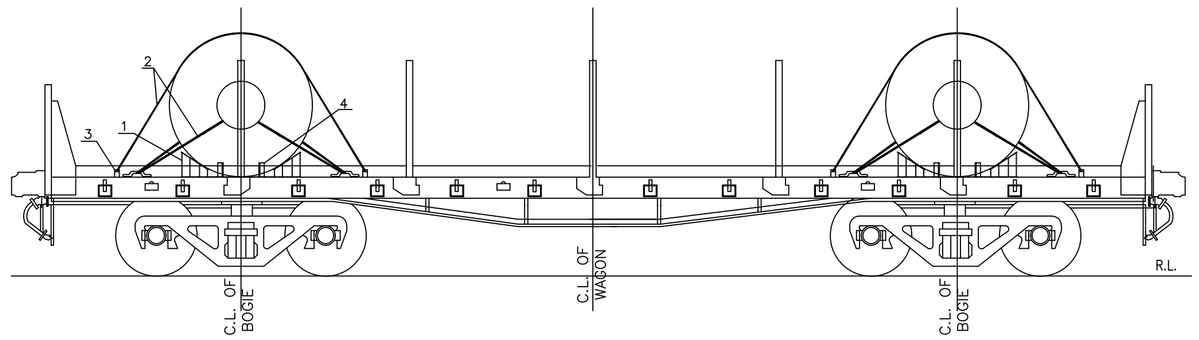


DIAGRAM OF 3 COIL LOADING ON BRN 22.9 WAGON

MAX. WEIGHT OF INDIVIDUAL COIL < 23T

FIG.1



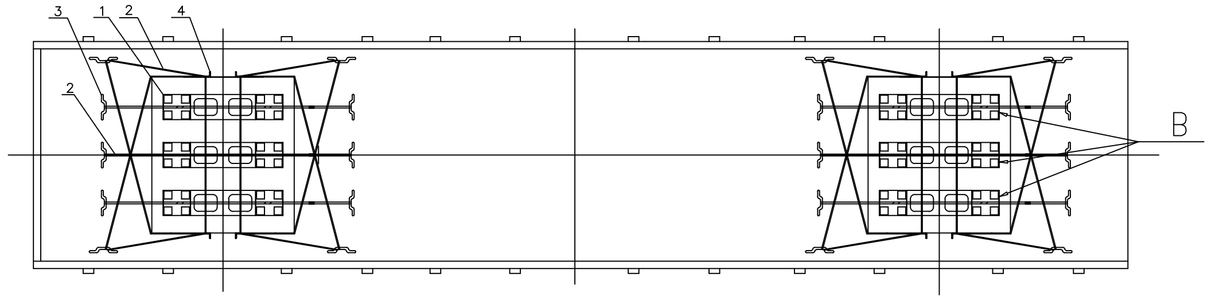
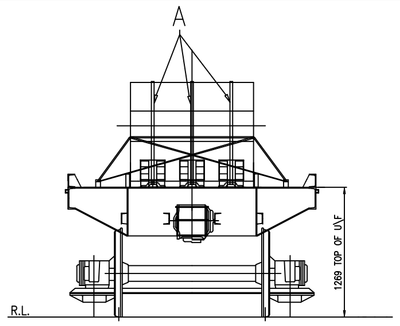
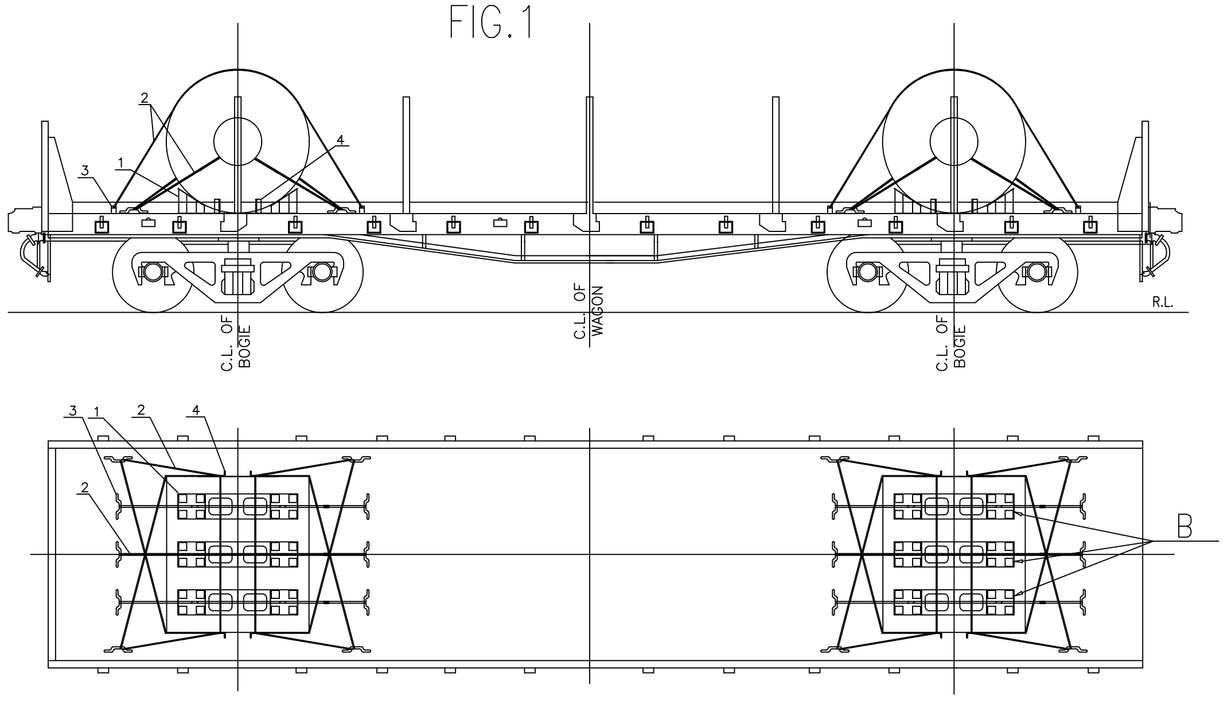


DIAGRAM OF 2 COIL LOADING ON BRN 22.9 WAGON

MAX. WEIGHT OF INDIVIDUAL COIL <= 34T

FIG.2

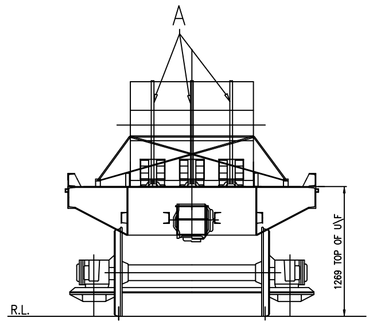




LOADING DIAGRAM OTHER THAN BRN 22.9 WAGON

MAX. WEIGHT OF INDIVIDUAL COIL <= 28T

FIG.3



NOTE :-

1. ALL INDIVIDUAL COILS ARE TO BE STRAPPED USING HEAVY DUTY STRAPS AS INDICATED BY 'A'.
2. COIL AXIS ALONG THE WIDTH OF WAGON.
3. RESTRICTION D <= 1.5 W
- (2) 4. BEFORE LOADING, ENSURE THAT NO. OF METAL SADDLE PER COIL SHALL NOT BE LESS THAN THREE AS INDICATED BY 'B'. SELECT METAL SADDLE ON THE BASIS OF DIAMETER OF COIL, REFERENCE DRAWING NO. OF METAL SADDLE IS WD-24036-S-01 PART-02.
- (1) 5. LOADING OF COILS SHOULD BE SUCH THAT :-
   5.1 MAXIMUM WEIGHT ON EACH BOGIE = UP TO PAY LOAD/2.
   5.2 THE LOAD SHOULD NOT EXCEED WAGON'S MAXIMUM PERMISSIBLE PAY LOAD.
6. CONSIGNMENTS SHALL BE PROPERLY SECURED BY USING ITEM NO. 01 & ITEM NO. 02 OF DRAWING NO. WD-94038-S-01. ITEM NO. 02 SHALL BE WELDED OR RIVETED WITH FLOOR OR SOLE BAR OF THE WAGON WHERE IT IS REQUIRED AS PER CONSIGNMENT.
7. STEEL STRAPES SHOULD BE UNIFORMLY TIGHTEND AT EACH STAGE BY TENSOMETER.
8. SIDE STANCHION (L.H. & R.H.) MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING AND DOWNWARD POSITION DURING LOADING/UNLOADING.
9. THE MAXIMUM DIFFERENCE IN WEIGHT ON TWO BOGIE SHALL NOT EXCEED MORE THAN 2 TON.
10. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001 THE DIMENSIONAL AND PHYSICAL PROPERTIES ARE MENTIONED IN THE TABLE BELOW (Ref-EN13247:2001)

SN	PARAMETERS	PHYSICAL PROPERTIES
1.	NOMINAL WIDTH	31.75
2.	NOMINAL THICKNEES	1.45
3.	MINIMUM BREAKING STRENGTH	49KN (5TON)

11. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002-1
12. THE INITIAL TENSION IN THE STRAP SHALL BE IN THE RANGE OF 500kg TO 800kg.
13. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE TRAIN OPERATION.
14. IF COIL LOADING IS DONE WITH WOODEN CRADLE THEN LOADING SHALL BE DONE AS PER DRAWING NO. WD-16042-G-01 .
- (2) 15. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.

RDSO LETTER NO. RDSO/WAGON(TECH-FOFC)/8/2023-O/o PED/SW/RDSO

ITEM	DESCRIPTION	NO.OFF	REF. DRG.	MTL&SPEC.	REMARKS
4	ANGLE STOPPER	04 NO. PER COIL	WD-24036-S-01 PART-4	–	
3	ISOLATION HOOK	10 NO. PER COIL	WD-24036-S-01 PART-3	–	
2	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	07 NO. PER COIL	–	EN13247:2001	
1	METAL SADDLE	03 NO.PER COIL	WD-24036-S-01 PART-2	–	

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
(2)	–	WD-24036	DRAWING REVISED	05/24	–
(1)	–	WD-24029	NOTE NO. 5 MODIFIED	03/24	–

SUPERSEDED BY

SUPERSEDES

DATE

SCALE

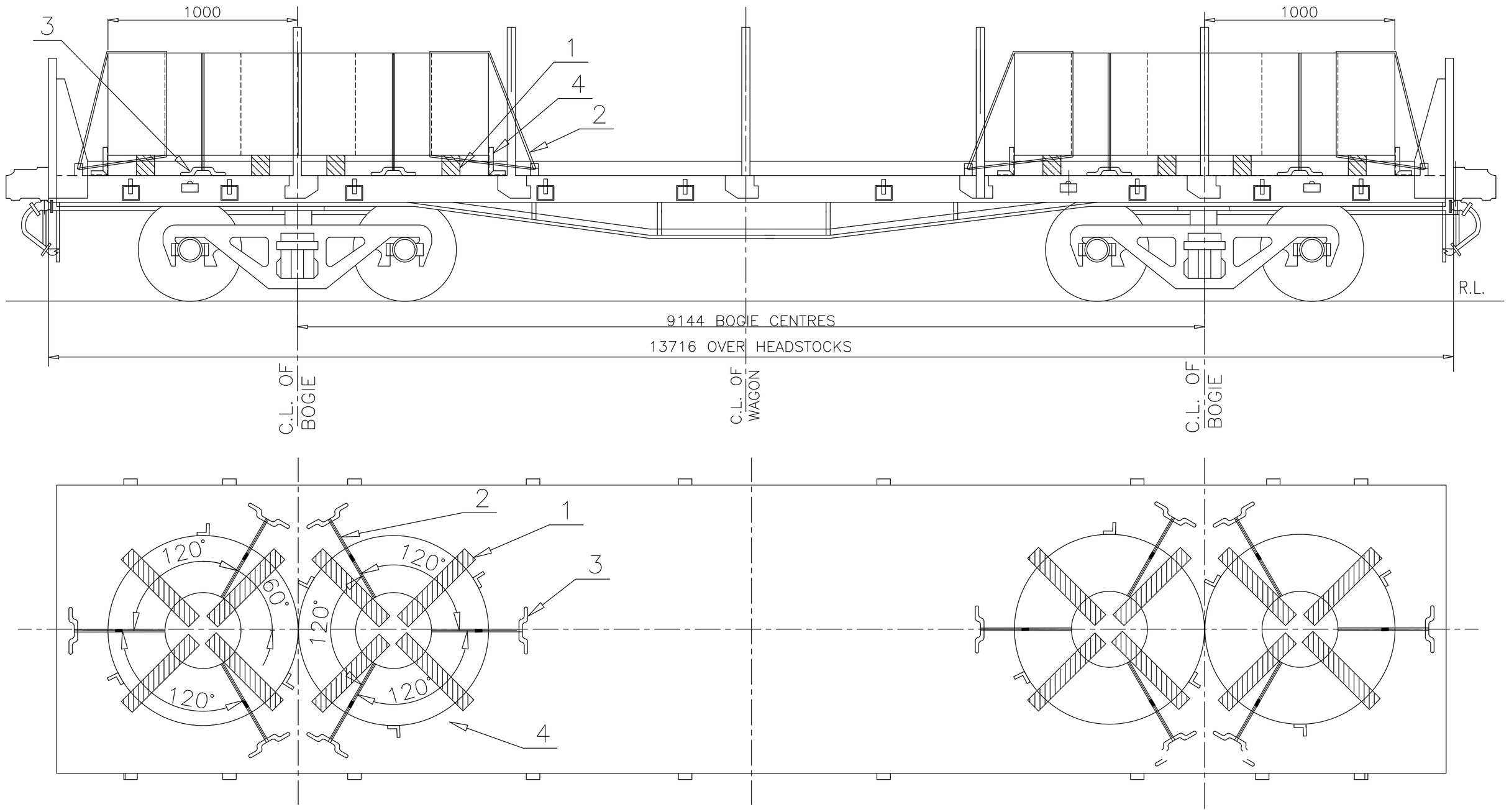
PASSED	S.M.TRIPATHI	11/23
CHECKED	A.P.SINGH	11/23
DRAWN	SACHIN KUMAR	11/23
TRACED		
COMPARED		
J.S.NO.	WD-23115	11/23

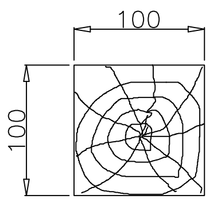
BOGIE FLAT WAGON

LOADING AND SECURING OF HR/CR COILS IN NON UNITISED PACKS ON BRN & ITS VARIANTS (BY USING METAL SADDLE)

B.G. | R.D.S.O. [W] | GROUP

WD-23115-S-02





1

NOTE:–

1. METHOD OF COIL LOADING – COIL AXIS VERTICAL.
2. MAX WEIGHT IMPOSED ON EACH BOGIE SHALL BE UP TO PAY LOAD/2
3. THE WEIGHT IMPOSED ON BOTH THE BOGIES SHOULD BE IDENTICAL.
4. THE MAXIMUM DIFFERENCE IN WEIGHT OF TWO BOGIE SHALL NOT EXCEED MORE THAN 2 TON.
5. INDIVIDUAL WEIGHT = 10 TO 17 T
6. LOAD ON THE WAGON SHALL BE SYMMETRICAL.
1. 7. THE LOAD SHOULD NOT EXCEED WAGON'S MAXIMUM PERMISSIBLE PAY LOAD.
8. SIDE STANCHION (L.H. & R.H.) MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING AND DOWNWARD POSITION DURING LOADING/UNLOADING.
9. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001

THE DIMENSIONAL AND PHYSICAL PROPERTIES ARE MENTIONED IN THE TABLE BELOW (Ref–EN13247:2001)

SN	PARAMETERS	PHYSICAL PROPERTIES
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5TON)

10. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1
11. THE INITIAL TENSION IN THE STRAP SHALL BE IN THE RANGE OF 500kg TO 800kg.
12. WOOD OF ADEQUATE STRENGTH WHICH CAN SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED.
13. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE TRAIN OPERATION.
14. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.
1. 13. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.
1. 16. EITHER 03 NO. OF ANGLE STOPPER OR 03 NO. OF HIGH TENSILE STEEL STRAPS SHOULD BE APPLIED FOR SECURING THE LOAD.
17. DEPENDING UPON THE EXPERIENCE/REPORT OF UNUSUAL INCIDENCE WITH THE ABOVE ARRANGEMENT, CONCERNED RAILWAY/CONSIGNEE MAY TAKE DECISION FOR APPLICATION OF BOTH STOPPER AND STRAPS TO SECURE THE LOAD PROPERLY TO AVOID ANY UNUSUAL INCIDENCE.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
1	–	WD–24036	DRAWING REVISED	05/24	–

File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED/SW/RDSO

ITEM	DESCRIPTION	NO.OFF	MTL&SPEC.	REMARKS
4	ANGLE STOPPER	03 NO FOR PER COIL	WD–24036–S–01 PART–4	
3	ISOLATION HOOK	03 NO FOR PER COIL	WD–24036–S–01 PART–3	
2	HIGH TENSILE STEEL STRAP	03 NO FOR PER COIL	EN13247:2001	
1	WOODEN RUNNER	04 NO FOR PER COIL	WOOD	

SUPERSEDED BY

SUPERSEDES

DATE

SCALE

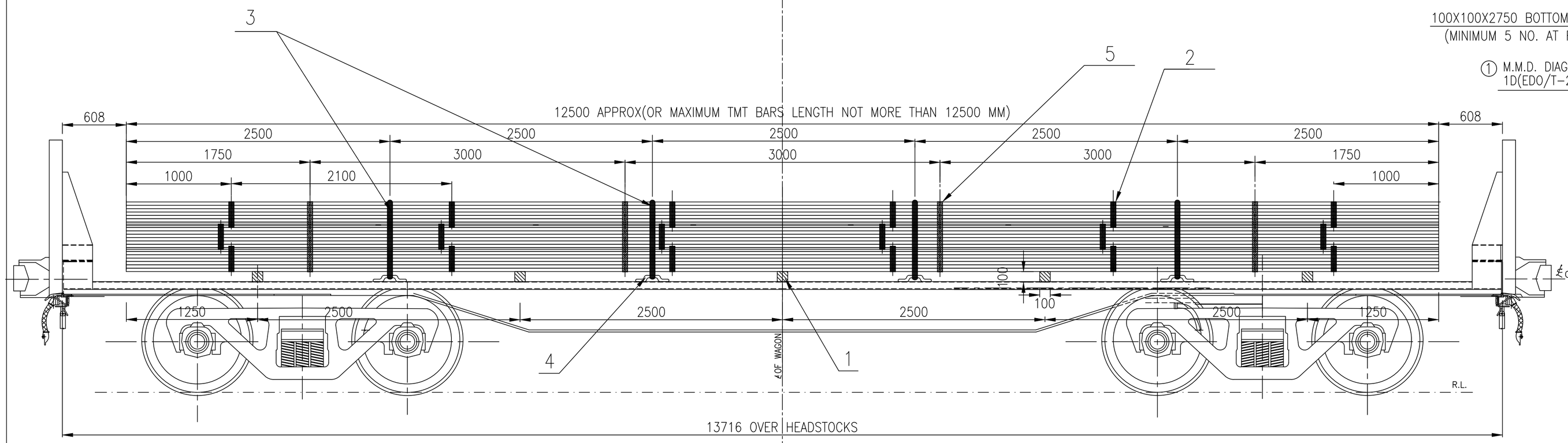
PASSED	S.M.TRIPATHI	08/23
CHECKED	A.P.SINGH	08/23
DRAWN	S.K.GAUR	08/23
TRACED		
COMPARED		
J.S.NO.	WD–23080	08/23

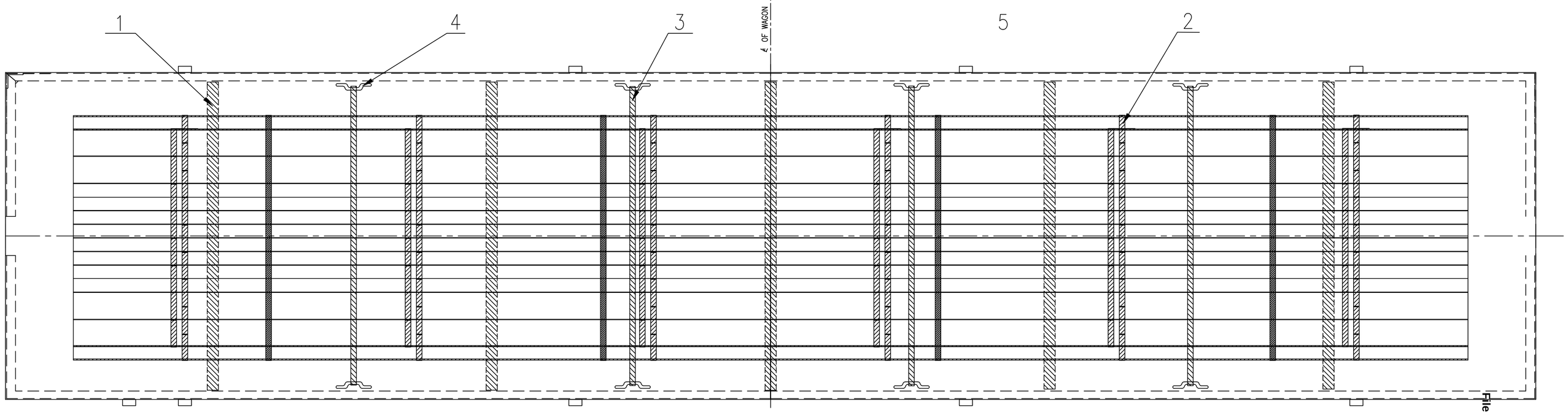
BOGIE FLAT WAGON

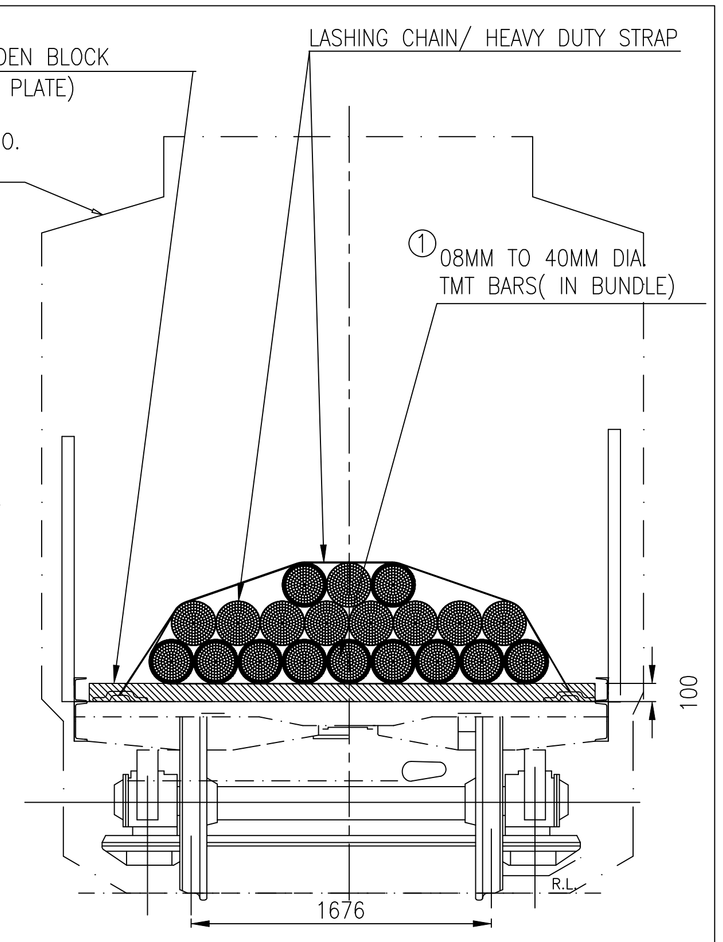
LOADING OF H.R./C.R. COILS ON BRN22.9/BRN22.9M1 WAGONS (UNITISED FORM)

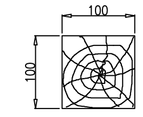
B.G. | R.D.S.O. [W] | GROUP

WD–23080–S–05









WOODEN ON FLOOR
SECTIONAL VIEW
1

NOTE:-

①1. TMT BARS HAVING DIAMETER OF 8MM TO 40MM SHOULD BE STACKED IN 03 ROWS AS SHOWN IN LOADING DIAGRAM.
①2. IN CASE OF VARIATION IN LENGTH OF TMT BARS BUNDLE ,SMALL LENGTH BARS BUNDLE SHOULD BE KEPT AT UPPERSIDE & CENTERED TO WAGON CENTRE.
①3. TMT BARS LOADED IN BUNDLE FORM AND WEIGHT OF EACH BUNDLE NOT MORE THAN 10 TON.
4. EACH TMT BARS BUNDLE WILL BE UNITIZED BY 06 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP AND TO BE TIGHTEN ADEQUATELY.
①5. THE TENSIONAL STEEL STRAP OF 1.27 OR 1.45 THICKNESS USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.-EN13247:2001)	
		1.27 THICKNESS STRAP	1.45 THICKNESS STRAP
1.	NOMINAL WIDTH	31.75	31.75
2.	NOMINALTHICKNEES	1.27	1.45
3.	MINIMUM BREAKING STRENGTH	43KN (4.3 TON)	49KN (4.9 TON)

②6. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002-1
②7. THE INITIAL TENSION IN THE STRAP SHALL BE IN THE RANGE OF 500kg TO 800kg.
8. TMT BARS/ BUNDLES ARE LOADED ALONG THE LENGTH AND AT THE CENTRE OF WAGON AS SHOWN IN DRAWING.
9. BEFORE LOADING TMT BARS IN THE WAGON, ENSURE THAT WOODEN BLOCKS ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING.
①10. WHILE LOADING AND UNLOADING THE BUNDLES OF TMT BAR ON WAGON FLOOR, AT LEAST 02 NO.'S STRAPS OF A BUNDLE TO BE USED FOR HOISTING AND LOWERING TO KEEP IT BALANCE FOR SAFE OPERATION .
11. AFTER LOADING, ALL TMT BARS BUNDLES SHALL BE ALSO UNITIZED TOGETHER BY 04 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP AND TO BE TIGHTEN ADEQUATELY.
①12. AFTER UNITIZING OF ALL TMT BARS BUNDLES TOGETHER, THE WHOLE BUNDLES UNITIZED TO BE AGAIN SECURED WITH ISOLATION HOOK BY 04 NO.'S OF STRAPS WITH THE WAGON BODY AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF BUNDLES OF TMT BARS SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
13. THE TOTAL LOAD OF LOADED CONSIGNMENT SHOULD NOT EXCEED THE PAY LOAD OF THE WAGON.
①14. THERE SHALL BE SYMMETRICAL LOADING. THE WEIGHT DIFFERENCE ON BOGIE CENTER SHALL NOT EXCEED MORE THAN 2 TONS.
15. THE LOADING/UNLOADING OF TMT BARS/BUNDLES TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
16. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD-CS-01-LOAD SECURING CHECK SHEET (LATEST).
17. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
18. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.
②19. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
②	–	WD-24036	DRAWING REVISED	05/24	–
①	–	WD-24027	NOTE,TITLE BLOCK AND MMD REVISED	03/24	–

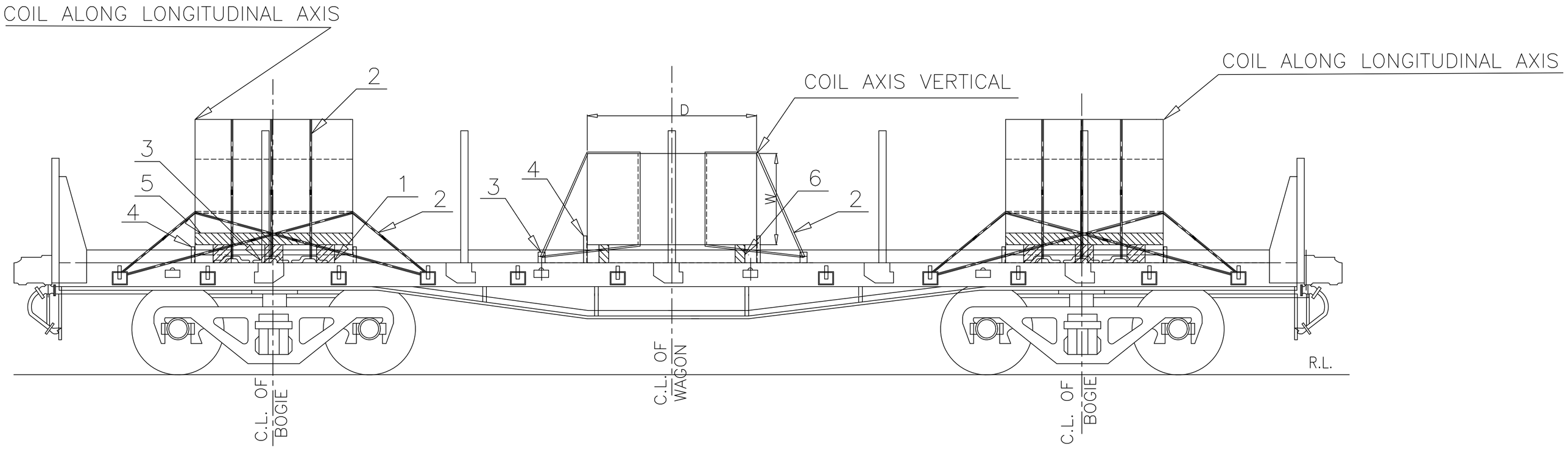
ITEM	DESCRIPTION	NO.OFF	MTL&SPEC	REMARKS
5	LASHING CHAIN/ HEAVY DUTY STRAP FOR BUNDLES UNITIZATION	4	EN13247:2001	
② 4	ISOLATION HOOK	8	WD-24036-S-01 PART-3	
3	LASHING CHAIN/ HEAVY DUTY STRAP TIGHTEN WITH ISOLATION HOOK FOR SECURING WITH WAGON BODY	4	EN13247:2001	
2	LASHING CHAIN/ HEAVY DUTY STRAP FOR BUNDLING	AS PER REQUIREMENT	EN13247:2001	
② 1	WOODEN BATTON	5	WOOD	

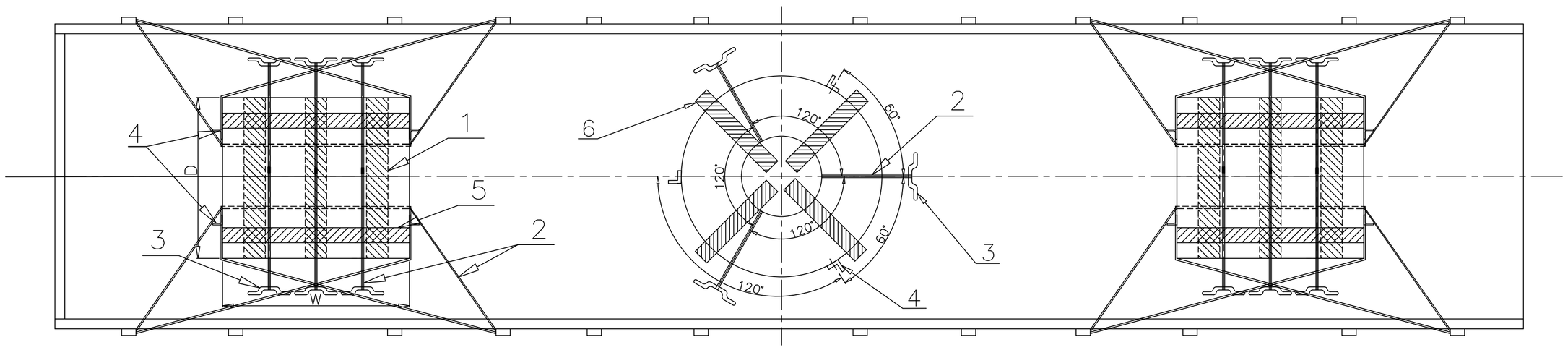
SUPERSEDED BY
SUPERSEDES
SCALE
PASSED R.V.SINGH 02/24
CHECKED A.P.SINGH 02/24
DRAWN ASHUTOSH SINGH 02/24
J.S.NO. WD-24024 02/24

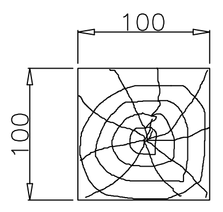
LOADING DIAGRAM FOR 08 MM TO 40 MM TMT BARS IN BRN22.9, BRN & IT'S VARIANTS.①

B.G. | R.D.S.O. [W] | GROUP | WD-24024-S-01

File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED/SW/RDSO







6

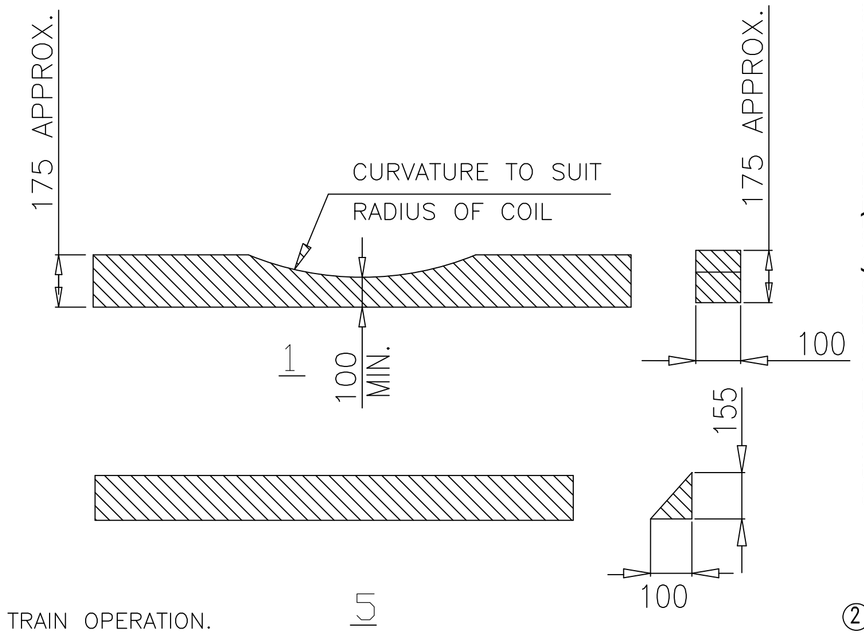
NOTE:–

1. MAX WEIGHT IMPOSED ON EACH BOGIE SHALL BE UP TO PAY LOAD/2
2. THE WEIGHT IMPOSED ON BOTH THE BOGIES SHOULD BE IDENTICAL.
3. THE MAXIMUM DIFFERENCE IN WEIGHT OF TWO BOGIE SHALL NOT EXCEED MORE THAN 2 TON.
① 4. TOTAL WEIGHT OF LOADED COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON. MAXIMUM WEIGHT OF COIL AT MIDDLE OF THE WAGON SHALL BE <=23T
② 5. RESTRICTION: W<=1.5D (FOR VERTICAL COIL), D<=1.5W(FOR HORIZONTAL COIL)
6. LOAD ON THE WAGON SHALL BE SYMMETRICAL.
7. SIDE STANCHION (L.H. & R.H.) MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING AND DOWNWARD POSITION DURING LOADING/UNLOADING.
8. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001

THE DIMENSIONAL AND PHYSICAL PROPERTIES ARE MENTIONED IN THE TABLE BELOW (Ref–EN13247:2001)

SN	PARAMETERS	PHYSICAL PROPERTIES
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5TON)

9. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1
10. THE INITIAL TENSION IN THE STRAP SHALL BE IN THE RANGE OF 500kg TO 800kg.
11. WOOD OF ADEQUATE STRENGTH WHICH CAN SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED.
12. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE TRAIN OPERATION.
13. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.
14. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.
15. EITHER 03 NO. OF STOPPER OR 03 NO. OF STRAPS SHOULD BE APPLIED FOR SECURING THE COIL WITH VERTICAL AXIS ONLY.
② 16. DEPENDING UPON THE EXPERIENCE/REPORT OF UNUSUAL INCIDENCE WITH THE ABOVE ARRANGEMENT, CONCERNED RAILWAY/CONSIGNEE MAY TAKE DECISION FOR APPLICATION OF BOTH STOPPER AND STRAPS TO SECURE THE LOAD PROPERLY TO AVOID ANY UNUSUAL INCIDENCE.
17. METAL SADDLE MAY BE USED FOR LOADING OF COIL ALONG LONGITUDINAL AXIS(EYE TOWARD ENGINE).
18. METAL SADDLE REFERENCE DRAWING NO. WD–24036–S–01 PART–1.



1 5

File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED/SWRDSO

ITEM	DESCRIPTION	NO.OFF	MTL&SPEC.	REMARKS
6	WOODEN RUNNER	04 NO FOR EACH COIL	WOOD	
5	WOODEN WEDGE	03 NO PER COIL	WOOD	
4	ANGLE STOPPER	04 NO EACH COIL	WD–24036–S–01 PART–4	
3	ISOLATION HOOK	AS PER REQUIREMENT	WD–24036–S–01 PART–3	
2	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	AS PER REQUIREMENT	EN13247:2001	
1	WOODEN CRADLE	03 NO PER COIL	WOOD	

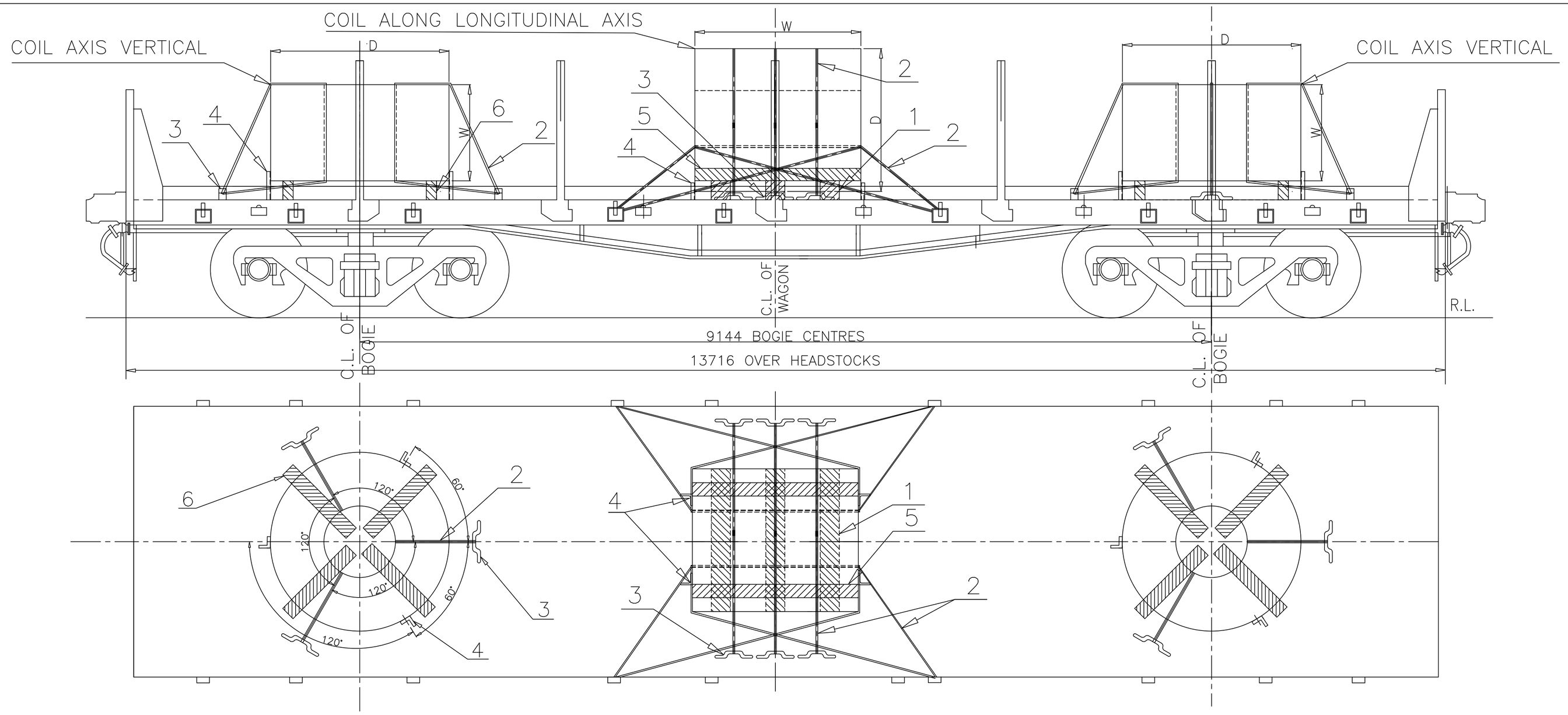
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
②	–	WD–24036	DRAWING REVISED	05/24	–
①	–	WD–24029	WEIGHT AT CENTRE MODIFIED	03/24	

SUPERSEDED BY			
SUPERSEDES		DATE	
SCALE	PASSED	S.M.TRIPATHI	08/23
	CHECKED	A.P.SINGH	08/23
	DRAWN	S.K.GAUR	08/23
	TRACED		
	COMPARED		
	J.S.NO.	WD–23080	08/23

BOGIE FLAT WAGON

LOADING OF H.R./C.R. COILS ON BRN22.9/BRN22.9M1 WAGONS

B.G.	R.D.S.O. [W]	GROUP	WD–23080–S–01

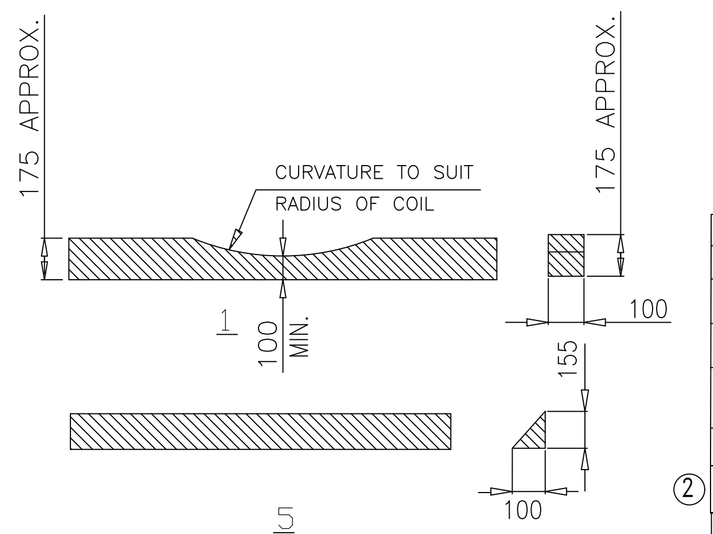


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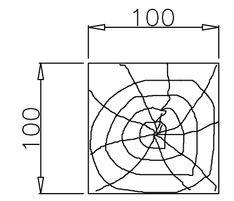
1. MAX WEIGHT IMPOSED ON EACH BOGIE SHALL BE UP TO PAY LOAD/2
2. THE WEIGHT IMPOSED ON BOTH THE BOGIES SHOULD BE IDENTICAL.
3. THE MAXIMUM DIFFERENCE IN WEIGHT OF TWO BOGIE SHALL NOT EXCEED MORE THAN 2 TON.
1. 4. TOTAL WEIGHT OF LOADED COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON. MAXIMUM WEIGHT OF COIL AT MIDDLE OF THE WAGON SHALL BE <=23T
2. 5. RESTRICTION: W<=1.5D (FOR VERTICAL COIL), D<=1.5W(FOR HORIZONTAL COIL)
6. LOAD ON THE WAGON SHALL BE SYMMETRICAL.
7. SIDE STANCHION (L.H. & R.H.) MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING AND DOWNWARD POSITION DURING LOADING/UNLOADING.
8. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001 THE DIMENSIONAL AND PHYSICAL PROPERTIES ARE MENTIONED IN THE TABLE BELOW (Ref–EN13247:2001)

SN	PARAMETERS	PHYSICAL PROPERTIES
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5TON)

9. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1
10. THE INITIAL TENSION IN THE STRAP SHALL BE IN THE RANGE OF 500kg TO 800kg.
11. WOOD OF ADEQUATE STRENGTH WHICH CAN SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED.
12. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE TRAIN OPERATION.
13. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.
14. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.
15. EITHER 03 NO. OF STOPPER OR 03 NO. OF STRAPS SHOULD BE APPLIED FOR SECURING THE COIL WITH VERTICAL AXIS ONLY.
2. 16. DEPENDING UPON THE EXPERIENCE/REPORT OF UNUSUAL INCIDENCE WITH THE ABOVE ARRANGEMENT, CONCERNED RAILWAY/CONSIGNEE MAY TAKE DECISION FOR APPLICATION OF BOTH STOPPER AND STRAPS TO SECURE THE LOAD PROPERLY TO AVOID ANY UNUSUAL INCIDENCE.
17. METAL SADDLE MAY BE USED FOR LOADING OF COIL ALONG LONGITUDINAL AXIS(EYE TOWARD ENGINE).
18. METAL SADDLE REFERENCE DRAWING NO. WD–24036–S–01 PART–1.



5



6

ITEM	DESCRIPTION	NO.OFF	MTL&SPEC.	REMARKS
6	WOODEN RUNNER	04 NO FOR EACH COIL	WOOD	
5	WOODEN WEDGE	03 NO PER COIL	WOOD	
4	ANGLE STOPPER	04 NO EACH COIL	WD–24036–S–01 PART–4	
3	ISOLATION HOOK	AS PER REQUIREMENT	WD–24036–S–01 PART–3	
2	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	AS PER REQUIREMENT	EN13247:2001	
1	WOODEN CRADLE	03 NO PER COIL	WOOD	

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
2	–	WD–24036	DRAWING REVISED	05/24	–
1	–	WD–24029	WEIGHT AT CENTRE MODIFIED	03/24	

SUPERSEDED BY
SUPERSEDES
DATE

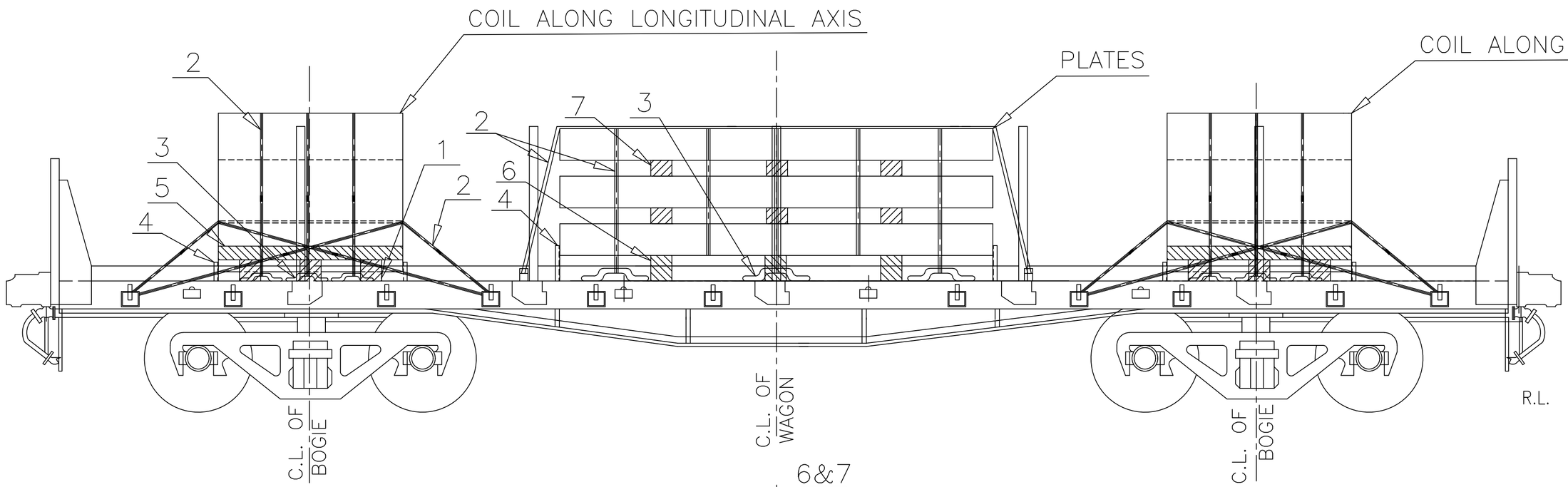
SCALE			
	PASSED	S.M.TRIPATHI	08/23
	CHECKED	A.P.SINGH	08/23
	DRAWN	S.K.GAUR	08/23
	TRACED		
	COMPARED		
	J.S.NO.	WD–23080	08/23

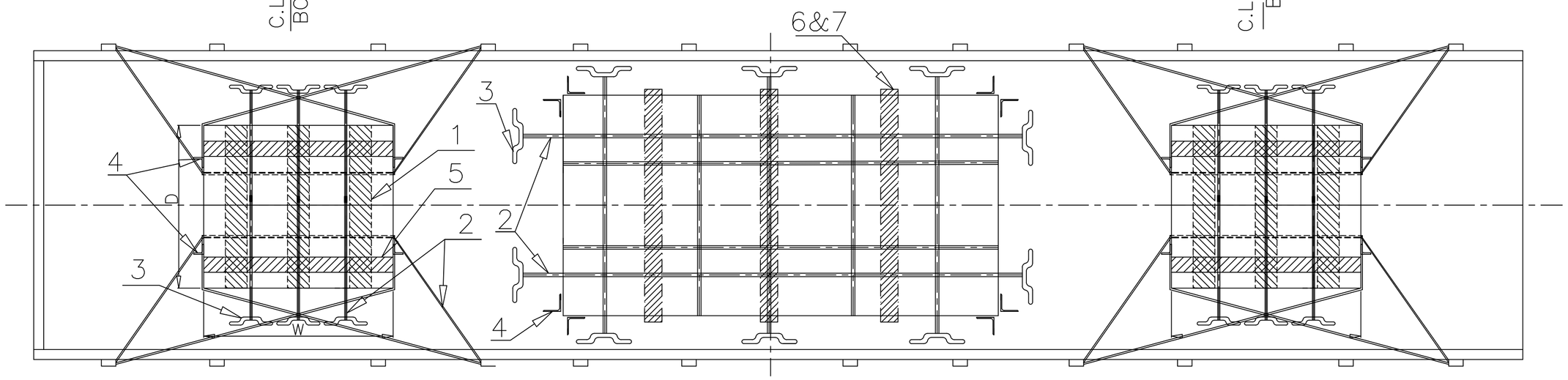
BOGIE FLAT WAGON

LOADING OF H.R./C.R. COILS ON BRN22.9/BRN22.9M1 WAGONS

B.G.	R.D.S.O. [W]	GROUP	WD–23080–S–02

File No.RDSO-MWDGENL(EOFC)/8/2023/Do PED/SW/RDSO



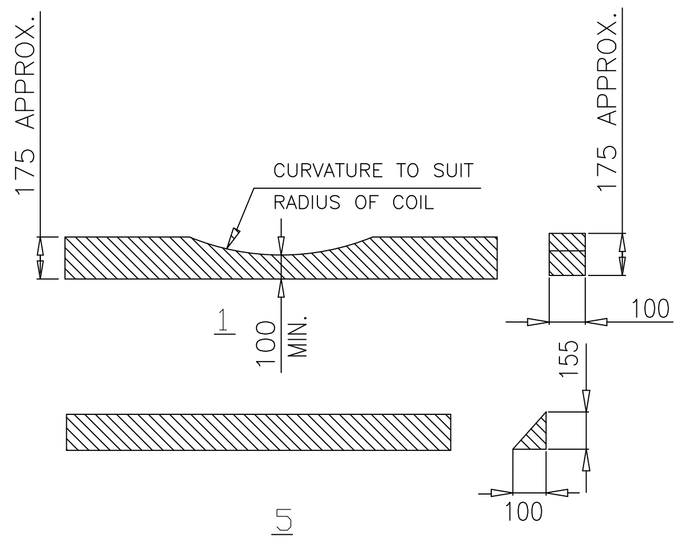


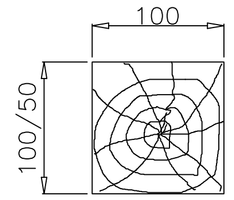
NOTE:–

1. MAX WEIGHT IMPOSED ON EACH BOGIE SHALL BE UP TO PAY LOAD/2
2. THE WEIGHT IMPOSED ON BOTH THE BOGIES SHOULD BE IDENTICAL.
3. THE MAXIMUM DIFFERENCE IN WEIGHT OF TWO BOGIE SHALL NOT EXCEED MORE THAN 2 TON.
4. THE WIDTH OF THE PLATES SHALL NOT BE MORE THAN 2500MM.
   ①MAXIMUM WEIGHT OF PLATES AT MIDDLE OF THE WAGON SHALL BE <=23T
5. RESTRICTION D<=1.5W
6. THE PLATES SHALL BE UNITISED IN BUNDLE FORM.
7. LOAD ON THE WAGON SHALL BE SYMMETRICAL.
8. SIDE STANCHION (L.H. & R.H.) MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING AND DOWNWARD POSITION DURING LOADING/UNLOADING.
9. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001
   THE DIMENSIONAL AND PHYSICAL PROPERTIES ARE MENTIONED IN THE TABLE BELOW (Ref–EN13247:2001)

SN	PARAMETERS	PHYSICAL PROPERTIES
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5TON)

10. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1
11. THE INITIAL TENSION IN THE STRAP SHALL BE IN THE RANGE OF 500kg TO 800kg.
12. WOOD OF ADEQUATE STRENGTH WHICH CAN SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED.
13. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE TRAIN OPERATION.
14. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.
15. ①TOTAL WEIGHT OF LOADED CONSIGNMENT ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
16. ② CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.
17. METAL SADDLE MAY BE USED FOR LOADING OF COIL ALONG LONGITUDINAL AXIS(EYE TOWARD ENGINE).
18. METAL SADDLE REFERENCE DRAWING NO. WD–24036–S–01 PART –1.





6&7
SECTION VIEW

File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED/SWR/RDSO

ITEM	DESCRIPTION	NO.OFF	MTL&SPEC.	REMARKS
7	INTERMIDIATE WOODEN RUNNER 50X100	AS PER REQUIREMENT	WOOD	
6	WOODEN RUNNER 100X100	AS PER REQUIREMENT	WOOD	
5	WOODEN WEDGE	AS PER REQUIREMENT	WOOD	
4	ANGLE STOPPER	AS PER REQUIREMENT	WD–24036–S–01 PART–4	
3	ISOLATION HOOK	AS PER REQUIREMENT	WD–24036–S–01 PART–3	
2	HIGH TENSILE STEEL STRAP	AS PER REQUIREMENT	EN13247:2001	
1	WOODEN CRADLE	03 NO. PER COIL	WOOD	

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
②	–	WD–24036	DRAWING REVISED	05/24	–
①	–	WD–24029	WEIGHT AT CENTRE MODIFIED	03/24	–

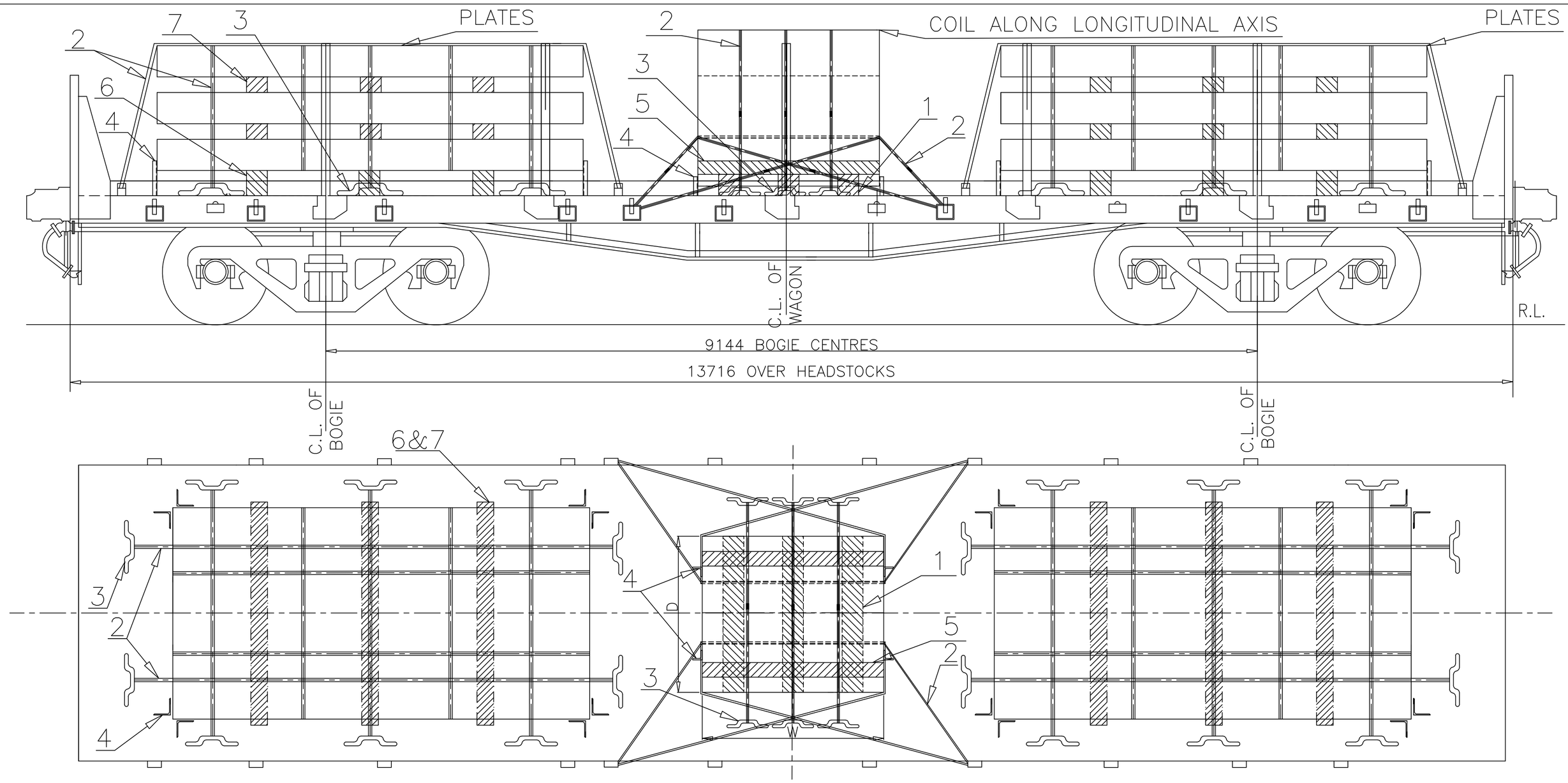
SUPERSEDED BY
SUPERSEDES DATE

SCALE			
	PASSED	S.M.TRIPATHI	08/23
	CHECKED	A.P.SINGH	08/23
	DRAWN	S.K.GAUR	08/23
	TRACED		
	COMPARED		
	J.S.NO.	WD–23080	08/23

BOGIE FLAT WAGON

LOADING OF PLATES WITH COIL ON BRN22.9/BRN22.9M1 WAGONS

B.G. | R.D.S.O. [W] | GROUP | WD–23080–S–03

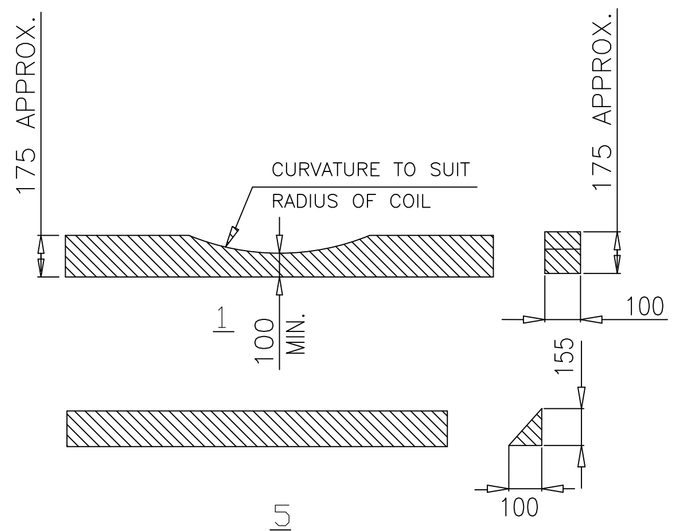


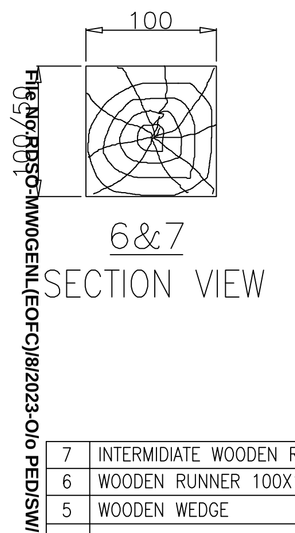
NOTE:–

1. MAX WEIGHT IMPOSED ON EACH BOGIE SHALL BE UP TO PAY LOAD/2
2. THE WEIGHT IMPOSED ON BOTH THE BOGIES SHOULD BE IDENTICAL.
3. THE MAXIMUM DIFFERENCE IN WEIGHT OF TWO BOGIE SHALL NOT EXCEED MORE THAN 2 TON.
4. THE WIDTH OF THE PLATES SHALL NOT BE MORE THAN 2500MM.
① MAXIMUM WEIGHT OF COIL AT MIDDLE OF THE WAGON SHALL BE <=23T
②5. RESTRICTION D<=1.5W
6. THE PLATES SHALL BE UNITISED IN BUNDLE FORM.
7. LOAD ON THE WAGON SHALL BE SYMMETRICAL.
8. SIDE STANCHION (L.H. & R.H.) MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING AND DOWNWARD POSITION DURING LOADING/UNLOADING.
9. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001 THE DIMENSIONAL AND PHYSICAL PROPERTIES ARE MENTIONED IN THE TABLE BELOW (Ref–EN13247:2001)

SN	PARAMETERS	PHYSICAL PROPERTIES
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.45
3.	MINIMUM BRAKING STRENGTH	49KN (5TON)

10. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1
11. THE INITIAL TENSION IN THE STRAP SHALL BE IN THE RANGE OF 500kg TO 800kg.
12. WOOD OF ADEQUATE STRENGTH WHICH CAN SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED.
13. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE TRAIN OPERATION.
14. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.
①15. TOTAL WEIGHT OF LOADED CONSIGNMENT ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
16. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP. ②
17. METAL SADDLE MAY BE USED FOR LOADING OF COIL ALONG LONGITUDINAL AXIS(EYE TOWARD ENGINE).
18. METAL SADDLE REFERENCE DRAWING NO. WD–24036–S–01 PART –1.





ITEM	DESCRIPTION	NO.OFF	MTL&SPEC.	REMARKS
7	INTERMIDIATE WOODEN RUNNER 50X100	AS PER REQUIREMENT	WOOD	
6	WOODEN RUNNER 100X100	AS PER REQUIREMENT	WOOD	
5	WOODEN WEDGE	AS PER REQUIREMENT	WOOD	
4	ANGLE STOPPER	AS PER REQUIREMENT	WD–24036–S–01 PART–4	
3	ISOLATION HOOK	AS PER REQUIREMENT	WD–24036–S–01 PART–3	
2	HIGH TENSILE STEEL STRAP	AS PER REQUIREMENT	EN13247:2001	
1	WOODEN CRADLE	03 NO. PER COIL	WOOD	

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
②	–	WD–24036	DRAWING REVISED	05/24	–
①	–	WD–24029	WEIGHT AT CENTRE MODIFIED	03/24	–

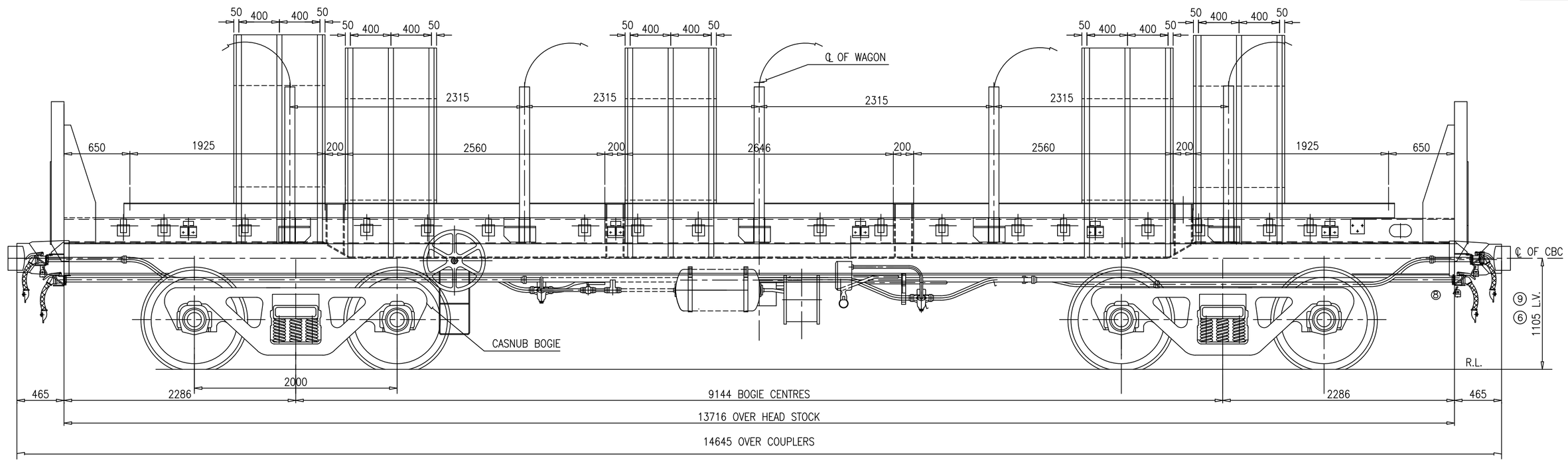
SUPERSEDED BY			
SUPERSEDES		DATE	
SCALE	PASSED	S.M.TRIPATHI	08/23
	CHECKED	A.P.SINGH	08/23
	DRAWN	S.K.GAUR	08/23
	TRACED		
	COMPARED		
	J.S.NO.	WD–23080	08/23

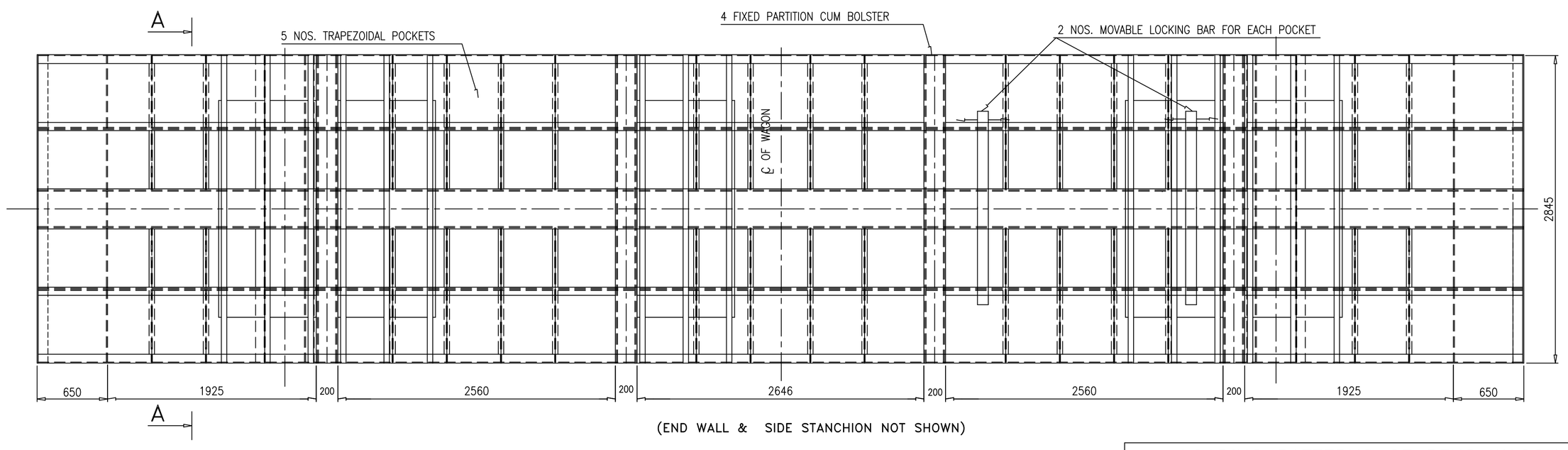
BOGIE FLAT WAGON

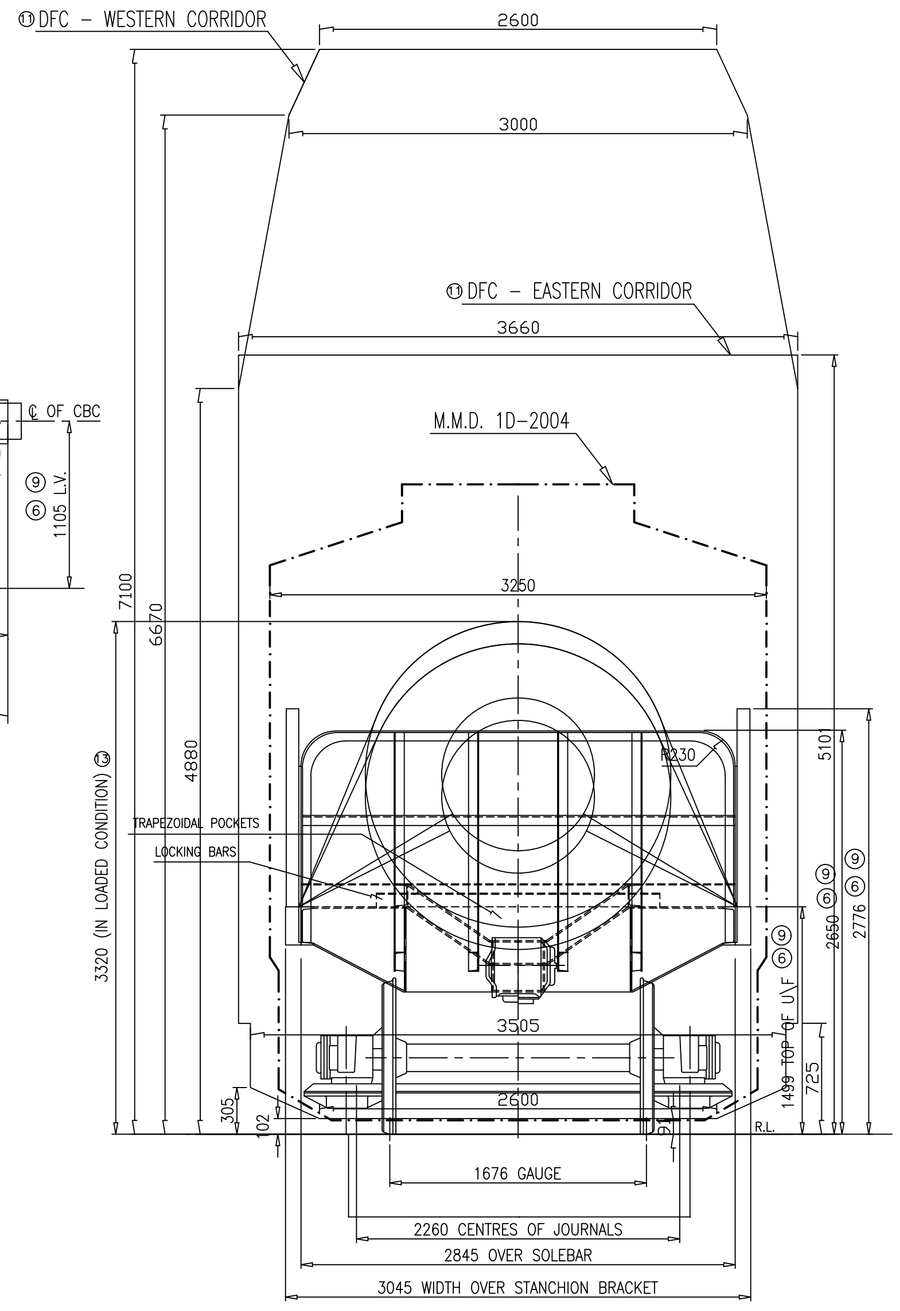
LOADING OF PLATES WITH COIL ON BRN22.9/BRN22.9M1 WAGONS

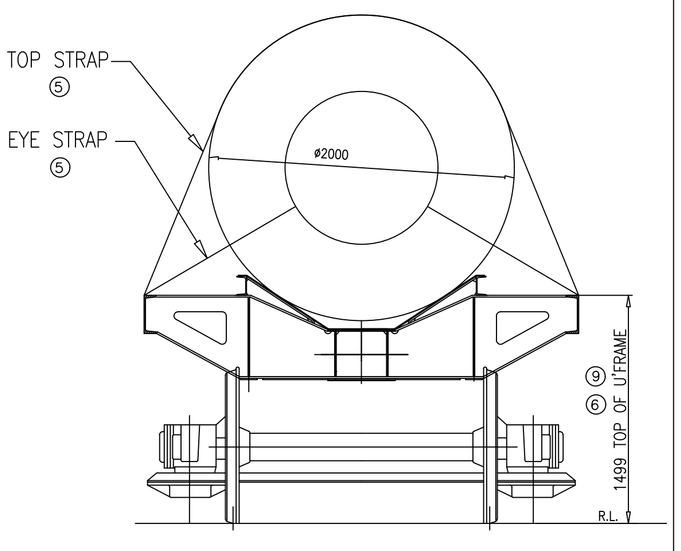
B.G.	R.D.S.O. [W]	GROUP	WD–23080–S–04

File No:RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SWI/RDSO









SECTION AA

DATA (BOGIE)	UNDER TARE (mm.)	
HEIGHT OF BOTTOM OF BOGIE FRAME FROM R.L. AT CENTRE	165	
DISTANCE FROM R.L. TO TOP OF PIVOT	928	⑥
DISTANCE FROM R.L. TO TOP OF BOGIE SIDE BEARER	909	⑥
HEIGHT OF SPRINGS	247	⑥

DATA (WAGON)	WAGON UNDER TARE (mm.)	
HEIGHT OF CBC, FROM R.L.	1105	⑥ ⑨
DISTANCE BETWEEN WHEEL FLANGES AND FLOOR	225.5	⑥
DISTANCE BETWEEN TOP & BOTTOM SIDE BEARERS	NIL	
TOP OF THE SOLE BAR	1499	⑥ ⑨

SUMMARY OF WEIGHT (ESTIMATED)	BFNS 20.32 TONNES	BFNS22.9 ⑨⑩⑦ 22.9 TONNES	FLATCOIL3 ⑭ 22.9 TONNES
UNDER FRAME COMPLETE WITH BODY ENDS, SIDE STANCHIONS, SADDLE AND FLOOR PLATE	13.896	13.896	13.896
TWO CENTRE BUFFER COUPLER COMPLETE (NON- TRANSITION)WITH YOKE & TWO DRAFT GEARS	1.32	1.32	1.32
BRAKE GEAR ON U'FRAME AND AIR BRAKE EQUIPMENT INCLUDING PIPING ETC	0.758	0.758	0.758
BOGIES COMPLETE EXCEPT SPRINGS WHEELS & AXLES, BEARING, ADAPTER & CENTRE PIVOTS ASSEMBLY	3.472	3.472	3.472
BOGIES BRAKE GEAR COMPLETE	0.500	0.500	0.500
FOUR PAIR OF WHEELS & AXLES + BEARING	6.080	6.080	6.080
ADAPTER	0.092	0.092	0.092
BOSTER SPRINGS AND SNUBBER SPRING	0.368	0.368	0.368
TWO TOP CENTER PIVOTS	0.224	0.224	0.224
ESTIMATED TARE	26.71	26.71	26.71
CARRYING CAPACITY	54.57	64.89	64.89
GROSS WEIGHT PER METER RUN OVER COUPLING FACES	5.55	6.25	6.25
RATIO OF CARRYING CAPACITY TO TARE	2.043	2.429	2.429
GROSS WEIGHT AS PER AXLE LOAD	81.28	91.6	91.6

LOADING PATTERNS OF BFNS WAGON							
S.No.	LOADING CONDITION	MAX. LOAD IN POCKET(Tonnes) Ist	IInd	IIIrd	IVth	Vth	MAX. PAY LOAD(Tonnes)
1.	SINGLE POCKET			20			20
2.	DOUBLE POCKET	32				32	64.89
3.	THREE POCKET	24		18		24	64.89
4.	FOUR POCKET	22	20		20	22	64.89
5.	FIVE POCKET	19	19	11	19	19	64.89

NOTE:– THE LOADING SHOULD BE SUCH THAT HIGHER LOADS ARE PLACED IN THE END POCKET AS FAR AS POSSIBLE.

⑭

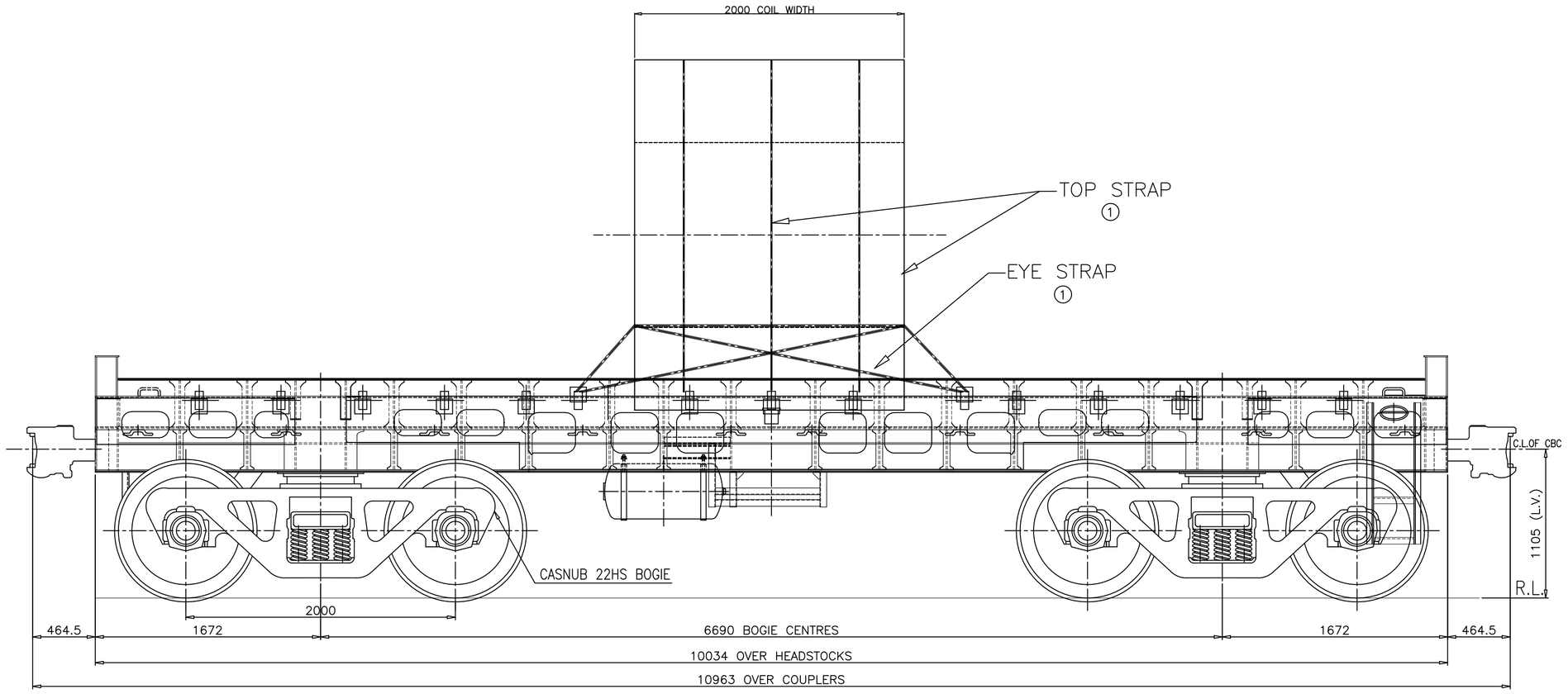
S.NO.	PER BOGIE SPRING GROUP COMPOSITION, FRICTION WEDGE AND SIDE BEARER DETAILS						
	WAGON	BOGIE	OUTER	INNER	SNUBBER	FRICTION WEDGE	SIDE BEARER
1.	BFNS	CASNUB 22 HS	14	12	4	METALLIC	PU
2.	BFNS22.9	CASNUB 22 HS	14	14	4	METALLIC	PU
2.	FLATCOIL3	CASNUB 22 RFT	14	14	4 (OUTER) 4 (INNER)	DRG. NO. WD-22055-S/5 AS PER SPEC NO. CONTR-02-MISC-2007	VARIANT-C OF WD-62-MISC.-17

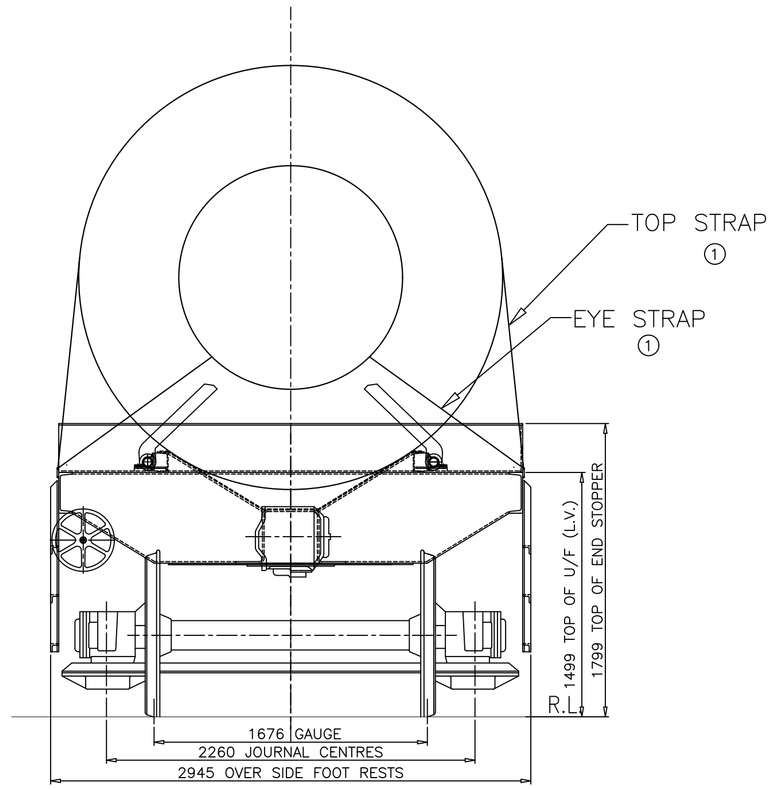
⑦ NOTE: 1. THE LOADING SHOULD BE SUCH THAT IN NO CASE THE LOAD ON ANY BOGIES EXCEED THE 22.9T AXLE LOAD.
⑮ 2. BFNS WAGON ARE FITTED WITH TWIN PIPE GRADUATED RELEASE AIR BRAKE SYSTEM.
⑬ 3. ALL SIDE STANCHION MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING.

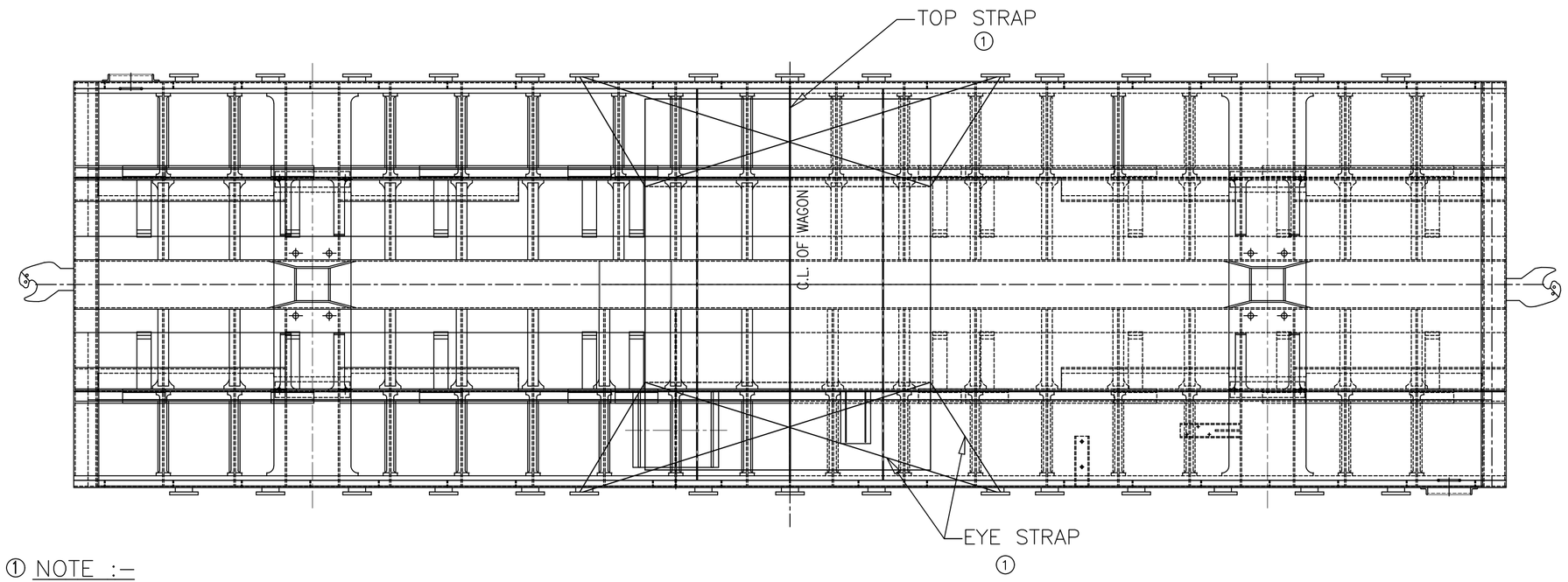
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
⑭	–	WD-23023	FLATCOIL3 IS ADDED IN TITLE BLOCK, RESPECTIVE DATA COLUMN ADDED IN SUMMARY OF WEIGHT TABLE AND SPRING GROUP COMPOSITION TABLE ADDED	3/23	
⑬	–	WD-22083	MAXIMUM HEIGHT IN LOADED CONDITION SHOWN & NOTE ADDED	9/22	–
⑫	–	WD-21073	BFNS22.9 IS ADDED IN TITLE BLOCK	8/21	–
⑪	–	WD-21057	MAXIMUM MOVING DIMENSIONS FOR DFC ADDED	7/21	–
⑩	–	WD-17030	BFNSM1 NAME MODIFIED AS BFNS22.9.	5/17	–
⑨	–	WD-16053	CBC HEIGHT INCREASED FROM 1101 TO 1105. TOP OF U/F & FIXED PART INCREASED BY 4 MM. BFNSM1 NAME INTRODUCED IN SUMMARY TABLE.	9/16	–
⑮	–	WD-16019	NOTE NO. 2 ADDED & TWIN PIPE MENTIONED.	4/16	–
⑦	–	WD-14018	NEW COLUMN IN "SUMMARY OF WEIGHT" HAS BEEN ADDED FOR 22.9T AXLE LOAD, TABLE OF "LOADING PATTERNS OF BFNS WAGON" IS REVISED AND NEW NOTE IS ADDED.	07/14	–
⑥	–	WD-07037	CBC HEIGHT 1101 WAS 1105. ACCORDINGLY WAGON HEIGHTS, WAGON & BOGIE DATA HAVE BEEN REVISED.	06/07	–
⑤	–	WD-05095	-	12/05	–
④	–	WD-04090	LOCATION OF SIDE BKT. CHANGED.	12/04	–
③	–	WD-04079	LASHING CHAIN DELETED & SIDE STANCHION ADDED.	10/04	–
②	–	WD-04046	SUMMARY OF WEIGHT REVISED & LOADING PATTERN ADDED.	7/04	–
①	–	WD-03071	DRAWING REVISED.	10/03	–

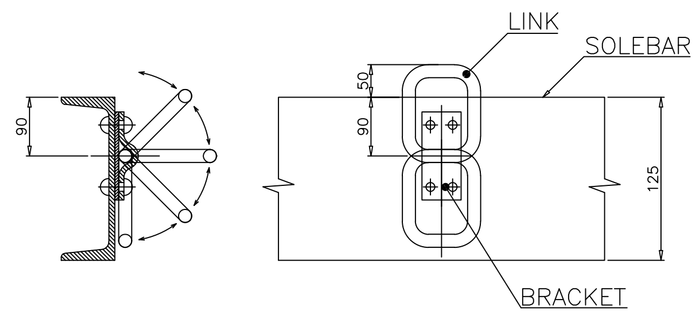
File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SWI/RDSO.

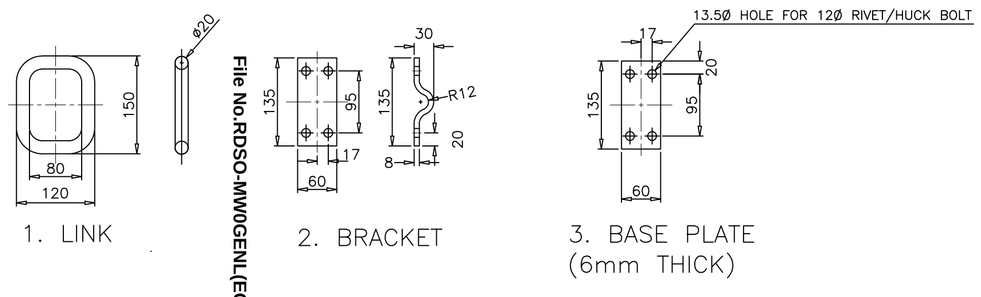
SUPERSEDED BY			BOGIE FLAT STEEL WAGON TYPE 'BFNS','BFNS22.9' ⑫ & FLATCOIL3 ⑭
SUPERSEDES		DATE	
SCALE	PASSED	D.D.SRIVASTVA 6/99	DIAGRAM
1:20	CHECKED	A.K.SAXENA 6/99	
	DRAWN	D.R.RIZVI 5/99	
	TRACED		
	COMPARED		
	J.S.NO.	WD-98057 11/98	
B.G.	R.D.S.O. [W]	GROUP	WD-98057-S-02











① NOTE :–

1. ALL COILS ARE TO BE STRAPPED AS SHOWN. THE STRAPPED SHALL BE AS PER EN 13246 TYPE 3.2/OR ANY OTHER SUITABLE MATERIAL.
2. ABOVE SKETCH IS INDICATIVE AND SHOWS ONLY LASHING ARRANGEMENT.
3. LOADING OF COILS SHOULD BE SUCH THAT :–
   - 3.1 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S MAXIMUM PERMISSIBLE PAY LOAD.
   - 3.2 THE WEIGHT IMPOSED ON BOTH THE BOGIES SHALL BE IDENTICAL.
   - 3.3 THE MAXIMUM DIFFERENCE IN WEIGHT OF TWO BOGIE SHALL NOT EXCEED MORE THAN 2 TON.
4. CONSIGNMENTS SHALL BE PROPERLY SECURED BY USING ITEM NO. 01 & ITEM NO. 02.
5. STEEL STRAPES SHOULD BE UNIFORMLY TIGHTEND AT EACH STAGE BY TENSOMETER.
6. THE INITIAL TENSION IN THE STRAP SHALL BE IN THE RANGE OF 500kg TO 800kg.
7. SIDE STANCHION (L.H. & R.H.) MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING AND IN DOWNWARD POSITION DURING LOADING & UNLOADING OF CONSIGNMENT.
8. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.
9. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE,SHAPE AND NO. OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
10. MAXIMUM WEIGHT OF THE COIL AT CENTRE IS 34 TON.

① SPECIFICATION FOR STEEL STRAP

S. No.	PURPOSE	WIDTH (IN MM)	THICKNESS (IN MM)	PERCENTAGE ELONGATION MIN.	TENSILE ST. (N/MM^2)	PHYSICAL
1.	FOR BUNDLING & UNITISING	31.75	1.0	6	925	DEBURRED EDGE PAINTED & WAXED
2.	FOR SECURING WITH WAGON BODY	31.75	1.0	6	925	DEBURRED EDGE PAINTED BROWN & WAXED

File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED/SWI/RDSO

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
①	–	WD–24036	DRAWING REVISED	05/24	–

ITEM	DESCRIPTION & DIMENSIONS	NO.OFF PER WAGON	REF.DRG	WT./OF ONE (Kg)	MAT.& SPEC.	REMARKS
3.	BASE PLATE	30	–		IS:2062 Fe 410 WA	
2.	BRACKET	30	–		IS:2062 Fe 410 WA	
1.	LINK	30	–		IS:2062 Fe 410 WA	

PRELIMINARY SKETCH

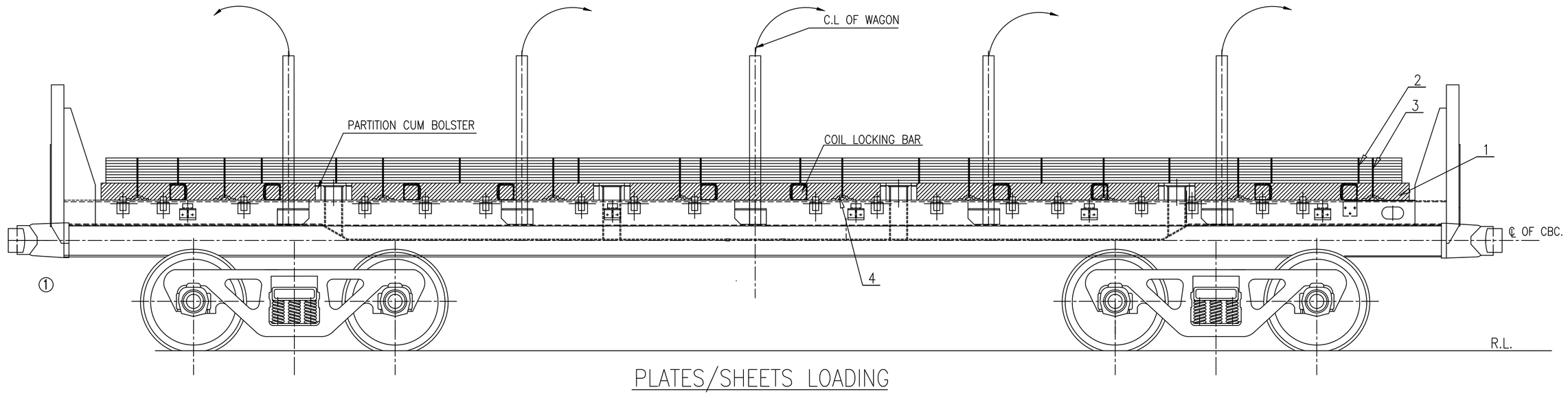
ONLY FOR PROTOTYPE APPLICATION UNDER GUIDANCE OF R.D.S.O.(WAGON)

SUPERSEDED BY			
SUPERSEDES			DATE
SCALE	PASSED	G.R.SHARMA	7/18
1:20	CHECKED	R.TAMRKAR	7/18
	DRAWN	A.P.SINGH	7/18
	TRACED		
	COMPARED		
	J.S.NO.	WD–18052	

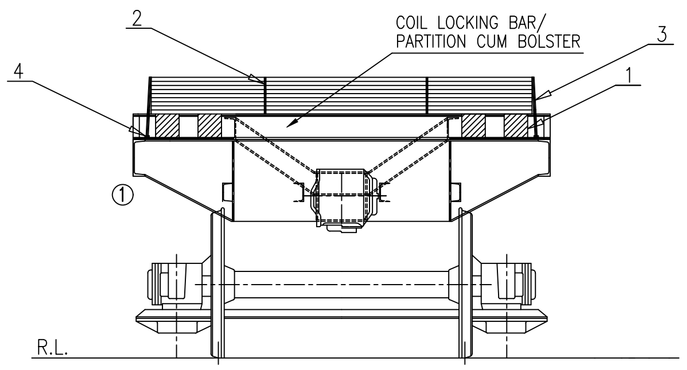
BOGIE FLAT STEEL WAGON TYPE 'BFNSM22.9'

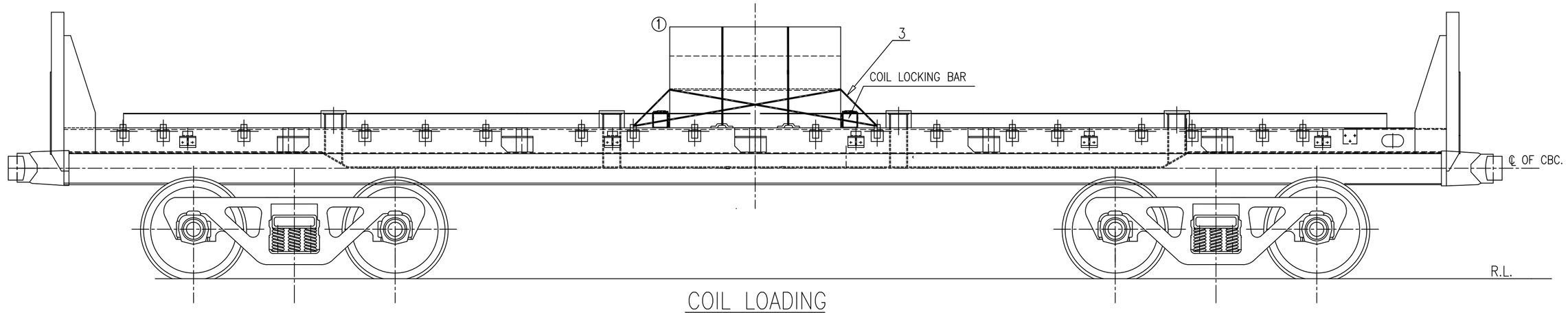
LASHING ARRANGEMENT

B.G.	R.D.S.O. [W]	GROUP	WD–18052–S–01

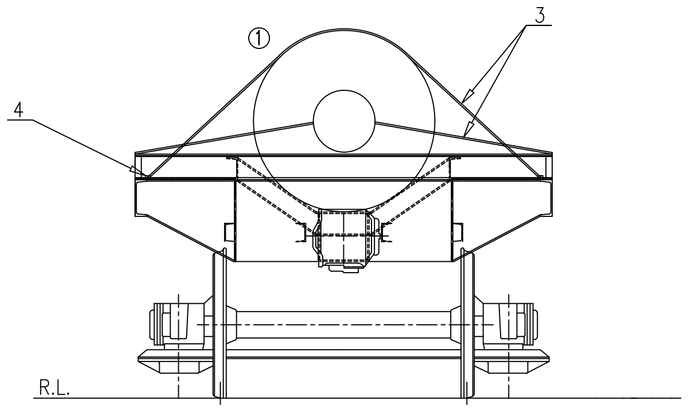


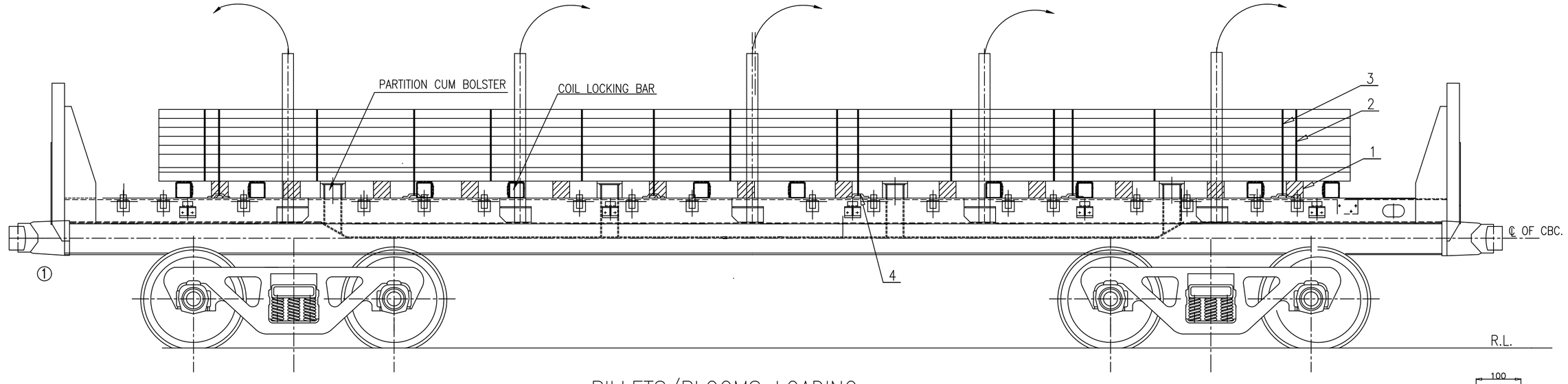
PLATES/SHEETS LOADING



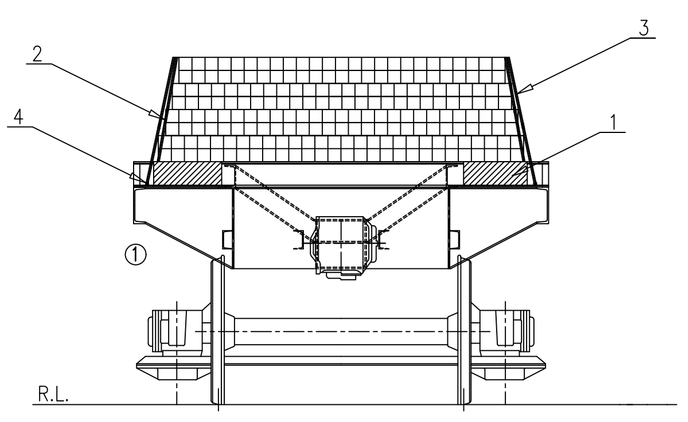


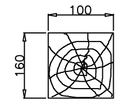
COIL LOADING





BILLETS/BLOOMS LOADING





① WOODEN LONGITUDINAL RUNNER
SECTIONAL VIEW

NOTE :–

1. ALL COILS,PLATES/SHEETS & BILLETS/BLOOMS ARE TO BE STRAPPED AS SHOWN. THE STRAPPED SHALL BE AS PER EN 13246 TYPE 3.2/OR ANY OTHER SUITABLE MATERIAL.
2. LOADING OF COILS ON BFNS22.9 SHALL BE FOLLOW THE TABLE "LOADING PATTERNS OF THE BFNS WAGON" AS SHOWN IN DRAWING NO. WD–98057–S–02. ABOVE SKETCH IS INDICATIVE AND SHOWS ONLY LASHING ARRANGEMENT.
3. LOADING OF COILS SHOULD BE SUCH THAT :–
   3.1 THE LOAD SHOULD NOT EXCEED WAGON'S MAXIMUM PERMISSIBLE PAY LOAD.
   3.2 THE WEIGHT IMPOSED ON BOTH THE BOGIES SHALL BE IDENTICAL.
4. SIDE STANCHION (L.H. & R.H.) MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING AND IN DOWNWARD POSITION DURING LOADING/UNLOADING.
5. THE MINIMUM NO. OF EACH TYPE OF LONGITUDINAL/LATERAL STRAPS SHALL BE AS INDICATED IN THE DRAWING.
6. ① THE INITIAL TENSION IN THE STRAP SHALL BE IN THE RANGE OF 500kg TO 800kg.
7. RECTANGULAR RUNNER WITH HEIGHT 160 MM SHALL BE USED TO ENSURE THE FLAT PLATFORM FOR LOADING OF PLATES/SHEETS AND BLOOMS/BILLETS.
8. WOOD OF ADEQUATE STRENGTH WHICH CAN SUSTAIN THE LOAD IMPARTED ON IT SHALL BE USED.
9. SECURING ARRANGEMENT SHALL BE CERTIFIED BY THE CONCERN RAILWAY.
10. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.
11. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.

① SPECIFICATION FOR STEEL STRAP

S. No.	PURPOSE	WIDTH (IN MM)	THICKNESS (IN MM)	PERCENTAGE ELONGATION MIN.	TENSILE ST. (N/MM^2)	PHYSICAL
1.	FOR BUNDLING & UNITISING	31.75	1.0	6	925	DEBURRED EDGE PAINTED & WAXED
2.	FOR SECURING WITH WAGON BODY	31.75	1.0	6	925	DEBURRED EDGE PAINTED BROWN & WAXED

ITEM	DESCRIPTION	NO.OFF	MTL&SPEC	REMARKS
4	ISOLATION HOOK	AS PER REQUIREMENT	WD–24036–S–01 PART–3	
3	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	AS PER REQUIREMENT	EN 13246 TYPE 3.2	
2	HIGH TENSILE STEEL STRAP (FOR BUNDLING & UNITIZATION)	AS PER REQUIREMENT	EN 13246 TYPE 3.2	
1	WOODEN RUNNER	AS PER REQUIREMENT	WOOD	

PRELIMINARY SKETCH — ONLY FOR PROTOTYPE APPLICATION UNDER GUIDANCE OF R.D.S.O.(WAGON)

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
①	–	WD–24036	DRAWING REVISE	05/24	–

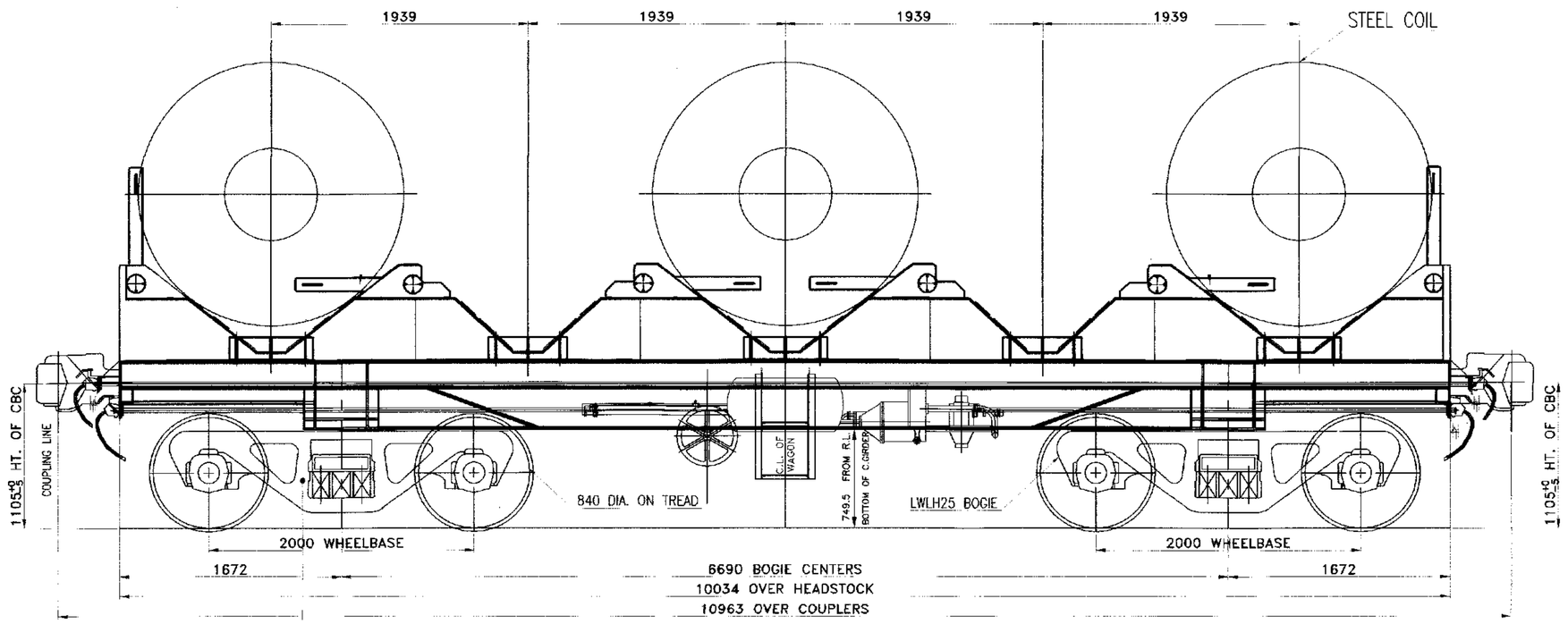
SUPERSEDED BY			
SUPERSEDES		DATE	
SCALE	PASSED	A.K.ROY	9/17
1:20	CHECKED	R.TAMRKAR	9/17
	DRAWN	A.P.SINGH	9/17
	TRACED		
	COMPARED		
	J.S.NO.	WD–17047	

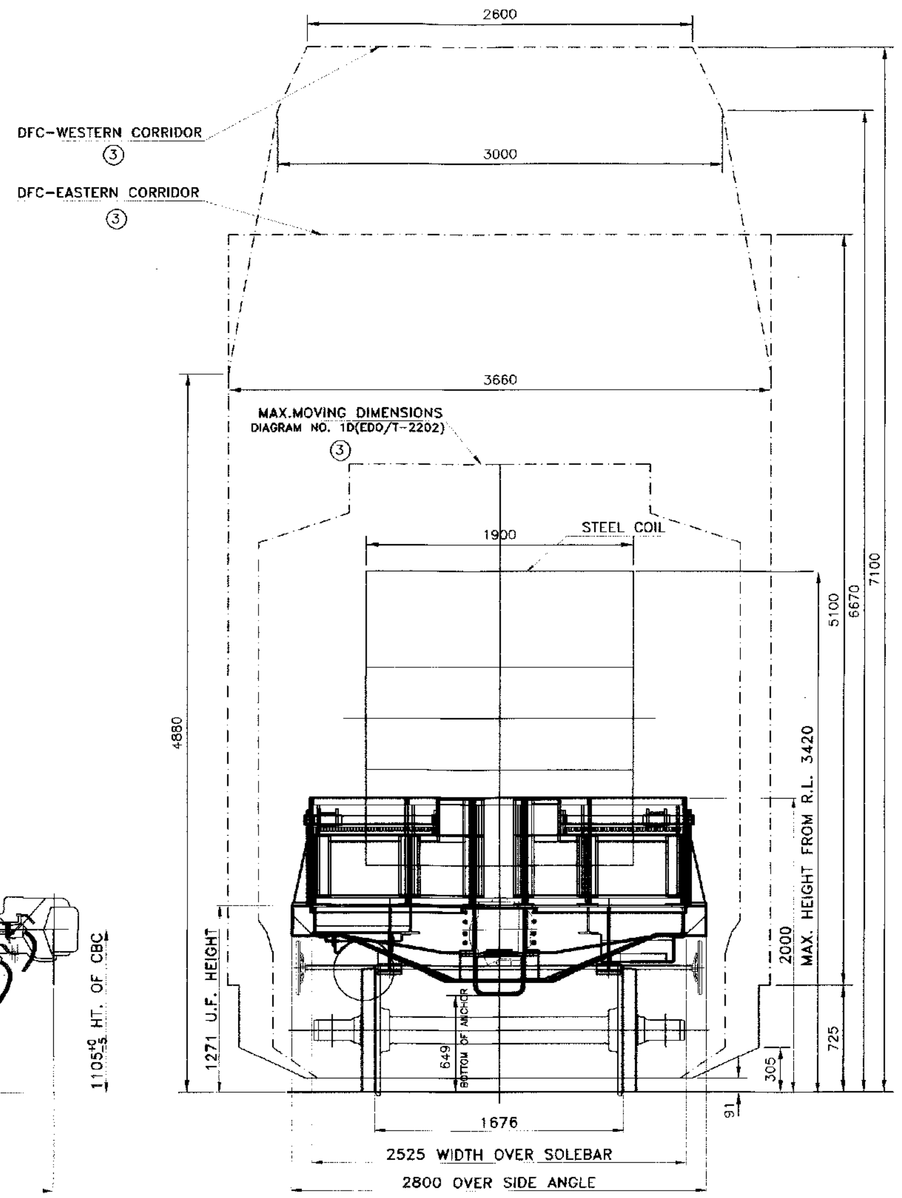
BOGIE FLAT STEEL WAGON TYPE 'BFNS22.9'

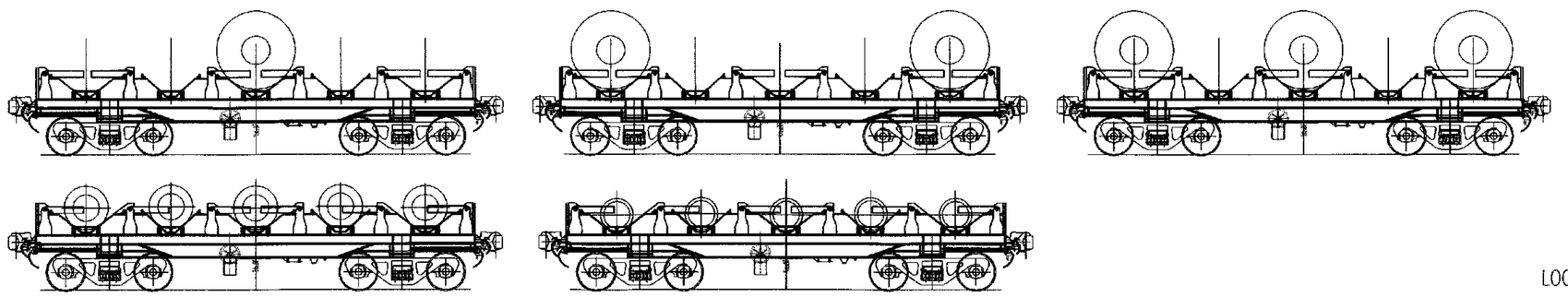
LOADING ARRANGEMENT

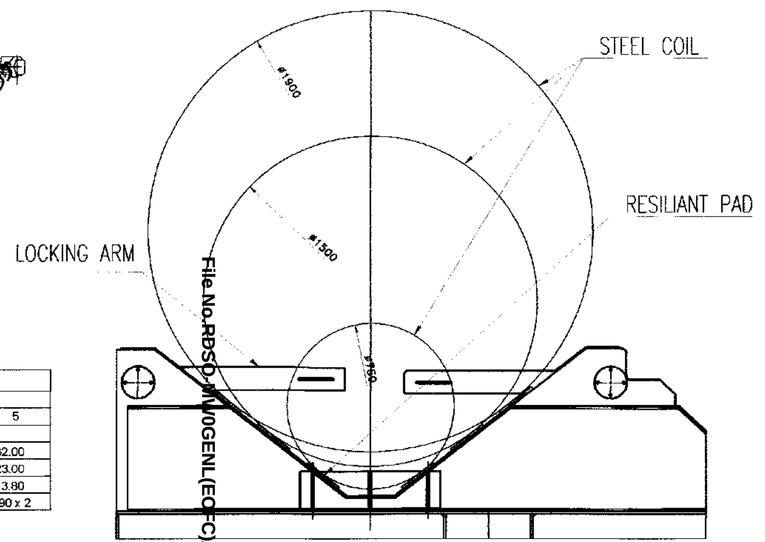
B.G. | R.D.S.O. [W] | GROUP | WD–17047–S–01

File No.RDSO-MWDGENL(EOFC)/8/2023-O/o PED/SW/RDSO









SUMMARY OF WEIGHTS (ESTIMATED)	
DESCRIPTION	MEASURES
WEIGHT OF UNDERFRAME	10.13 t
BOGIE BRAKE GEAR COMPLETE	0.70 t
BOGIE COMPLETE	9.85 t
TWO CBC COMPLETE	1.320 t
ESTIMATED TARE	22.0 t
PAY LOAD	69.6 t
GROSS LOAD	91.6 t
AXLE LOAD (MAX.)	22.9 t
RATIO (PAY LOAD TO TARE)	3.16
GROSS LOAD PER METER RUN OVER COUPLING FACES	8.355 t/m
NO. OF WAGON PER RAKE (636 m)	58
NO. OF POCKET PER WAGON	5
MAX. C.C. PER RAKE (58 WAGONS)	4036.8 t
HEIGHT OF CBC FROM R.L.	1105 mm
C.G. FROM R.L. (EMPTY)	875 mm
C.G. FROM R.L. (LOADED)	2017 mm
LOADING COMMODITY FOR WHICH WAGON IS DESIGNED	STEEL COILS (HR & CR)
COIL ARRANGMENT IN POCKET	EYE TO PLATFROM / SOLEBAR

BOGIE DATA (TARE)

S.NO.	DESCRIPTION	mm.
1.	HT. OF BOTTOM BOGIE FRAME FROM R.L. AT CENTRE	149
2.	DISTANCE FROM R.L. TO TOP PIVOT	654.5
3.	DISTANCE FROM R.L. TO TOP OF SIDE BEARER	780.5
4.	HEIGHT OF SPRINGS	256.5
5.	WHEEL DIA ON TREAD	840
6.	WHEEL DIA ON TREAD CONDEMNING SIZE	780
7.	DIA. OF WHEEL SEAT	213
8.	JOURNAL CENTRES	2260
9.	JOURNAL SIZE	157.2X226.8

Loading Pattern for 22.9 t Axle Load						
	Max. Coil Weight in Pockets					
No. of Coils	1	2	3	4	5	
1			32.00			
2	32.00				32.00	
3	23.00		23.00		23.00	
5	13.80	13.80	13.80	13.80	13.80	
10	6.90 x 2	6.90 x 2	6.90 x 2	6.90 x 2	6.90 x 2	

SALIANT FEATURES
RESILIANT PAD FOR IMPACT LOADING & SHOCK ABSORVATION.
ALTERNATE OPTION FOR LOADING & UNLOADING BY FORKLIFT.
SECURING ARRANGEMENT FOR COILS.
RESTRICTED PLATEMENT OF HEAVY COILS.
UNDERFRAME DESIGN IS SUITABLE FOR 25 t AXLE LOAD.

ALT.	ITEM	AUTHY	DESCRIPTION	DATE	ASSEMBLY DRG.
6		WD-21091	DRAWING REVISED AND REDRAWN	10/2021	
5		WD-21067	SAFHA OF SINGLE COIL IN WAGON CENTRAL SADDLE ADDED	09/2021	
4		WD-20044	NOTE DELETED & FOR SPEED CERTIFICATE IN TITE BLOCK DELETED	02/2021	
3		WD-20046	SDO OF DFC ADDED AND MMD 10-2004 REVISED.	10/2020	
2		WD-20011	MIN. HT. OF CPS GIRDER FROM R.L & MAXI CBC HT. FROM R.L ADDED AND C.G. HT. REVISED.	03/2020	
1		WD-20007	DRAWING REVISED	02/2020	

PRELIMINARY SKETCH — ONLY FOR PROTOTYPE APPLICATION UNDER GUIDANCE OF RDSO.(WAGON)

SUPERSEDED BY

SUPERSEDES — DATE

SCALE	PASSED	S.JAUHRI 04/19
	CHECKED	DINESH 04/19
	DRAWN	AMIT 04/19
	REPLOTED	
	J.S.NO.	WD-19024 04/19

B.G. — R.D.S.O. [W] GROUP

BOGIE FLAT STEEL WAGON TYPE 'BFNV'

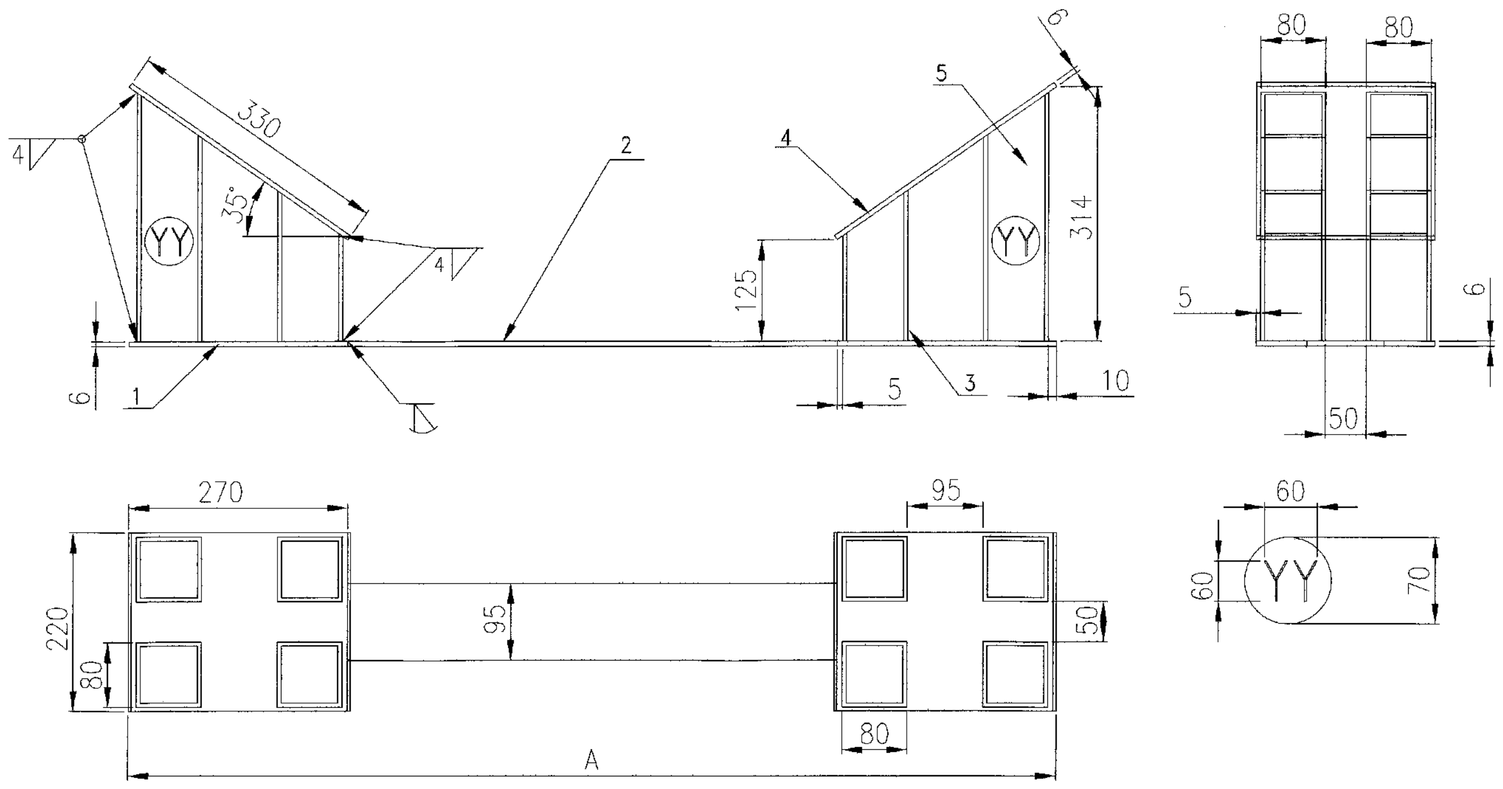
DIAGRAM

WD-19024-S-02

A1

File No.RBSO/WOGEN(EOC)/8/2023-O/o PED/SW/RDSO

491
11/56



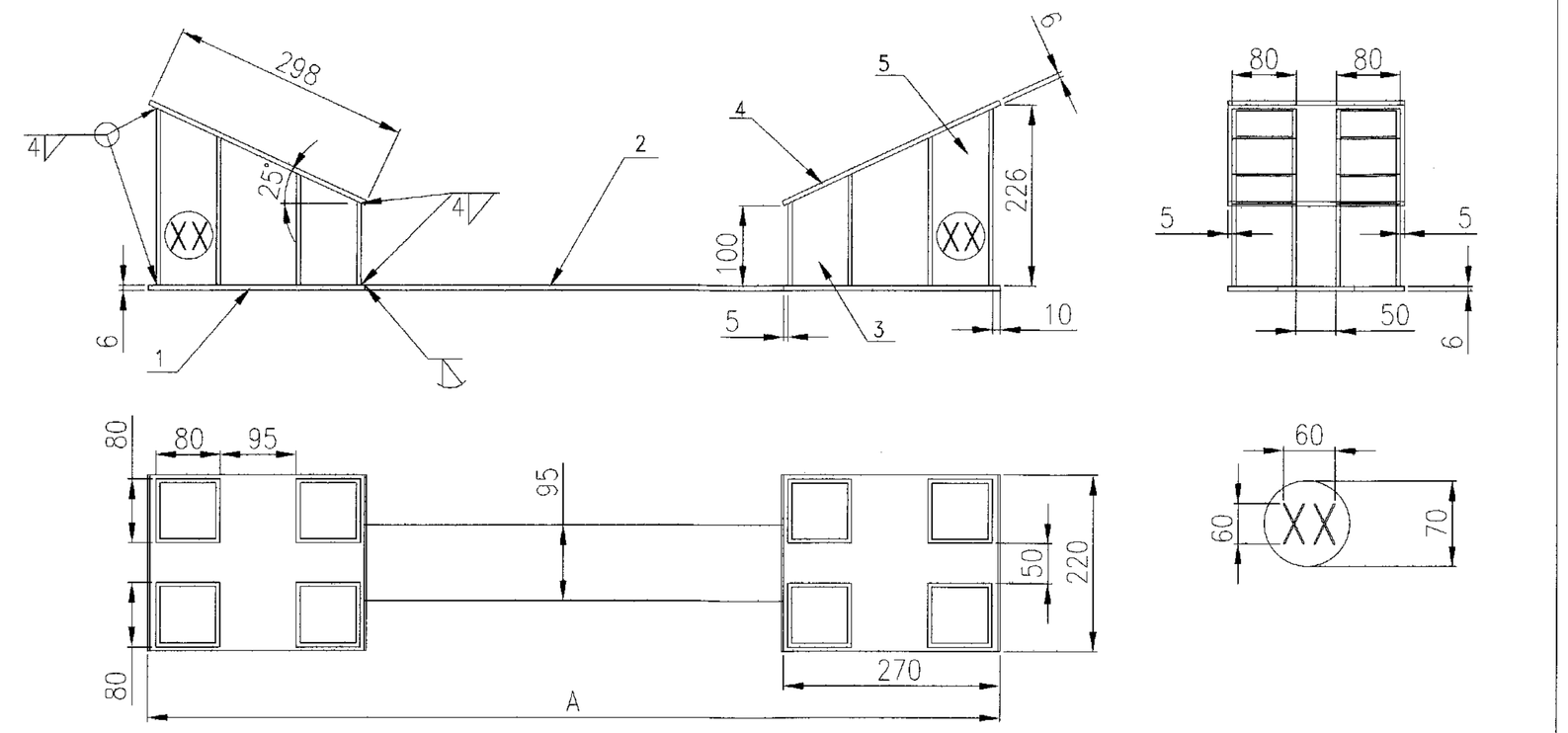
ITEM	DESCRIPTION	NO.OFF	MTL&SPEC.
5	VERTICAL BOX LONG 80X80X5TH	04	IS:2062 E250
4	INCLINED PLATE	02	IS:2062 E250
3	VERTICAL BOX SHORT 80X80X5TH	04	IS:2062 E250
2	CONNECTING PLATE BETWEEN SADDLE	01	IS:2062 E250
1	BOTTOM PLATE	02	IS:2062 E250

PARTS DESCRIPTION OF METAL SADDLE

S.NO.	COIL DIA RANGE	LENGTH OF 'A'	PAINT ON METAL SADDLE BY 'YY'
1	1400–1700	1300	2A
2	1700–2000	1400	2B
3	2000–2200	1500	2C
4	2200–2400	1600	2D

DIFFERENT TYPE OF SADDLE ON THE BASIS OF OUTER COIL DIA. RANGE

2



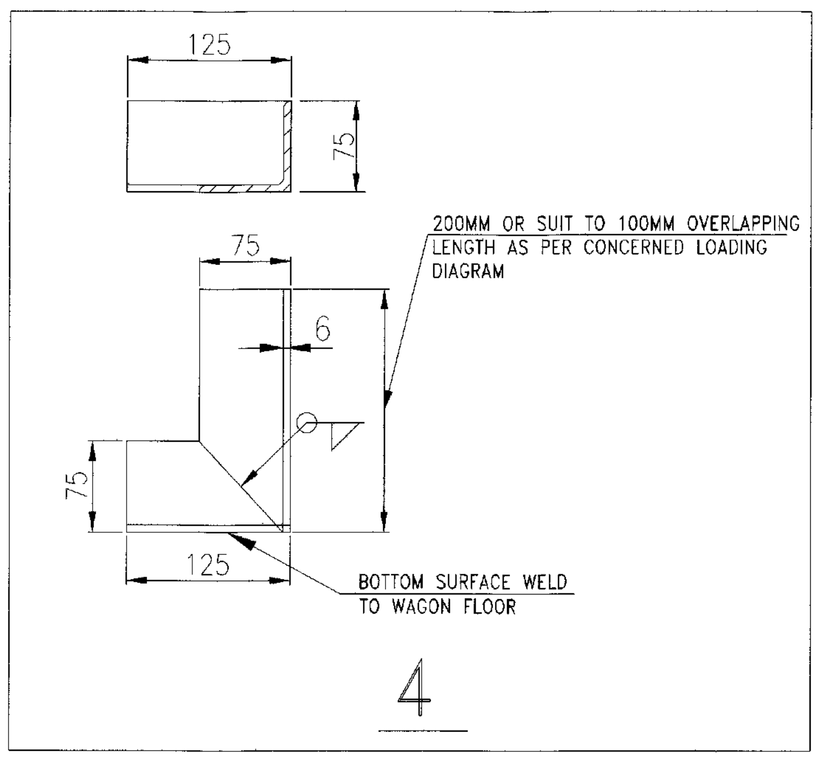
ITEM	DESCRIPTION	NO.OFF	MTL&SPEC.
5	VERTICAL BOX LONG 80X80X5TH	04	IS:2062 E250
4	INCLINED PLATE	02	IS:2062 E250
3	VERTICAL BOX SHORT 80X80X5TH	04	IS:2062 E250
2	CONNECTING PLATE BETWEEN SADDLE	01	IS:2062 E250
1	BOTTOM PLATE	02	IS:2062 E250

PARTS DESCRIPTION OF METAL SADDLE

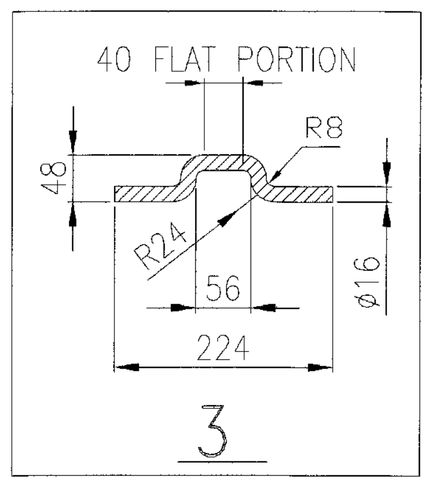
S.NO.	COIL DIA RANGE	LENGTH OF 'A'	PAINT ON METAL SADDLE BY 'XX'
1	1500–1700	1100	1A
2	1700–2200	1295	1B
3	2200–2400	1390	1C

DIFFERENT TYPE OF SADDLE ON THE BASIS OF OUTER COIL DIA. RANGE

1



4



3

NOTE:–

1. METAL SADDLES USED FOR LOADING STEEL COILS:–
   - 1.1 Material of the metal saddle shall be IS:2062 E250 or superior than it (strength wise).
   - 1.2 The metal saddles should have sufficient mechanical strength and rigidity to maintain its shapes and size after securing and shall be intact/maintained upto final destination of the consignments.
   - 1.3 The metal saddle should be fabricated by welding. There shall not be any welding failure which leads to unsafe operation of the train.
   - 1.4 Metal saddle should be used on the basis of coil diameter and loading direction of steel coil as mentioned in Part Table 1 & 2.
   - 1.5 Metal saddles should not be fixed/welded on the wagon floor.
   - 1.6 The cost of metal saddles will not be borne by Indian railways and it will not be a part of the standard wagon.
2. ANGLE STOPPERS OF MATERIAL IS:2062 E250 SHOULD BE PROVIDED TO PREVENT SHIFTING OF METAL SADDLES.
3. OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER CONSIGNMENT AS CONCERNED LOADING DIAGRAM.
4. THE MATERIAL OF ISOLATION HOOK SHOULD BE OF IS:2062 E250L AND MADE WITH PLAIN ROD.
5. SECURING ARRANGEMENT SHALL BE CERTIFIED BY THE CONCERN RAILWAYS.

File No:RDSO-MWGEN-(EOFC)/8/2023-O/o PED/SWRDSO

ALL DIMENSIONS ARE IN MM.

ITEM	DESCRIPTION	NO. OF PCS PER COIL	MTL&SPEC	REMARKS
4	ANGLE STOPPER (GA 75X75X6 TH., L= 200 APPROX.)	--	IS:2062 E250	FOR PROTECTION OF CR COIL SUITABLE PACKING BETWEEN THE ANGLE STOPPER AND CR COIL CAN BE USED
3	ISOLATION HOOK	--	IS:2062 E250	MADE WITH ø16 MM PLAIN ROD
2	METAL SADDLE (FOR LATERAL DIRECTION LOADING)	--	IS:2062 E250	WHEN STEEL COIL LOADED EYE TO THE PLATFORM
1	METAL SADDLE (FOR LONGITUDINAL DIRECTION LOADING)	--	IS:2062 E250	WHEN STEEL COIL LOADED EYE TO THE ENGINE

PRELIMINARY SKETCH

ONLY FOR PROTOTYPE APPLICATION UNDER GUIDANCE OF R.D.S.O.(WAGON)

SUPERSEDED BY:
SUPERSEDES
SCALE

PASSED		
CHECKED		05/24
DRAWN		05/24
COMPARED		05/24
J.S.NO.	WD-24036	04/24

COMPONENT'S USED FOR LOADING & SECURING ARRANGEMENT

B.G. | R.D.S.O. [W] | GROUP | WD-24036-S-01

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRG.

INDIAN RAILWAYS

CHECK SHEET
FOR
LOADING & SECURING OF CONSIGNMENTS
ON WAGONS

S.NO.	Month/year of issue	Amendment No.	Revision No	Pages
1.	JULY- 2023	---	---	02

ISSUED BY

RESEARCH DESIGNS AND STANDARDS ORGANISATION
MINISTRY OF RAILWAYS
MANAK NAGAR, LUCKNOW - 226 011

JULY-2023

Check Sheet for Loading and securing the consignments on wagon

Wagon type/Code:	Wagon No:	Loading Place/ code:
Loading Commodity:	Relevant Loading Diagram no:	Date:

S. No.	Stage/ Parameters	Requirement as per Loading Diagram	Actual Parameters Found		Remark
			Consignment Loading Authority	Railways / Inspecting Authority	
1	Condition of wagon used for loading	Fit for Loading Unfit for loading (reason)			
2	Pay Load of used wagon	As per relevant wagon diagram			
3	Weight of each commodity (Steel Coil/ Pipe/ Billets/ Wire Roll/ Bars etc.)	Weight details provide on loading commodities			
4	No. of commodities/ Bundles loaded	Total no. of commodities/ Bundles			
5	Total weight of loaded consignment (in ton)	Sum of S. No. 3 & 4			
6	No. off wooden block/log or steel saddle used at bottom of each consignment	As per loading diagram no. off used **=**			
7	Total no. wooden block/log or steel saddle used at bottom/ wagon	As per loading diagram total no. used/ wagon **=**			
8	Side wooden log/ other fixing arrangement for consignment with side wall (**if used in relevant loading diagram**)	No. off Side wooden log/ other fixing arrangement used at each side wall as per loading diagram **=**			
9	No. off Lashing chain/ strap used for securing of each consignment/bundle	As per loading diagram no. off used for each consignment/ bundle **=**			
10	Total no. off Lashing chain/ strap used for securing/ wagon	As per loading diagram total no. used/ wagon **=**			
11	Tension given to the lashing straps	Tension as per loading diagram **=**			
12	All loaded consignment found in wagon with correct stacking, securing & lashing arrangement.	Correct stacking, securing & lashing arrangements as detailed/ mentioned in relevant loading diagram found satisfactory. (YES/ NO).			

Consignment/ Loading Authority		Railway/ Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	