भारतसरकार**GOVERNMENT OF INDIA**
रेलमंत्रालय **MINISTRY OF RAILWAYS**
रेलवेबोर्ड**RAILWAY BOARD**

No.2019/M(N)/204/6 (E-3324111) **Dated: 24.12.2024**

General Managers
All Zonal Railway

Sub: Compendium of instructions on loading of consignment on wagons (Rev-2).
Ref: (i) RDSO letter no. MW/Loading & Securing dated 13.12.2024 (Copy enclosed).
(ii) Railway Board's letter no 2019/M(N)/204/6 dated 17.05.2024. (Copy enclosed)

Railway Board had circulated the "Compendium of Instructions on Loading of Consignment on Wagons (Rev-1)" through the referenced letter (ii). In response, Zonal Railways and steel loading firms raised additional concerns regarding loading and securing diagrams for consignments which were not covered in the current compendium. These include issues such as the loading of steel slabs/plates in open and flat wagons, the length of wooden cradles, and the loading of TMT bars.

The matter was further reviewed by RDSO and in line with the requirements of the steel loading firms, relevant drawings have been revised, and 10 additional loading and securing diagrams have been created and incorporated into the updated compendium. The revised as Revision-2 of the "Compendium of Instructions on Loading of Consignment on Wagons" is attached herewith.

It is requested to kindly arrange to implement the instructions regarding the loading and securing of consignments on wagons, as issued by RDSO, to ensure the safe operation of rolling stock over Indian Railways.

(Happy Walia)
EDME (Freight)
Railway Board
Email: edmef@rb.railnet.gov.in

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

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

दिनांक: 13-12-2024

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

विषय : **Compendium of instructions on loading of consignment on wagons (Rev-2)**

संदर्भ: (i) This office letter of even number dated 17.05.2024.
(ii) This office letter of even no. dated 6.6.2024.
(iii) This office letter of even no. dated 30.09.2024.
(iv) PCME/SWR letter no. SWR/M/N/19/VOL-XII dated: 23/08/2024.
(v) CRSE/Frt/SWR letter no. SWR/M/N/19/Vol-XIII dated. 26.09.2024.
(vi) Dy. CME (HQ)ECoR letter no. M3/52/Pt.-I/203 dated: 13/09/2024.
(vii) Railway Board letter no.2021/TT-III/32/1 dated 04.12.2024

Vide ref. (i) above; compendium of latest instructions on loading and securing on various consignments on wagons (Rev.-1) was issued. For lashing and securing of the consignments suitable lashing arrangements along with material specifications of tensile steel strap was prescribed. The tensile steel strap of 1.45 mm thickness from specification BS EN13427:2001 was prescribed for securing of steel coils. However, due to supply related constraints use of 1.27 mm thick steel straps from the same specification i.e. BS EN13427:2001 was provisionally permitted with conditions stipulated in letter at ref.(iii) above. A VC with Zonal Railways was done on 06.09.2024 wherein following difficulties were reported in use of 1.45 mm tensional steel strap.

1. High stiffness making it difficult to handle.
2. Bending and twisting of the strap through the hooks is difficult leading to strap not fitting/tightening properly.
3. Strap sealing is difficult and requires heavier die for making notch joints.
4. Difficulty in sealing the strap through manual sealing tool.
5. Non uniform tensions observed on the strap after passing through isolation hook.

The above issues were further deliberated in a meeting with Zonal Railways and Steel Plants through VC on 23.10.2024. Accordingly it has been decided to allow use of 1.27 mm thick tensional steel strap in required numbers, and the relevant drawings have been revised for use of 1.27mm thick steel straps as per specification i.e. BS EN13427:2001.

After issue of revised compendium on 17.05.2024, Zonal Railways and steel loading firms have also brought out certain other issues related to loading and securing diagrams for other type of consignments which are not covered in the above compendium such as loading of steel slabs/plates in open and flat wagons, length of wooden cradle, loading of TMT bars etc.

Above issues and the remarks of RDSO on the corresponding issues is attached in this letter as **Annexure-I.** Based on requirement of steel loading firms, relevant drawings have been modified and 10 additional loading and securing diagrams have been prepared and included in revised compendium (Rev.2).

The enclosed compendium(Rev.2) includes all the latest drawings and instructions, superseding previous versions. The revised/new drawings are marked with distinct alteration identities and highlighted in red in the index table.

Loading arrangement allowed on trial basis has been included in blue colour in the index table.

Concerned Zonal Railways should ensure the submission of trial reports as indicated in the remarks column.

In view of above, Railway Board may kindly issue “Compendium of instructions on loading of consignment on wagons (Rev-2)” in supersession of previous version.

सग्लंक : उपरोक्त (in 86 pages)

Digitally Signed by Ajit Kumar Singh
Date: 13-12-2024 16:44:38
Reason: Approved

(अजीत कुमार सिंह)
कार्यकारी निदेशक / माल डिब्बा

Decision taken on point raised by Steel plants & Zonal Railways and During VC on 23.10.2024

SN	Issues	Raised by	Recommendation of RDSO
1.	Use of 1.27mm strap in place of 1.45mm strap(due to lashing issues) for loading and securing of steel consignments.	ECoR, SECR, SER,SWR	The issue has been examined and the use of a 1.27mm strap in place of 1.45mm strap for loading and securing of steel consignments has been incorporated into the relevant loading drawings by rationalizing the no. of straps to be used. However use of steel straps of thickness 1.45mm can be continued for existing inventory as per previous issued loading and securing diagram (Rev.1).
2.	Granite Block Loading in open wagon BOSTs, BOXNs and BOXNRs i. Letter no.SWR/M/N/19 Vol-XII dated:03.10.2024, ii. Letter no.SWR/M/N/19/Granite date:29.11.2024	SWR	The necessary changes in the loading diagrams has been done to accommodate the loading requirements of granite blocks up to 33 tons in different configurations. The feasibility of loading granite blocks exceeding 33 tons, up to the carrying capacity of the wagon referred by vide SWR letter at (ii) in open wagons is under evaluation and a separate sketch for the same shall be issued in due course of time.
3.	Steel Slab Loading on BFNS 22.9 in 3 slab combination and 2 slab combination. i. Letter no.TMILL/SFTO-LSFTO/23-24/0627 dated:28.06.2024.	Tata steel	New Drawing No. WD-24088-S-3 has been issued for steel slab loading on BFNS 22.9 wagons, both for 3-slab and 2-slab combinations. The same has been added in the revised compendium.
	Feasibility of loading TMT bars on BFNS 22.9 wagons.		Loading diagrams no.WD-24088-S-08 for loading of TMT bars on BFNS22.9 wagons has been added in the revised compendium.
	To examine the feasibility of 2.5m, 6.3m, 8m long plate/sheet in BRNs/BOSTs wagons. SAIL/BSL Letter no.Nil dated:12.10.	SAIL/Bokaro	New Drawing No. WD-24088-S-04, WD-24088-S-05, WD- have been added and Drawing no.WD-21112-S-02 has been revised to accommodate the referred requirements in this revised compendium
	Door height issues in open BOXN/BOST type wagons		The door size has been reduced for safety reasons.
	Three coil combination with center coil in eye to sky mode for BOSTs/BOXNs wagons		Drawing No.WD-24027-S-01, WD-24038-S-04 has been issued for three coil combination with center coil in eye to sky direction.

	Drawings for RINL products such as billets, rounds, angles, channels, flats and billets ect. ECoR letter no.M3/52/Pt.I/1314 dated:13.06.2024 & RINL letter no.VSP/Mktg/CDY/2024-25 dated:120.6.2024.		Drawings/loading diagrams nn.WD-24088-S-06, WD-24088-S-07, WD-24088-S-09, WD-24088-S-10 have been added in this revised compendium.
	Capturing new steel traffic –Billets/Rounds RB letter no.2021/TT-III/32/1 dated:04.12.2024 SECR letter no.OPTG/SECR/Goods/Steel/6 dated:02.12.2024	RB SECR	The previous drawings No.WD-21112-S-02 alt.2 has been revised to accommodate the referred requirements.
4.	Tolerance in loading of steel coil at Wagon Centre and Bolster.	SER	In the loading diagram, symmetrical loading has been specified. However, due to the variations in the underframe structure and the positioning of load-bearing members, it is not possible to prescribe a universal general tolerance. Tools such as paint markings on the wagon floor, walls, and other surfaces or any other method prescribed by Zonal Railways can be used to assist in symmetrical loading.
5.	Examine the D/W ration increase from 1.5 to 2.0	SAIL/Bokaro	The issue has been examined and increasing the W/D ratio is not recommended due to the wagon's limitations. Moreover, this stipulation is only applicable for coil loaded with eye to sky orientation.
	Not easy to load on exact position of bogie centre so some tolerance shall prescribed.		As per para 04 above.
	Gap between Angle stopper and Coil after weld.		Gap between Angle stopper and Coil is not recommended after weld.
	Wooden Log supplied not exact of size 100x100 i.e. supplied less about 5 mm.		5 mm tolerance is agreed to. However, suitability of wooden log for intended purpose and safety of the consignments should be ensured.
	Permitting multiple combination of consignment loading on single wagon.		Based on different requirement relevant drawings have already been issued. However for convenience of loading firms, following may be permitted by Zonal Railways: • On the same wagon type two different diagrams can be followed subject to all the stipulation of both drawings being met. • Under no circumstances CC of wagon is exceeded and load difference on two bogies must be within 2 tonnes. • It must not lead to violation of any commercial

			guidelines issued for loading of different consignments.
6	No. of steel saddle decrease from 3 to 2 in steel coil of comparatively low wt.	Jindal Stainless (JSL)	03 metal saddles are used for optimal distribution of the coil load across the bearing surface, enhancing stability and minimizing pressure points on the wagon floor. However, excluding BOXNHL wagon, for loading coils of up to 10 tons weight, 02 metal saddles can be used in place of 03 recommended.
	Three Coil combinations in the form of 22.5+21.5+22.5 on BFNS 22.9 wagon. Letter No. JISL/JSLS/SRDME/10-01/2024-25 dated 16/10/2024.		The loading diagram no.WD-98057-S-02 alt.16 of BFNS 22.9 wagon has been altered to for the desired load combination.
7.	Increase the loading capacity at bolster on BOXNHL wagons beyond 28 Tons.	JSW/SWR	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.
	Minimize the length of wooden cradle from 7 feet to 5 feet in BOST and BOXNs wagons.		This is not recommended because 5 feet length is insufficient to transfer the load on adjacent cross members of the wagon.
	Minimize the no. of steel saddle from 3 to 2 for loading steel coil of comparatively low weight.		As above at SN.6.
	BFNV -2/4 pocket loading for 04 coil shall be examined.		This will be governed as per RDSO letter no.MW/PWDA/Jindal/Flat Wagon/CSC dt.12.11.2024.

Compendium of Loading Diagrams on Wagons (Rev.-2)

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 01	2000mm (Maximum)	02 Block (01 at each Bolster)	N/A, Up to Pay load	Also applicable for BOXN, BOXNR, BOXNS, BOXNHL and its variants. The previous Drawing has been superseded by Alt.01
2	WD-21039-S-02 Alt 01	2000mm (Maximum)	03 Block (not more than 22t at centre)	N/A, Up to Pay load	-same as above- The previous Drawing has been superseded by Alt.01

3	WD-21039-S-03 Alt 01	2000mm (Maximum)	04 Block (02 block at centre but total wt. not more than 15 t)	N/A, Up to Pay load	-same as above- The previous Drawing has been superseded by Alt.01
4	WD-21039-S-04 Alt 01	2000mm (Maximum)	04/06 Block (02 blocks at each Bolster and 02 block at middle of the wagon)	N/A, Up to Pay load	-same as above- The previous Drawing has been superseded by Alt.01

(iii) TMT Bars, CHANNELS & ANGLES Loading Diagram details

S. No.	TMT Bars Loading diagram No.	Dia	Length	Wt.	Remarks
1	WD-15057-S-07 Alt 02 **(For Reinforcement Bar)**	Oval shape 381/ 254 mm OR as per requirement	Up to 12000mm (Max-12500 mm)	Up to Pay load	The previous Drawing has been superseded by Alt.02
2	WD-22038-S-01 Alt 03 **(for TMT bars, Steel Rounds & Steel Flats)**	TMT bars/ Steel Rounds (8 mm to 100 mm) and Steel Flats (up to 100X100 mm)	12 meter (Max-12500 mm)	Up to Pay load	The previous Drawing has been superseded by Alt.03. Same drawing is also applicable for BOXN, BOXNHL and its variants.
3	WD-24088-S-06 Alt Nil **(for Steel Channels, Beams & Billets)**	Steel Channels as per requirement	12 meter Steel Channels / Beams(up to 300 mm height) and Billets(up to 125X125 mm) (Max length-12500 mm)	Up to Pay load	New loading diagram added for Steel Channels/Beams & Billets for BOST wagons and its variants.
4	WD-24088-S-07 Alt Nil **(for Steel Angles)**	Steel Angles as per requirement	12 meter (Max-12500 mm)	Up to Pay load	New loading diagram added for Steel Angles for BOST wagons 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 06 **(for steel Slab & billets)**	----	9 to 12.5 meter for BOST & 9 to 13 meter in BRN	Up to Pay load	The previous Drawing has been superseded by Alt.06 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 04 **(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.04
2	WD-22038-S-03 Alt 06 **(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 coil)	The previous Drawing has been superseded by Alt.06.

3	WD-23115-S-01 Alt 03 **(Coil Eye to Side Wall/PF) (Loading on Metal saddle)**	----	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.03 • **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 02 (**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.02 • **This loading diagram is on trial basis on metal saddle 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. 02 **(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.02 • **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. 01 **(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)	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.**
7	WD-24036-S-03 Alt.01 **(Steel Coils eye to sky/ Vertical in)**	Up to 33 T at each bolster (two coil adjacent at bolster)	04 Per Wagon (1 at bolster center and 2nd adjacent to 1st coil)	Up to Pay load	The previous Drawing has been superseded by Alt.01

8	WD-24036-S-05 Alt. 01 **(Coil eye to engine) (Loading on Metal saddle)**	-----	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 **Loading diagram 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. 01 **(Eye to Platform)** Loading of Unitized steel coil in lateral direction	-------	06 (02 unitized coil at meddle & 02 unitized coil at each bolster Centre) Or 04 (02 unitized coil at each bolster)	Up to Pay load. (Unitized coil weight at middle up max 16t)	The previous Drawing has been superseded by Alt.01

(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) Steel Plates Bundles Loading Diagram Details

S. No.	Steel Plates Bundles Loading diagram No.	BXH	Length	Wt.	Remarks
1	WD-24036-S-04 Alt. 01 **(for Steel Plates/ sheets)**	Steel Plates/ sheets Bundles as per requirement (Max.2200 mm width)	Length from 2.5 meter to 4.0 meter bundles 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 (Max. 22t in middle for 03 nos. plates bundles loading)	The previous Drawing has been superseded by Alt.01 Loading diagram for Bundle of steel plates at each bolster centre and middle of wagon.
2	WD-24088-S-04 Alt Nil **(for Steel plate/ Sheets bundles on both bogie Centres)**	Steel Plates/sheets Bundles as per requirement (Max.2200 mm width)	Length from 4.0 meter to 6.3 meter bundles	Up to Pay load	New loading diagram added for Steel Plates Bundles for BOST wagons and its variants.
3	WD-24088-S-05 Alt Nil **(for Steel plate/ Sheets bundles on wagon Centres)**	Steel Plates/ Sheets Bundles (Max.2200 mm width)	Length from 8 meter to 12 meter bundles (Max-12500 mm)	Up to Pay load	New loading diagram added for Steel plates for BOST wagons and its variants.

(viii) 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 02 **(Steel Coil eye to Sky/Vertical & Plates)**	----	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.02
2	WD-24001-S-02 Alt 03 **(Steel Coil eye to Sky/Vertical & Plates)**	----	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.03
3	WD-24001-S-03 Alt 02 **(Steel Coil eye to side wall/PF & Plates)**	----	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.02
4	WD-24001-S-04 Alt 02 **(Steel Coil eye to side wall/PF & Plates)**	----	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.02

(ix) Mix Loading (Steel Coils & Steel Bar Coils) Diagram Details

S. No.	Mix Loading diagram No.	Coil Outer Dia	No. of Coil	Wt. of Coils	Remark
1	WD-24088-S-01 Alt. Nil **Steel Coil (eye to Sky) & Steel Bar Coils**	----	02 No.'s of vertical steel coil (01 at each bolster centre) & steel bar coils at wagon centre.	As per wagon pay load	New diagram added for steel coil (vertical) at each bolster centre & steel bar coils at wagon centre.
2	WD-24088-S-02 Alt. Nil **Steel Coil (eye to Engine) & Steel Bar Coils**	----	02 No.'s of steel coil (01 at each bolster centre) & steel bar coils at wagon center.	As per wagon pay load	New diagram added for of steel coil (eye to Engine) at each bolster centre & steel bar coils at 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-02 **(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 Alt02 **(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 01 **(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 01 **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 2 **(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.02 **Max. weight of coil at middle = 16 t.**
2	WD-24028-S-02 Alt 2 **(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.02 **Max. weight of coil at middle = 16 t.**
3.	WD-24028-S-03 Alt 2. 1. Steel Coil eye to side wall/PF 2. Loading with metal saddle	-------	Total=03 or 2 coil (01 no. coil at each bolster	Up to Pay load	The previous Drawing has been superseded by Alt.02 **Max. weight of coil at middle = 16 t.**
4.	WD-24028-S-04 Alt 2. (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.02 • 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 01 **(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 = 22 t.
6.	WD-24038-S-02 Alt-1 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 = 22 t.
7.	WD-24038-S-03 Alt 01 (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 01. Loading of Unitized steel coil in lateral direction (Eye to Platform)	-----	06 (02 at middle & 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 01	-----	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 04	---	---	Up to Pay Load	The previous Drawing has been superseded by Alt.04

(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 01	2000mm	02 Block (at Bolsters)	Up to Pay load	The previous Drawing has been superseded by Alt.01
2	WD-21048-S-02 Alt 01	2000mm	03 Block(not more than 15 t at centre)	Up to Pay load	The previous Drawing has been superseded by Alt.01
3	WD-21048-S-03 Alt 01	2000mm	04 Block (02 block at centre and not more than 15 t)	Up to Pay load	The previous Drawing has been superseded by Alt.01
4	WD-21048-S-04 Alt 01	2000mm	04/06 Block (02 blocks at each Bolster and 02 block at middle of the wagon	Up to Pay load	The previous Drawing has been superseded by Alt.01

(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 04	As per wagon	08 to 12 meter	Up to Pay load	The previous Drawing has been superseded by Alt.04
2	WD-21112-S-02 Alt 04	As per wagon	2.5 to 6 meters	Up to Pay load	The previous Drawing has been superseded by Alt.04
3	WD-21095-S-01 Alt 06	As per wagon	9-13 meters	Up to Pay load	The previous Drawing has been superseded by Alt.06

(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 07 **(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.07 For BRH/BRN/BRNA/BRNA HS Wagons.
2	WD-94038-S-02 Alt 07 **(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.07 For BRN, BRHC, BRHT, BRNA & BRNAHS wagons.
3.	WD-15060-S-01 Alt 06 **(Steel Coil Eye to Platform)**	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.06
4.	WD-15060-S-02 Alt 06 **(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.06
5.	WD-16042-S-01 Alt 08 **(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.08
6.	WD-23115-S-02 Alt-03 **(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.	The previous Drawing has been superseded by Alt.03 • **This loading diagram is on trial basis for two years**

				Wt. 34T for individual Coil) ➢ For other than BRN22.9 wagon, Max coil wt.-28T.	**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. 02 **(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.02

(v) TMT Bars, CHANNELS & ANGLES Loading Diagram details

S. No.	TMT Bars Loading diagram No.	Dia	Length	Wt.	Remark
1	WD-24024-S-01 Alt.03 (for TMT bars/Steel rounds)	8 mm to 100 mm	Up to 12.5 meter.	Up to Pay load	The previous Drawing has been superseded by Alt.03
2	WD-24088-S-09 Alt Nil **(for Steel Channels)**	Steel Channels as per requirement	12 meter (Max-12000 mm)	Up to Pay load	New loading diagram added for Steel Channels for BRN wagons and its variants.
3	WD-24088-S-10 Alt Nil **(for Steel Angles)**	Steel Angles as per requirement	12 meter (Max-12000 mm)	Up to Pay load	New loading diagram added for Steel Angles for BRN wagons and its variants.

(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.03	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 ≤ 23T)	The previous Drawing has been superseded by Alt.03
2	WD-23080-S-02 Alt.03	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 ≤ 23T)	The previous Drawing has been superseded by Alt.03 The Max. Difference in wt. of two bogies shall not more than 02 tons.
3	WD-23080-S-03 Alt.03	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 ≤ 23T	The previous Drawing has been superseded by Alt.03 The Max. Difference in wt. of two bogies shall not more than 02 tons.
4	WD-23080-S-04 Alt.03	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 ≤ 23T	The previous Drawing has been superseded by Alt.03 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 16 Loading arrangement Diagram for BFNS22.9/ FLATCOIL3	11 to 32 t	01 to 05 no. As per loading pattern	Up to pay load 64.89t	The previous Drawing has been superseded by Alt.16
2	WD-18052-S-01 Alt 02 BFNSM22.9/BFNS M1	As per pay load	01 of 2000 mm coil width max.	Up to pay load	The previous Drawing has been superseded by Alt.02
3	WD-17047-S-01 Alt 02 (BFNS22.9)	-	-	Up to pay load	The previous Drawing has been superseded by Alt.02

(ii) Steel Slab Loading Diagram details

SN	Steel slab Loading diagram No.	B X H	Length	Wt.	Remarks
1	WD-24088-S-03 Alt Nil	--	Up to 12.5 meter	Up to Pay load	Loading of steel slab as per table shown in the diagram. • **This loading diagram is on trial basis for two years vide RDSO letter no.MW/BFNS date 21.10.2024 and valid up to 20.10.26 only.** • **Zonal Railways and consignee to provide feedback to RDSO on quarterly basis.**

(iii) TMT bar Loading Diagram details

SN	Steel slab Loading diagram No.	B X H	Length	Wt.	Remarks
1	WD-24088-S-08 Alt Nil	As per wagon	Up to 12.0 meter	Up to Pay load	Loading of 08mm to 40mm TMT bars in BFNS22.9/FLATCOIL3 wagon.

6. Loading Diagrams details for loading on BFNV Wagon

(i) Steel Coil Loading Diagram details

S. No.	Steel Coil Loading Diagram no.	Total pay load	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**

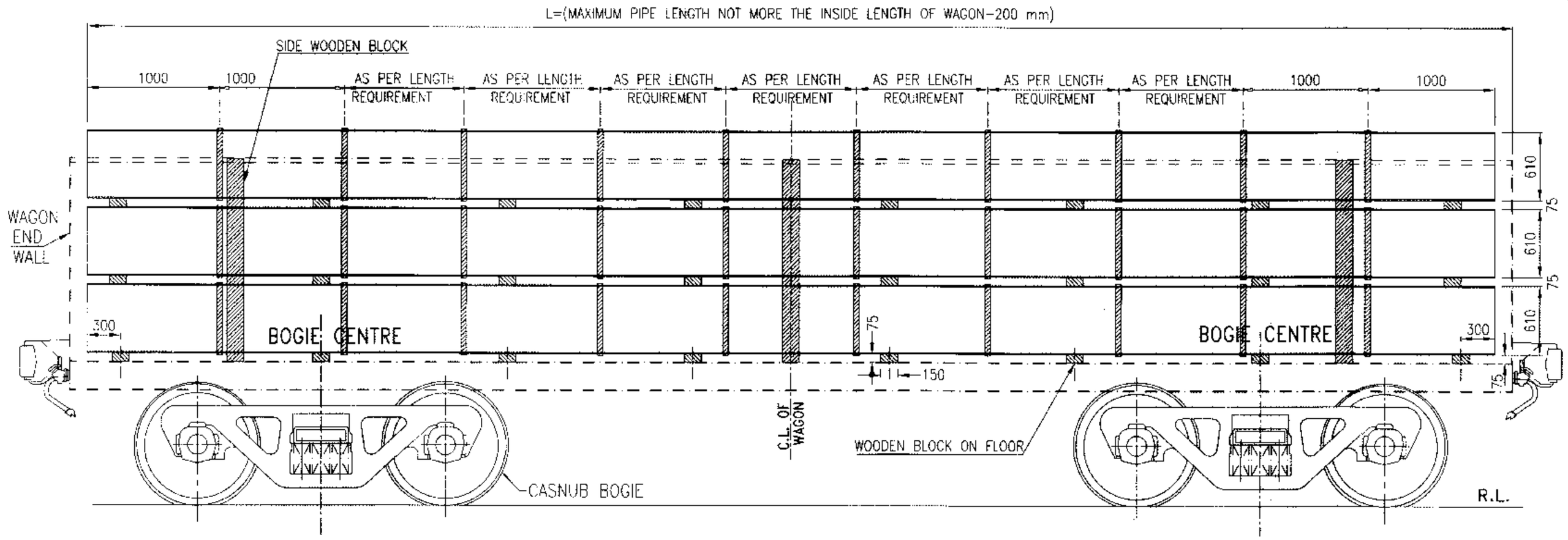
7. Component's drawing for Loading & Securing arrangement

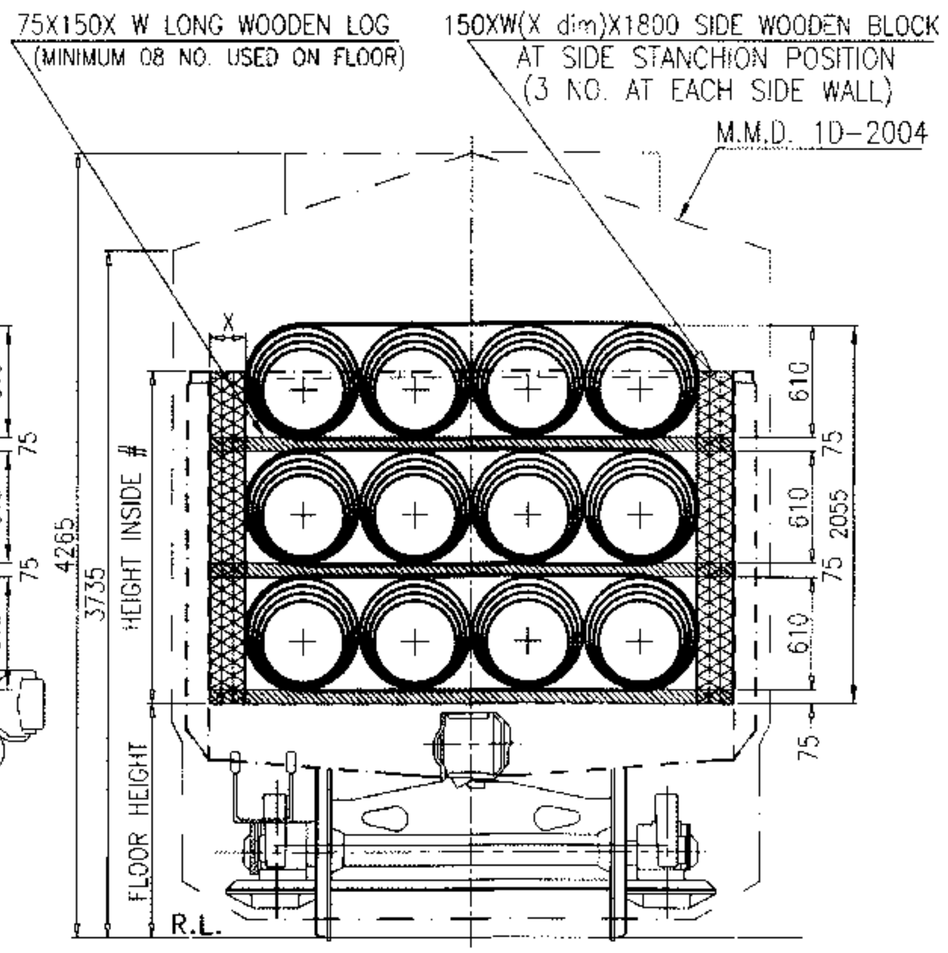
Metal Saddle, Isolation Hook, and Wooden wedge and angle Stopper etc. used for Loading and securing arrangement Drawing No. WD-24036-S-01 Alt 01 is attached in the compendium.

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

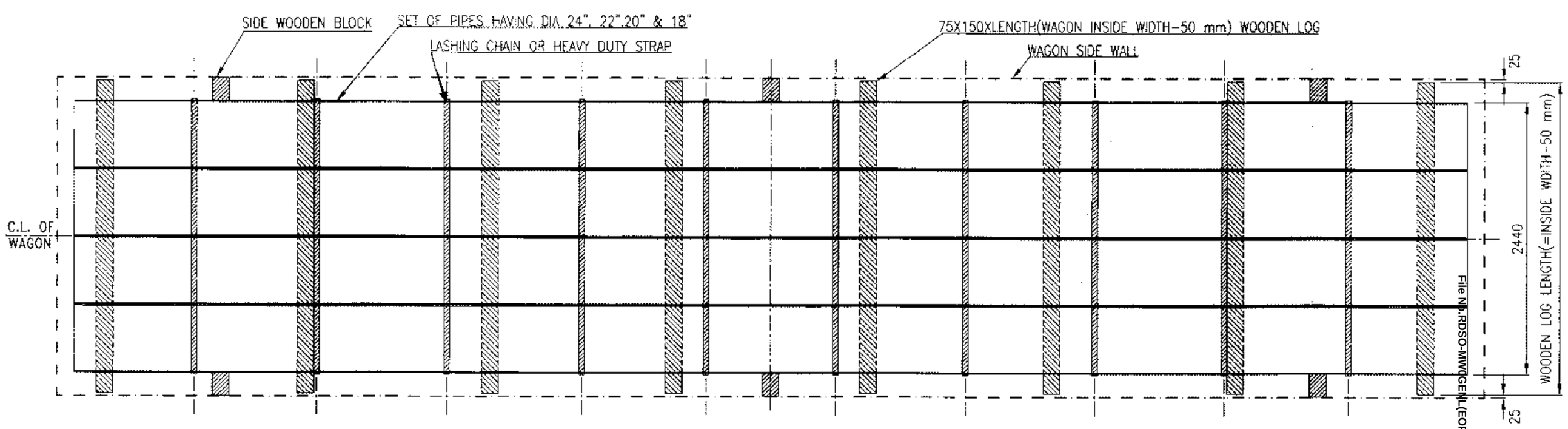
X-X-X-X-X-X





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 (I)
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.

File No.RDSO-MWIGEN-LEOFC/18/2023-O/o PED/SWIRDSO

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	

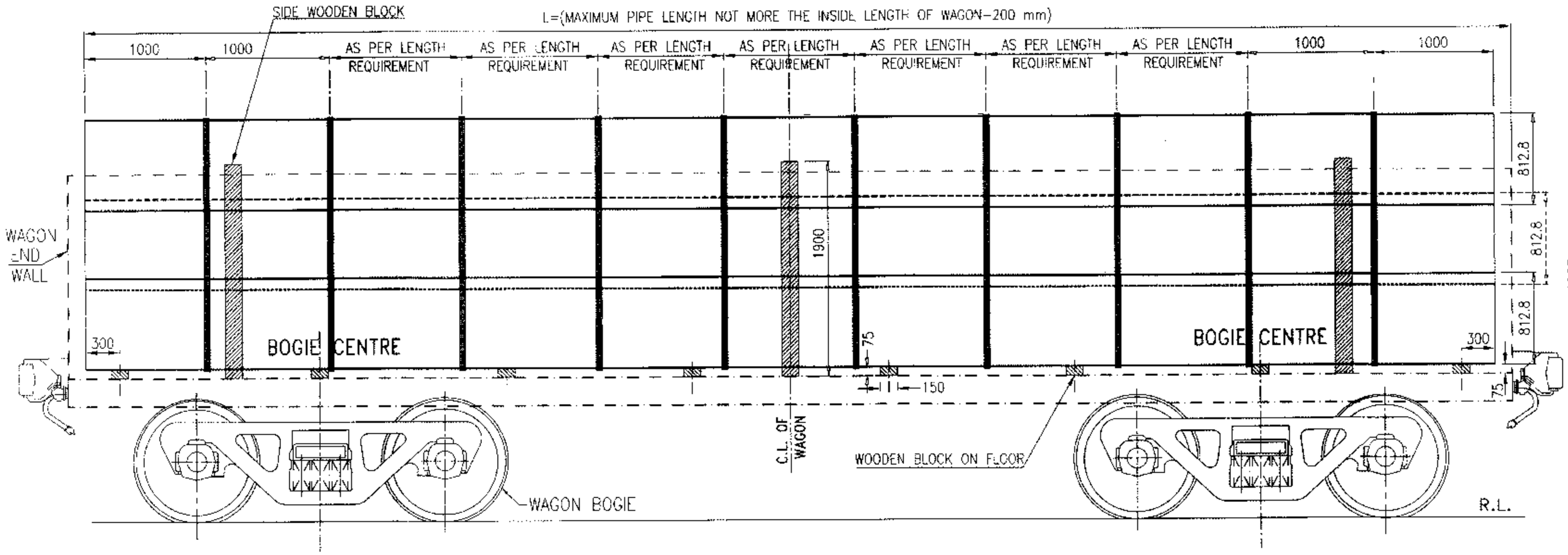
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SUPERSEDES		DATE
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	CHECKED	10/20
	DRAWN A.K.KUSHWAHA	10/20
	J.S.NO. WD-20042	10/20

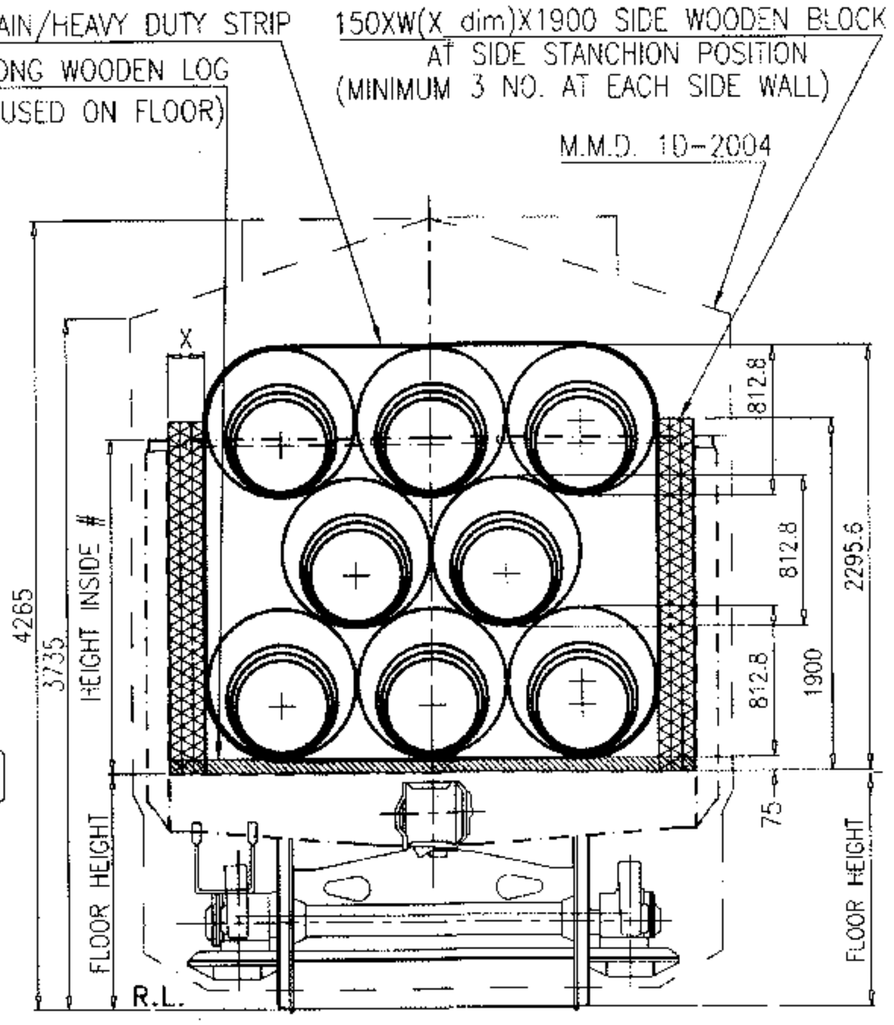
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LOADING DIAGRAM OF STEEL PIPES IN BOXN/BOST/BOXNR/BOXNHL/ BOXNS WAGON & ITS VARIANTS

GROUP

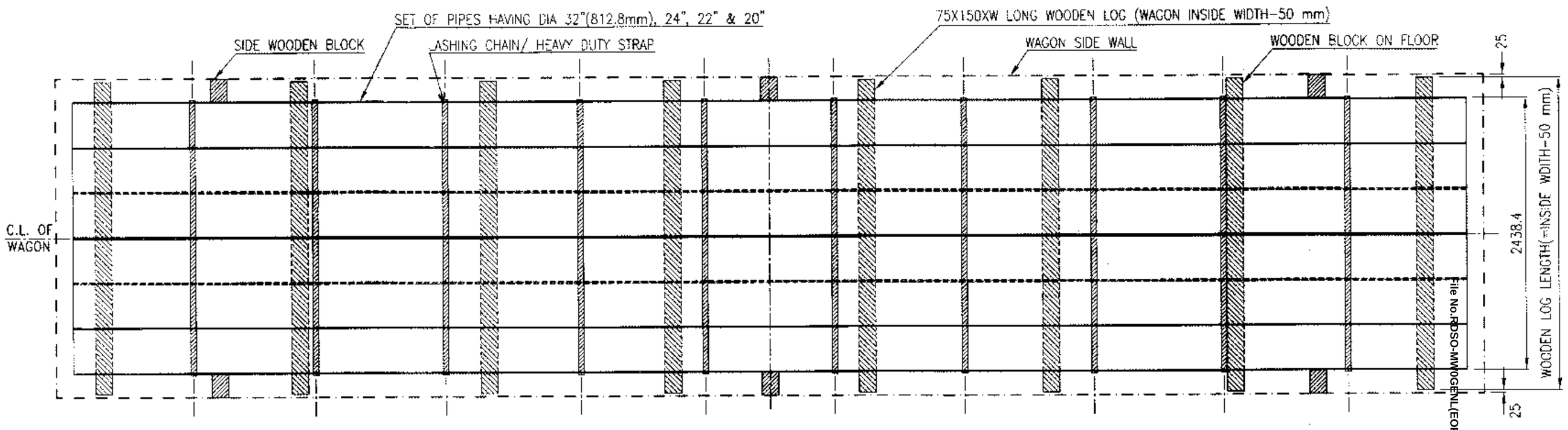
WD-20042-S-01





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.

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

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

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

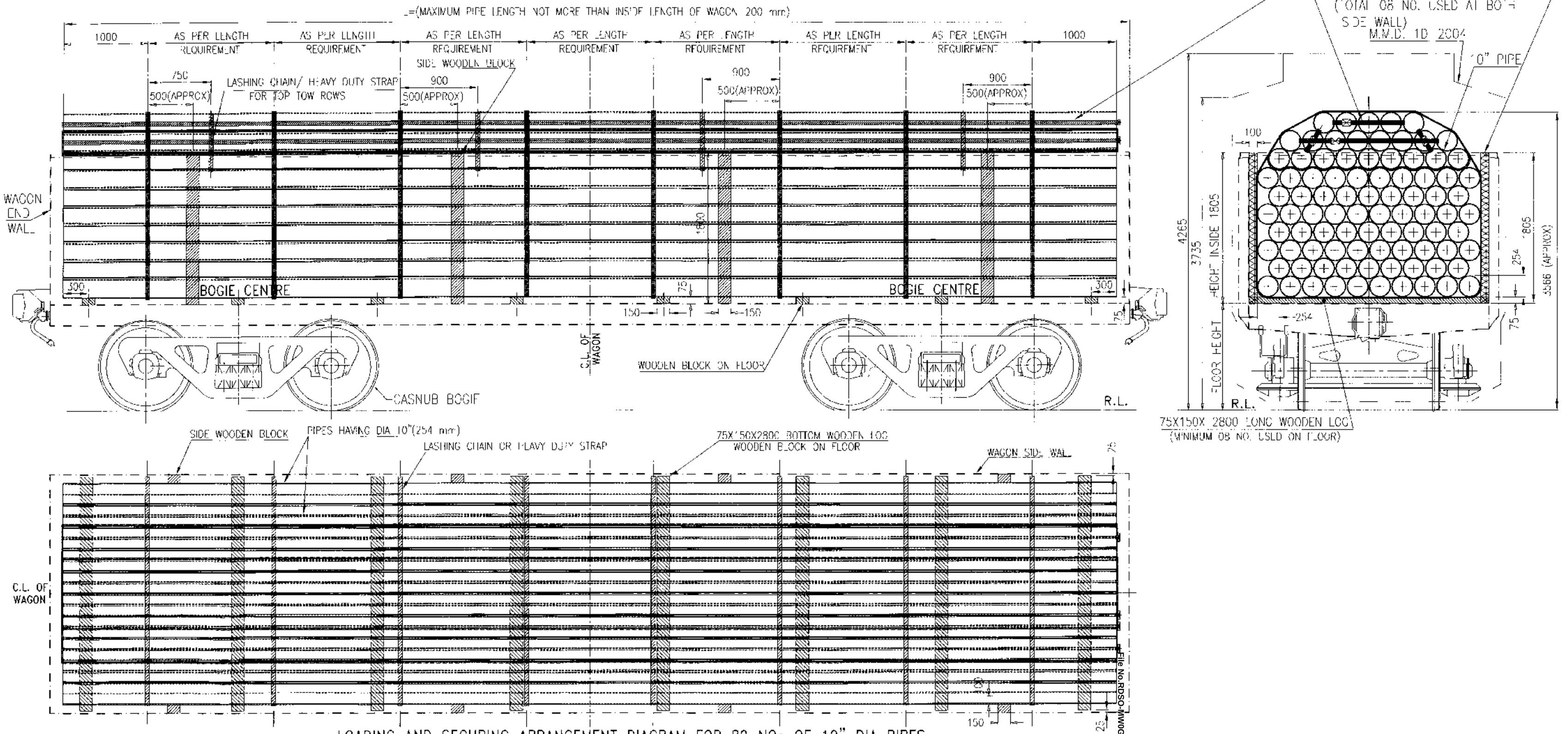
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LOADING DIAGRAM OF 32",24",22"& 20" PIPES SET IN BOXN/BOST/BOXNR/BOXNHL/ BOXNS WAGON & ITS VARIANTS

GROUP

WD-20052-S-01

994 of 1169



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

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.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

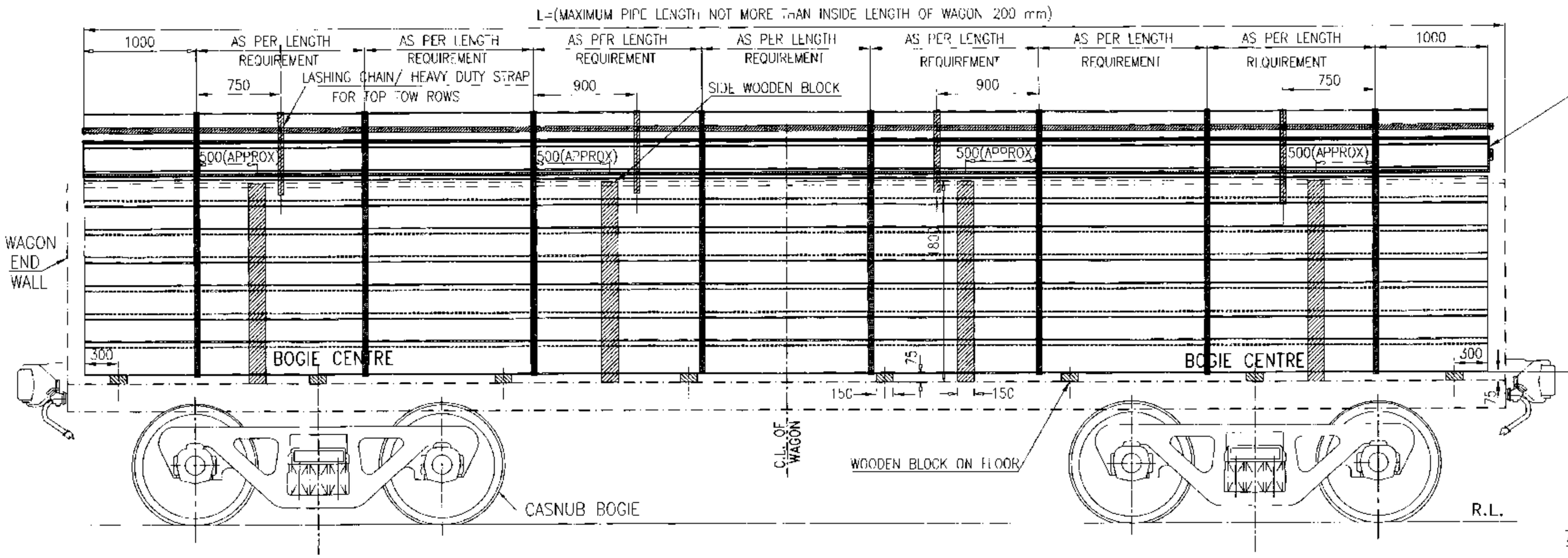
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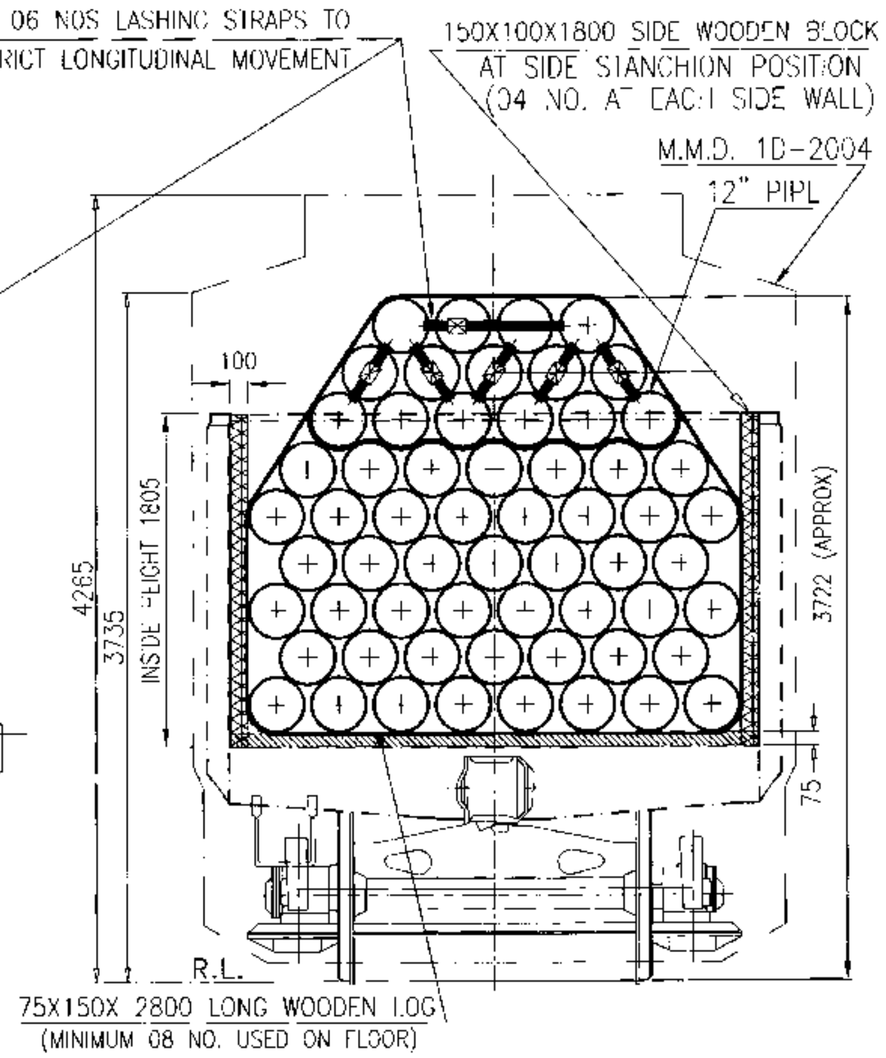
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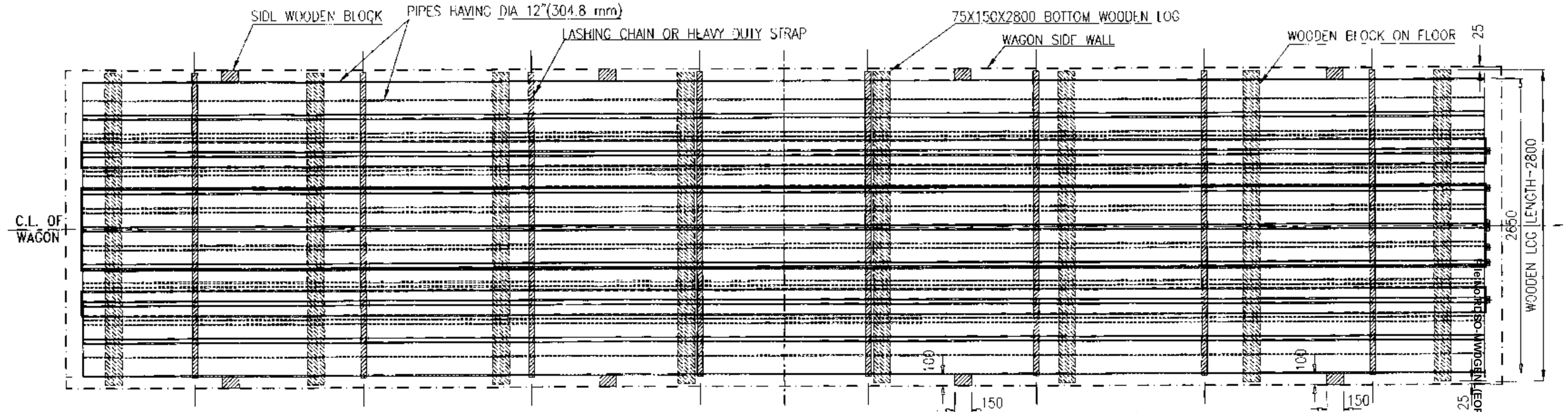
LOADING DIAGRAM OF 10" STEEL PIPES IN BOST WAGON & ITS VARIANTS

WD–21038–S–01

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







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.

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

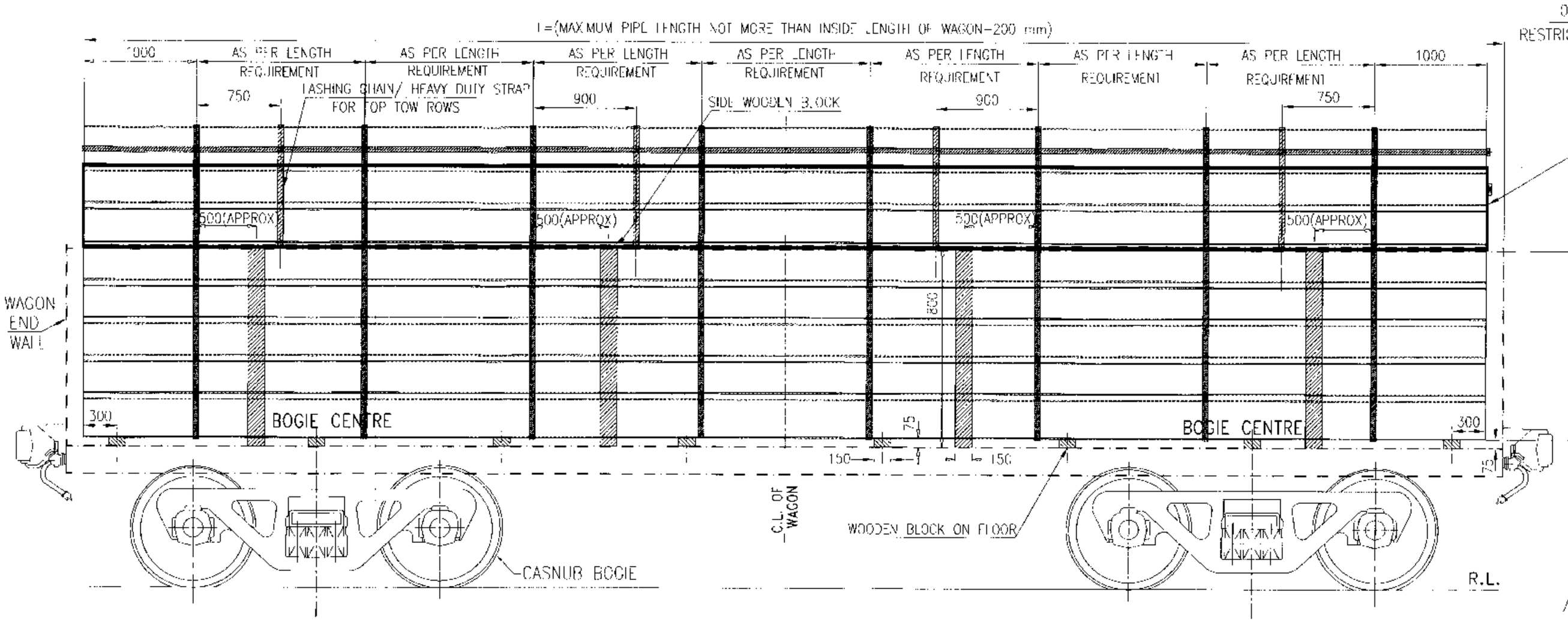
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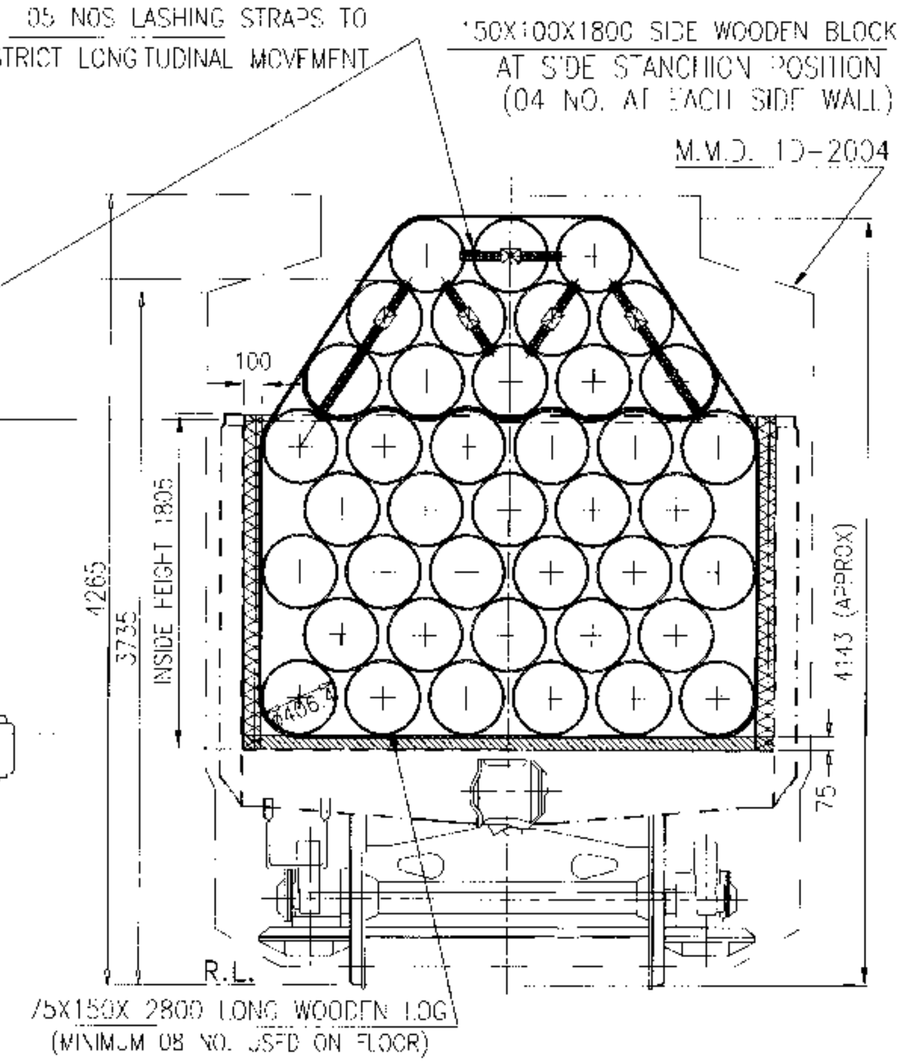
LOADING DIAGRAM OF 12" STEEL PIPES OVER BRIM IN BOST WAGON & ITS VARIANTS

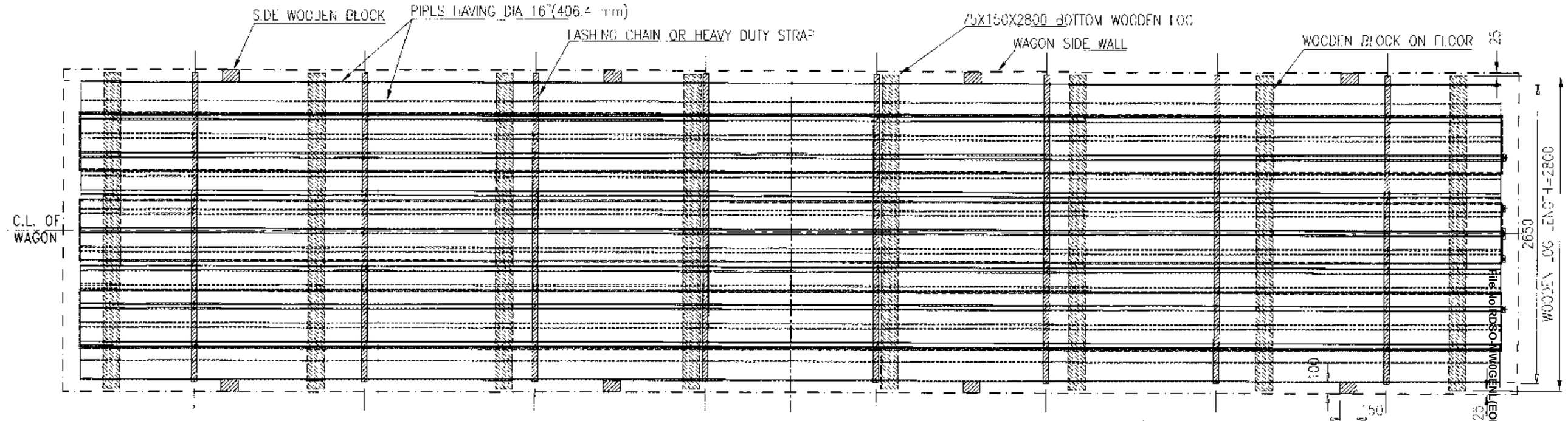
GROUP | WD-21038-S-02

File No.RDSO/WDGN/LEOFC/I/2023-O/o PEDI/SWRDSO

996 /69







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 05 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 "BCXN" AND "BOXNHL" WAGONS CAN BE FOLLOWED IN SAME PATTERN BY CONSIDERING LENGTH OF PIPES & PAY LOAD.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

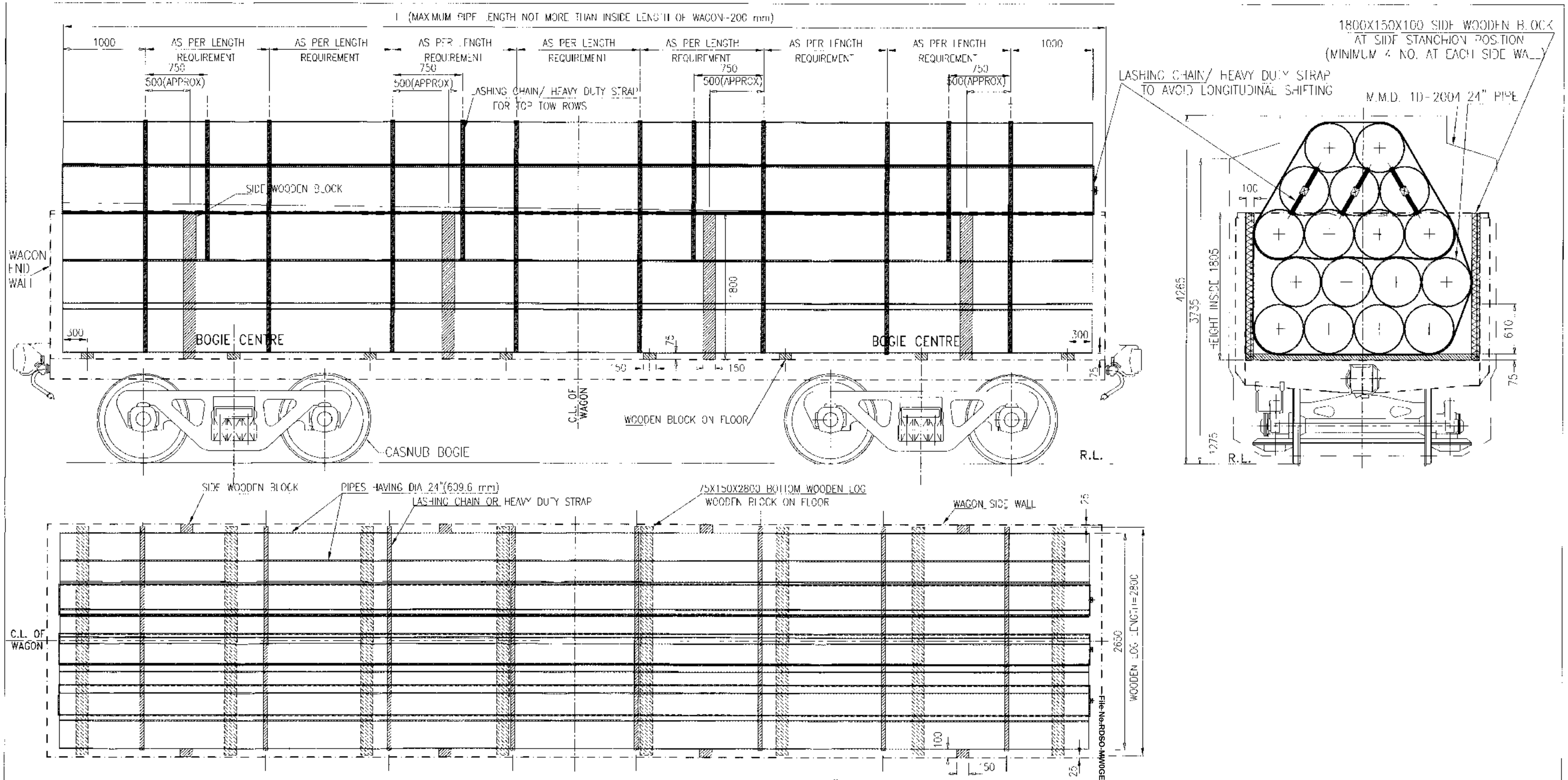
SUPERSEDED BY		
SUPERSEDES		DATE
SCALE	PASSED	04/21
	CHECKED	04/21
	DRAWN J. AHMAD	04/21
	J.S.NO. WD 21038	04/21

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/8/2023-O/o PED/SWR/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.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

SUPERSEDED BY
SUPERSEDES — DATE
SCALE: PASSED 04/21
CHECKED 04/21
DRAWN A.K.KUSHWAHA 04/21
J.S.NO. WD 21038 04/21

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

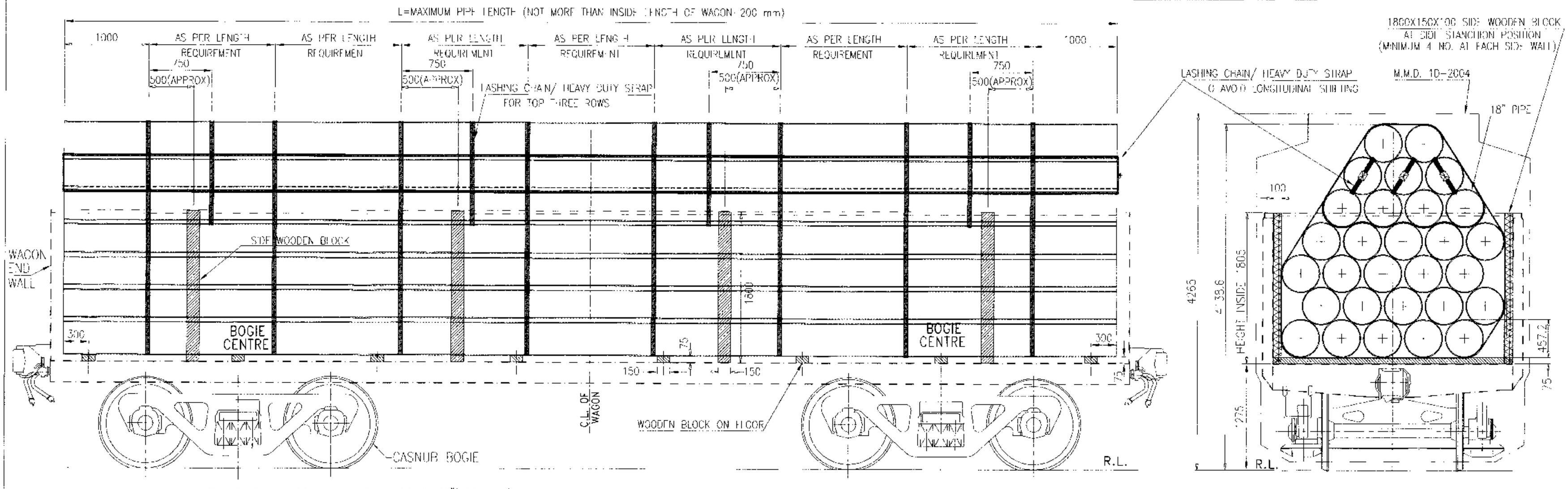
B.G. R.D.S.O. [W]

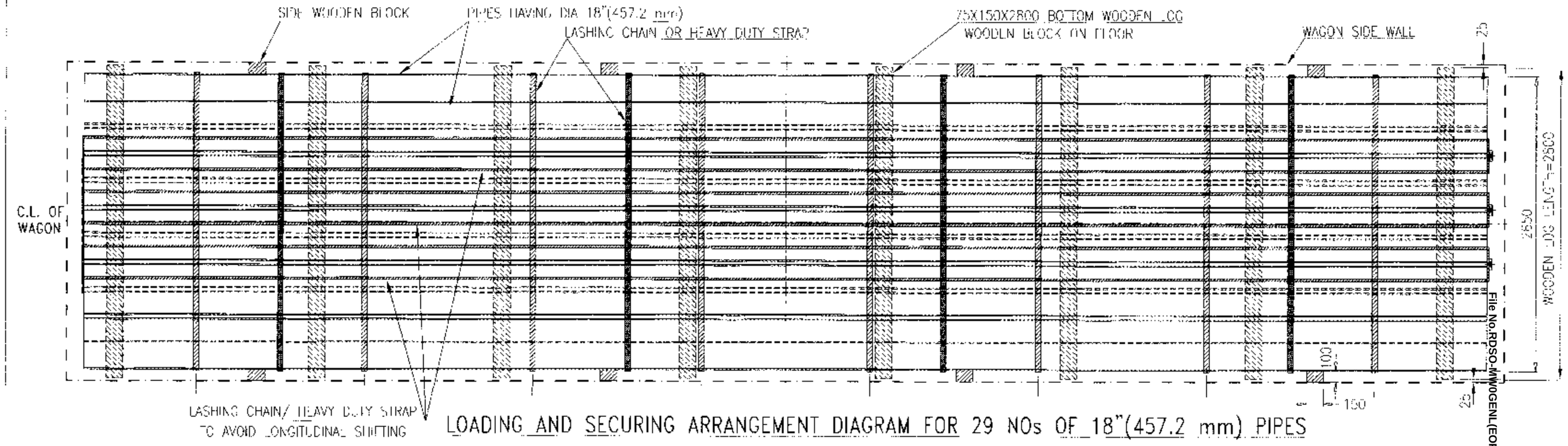
GROUP

WD-21038-S-04

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

69/1 966





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

NOTE:-

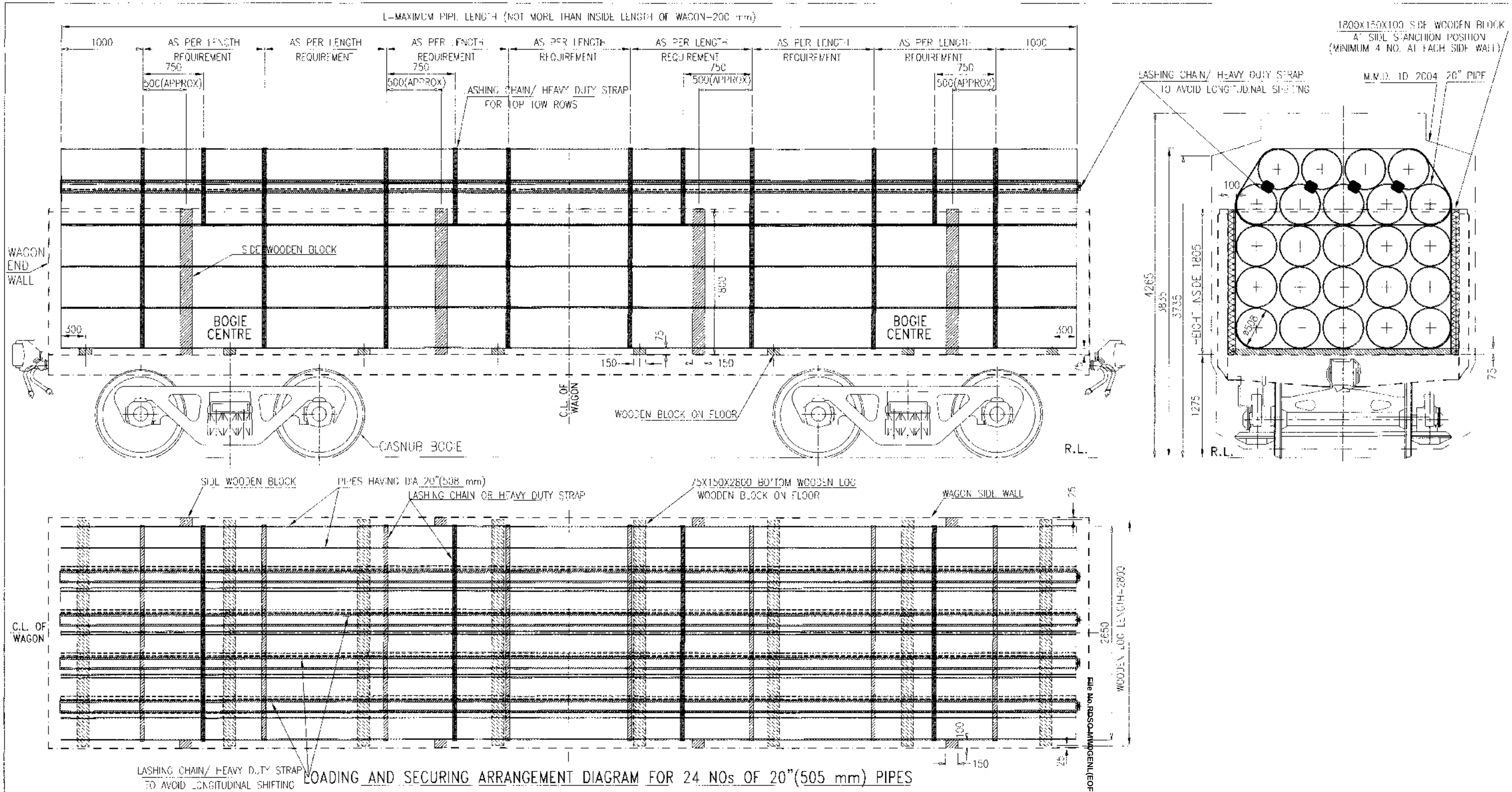
1. MAXIMUM 29 NOS. PIPES HAVING DIAMETER OF 18"(457.2 mm) SHOULD BE STACKED IN 07 ROWS AS SHOWN IN LOADING DIAGRAM.
2. IN CASE OF VARIATION IN LENGTH OF PIPES, ONE END OF THE PIPES SHOULD BE COPLANAR (IN SAME VERTICAL PLANE).
3. TOTAL 29 NOS. OF PIPES OF 18" DIA CAN BE LOADED IN 07 ROWS AND 05 COLUMN 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 UNTIZED 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.

SUPERSEDED BY		
SUPERSEDES	DATE	LOADING DIAGRAM OF 18" STEEL PIPES OVER BRIM IN BOST WAGON & ITS VARIANTS
SCALE PASSED	08/21	
CHECKED	08/21	
DRAWN ARVIND	08/21	
ESTD NO. WD-21060	07/21	
B.G.	R.D.S.O. [W]	GROUP
		WD-21060-S-01

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

999 /69



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 T-L 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.

SUPERSEDES BY		
SUPERSEDES		DATE
SCA. PASSED		07/21
CHECKED		07/21
DRAWN	A.K.KUSHWAHA	07/21
T.S NO.	WD-21060	07/21

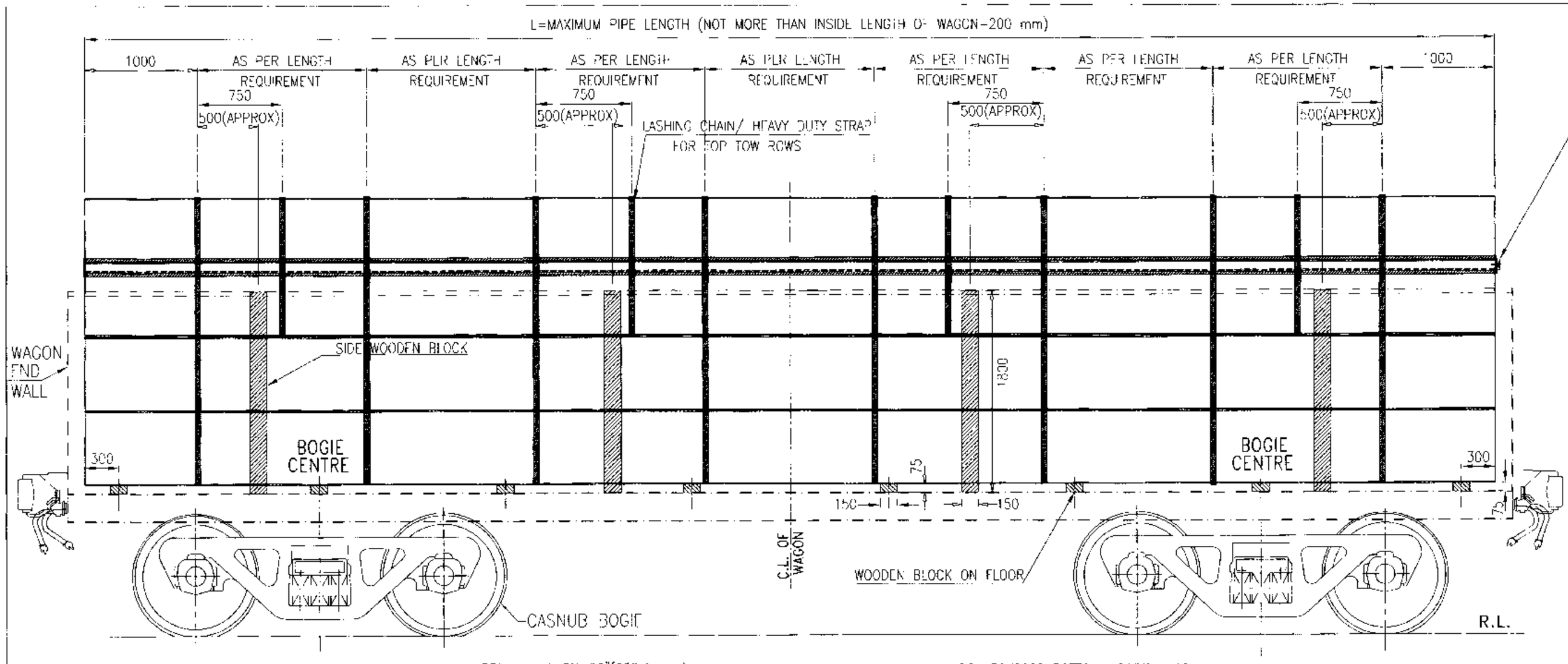
LOADING DIAGRAM OF 20" STEEL PIPES OVER BRIM IN BOST WAGON & ITS VARIANTS

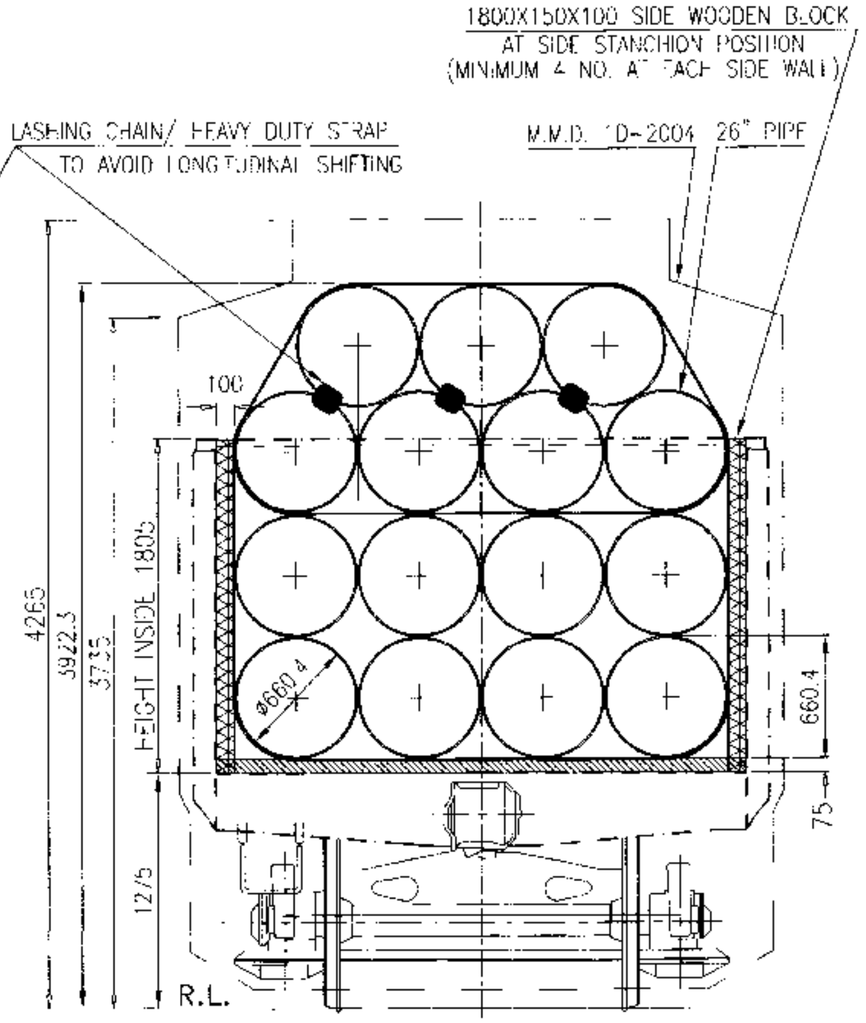
B.G. | R.D.S.O. [W] | GROUP | WD-21060-S-02

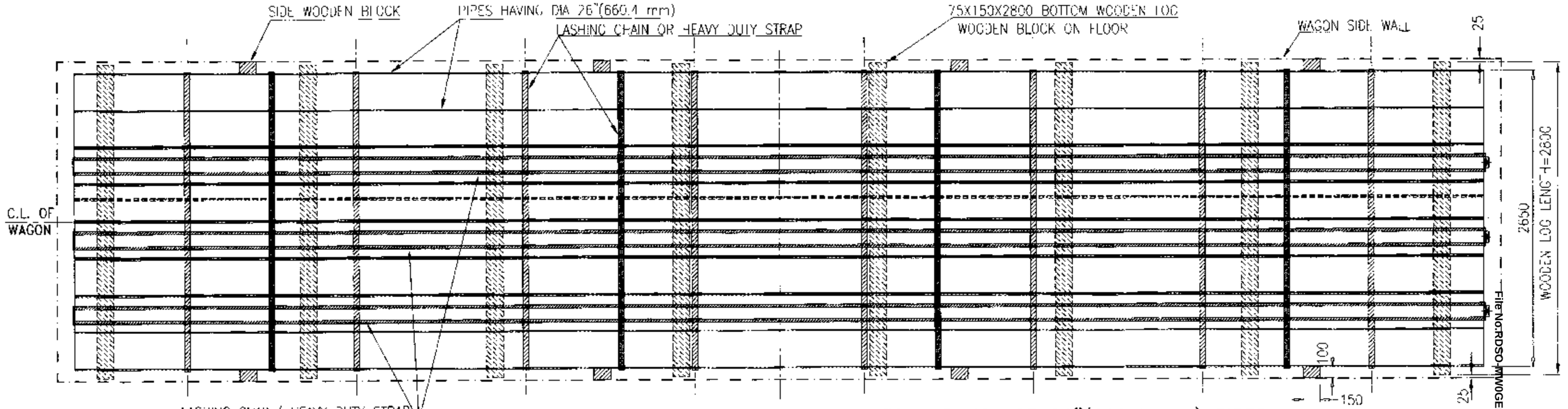
File No.RDSO/MW&GENL(EOFC)/8/2023-O/o PED/SW/RDSO

1000
1969

L=MAXIMUM PIPE LENGTH (NOT MORE THAN INSIDE LENGTH OF WAGON-200 mm)







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.

SUPERSEDED BY			
SUPERSEDES			DATE
SCALE	PASSED		07/21
	CHECKED		07/21
	DRAWN	A.K.KUSHWAHA	07/21
	J.S.NO.	WD-21060	07/21

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

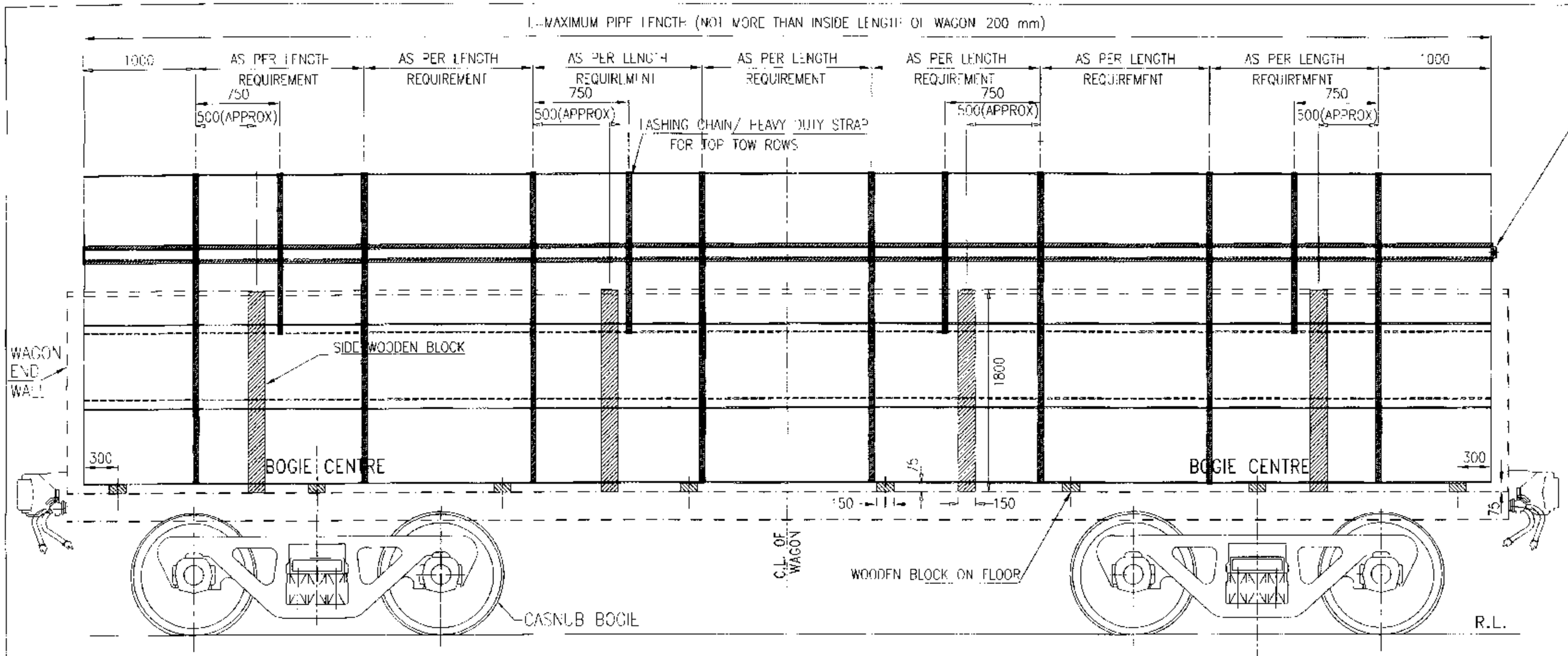
LOADING DIAGRAM OF 26" STEEL PIPES OVER BRIM IN BOST WAGON & ITS VARIANTS

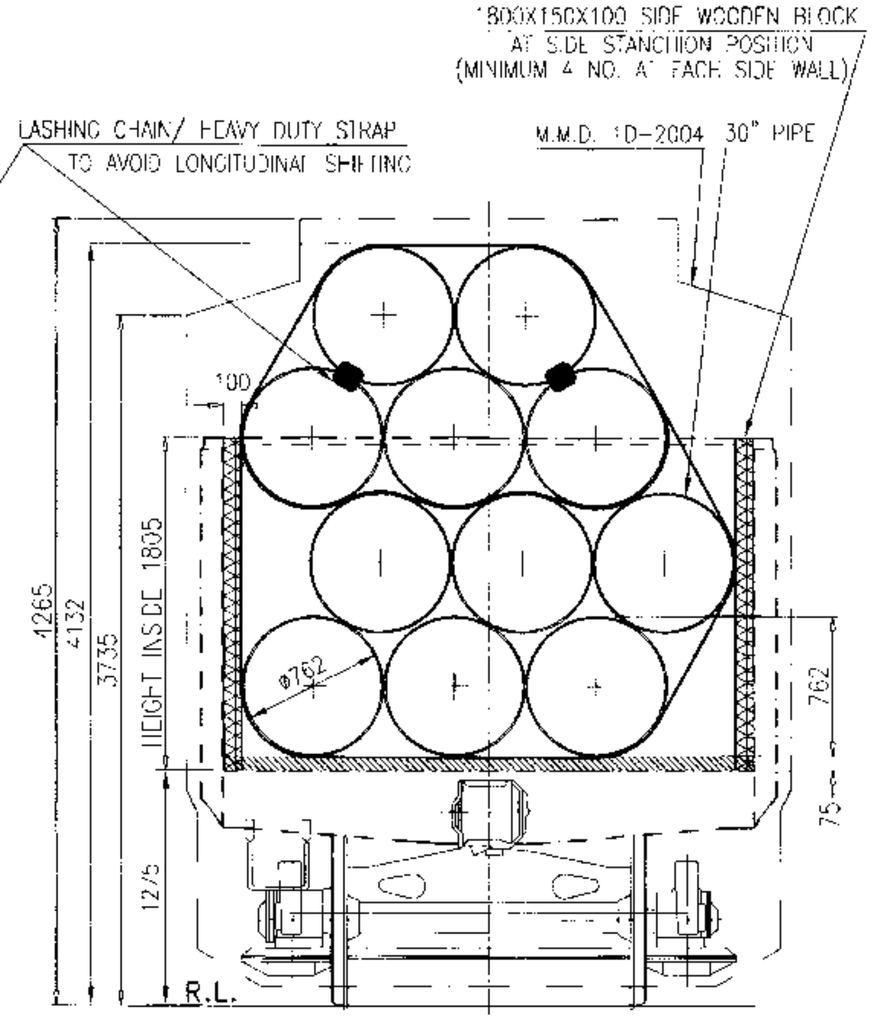
GROUP | WD-21060-S-03

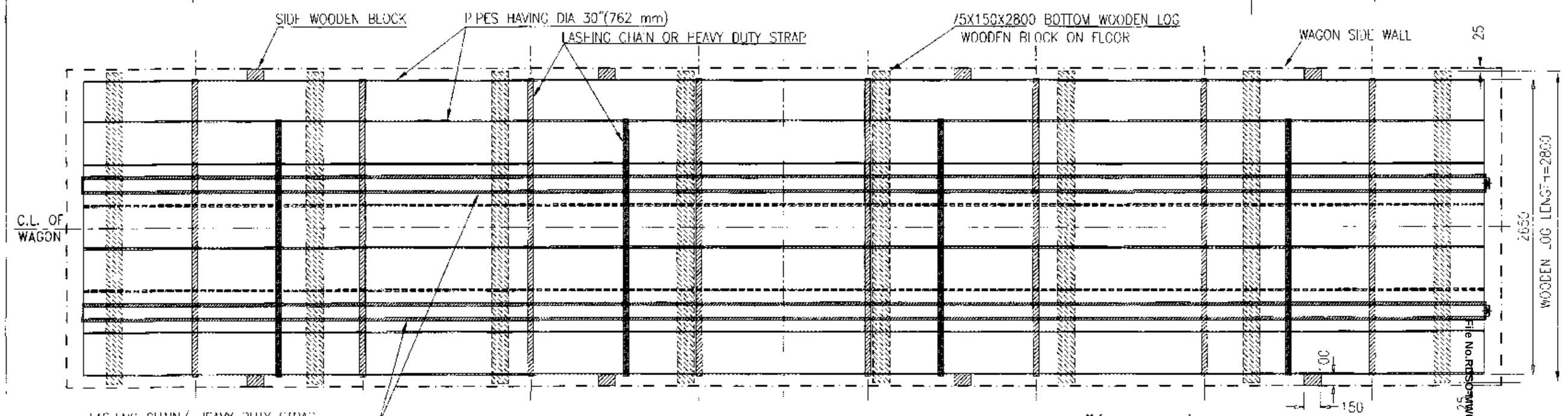
A1

File No:RDSO/WOGEN/LEOFC/8/2023-O/o PED(SW/RDSO

1001
169







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

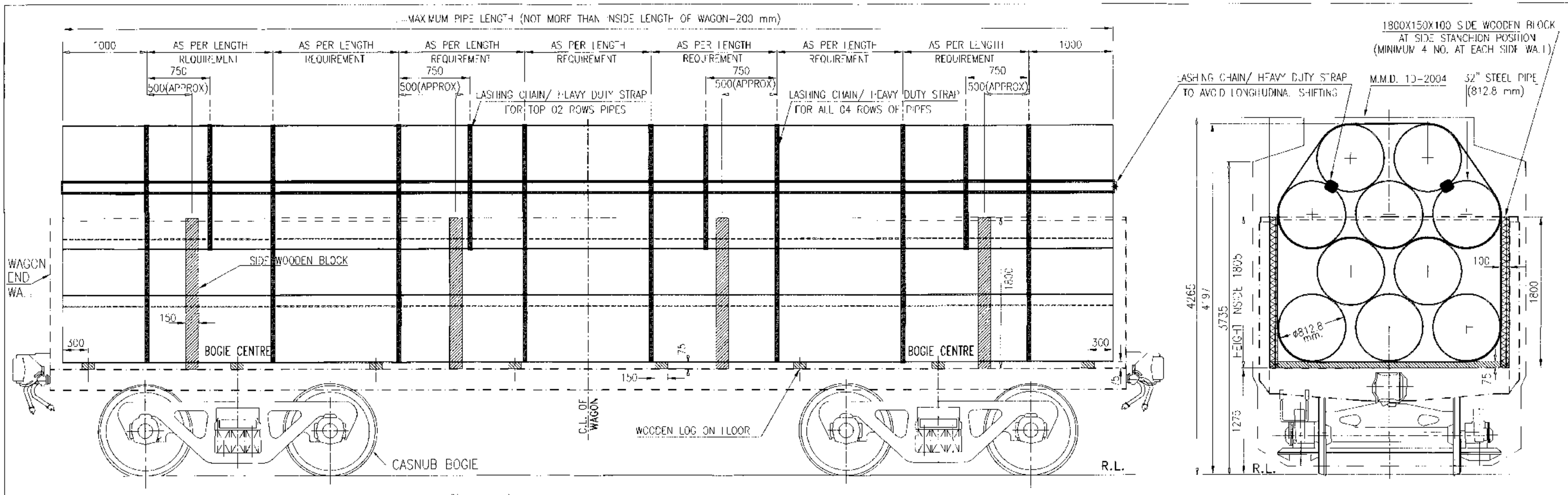
File No.RDSO/WDGENL(EOFC)/8/2023-O/o PEDI/SWIRDSO

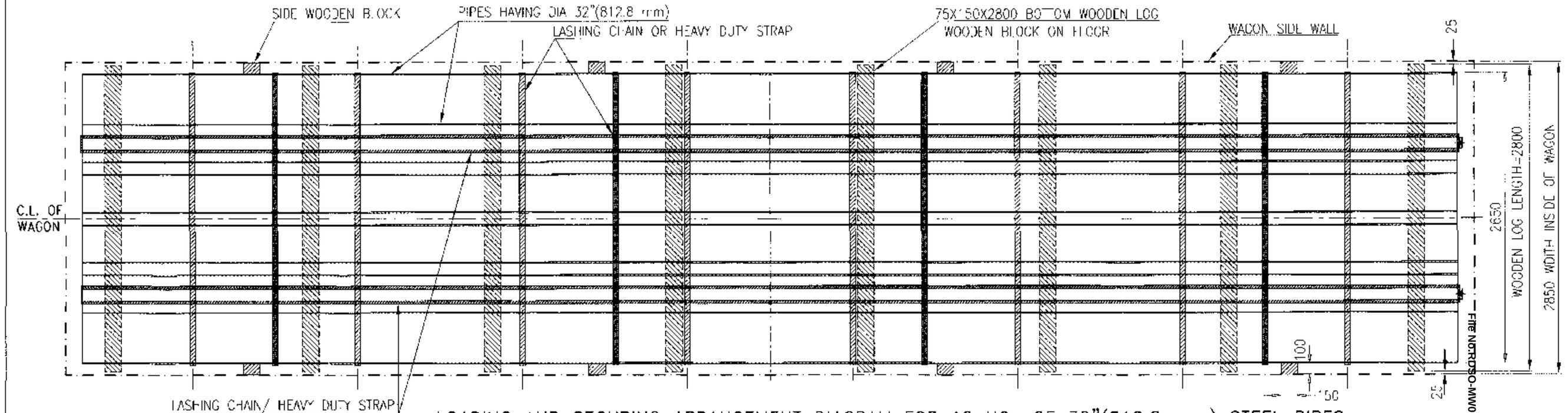
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

SUPERSEDED BY			
SUPERSEDES		DATE	LOADING DIAGRAM OF 30" STEEL PIPES OVER BRIM IN BOST WAGON & ITS VARIANTS
SCALE	PASSED	07/21	
	CHECKED	07/21	
	DRAWN A.K.K.JSIVAJA	07/21	
	J.S.NO. WD- 21060	07/21	

B.G. | R.D.S.O. [W] | GROUP | WD-21060-S-04

102
1169





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

FILE NO:RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SWR/DSO

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 & FLOOR 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		DATE
SUPERSEDES		
SCALE PASSED		05/22
CHECKED	A.K.KUSHWAHA	05/22
DRAWN	A.K.KUSHWAHA	04/22
I.S.NO.	WD-22038	04/22

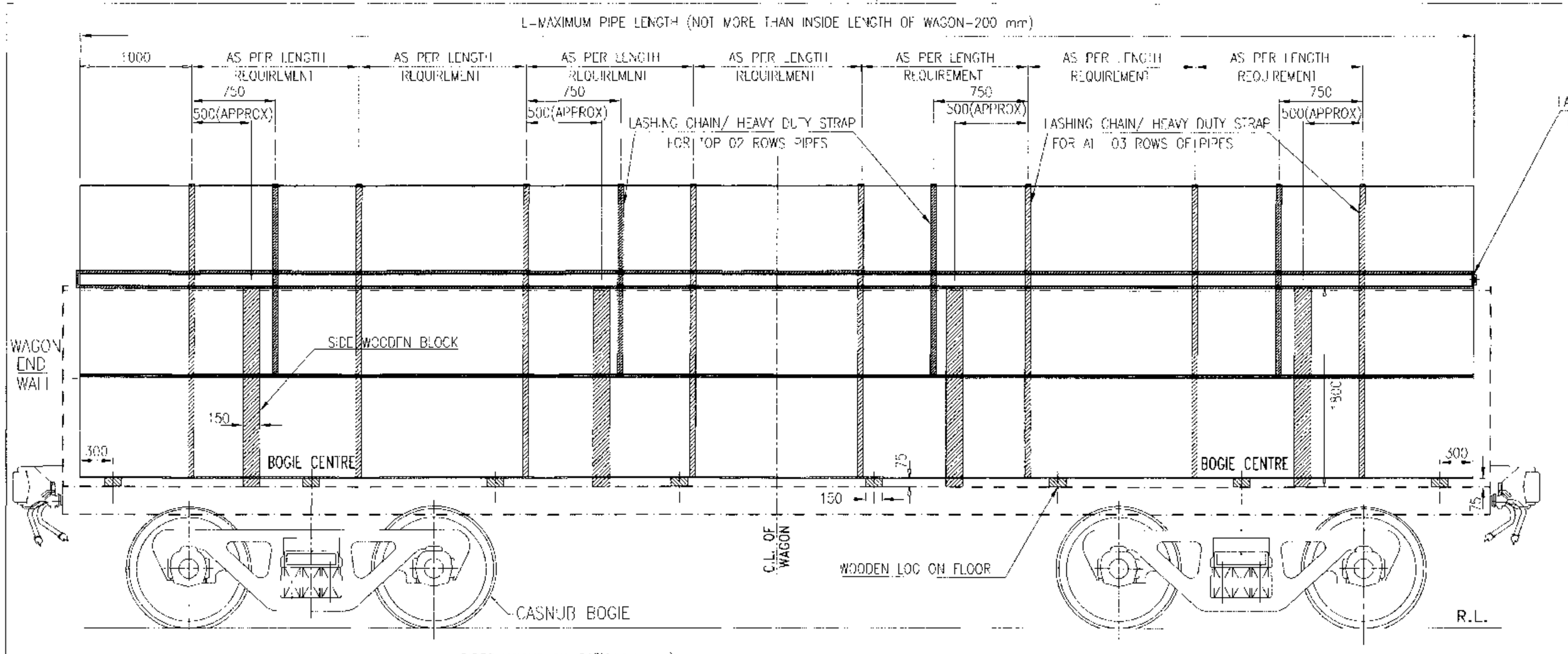
B.G. | R.D.S.O. [W] | GROUP

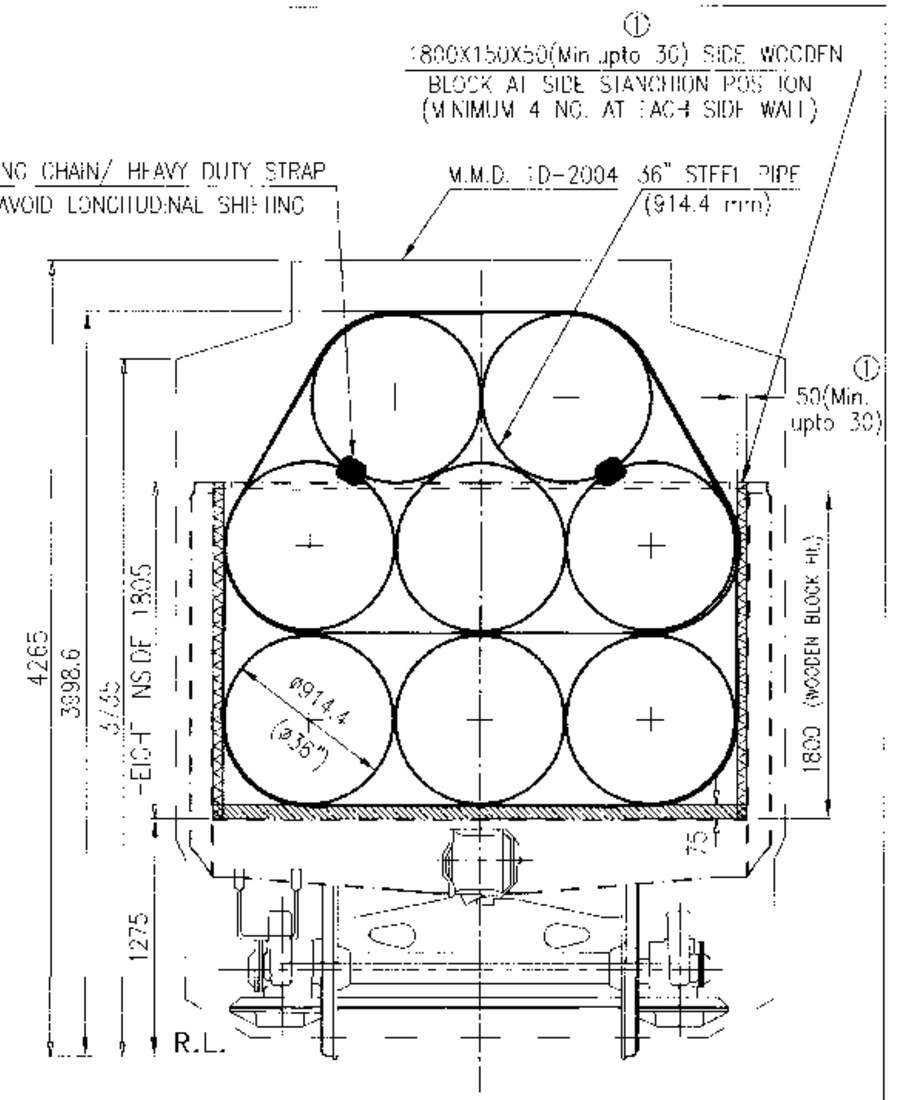
LOADING DIAGRAM OF 32" STEEL PIPES OVER BRIM IN BOST WAGON & ITS VARIANTS

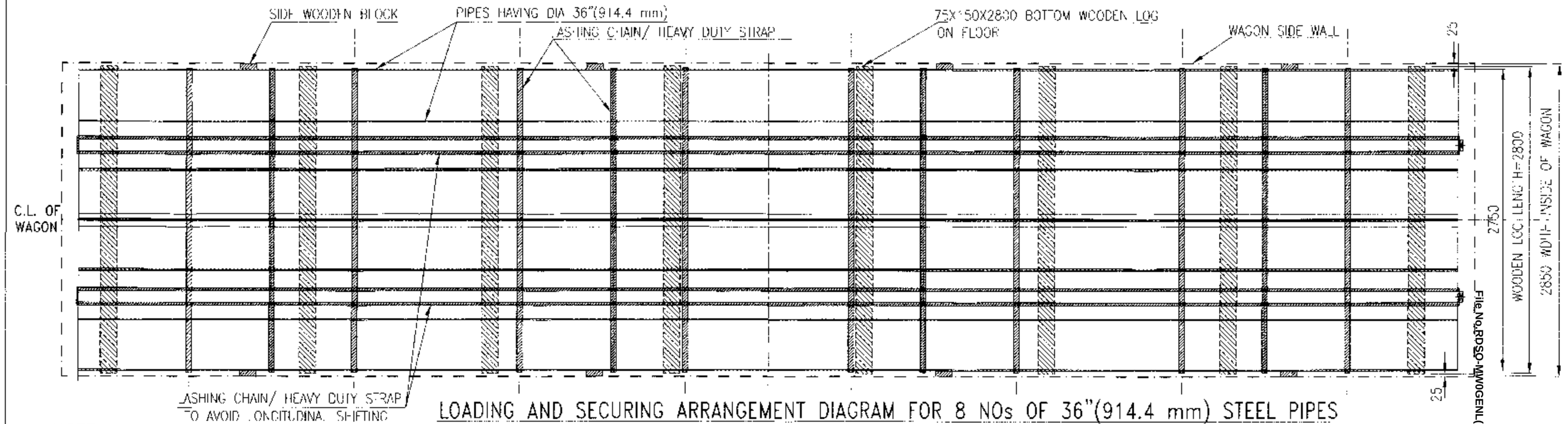
WD-22038-S-02

A1 19/05/22

1003 1169







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

NOTE:-

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/UN-LOADING 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. IF 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	

SUPERSEDES / SUPERSEDED BY

		DATE
SCALE	PASSED	08/22
	CHECKED	08/22
	DRAWN	08/22
T.I.S. NO.	WD-22076	08/22

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

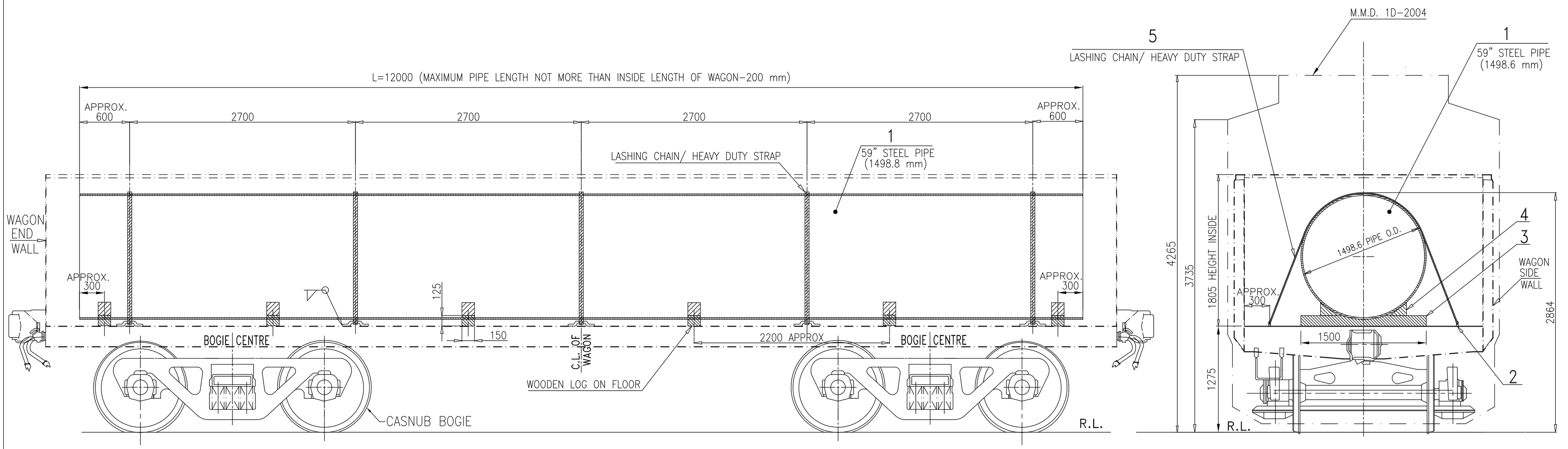
LOADING DIAGRAM OF 36" STEEL PIPES OVER BRIM IN BOST WAGON & ITS VARIANTS

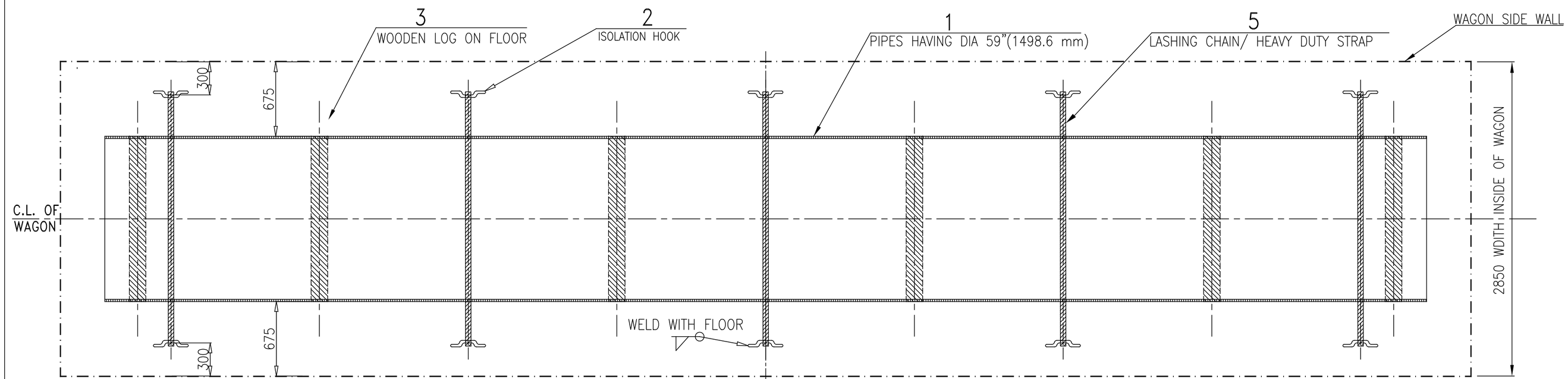
GROUP | WD-22076-S-01

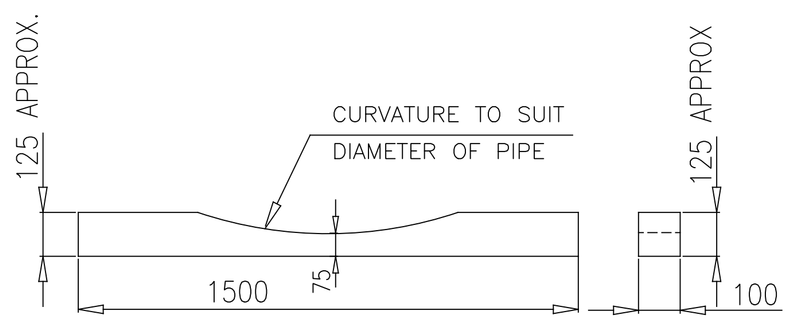
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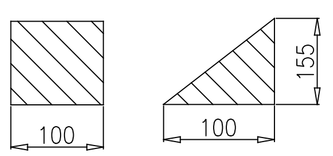
1004

II/69413/2024









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	

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

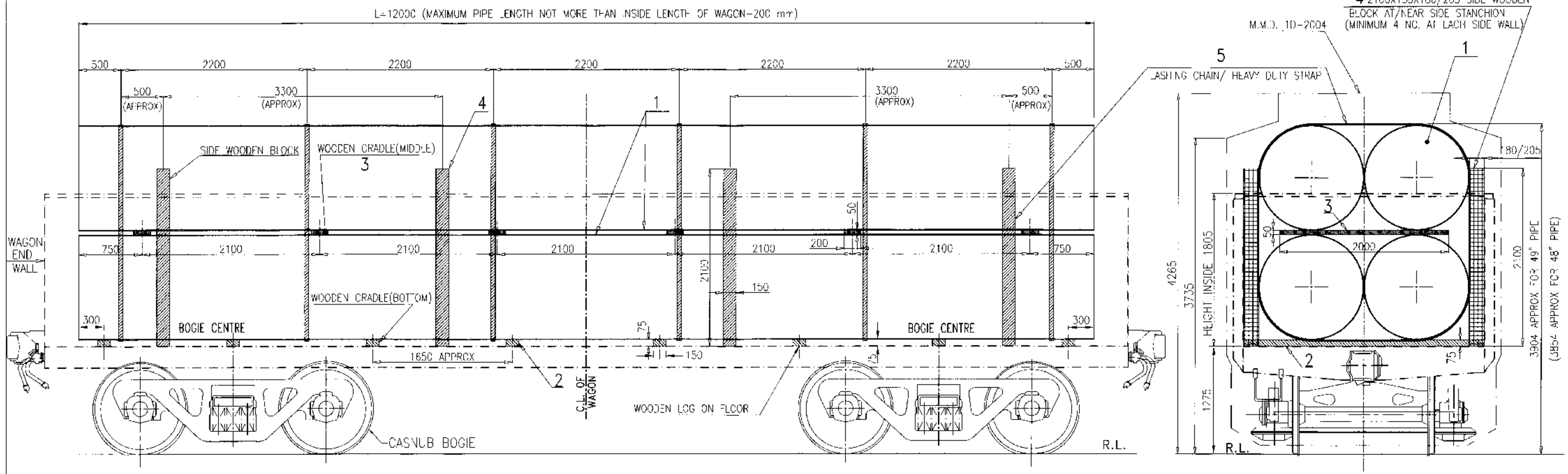
SUPERSEDED BY
SUPERSEDES

SCALE			DATE
	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

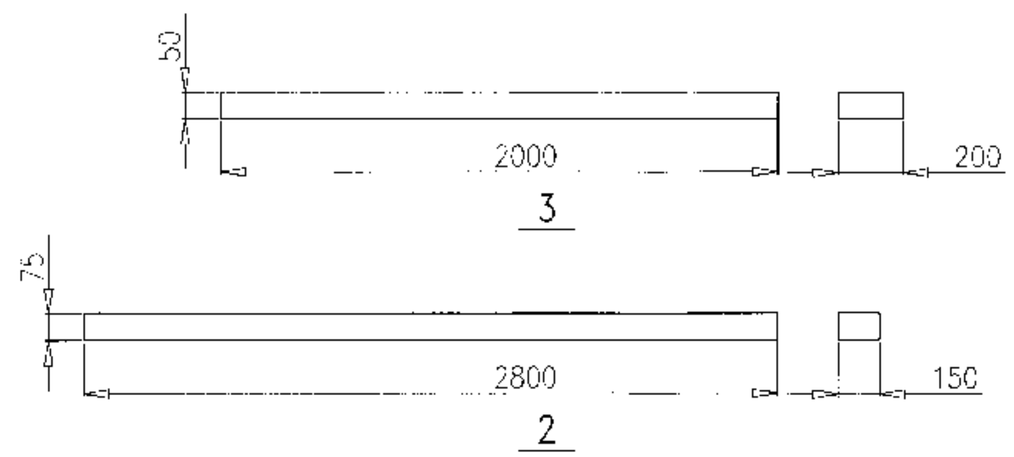
LOADING DIAGRAM OF 59" STEEL PIPES IN BOST WAGON & ITS VARIANTS

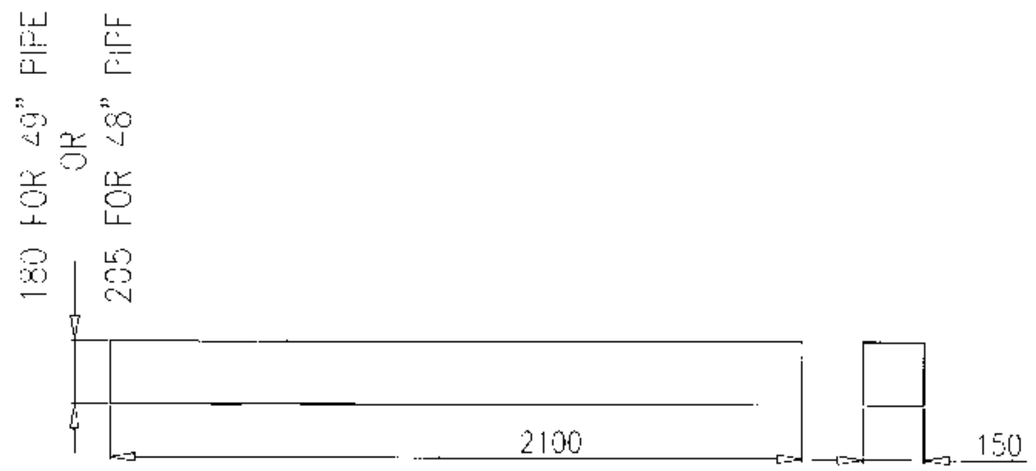
B.G. | R.D.S.O. [W] | GROUP | WD–23059–S–01

File No.RDSO-MWG&ENL(EOF-C)/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





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	

SUPERSEDED BY				
SUPERSEDES			DATE	
SCALE	PASSED		06/23	LOADING DIAGRAM OF 48" AND 49" STEEL PIPES IN BOST TYPE WAGON & ITS VARIANTS
	CHECKED		06/23	
	DRAWN	A.K.KOSHYAHA	06/23	
	J.S.NO.	WD-23059	06/23	

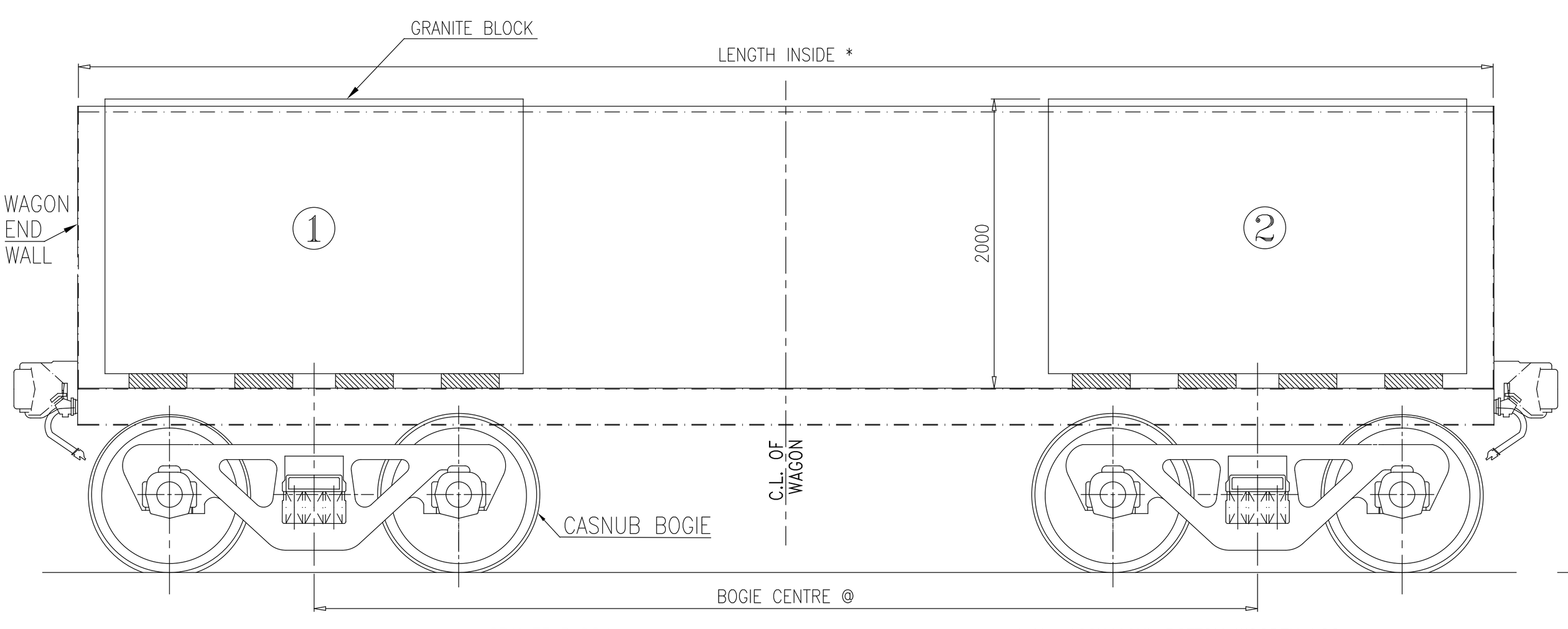
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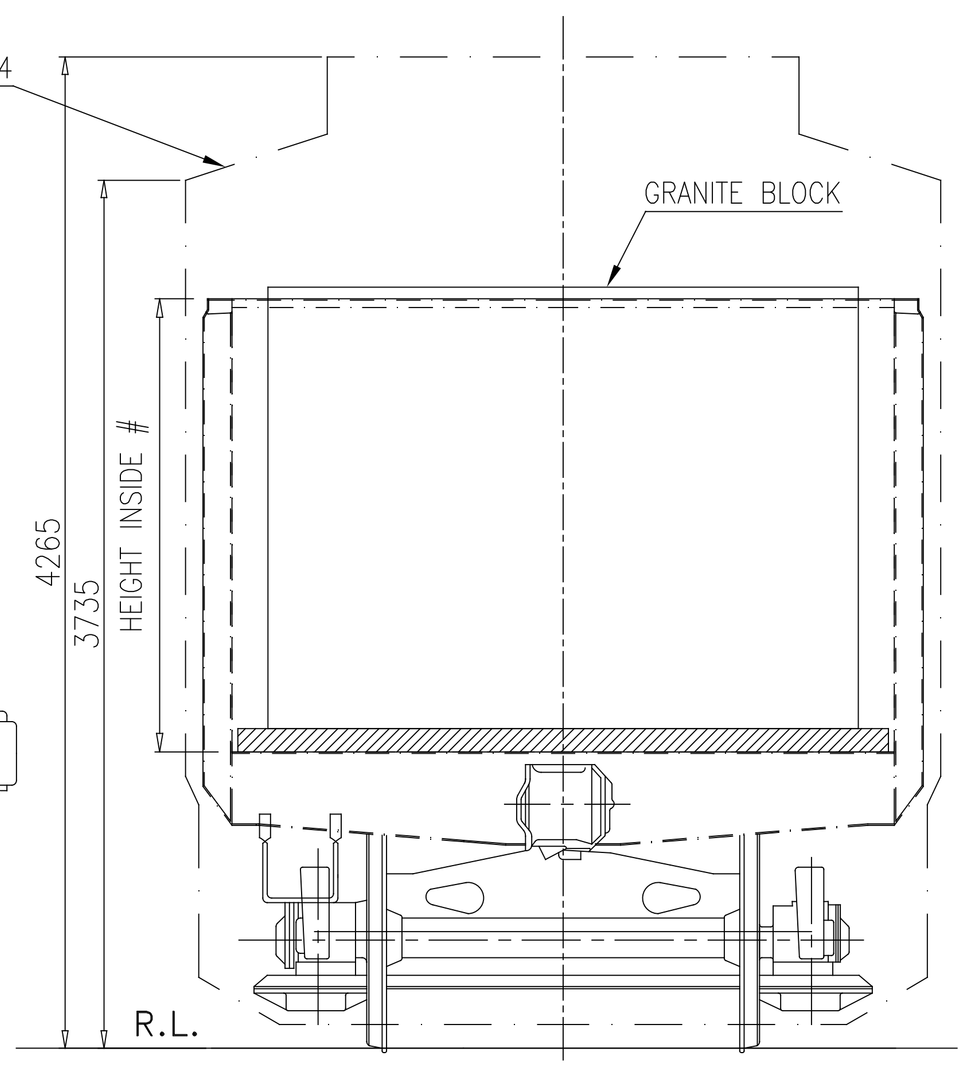
B.G. | R.D.S.O. [W] | GROUP | WD-23059-S-02

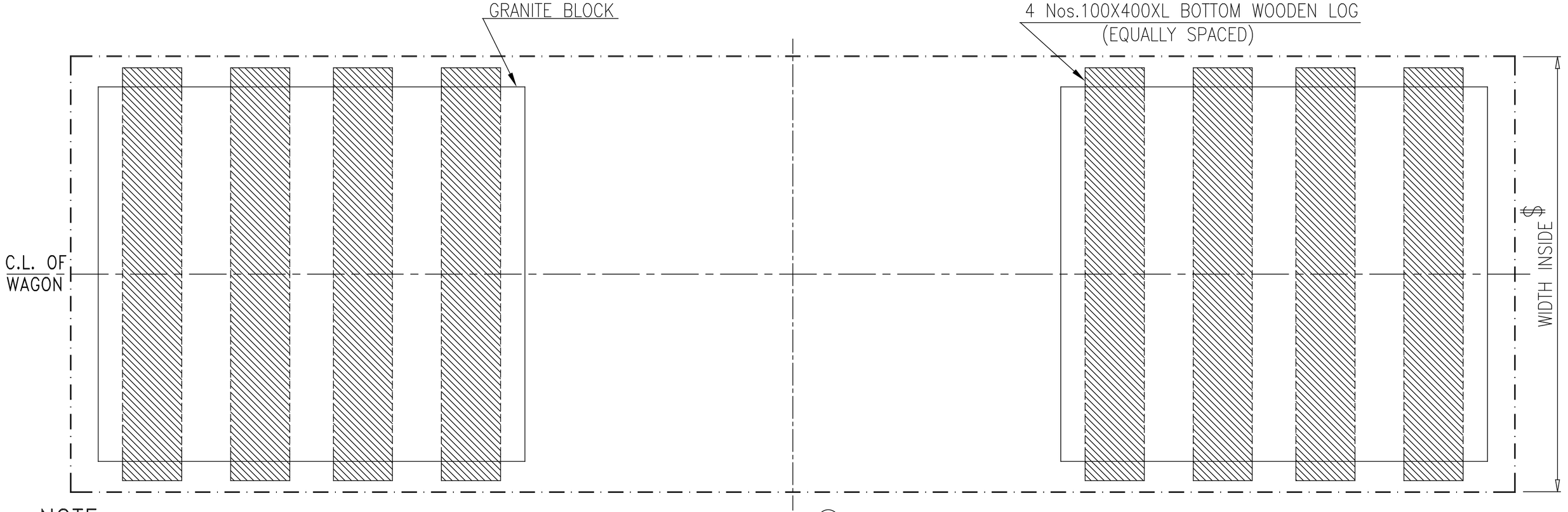
A1 02hy

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

1006







∗ – 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)

NOTE:–

1. THE DIFFERENCE IN WEIGHT OF GRANITE BLOCK 1 & 2 SHOULD NOT BE MORE THAN 2t.
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. ①
4. THE GRANITE BLOCKS SHOULD BE KEPT CENTRALLY COINCIDE WITH BOGIE CENTER LATERALLY. LOADING OF GRANITE BLOCKS SHALL BE SYMMETRICAL W.R.T. LONGITUDINAL AXIS AS WELL AS TRANSVERSE AXIS PASSING THROUGH CENTRE OF WAGON TO AVOID UNEVEN LOADING.
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. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. ① THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE TRANSPORTATION.
9. ALL DIMENSIONS ARE IN mm.

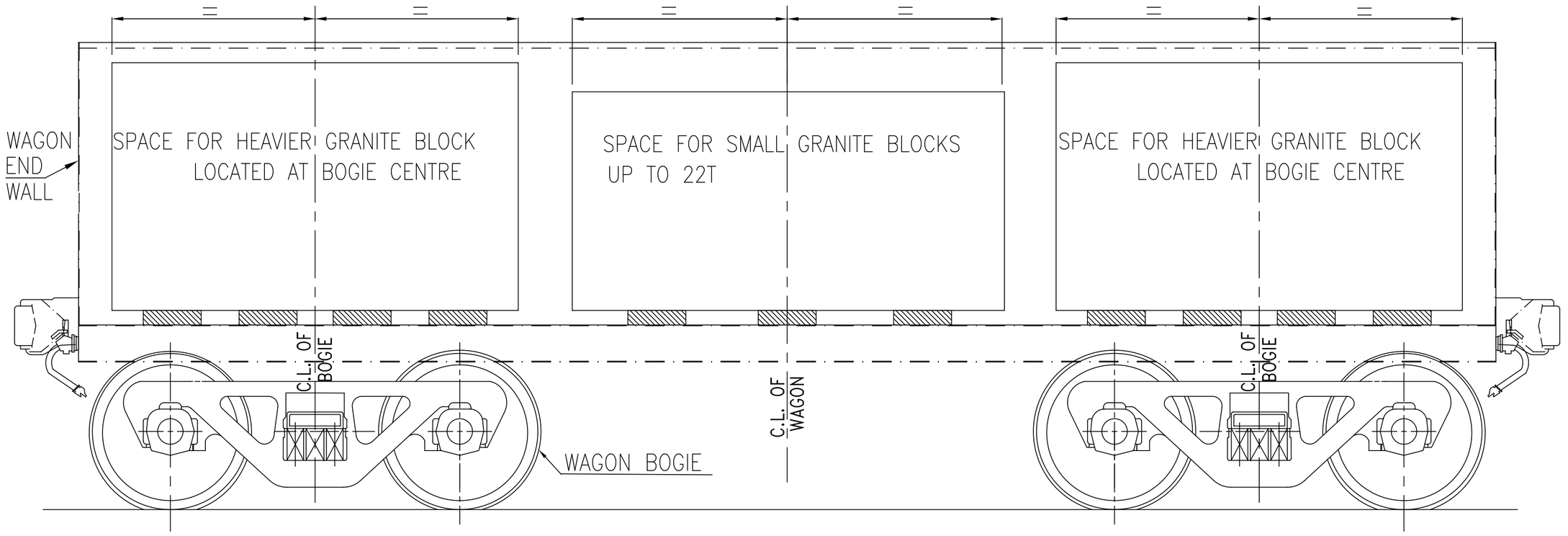
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1	– –	WD–24088	NOTE NO.1, 4 AND 8 MODIFIED.	09/24	

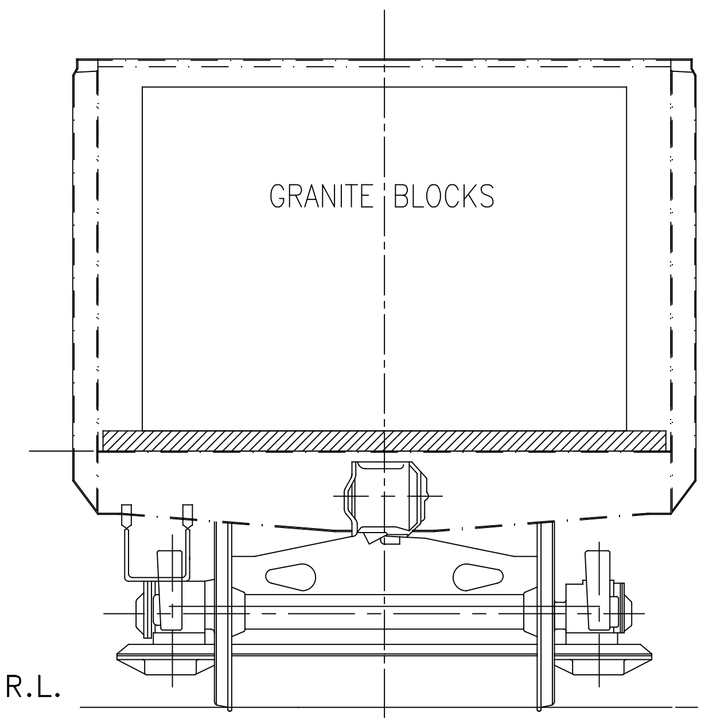
SUPERSEDED BY			
SUPERSEDES			DATE
SCALE	PASSED	sd/G.R.Sharma	05/21
	CHECKED	sd/J Ahmad	05/21
	DRAWN	J.AHMAD	05/21
	J.S.NO.	WD–21039	05/21

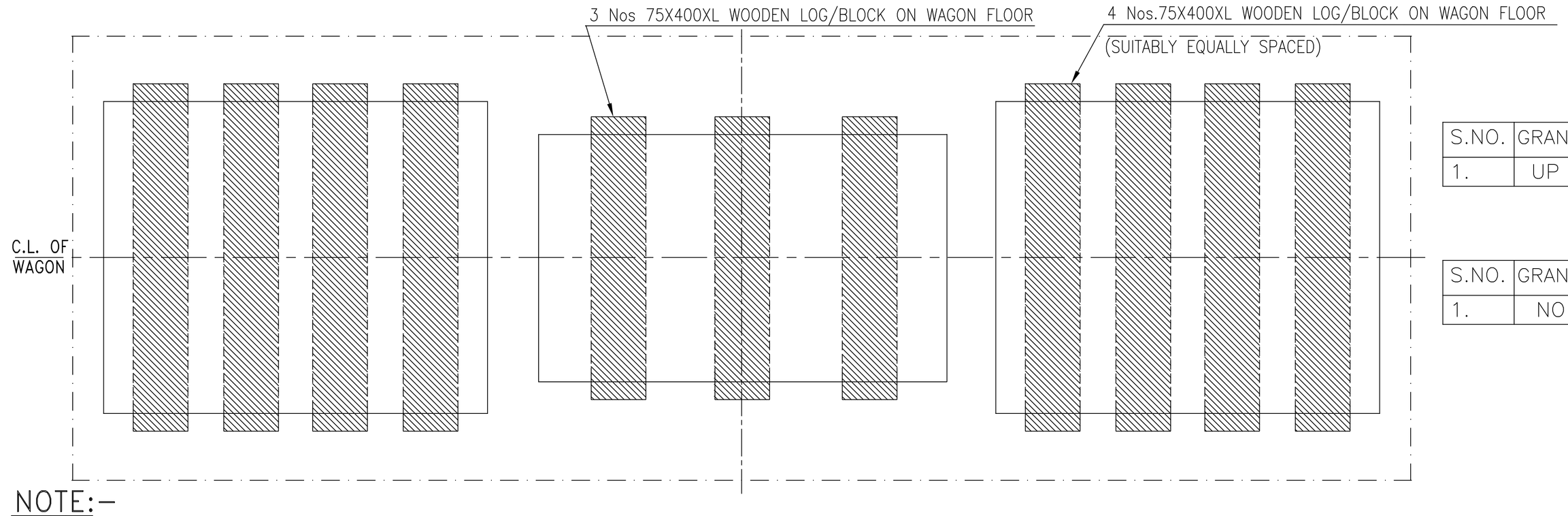
LOADING DIAGRAM OF GRANITE STONES IN BOXN/BOXNR/BOST/BOXNHL/BOXNS WAGONS & ITS VARIANTS (FOR 02 NO. GRANITE STONE BLOCKS)

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

I/69413/2024
File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SWI/RDSO
1007







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

TABLE−A

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

TABLE−B

NOTE:−

1. HEAVIER GRANITE BLOCKS SHALL BE LOADED AT BOGIE CENTRE. THE DIFFERENCE IN WEIGHT OF GRANITE BLOCKS AT BOTH BOGIE CENTRE SHOULD NOT BE MORE THAN 2 TON.
2. ALL LOADING WILL BE SYMMETRICAL ABOUT CENTRE LINE ALONG THE WAGON LENGTH AS WELL AS ALONG THE WIDTH OF WAGON.
3. ALL SMALL LOADS WILL BE KEPT TOGETHER IN CLOSE PROXIMITY ABOUT THE WAGON CENTRE AND SHALL BE ENSURED NOT TO MOVE, SECURED BY ANGLE STOPPERS WELDED TO THE WAGON FLOOR. LOCATION AND SIZE OF STOPPERS SHALL BE DECIDED BY ZONAL RAILWAYS.
4. ANGLE STOPPERS WELDED WITH WAGON FLOOR SHALL BE USED TO SECURE THE GRANITE BLOCK FROM UNDESIRED SHIFTING.
5. FOR STACKED LOADING, PROPER SECURING SHALL BE ENSURED WHICH SHALL BE APPROVED BY ZONAL RAILWAYS.
6. FOR ANGLE STOPPERS, PLEASE REFER TO DRG. NO. WD−24036−S−01 ITEM NO.−4.
7. AN INDICATIVE LOADING PATTERN IS GIVEN IN THE TABLE A AND B.
8. THE CAPACITY/ PAY LOAD VARIES FROM WAGON TO WAGON. THEREFORE WHILE LOADING, IT SHALL BE ENSURED THAT THE TOTAL LOAD SHALL NOT EXCEED THE PAY LOAD OF THAT PARTICULAR WAGON.
9. THE TOTAL LOAD ON ONE BOGIE SHOULD NOT EXCEED PAY LOAD/2.
10. THE GRANITE BLOCKS LOADED AT CENTER OF WAGON SHOULD NOT BE MORE THAN 22t.
11. THE LENGTH OF WOODEN LOGS 'L' SHOULD BE MORE THAN WIDTH OF THE GRANITE BLOCKS.
12. PROPER QUALITY HARD WOOD OF ADEQUATE STRENGTH,WHICH SUSTAIN THE LOAD IMPARTED ON IT, SHAL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY.
13. BEFORE LOADING, IT MUST BE ENSURED THAT WAGON IS FREE FROM SAGGING OR ANY DEFECTS.
14. THE LOADING/UNLOADING OF GRANITE BLOCKS IN WAGON TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON.
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.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
1	−−	WD−24088	DRAWING REVISED & REDRAWN	09/24	

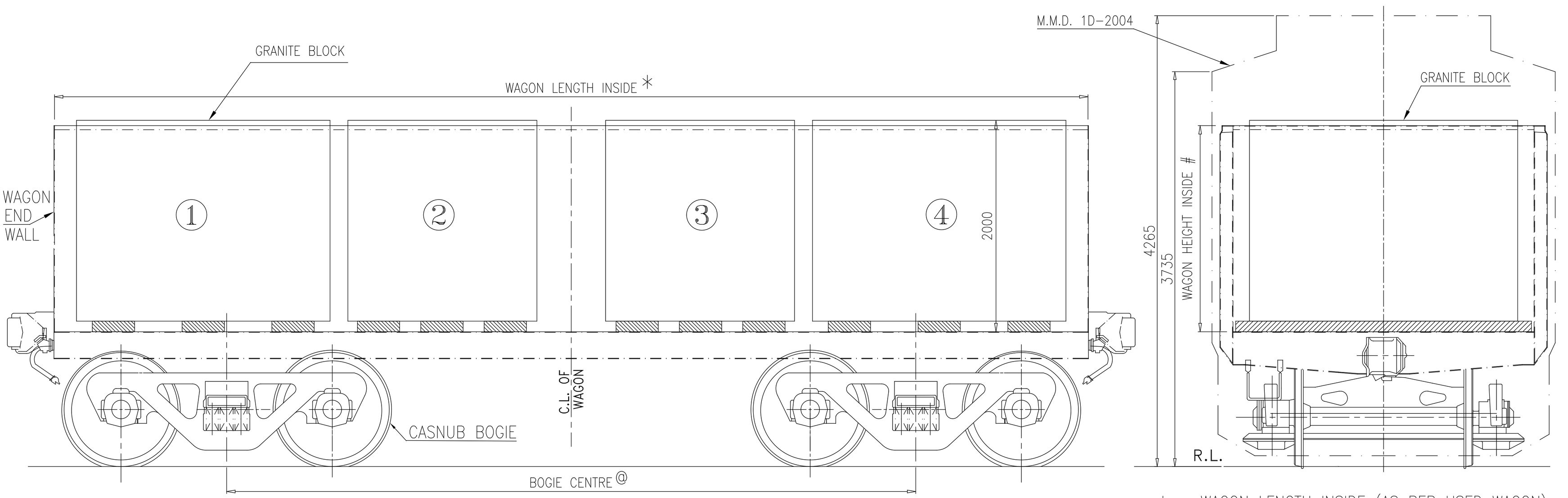
SUPERSEDED BY			
SUPERSEDES			DATE
SCALE	PASSED	sd/G.R.Sharma	05/21
	CHECKED	sd/J.Ahmad	05/21
	DRAWN	J.AHMAD	05/21
	J.S.NO.	WD−21039	05/21

LOADING DIAGRAM OF GRANITE STONE BLOCKS ON BOXN/BOXNR/BOST WAGONS AND ITS VARIANTS (FOR 03/ 02 NO. GRANITE STONE BLOCKS)

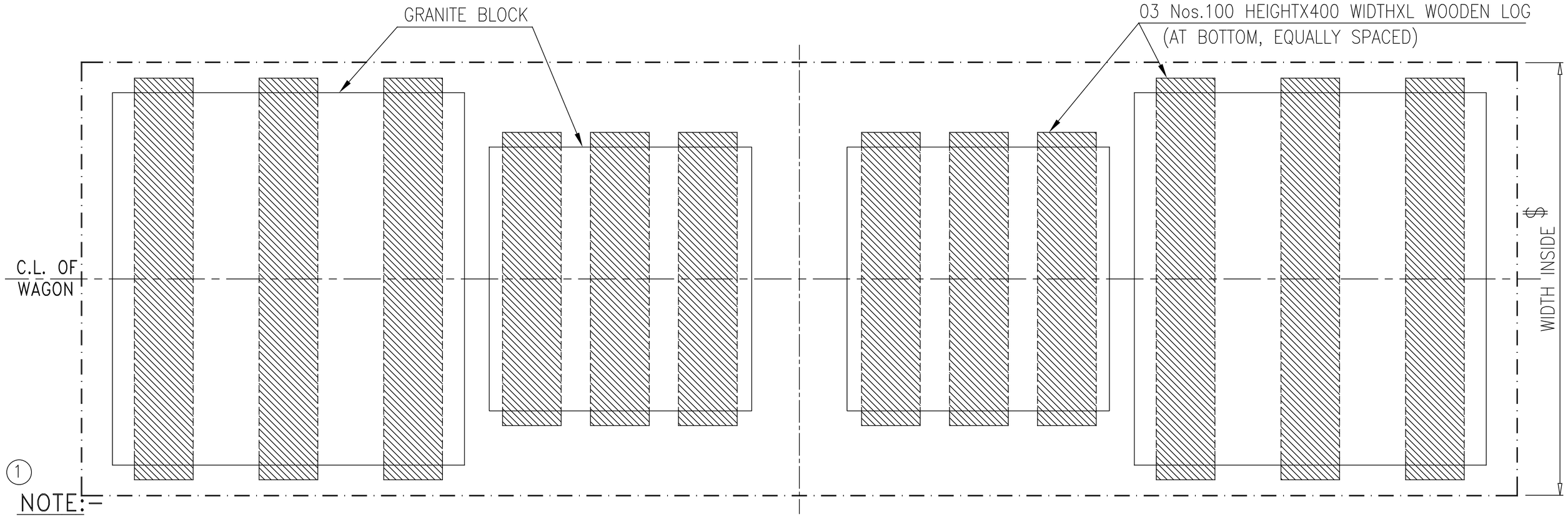
B.G. | R.D.S.O. [W] | GROUP | WD−21039−S−02

I/69413/2024
File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SWI/RDSO
1008

I/69413/2024



∗ – 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)



NOTE:–

1. THE DIFFERENCE IN WEIGHT OF GRANITE BLOCK 1+2 & 3+4 SHOULD NOT BE MORE THAN 2t.
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. LOADING OF GRANITE BLOCKS SHALL BE SYMMETRICAL W.R.T. LONGITUDINAL AXIS AS WELL AS TRANSVERSE AXIS PASSING THROUGH CENTRE OF WAGON TO AVOID UNEVEN LOADING. (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 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. 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 TRANSPORTATION. (1)
10. ALL DIMENSIONS ARE IN mm.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
1	––	WD–24088	NOTE NO.1, 4 AND 9 MODIFIED.	09/24	

SUPERSEDED BY			
SUPERSEDES			DATE
SCALE	PASSED	sd/G.R.Sharma	05/21
	CHECKED	sd/J Ahmad	05/21
	DRAWN	A.K.KUSHVAHA	05/21
	J.S.NO.	WD–21039	05/21

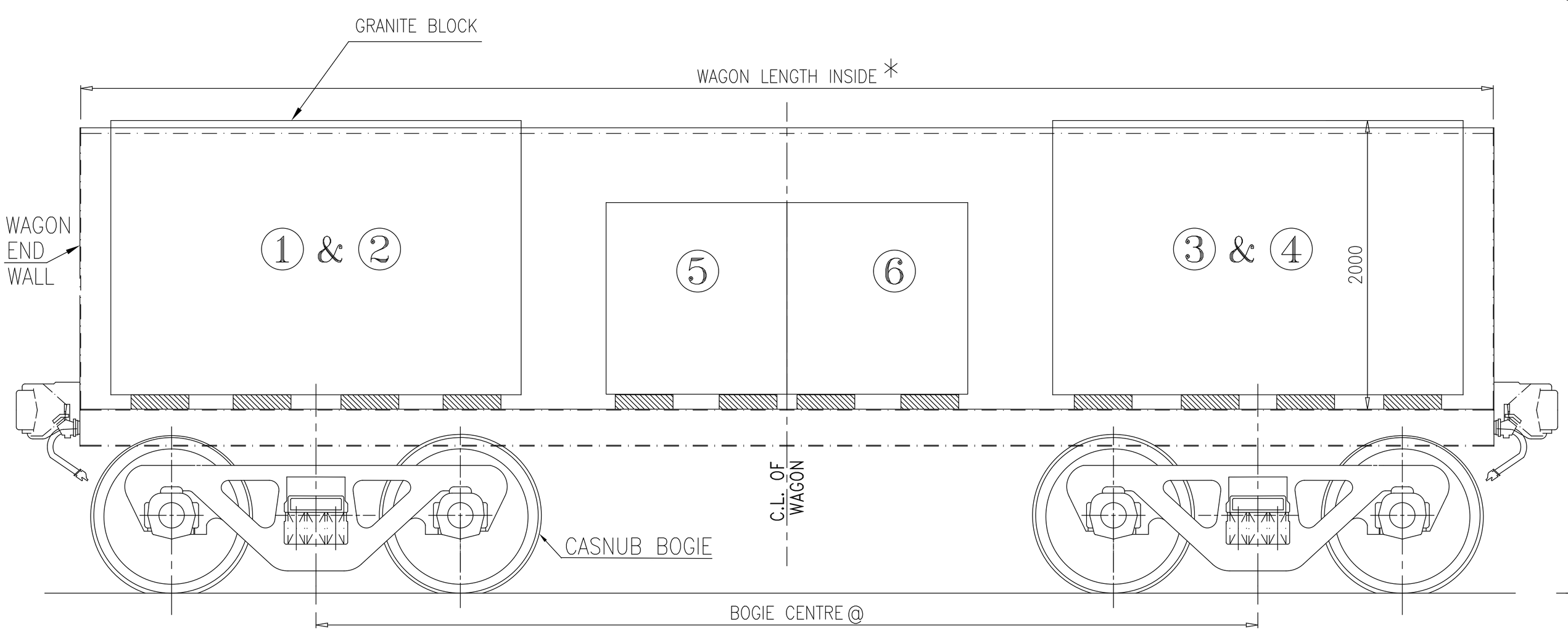
LOADING DIAGRAM OF GRANITE STONES IN BOXN/BOXNR/BOST/BOXNHL/BOXNS WAGONS & ITS VARIANTS (FOR 04 NO. GRANITE STONE BLOCKS)

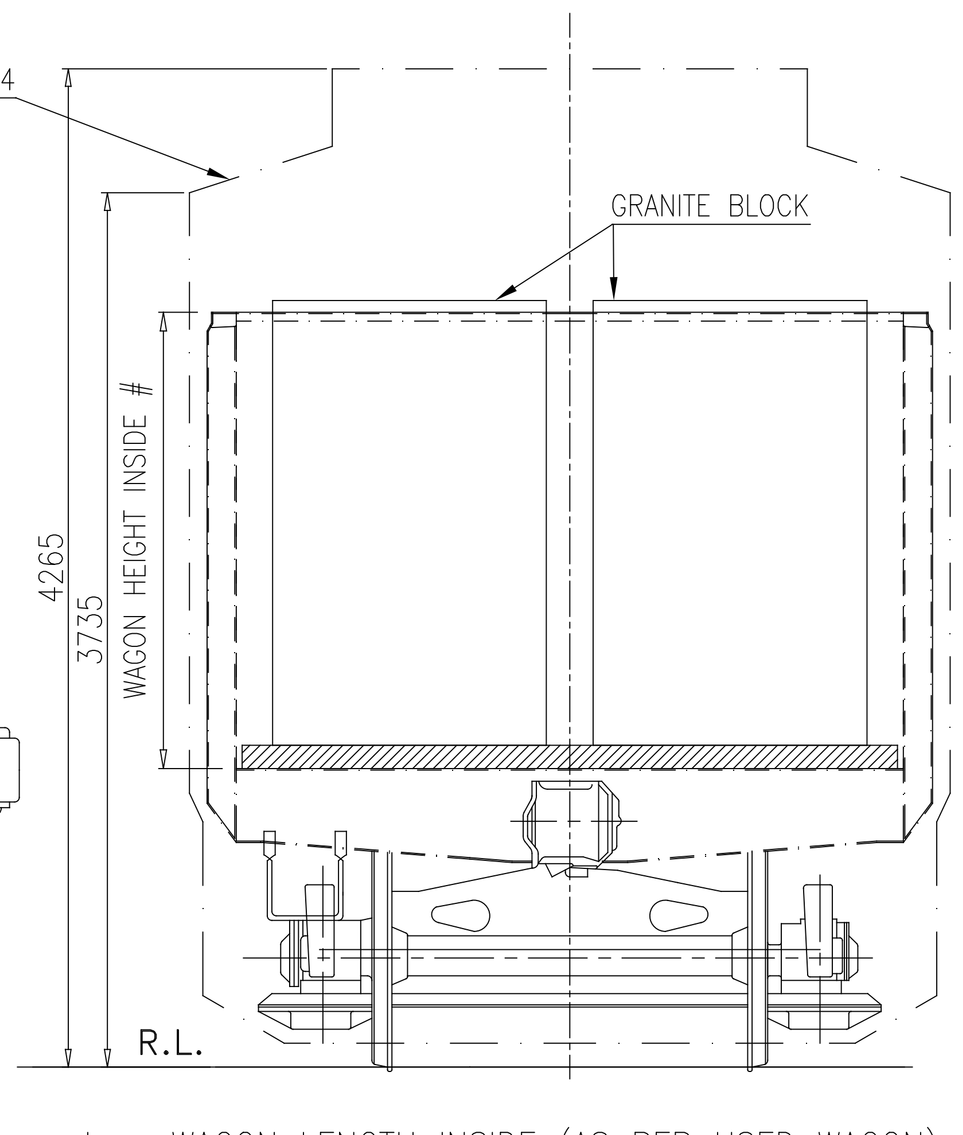
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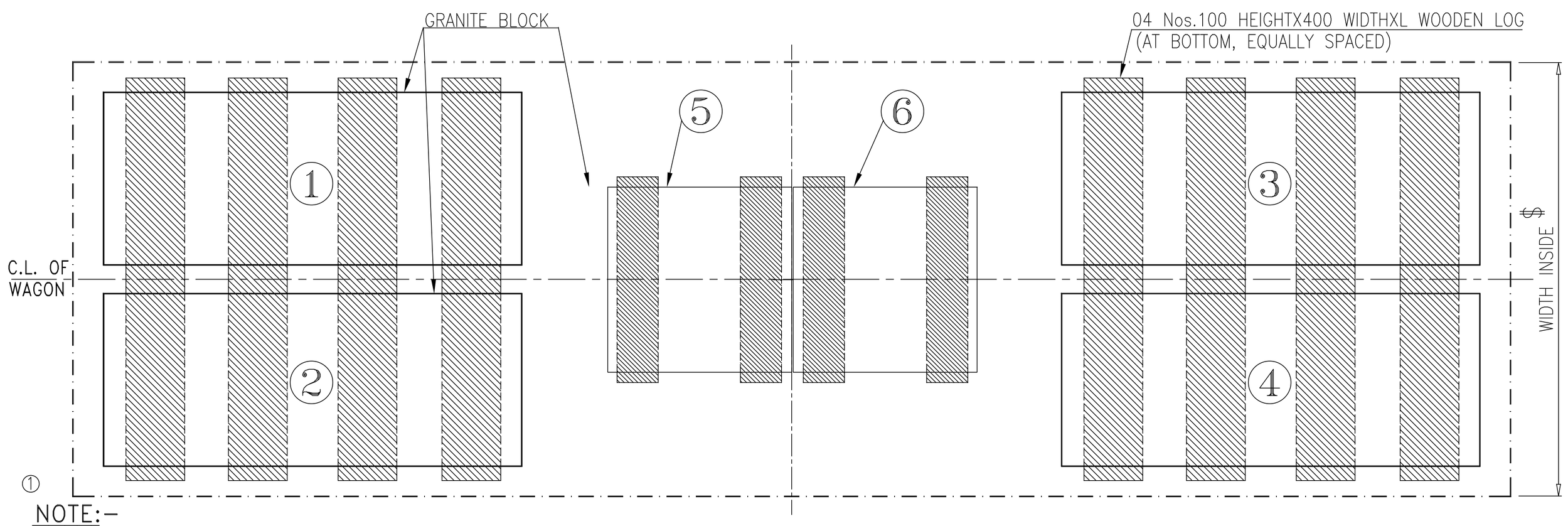
File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SW/RDSO

1009

TI/69413/2024







* – 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)

NOTE:–

1. THE DIFFERENCE IN WEIGHT OF GRANITE BLOCK 1+2 & 3+4 SHOULD NOT BE MORE THAN 2t. THE MAXIMUM WEIGHT OF BLOCK 5+6 WEIGHT NOT MORE THAN 16t.
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.LOADING OF GRANITE BLOCKS SHALL BE SYMMETRICAL W.R.T. LONGITUDINAL AXIS AS WELL AS TRANSVERSE AXIS PASSING THROUGH CENTRE OF WAGON TO AVOID UNEVEN LOADING.
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. 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 TRANSPORTATION.
10. ALL DIMENSIONS ARE IN mm.

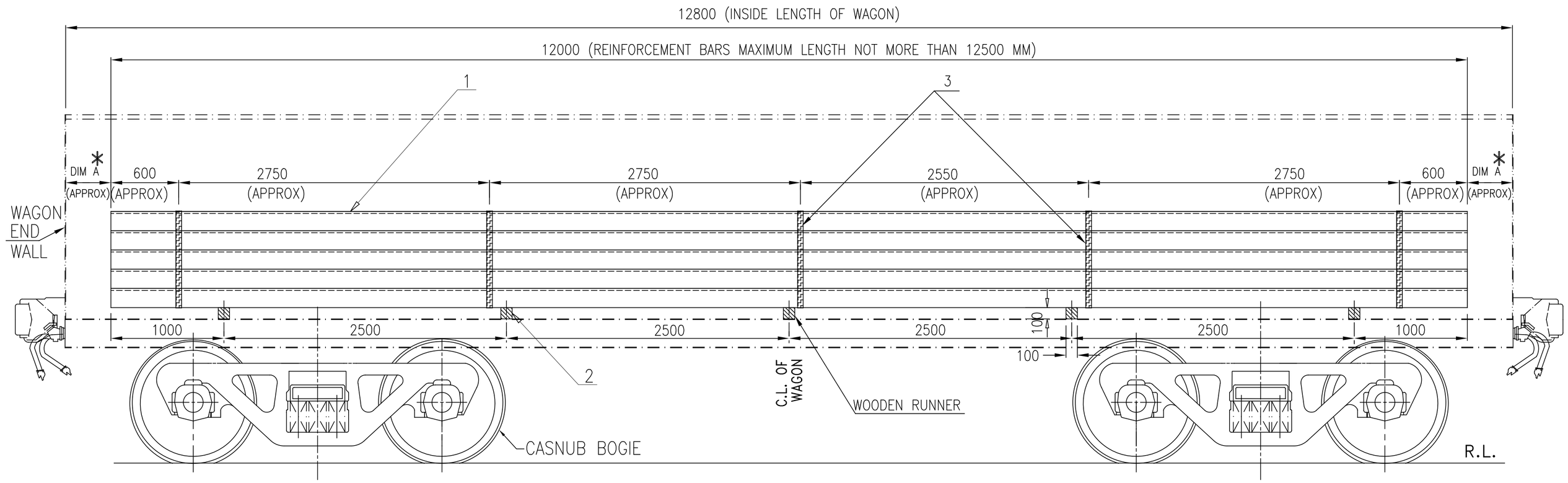
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1	--	WD-24088	NOTE NO.1, 4 & 9 MODIFIED & BLOCK NO. 5& 6 ADDED	09/24	

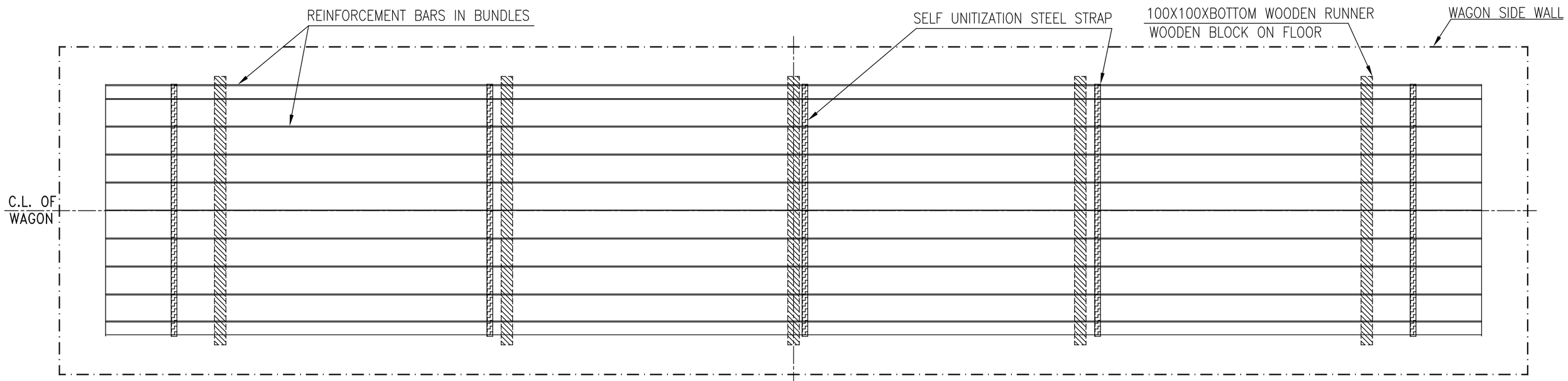
SUPERSEDED BY			
SUPERSEDES			DATE
SCALE	PASSED	sd/G.R.Sharma	05/21
	CHECKED	sd/J Ahmad	05/21
	DRAWN	A.K.KUSHVAHA	05/21
	J.S.NO.	WD-21039	05/21

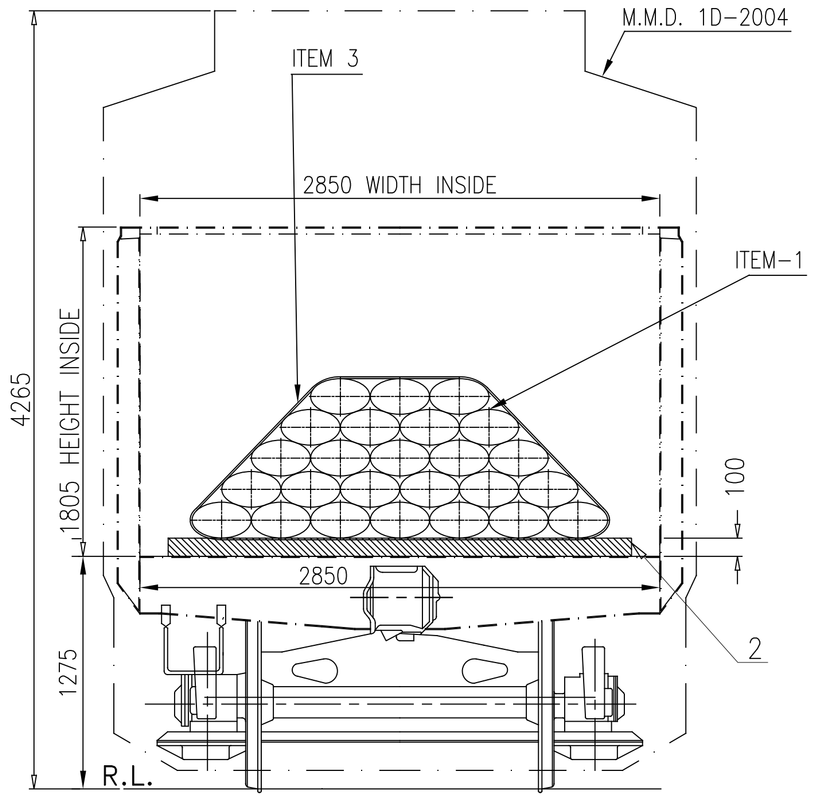
LOADING DIAGRAM OF GRANITE STONES IN BOXN/BOXNR/BOST/BOXNHL/BOXNS WAGONS & ITS VARIANTS (FOR 04/06 NO. GRANITE STONE BLOCKS)

B.G.	R.D.S.O. [W]	GROUP	WD-21039-S-04

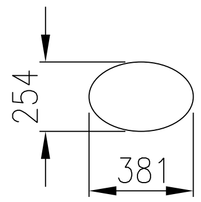
File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SW/RDSO



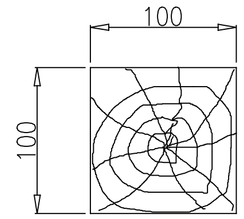




✱ DIM A = WAGON INSIDE LENGTH − RENFORCEMENT BARS LENGTH / 2



REINFORCEMENT BARS DIMENSION
(FOR REFEREN ONLY)



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

LOADING AND SECURING ARRANGEMENT DIAGRAM FOR REINFORCEMENT BARS

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 EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW; ②

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. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND−HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED. ②
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.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
2	--	WD-24088	NOTE NO.8 FOR STEEL STRAP AND NOTE NO.10 FOR CRIMPING MODIFIED.	09/24	
1	--	WD-24036	DRAWING AND NOTE REVISED AND REDRAWN.	04/24	

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

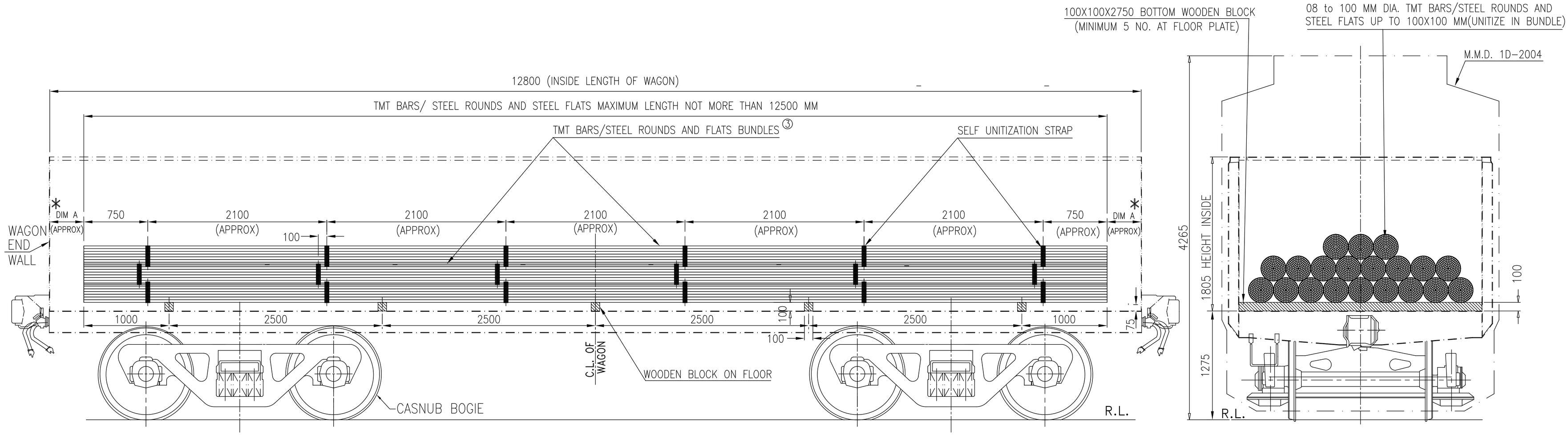
SUPERSEDED BY			
SUPERSEDES		DATE	
SCALE	PASSED	Sd.A.K.ROY	11/15
	CHECKED	Sd.A.P.SINGH	10/15
	DRAWN	DEEPAK	10/15
	COMPARED		
	J.S.NO.	WD−15057	10/15

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

B.G.	R.D.S.O. [W]	GROUP	WD−15057−S−07

I/6941/8/2024
File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SW/RDSO
1011

II/69413/2024



LOADING AND SECURING ARRANGEMENT DIAGRAM FOR TMT BARS/STEEL ROUNDS (8 MM TO 100 MM DIA) AND STEEL FLATS(UP TO 100X100 mm)

NOTE:-

1. TMT BARS/STEEL ROUNDS HAVING DIAMETER OF 8MM TO 100 mm AND STEEL FLATS (UP TO 100X100 mm) UNITIZE IN BUNDLES, SHOULD BE STACKED IN 02 OR 03 LAYERS(AS PER REQUIREMENT) AS SHOWN IN LOADING DIAGRAM.
2. LOADING OF TMT BARS/STEEL ROUNDS AND STEEL FLATS BUNDLES SHOULD BE LOADED UNIFORMLY DISTRIBUTED AND SYMMETRICALY 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/STEEL ROUNDS AND STEEL FLATS, LOWER LENGTH OF BARS/ROUNDS AND FLATS BUNDLE SHOULD BE KEPT AT UPPER SIDE LAYER AT CENTRE OF WAGON.
4. TMT BARS/STEEL ROUNDS AND FLATS LOADED IN BUNDLE FORM & ANY BUNDLE WEIGHT NOT MORE THAN 10 TON. TMT BARS/ STEEL BUNDLES/FLATS ARE LOADED ALONG THE LENGTH AND CENTRE OF WAGON AS SHOWN IN DRAWING.
5. STRAP USED FOR UNITIZE THE TMT BARS/STEEL ROUNDS AND FLATS HAVE ADEQUATE STRENGTH FOR SAFE LOADING & UNLOADING OPERATION.
6. BEFORE LOADING TMT BARS/STEEL ROUNDS AND FLATS BUNDLES IN THE WAGON, ENSURE THAT WOODEN RUNNER ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING.
7. LOADING OF TMT BARS/STEEL ROUNDS AND FLATS 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/STEEL ROUNDS AND FLATS BUNDLE WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   - 7.3 MAXIMUM DIFFERENCE IN TMT BARS/ STEEL ROUNDS AND FLATS BUNDLE WEIGHT LOADED ON BOTH BOGIE CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   - 7.4 TOTAL WEIGHT OF LOADED TMT BARS/STEEL ROUNDS AND FLATS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
8. THE LOADING/UNLOADING OF TMT BARS/STEEL ROUNDS AND FLATS BUNDLES TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON..
9. THE LOADING OF TMT BARS/STEEL ROUNDS AND FLATS BUNDLES ON ''BOXN"/"BOXNR" AND ''BOXNHL" WAGONS CAN BE FOLLOWED IN SAME PATTERN BY CONSIDERING LENGTH OF TMT BARS&ROUNDS/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.
3	--	WD-24088	STEEL ROUNDS AND FLATS UP TO 100 MM ADDED IN DRAWING, ACCORDINGLY DRAWING AND NOTE REVISED.	09/24	
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.Kushvaha	05/22
	DRAWN	SACHIN KUMAR	04/22
	J.S.NO.	WD-22038	04/22

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

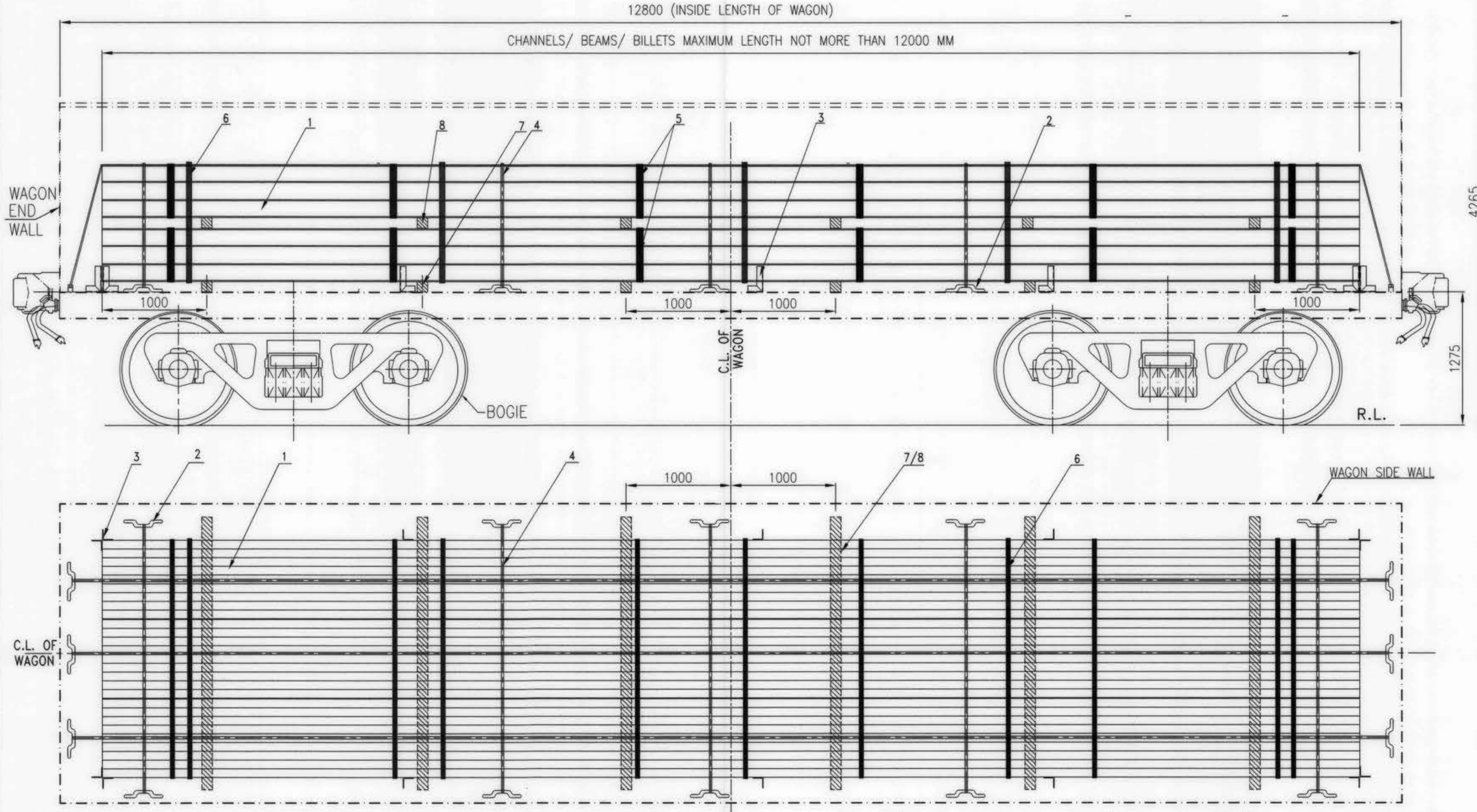
③①

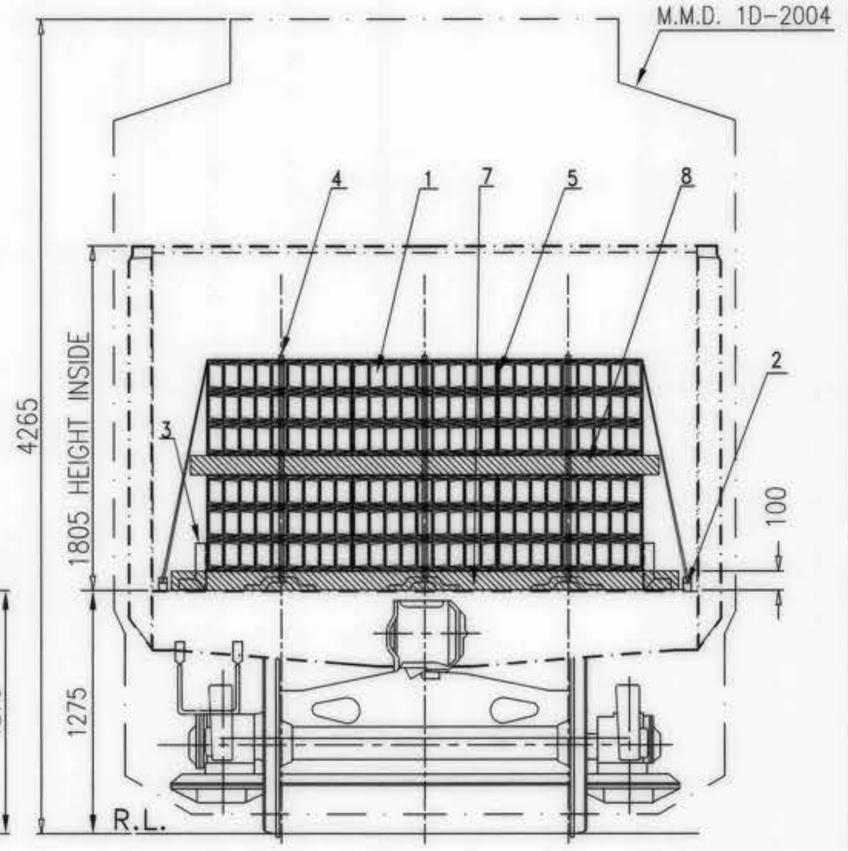
LOADING DIAGRAM FOR 08 mm TO 100 mm TMT BARS/STEEL ROUNDS AND STEEL FLATS up to 100 X 100 mm IN BOST TYPE WAGON & ITS VARIANTS

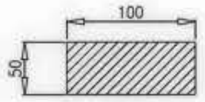
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File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SWR/DSO

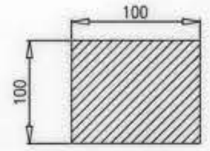
1012







8



7

LOADING AND SECURING ARRANGEMENT DIAGRAM FOR FOR 12 MT LENGTH CHANNELS & BEAMS(UP TO 300 MM HEIGHT) AND BILLETS(UP TO 125X125 MM) IN BUNDLES

NOTE:-

1. STEEL CHANNELS/ BEAMS (UP TO 300 MM) AND BILLETS(UP TO 125X125 MM) BUNDLES SHOULD BE STACKED IN LAYERS AS SHOWN IN DRAWING.
2. LOADING OF STEEL CHANNELS/ BEAMS/ BILLETS BUNDLE 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 ISMC CHANNELS/ BEAMS/ BILLETS BUNDLE, SMALL LENGTH BUNDLE SHOULD BE KEPT AT UPPER SIDE LAYER AT CENTRE OF WAGON.
4. CHANNELS/ BEAMS/ BILLETS LOADED IN BUNDLE FORM & ANY BUNDLE WEIGHT NOT MORE THAN 10 TON. CHANNELS/ BEAMS/ BILLETS BUNDLES ARE LOADED ALONG THE LENGTH AND CENTRE OF WAGON AS SHOWN IN DRAWING.
5. **PROCEDURE OF LOADING CHANNELS/ BEAMS/ BILLETS BUNDLES ON WAGON ARE:-**
   - 5.1 BEFORE LOADING CHANNELS/ BEAMS/ BILLETS BUNDLES, 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.
   - 5.2 AFTER PLACING FIRST LAYER OF CHANNELS/ BEAMS/ BILLETS BUNDLES ON WOODEN RUNNER, INTERMEDIATE WOODEN RUNNERS TO BE PLACED AT CORRECT POSITION BEFORE LOADING ANOTHER LAYER OF BUNDLES AS SHOWN IN DRAWING.
   - 5.3 AFTER PLACING CHANNELS/ BEAMS/ BILLETS BUNDLES IN LAYERS, THEN ALL BUNDLES TO BE UNITIZE WITH THE HELP OF 05 NO. STEEL STRAPS AS SHOWN IN DRAWING.
   - 5.4 AFTER UNITIZING THE BUNDLES TOGETHER WITH STEEL STRAPS, THEN USE 03 NO.'S OF STEEL STRAP FOR SECURING THE CHANNELS/ BEAMS/ BILLETS BUNDLES LONGITUDINALLY WITH ISOLATION HOOK AS SHOWN IN DRAWING.
   - 5.5 AFTER SECURING THE BUNDLES LONGITUDINALLY, THEN USE 05 NO.'s OF STEEL STRAPS FOR SECURING THE BUNDLES TRANSVERSELY WITH ISOLATION HOOK, TIGHTEN ADEQUATELY FOR SAFE OPERATION AS SHOWN IN DRAWING.
   - 5.6 AFTER TIGHTENING BY STRAP, BUNDLES SHALL BE SECURE BY PROVIDING 14 NO.'s OF ANGLE STOPPER AS SHOWN IN DRAWING.
   - 5.7 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER FIRST LAYER OF CHANNELS/ BEAMS BUNDLES.
6. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

EN 13247: 2001

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

7. 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.
8. 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. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND-HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.
9. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD-CS-01-LOAD SECURING CHECK SHEET (LATEST).
10. THE LOADING/UNLOADING OF CHANNELS/ BEAMS TO BE CARRIED OUT IN SUCH A WAY, THAT LOADING/UNLOADING DONE IN SAFE WAY AND IT WILL NOT DAMAGE WAGON.
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.

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

ITEM	DESCRIPTION	NO. OF PCS	REFERENCE DRAWING	MTL & SPEC.	REMARKS
8.	WOODEN RUNNER (50X100)	AS PER REQUIREMENT	--	--	--
7.	WOODEN RUNNER (100X100)	6	--	--	--
6.	LASHING CHAIN OR HEAVY DUTY STRAP FOR SELF UNITIZATION OF BUNDLES	5	--	--	--
5.	LASHING CHAIN OR HEAVY DUTY STRAPS FOR FORMING IN BUNDLES	AS PER REQ.	--	--	--
4.	LASHING CHAIN OR HEAVY DUTY STRAP FOR TIGHTEN WITH ISOLATION HOOK	8	--	EN13247	--
3.	ANGLE STOPPER	14	--	--	AS PER DRAWING NO. WD-24036-S-01,ITEM NO.-4
2.	ISOLATION HOOK	16	--	--	AS PER DRAWING NO. WD-24036-S-01,ITEM NO.-3
1.	CHANNEL/ BEAMS/ BILLETS BUNDLES	AS PER REQUIREMENT	--	--	--

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

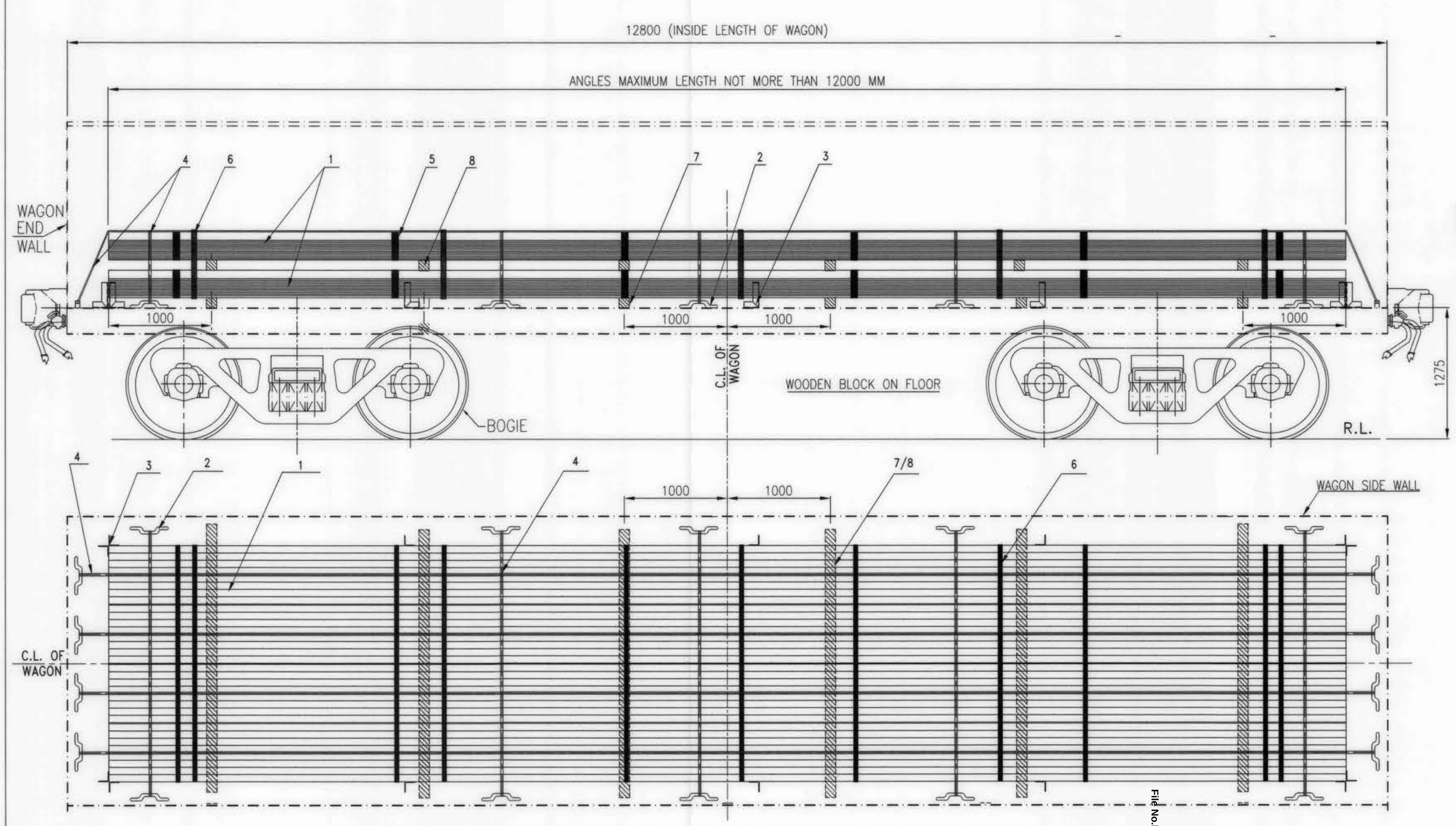
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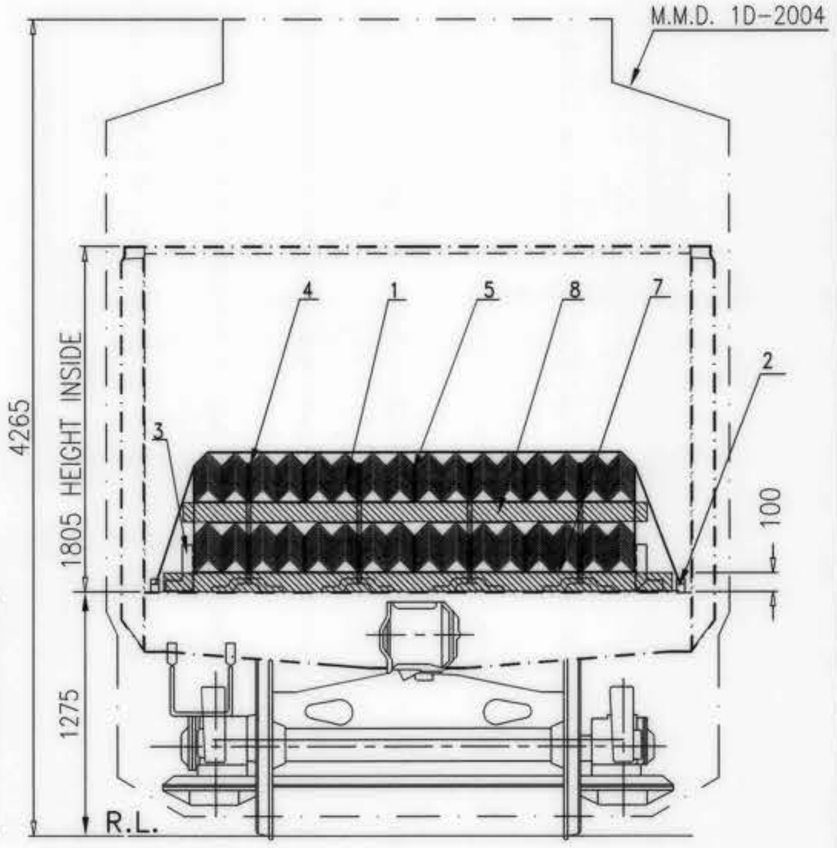
SCALE	PASSED	11/24
	CHECKED	11/24
	DRAWN SACHIN KUMAR	10/24
	J.S.NO. WD-24088	09/24

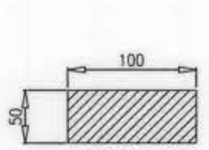
LOADING DIAGRAM FOR 12M CHANNELS/BEAMS (HEIGHT UP TO 300 MM) AND BILLETS(UP TO (125X125 MM) IN BOST WAGON & ITS VARIANTS

B.G. | R.D.S.O. [W] | GROUP | WD-24088-S-06

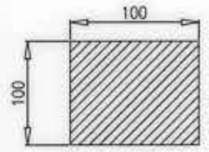
A1







8



7

LOADING AND SECURING ARRANGEMENT DIAGRAM FOR 12 M ANGLES BUNDLES

NOTE:-

1. ANGLES BUNDLE SHOULD BE STACKED IN SELF UNITIZE LAYERS AS SHOWN IN DRAWING.
2. LOADING OF ANGLES BUNDLE 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. ANGLES BUNDLE LOADED IN BUNDLE FORM & ANY BUNDLE WEIGHT NOT MORE THAN 10 TON. ANGLES BUNDLES ARE LOADED ALONG THE LENGTH AND CENTRE OF WAGON AS SHOWN IN DRAWING.
4. **PROCEDURE OF LOADING ANGLES BUNDLES ON WAGON ARE:-**
   - 5.1 BEFORE LOADING ANGLES BUNDLES, 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.
   - 5.2 AFTER PLACING FIRST LAYER OF ANGLES BUNDLES ON WOODEN RUNNER, INTERMEDIATE WOODEN RUNNERS TO BE PLACED AT CORRECT POSITION BEFORE LOADING ANOTHER LAYER OF ANGLES BUNDLES AS SHOWN IN DRAWING.
   - 5.3 AFTER PLACING ANGLES BUNDLES IN LAYERS, THEN ALL BUNDLES TO BE UNITIZE WITH THE HELP OF 05 NO. STEEL STRAPS AS SHOWN IN DRAWING.
   - 5.4 AFTER UNITIZING THE BUNDLES TOGETHER WITH STEEL STRAPS, THEN USE 03 NO.'S OF STEEL STRAP FOR SECURING THE ANGLES BUNDLES LONGITUDINALLY WITH ISOLATION HOOK AS SHOWN IN DRAWING.
   - 5.5 AFTER SECURING THE BUNDLES LONGITUDINALLY, THEN USE 05 NO.'s OF STEEL STRAPS FOR SECURING THE BUNDLES TRANSVERSELY WITH ISOLATION HOOK, TIGHTEN ADEQUATELY FOR SAFE OPERATION AS SHOWN IN DRAWING.
   - 5.6 AFTER TIGHTENING BY STRAP, BUNDLES SHALL BE SECURE BY PROVIDING 14 NO.'s OF ANGLE STOPPER AS SHOWN IN DRAWING.
   - 5.7 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER FIRST LAYER OF ANGLES BUNDLES.
5. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

EN 13247: 2001

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

6. 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.
7. 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. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND-HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.
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 SLABS TO BE CARRIED OUT IN SUCH A WAY, THAT LOADING/UNLOADING DONE IN SAFE WAY AND IT WILL NOT DAMAGE WAGON.
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.

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

ITEM	DESCRIPTION	NO. OF PCS	REFERENCE DRAWING	MTL & SPEC.	REMARKS
8	WOODEN RUNNER (50X100)	AS PER REQUIREMENT	--	--	--
7.	WOODEN RUNNER (100X100)	6	--	--	--
6.	LASHING CHAIN OR HEAVY DUTY STRAP FOR SELF UNITIZATION BETWEEN BUNDLES OF ANGLES	5	--	--	--
5.	LASHING CHAIN OR HEAVY DUTY STRAP FOR SELF UNITIZATION TO FORMING BUNDLES	AS PER REQ.	--	--	--
4.	LASHING CHAIN OR HEAVY DUTY STRAP TIGHTEN ISOLATION HOOK.	8	--	EN13247	--
3.	ANGLE STOPPER	14		--	AS PER DRAWING NO. WD-24036-S-01,ITEM NO.-4
2.	ISOLATION HOOK	16		--	AS PER DRAWING NO. WD-24036-S-01,ITEM NO.-3
1.	ANGLES BUNDLE PACKETS	AS PER REQUIREMENT	--	--	--

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

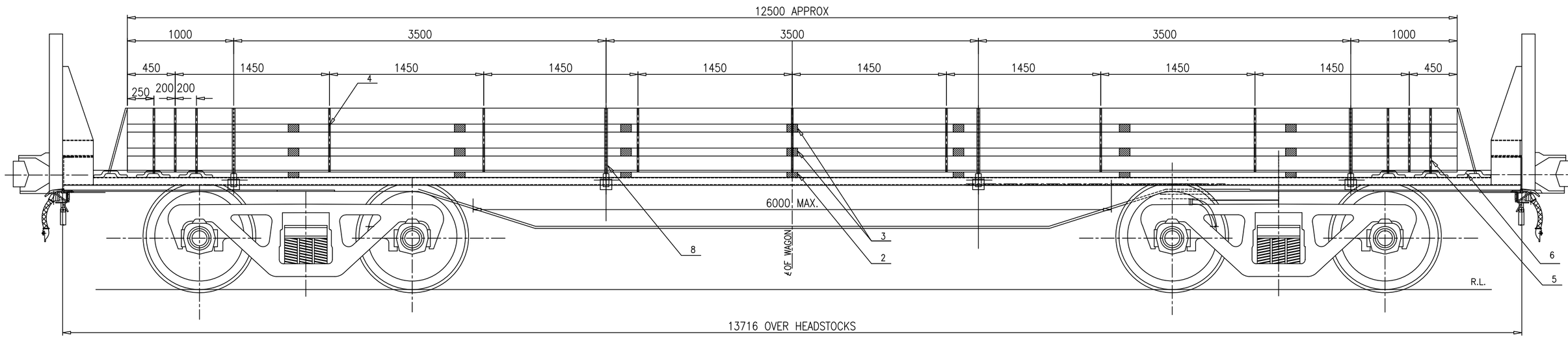
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SCALE

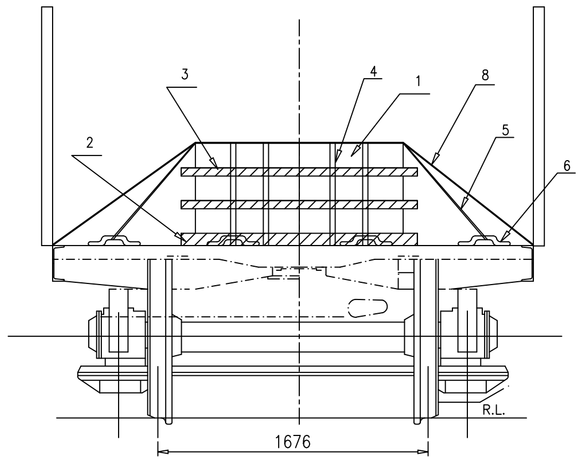
		DATE
PASSED		11/24
CHECKED		11/24
DRAWN	SACHIN KUMAR	11/24
U.S.NO.	WD-24088	09/24

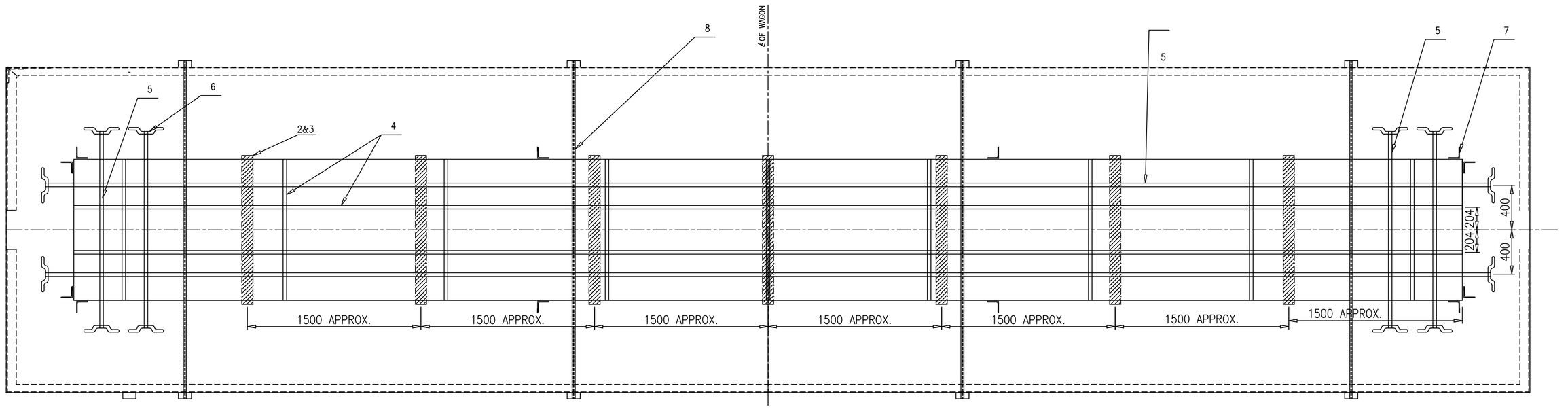
LOADING DIAGRAM FOR 12M ANGLES IN BOST TYPE WAGON & ITS VARIANTS

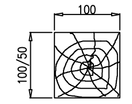
B.G. | R.D.S.O. [W] | GROUP | WD-24088-S-07

1014









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 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 TO EXTENT POSSIBLE MAINTAINING LIMITS AS INDICATED.
   ③ 6. ALL SLABS ARE TO BE SECURED USING HEAVY DUTY STEEL STRAPS AS INDICATED
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 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).
    ⑥ 12. 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	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3TON)

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

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.
    ⑥ 23. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

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

ITEM	DESCRIPTION	NO.OFF	MTL&SPEC	REMARKS
⑤ 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	
⑤ 6	ISOLATION HOOK	AS PER REQUIREMENT	WD–24036–S–01 PART–3	
③⑥ 5	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	AS PER REQUIREMENT	EN 13247:2001	
③⑥ 4	HIGH TENSILE STEEL STRAP (FOR BUNDLING & UNITIZATION)	AS PER REQUIREMENT	EN 13247:2001	
3	INTERMEDIATE WOODEN RUNNER	AS PER REQUIREMENT	WOOD	
2	WOODEN RUNNER	AS PER REQUIREMENT	WOOD	
1	STEEL SLABS	AS PER REQUIREMENT	STEEL	

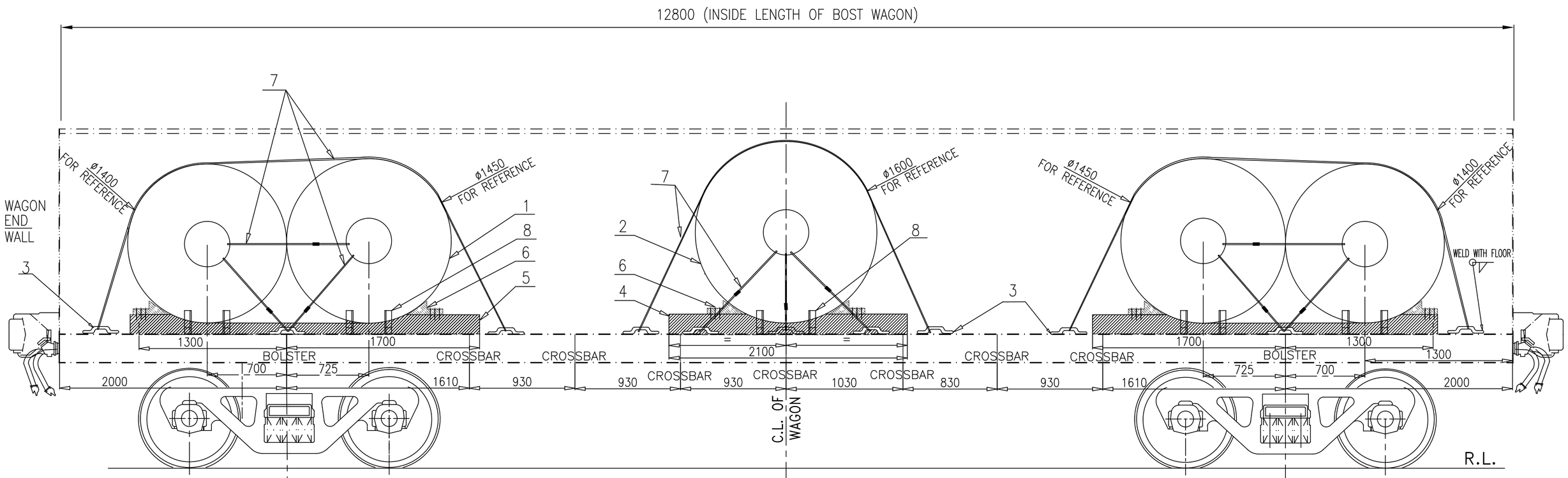
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
⑥	–	WD–24088	STEEL STRAP SPECIFICATION CHANGED FROM EN–13246 TO EN–13247 & NOTE NO. 23 ADDED.	10/24	–
⑤	–	WD–24036	DRAWING REVISED	05/24	–
④	–	WD–24029	NOTE NO. 3 REMOVED	03/24	–
③	–	WD–23075	NOTE NO. 16 TO 21 ADDED.	08/23	–
②	–	WD–21112	NOTE NO. 16 ADDED	01/22	
①	–	WD–21119	NOTE NO. 14 & 15 ADDED AND BOST WAGON & ITS VARIANTS ADDED IN TITLE BLOCK.	12/21	

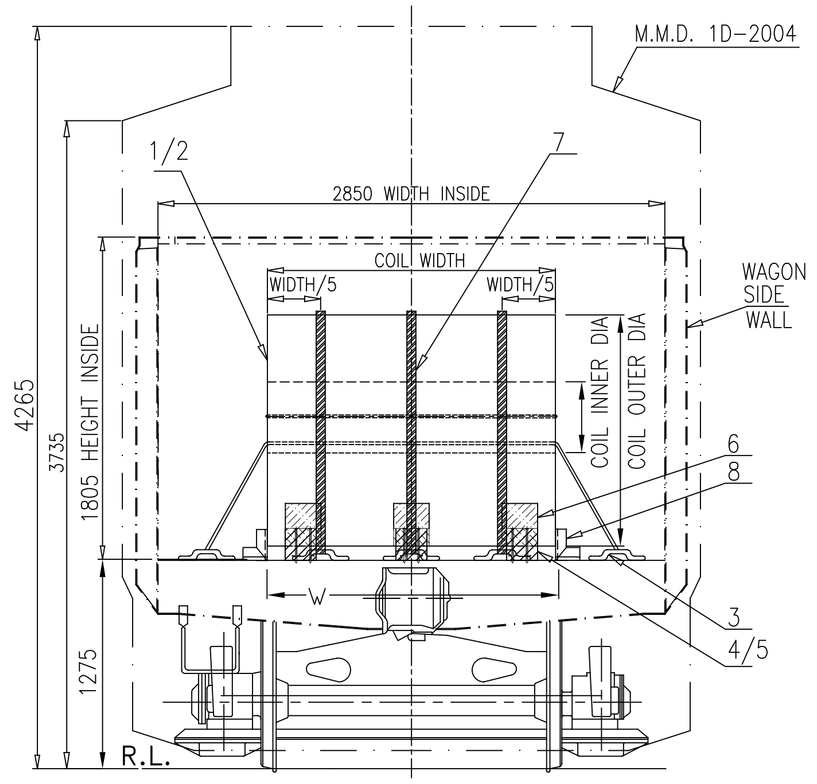
SUPERSEDED BY			
SUPERSEDES			DATE
SCALE	PASSED	G.R.SHARMA	10/21
	CHECKED	A.P.SINGH	10/21
	DRAWN	DINESH	10/21
	TRACED		
	COMPARED		
	J.S.NO.	WD–21095	10/21

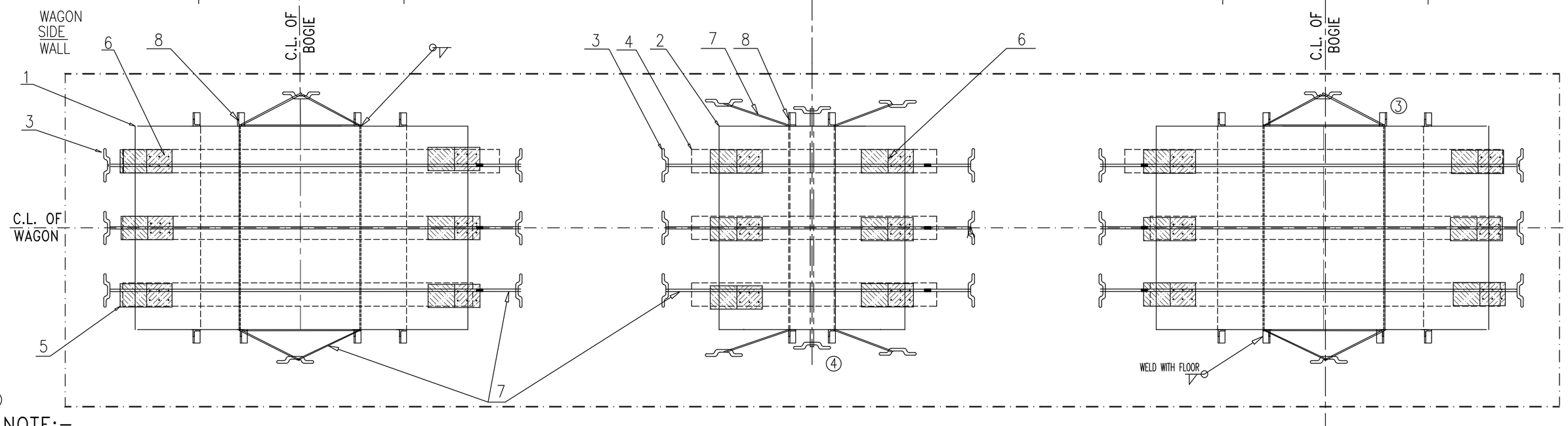
LOADING AND SECURING OF STEEL SLABS/BILLETS (9–13MTRS) ON BRN AND BOST WAGON & ITS VARIANTS ①

B.G.	R.D.S.O. [W]	GROUP	WD–21095–S–01

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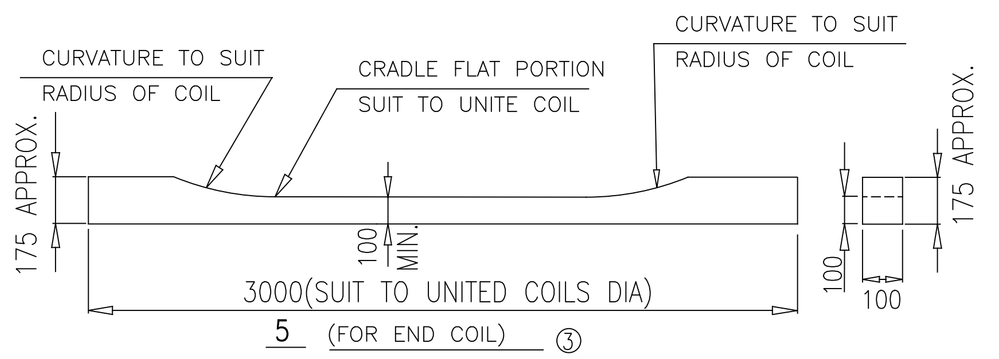


S.NO.	ONE COIL WEIGHT AT CENTRE OF WAGON	UNITED COILS WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 16 TON MAXIMUM	(TOTAL PAY LOAD–16 TON)/2 (SEE NOTE–3)

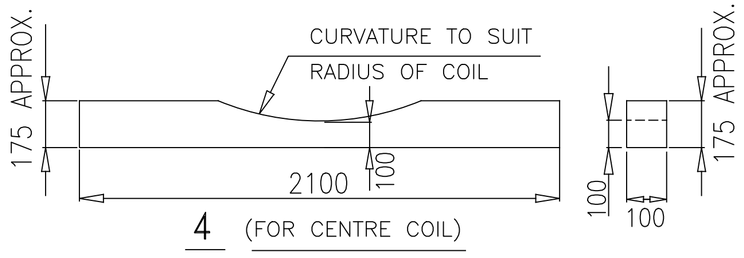
TABLE–A (LOADING SCHEME FOR 05 NO. STEEL COIL)

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)

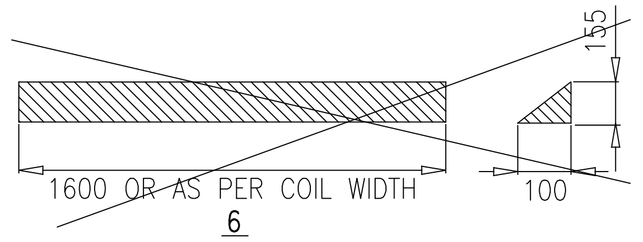
TABLE–B (LOADING SCHEME FOR 04 NO. STEEL COIL)



5 (FOR END COIL) ③



4 (FOR CENTRE COIL)



6

NOTE:–

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, STRAPPING IN COIL EYE, WOODEN WEDGE PLACED AND FIXED ON BOTH SIDE OF UNITED COILS/ COIL ON WOODEN CRADLE. THEN USE THREE STRAPS OVER EACH UNITEDCOILS/ 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./3 NOs. LASHING CHAIN/STEEL STRAP WITH ISOLATION HOOK AS PER DRAWING.
9. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW; ④

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.–EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BREAKING STRENGTH	43KN (4.3 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. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.
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 UNITED COIL/COIL	MTL&SPEC	DRG NO./REMARKS
③ 8.	ANGLE STOPPER	4 AT MIDDLE 8 AT END	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–4
④ 7.	LASHING CHAIN OR HEAVY DUTY STRAP	6 AT MIDDLE 6 AT END	STEEL	SEE NOTE NO.–9
④ 6.	WOODEN WEDGE	6	WOOD	WD–24036–S–01,ITEM NO.–5
5.	WOODEN CRADLE(LONG)	3	WOOD	
4.	WOODEN CRADLE(SHORT)	3	WOOD	
④③ 3.	ISOLATION HOOK	12 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.
④	–	WD–24088	STRAP THICKNESS IS CHANGED FROM 1.45 TO 1.27 MM IN NOTE NO. 9. ONE STRAP FOR MIDDLE COIL EYE ADDED. ITEM–6 & NOTE–11 MODIFIED.	09/24	
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
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]

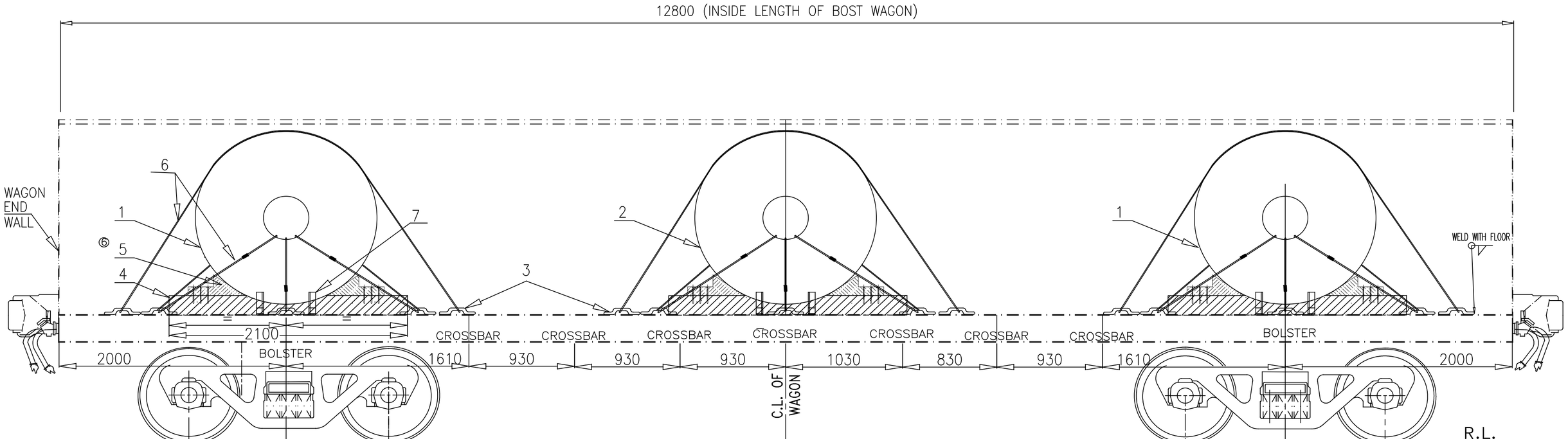
② LOADING OF STEEL COILS ON BOST WAGON & ITS VARIANTS

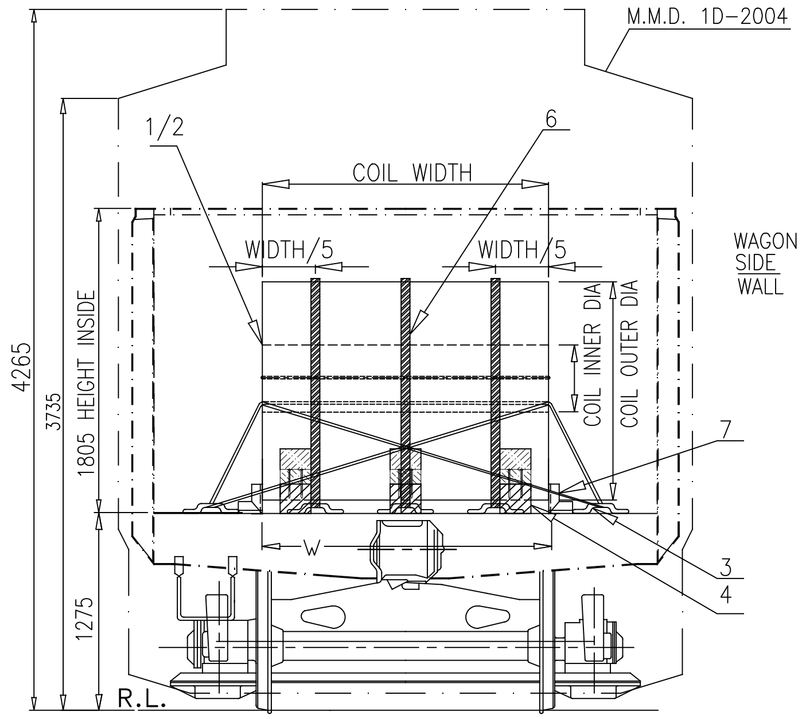
GROUP | WD–15057–S–08

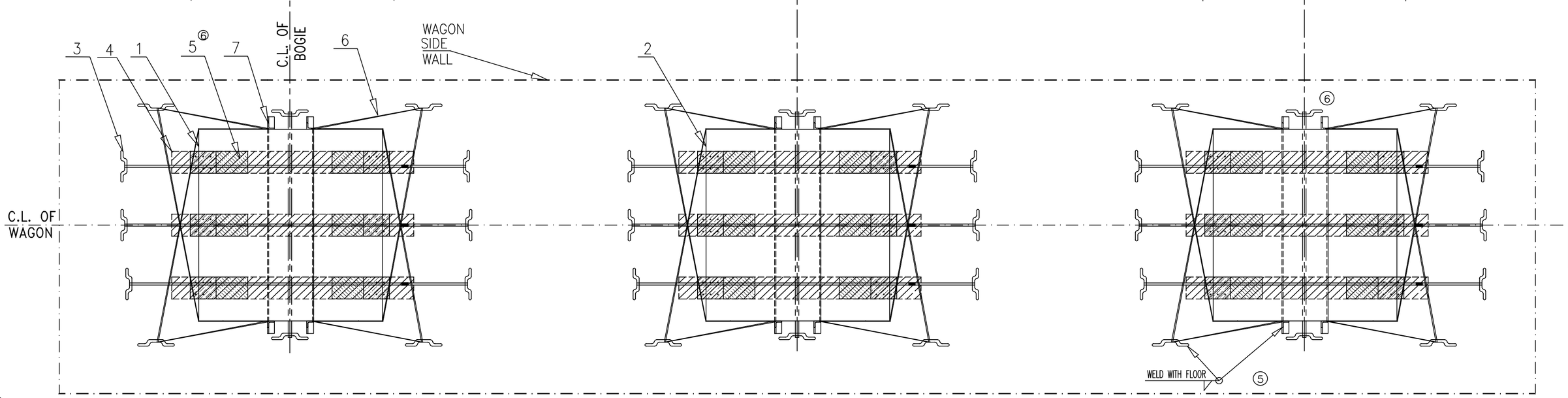
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File No.RDSO-MWDGENL(EOFC)/8/2023-O/o PED/SW/RDSO
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II69413/2024

File No.RDSO-MWOGENL(EOFC)/82023-O/o PED/SWRDSO







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

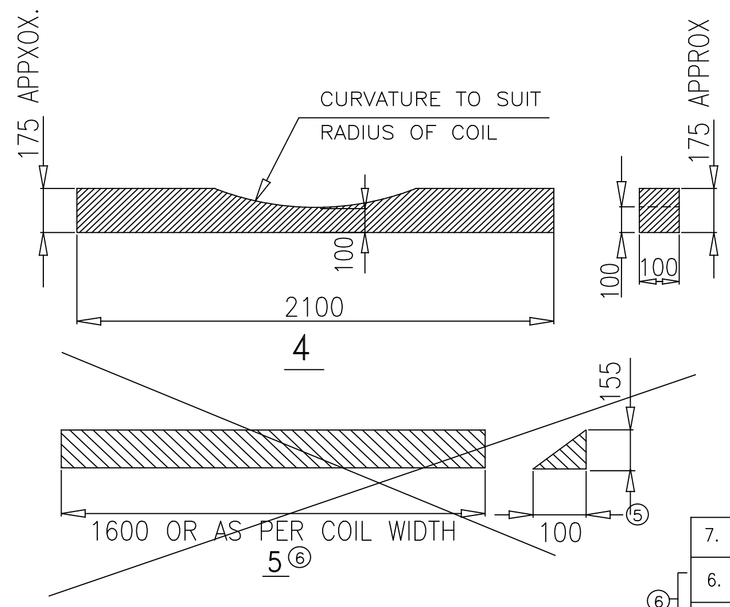
TABLE–B (LOADING SCHEME FOR 02 NO. STEEL COIL)

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 ONE STRAP TO EYE &THREE STRAPS OVER EACH COIL TO 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; ⑥

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. 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. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED. ⑥
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 ③ TRANSPORTATION.
16. IF COIL LOADING IS DONE WITH METALLIC SADDLE THEN LOADING SHALL BE DONE AS PER LOADING DRAWING NO. WD–23115–S–01.



ITEM	DESCRIPTION	NO. OF PCS PER COIL	MTL&SPEC	DRG. NO./REMARKS
7.	ANGLE STOPPER	4	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–4
6. ⑥	LASHING CHAIN OR HEAVY DUTY STRAP	8	EN13247:2001	
5. ⑥	WOODEN WEDGE	6	WOOD	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–5
4.	WOODEN CRADLE	3	WOOD	
3. ⑥⑤	ISOLATION HOOK	12	---	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)

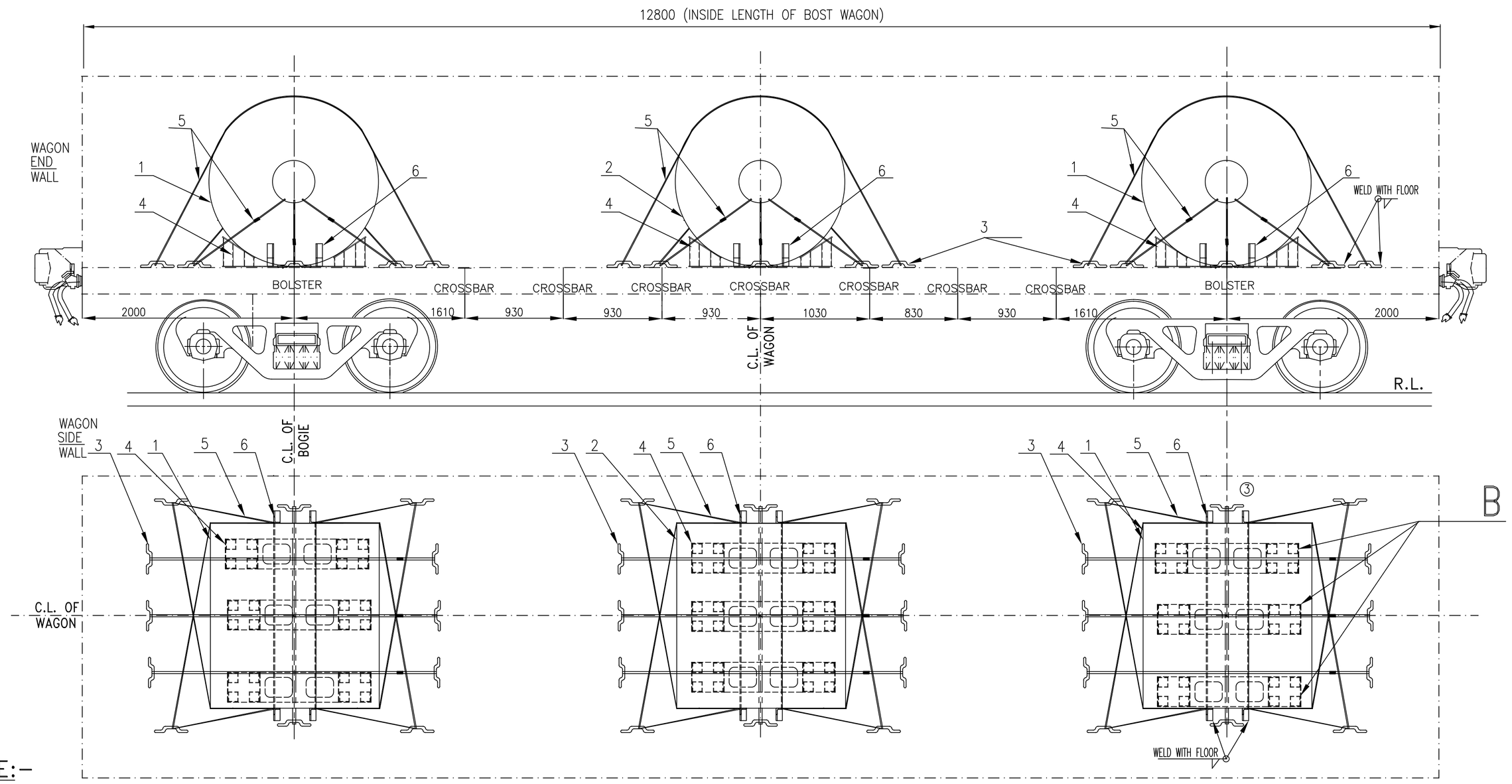
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
⑥	–	WD–24088	STRAP THICKNESS CHANGED FROM 1.45 TO 1.27 MM IN NOTE NO. 8. ONE STRAP FOR COIL EYE ADDED. WEDGE & NOTE–10 MODIFIED.	09/24	–
⑤	–	WD–24036	ITEM NO. 3 & 7 DRG. DELETED AND REFERENCE DRG. NO. ADDED IN DESCRIPTION TABLE. ITEM NO. 4& 5 DIMENSION AND 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	–

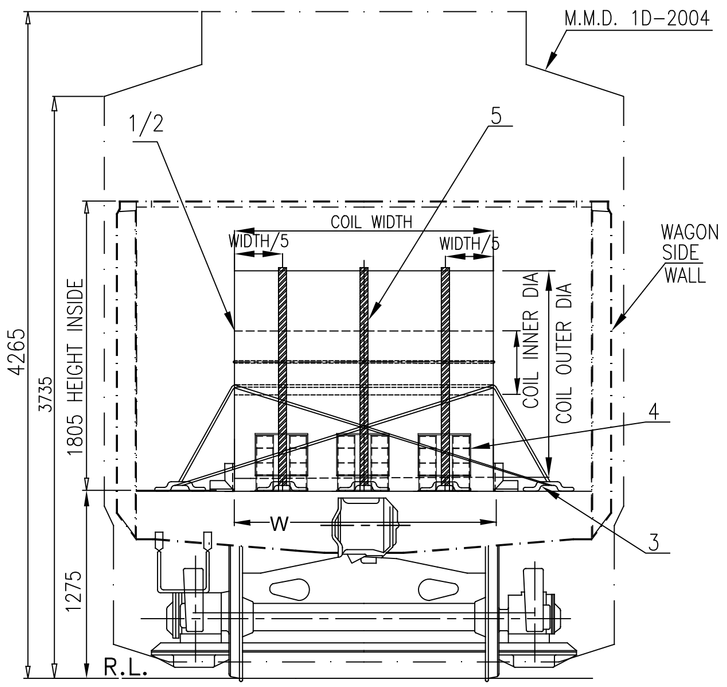
SUPERSEDED BY			
SUPERSEDES			DATE
SCALE	PASSED	Sd–S.M.Tripathi	05/22
	CHECKED	A.K.KUSHVAHA	05/22
	DRAWN	SACHIN KUMAR	04/22
	J.S.NO.	WD–22038	03/22

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

1017





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, USE ONE STRAP TO EYE & 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; ③

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. 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. ③ CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND-HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.
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 .

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
③	-	WD-24088	STRAP THICKNESS IS CHANGED FROM 1.45 TO 1.27 MM IN NOTE NO. 8. ONE STRAP FOR COIL EYE ADDED. NOTE NO.-10 MODIFIED FOR CRIMPING.	09/24	
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	

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 ②
5	LASING CHAIN OR HEAVY DUTY STRAP	8	EN13247:2001	③
4	METAL SADDLE	3	---	AS PER DRAWING NO. WD-24036-S-01,ITEM NO.-2 ②
3	ISOLATION HOOK	12	---	AS PER DRAWING NO. WD-24036-S-01,ITEM NO.-3 ③②
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)

SUPERSEDED BY

SUPERSEDES

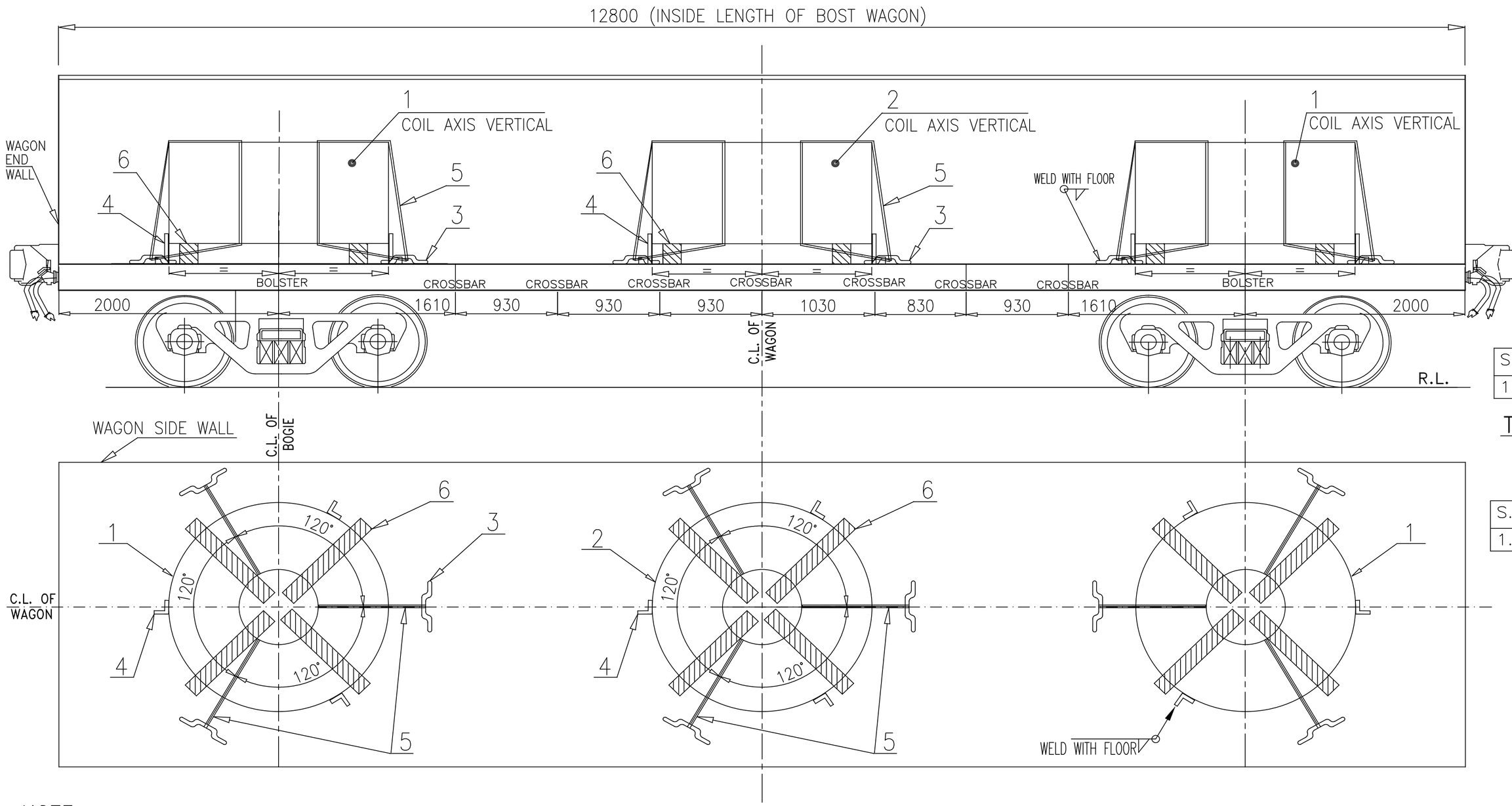
SCALE			DATE
	PASSED	Sd. S.M.TRIPATHI	11/23
	CHECKED	Sd. ANIL KUSHWAHA	11/23
	DRAWN	A.K.SINGH	11/23
	J.S.NO.	WD-23115	11/23

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

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

I/69413/2024
File No.RDSO-MWOGEN(EOFC)/8/2023-O/O PED/SWR/DSO
1018

II/694 13/2024

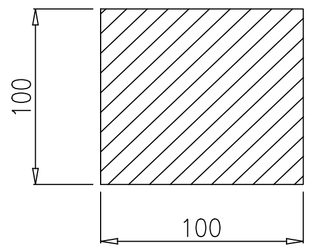


S.NO.	COIL WEIGHT AT WAGON CENTRE	COIL WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 22 TON MAXIMUM	(TOTAL PAY LOAD−22 TON)/2

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 LENGTH SHALL BE MORE THAN 100 MM OF THE OUTER RADIUS OF COIL AND WOODEN RUNNER PLACED AT CORRECT POSITION AS SHOWN IN DRAWING. ② 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, 03 NO's ANGLE STOPPERS AND 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 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. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND−HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED. ②
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.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
2	−−	WD−24088	NOTE NO. 4.1 , 4.2 AND 7 MODIFIED.	09/24	
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	

ITEM	DESCRIPTION	No. OF PCS PER COIL	MTL&SPEC	REMARKS
6.	WOODEN RUNNER (100X100)	4	WOOD	LENGTH OF WOODEN RUNNER SHALL BE 100 MM MORE THAN OUTER RADIUS OF COIL ②
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 ①
3.	ISOLATION HOOK	3	---	AS PER DRAWING NO. WD−24036−S−01,ITEM NO.−3 ①
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
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

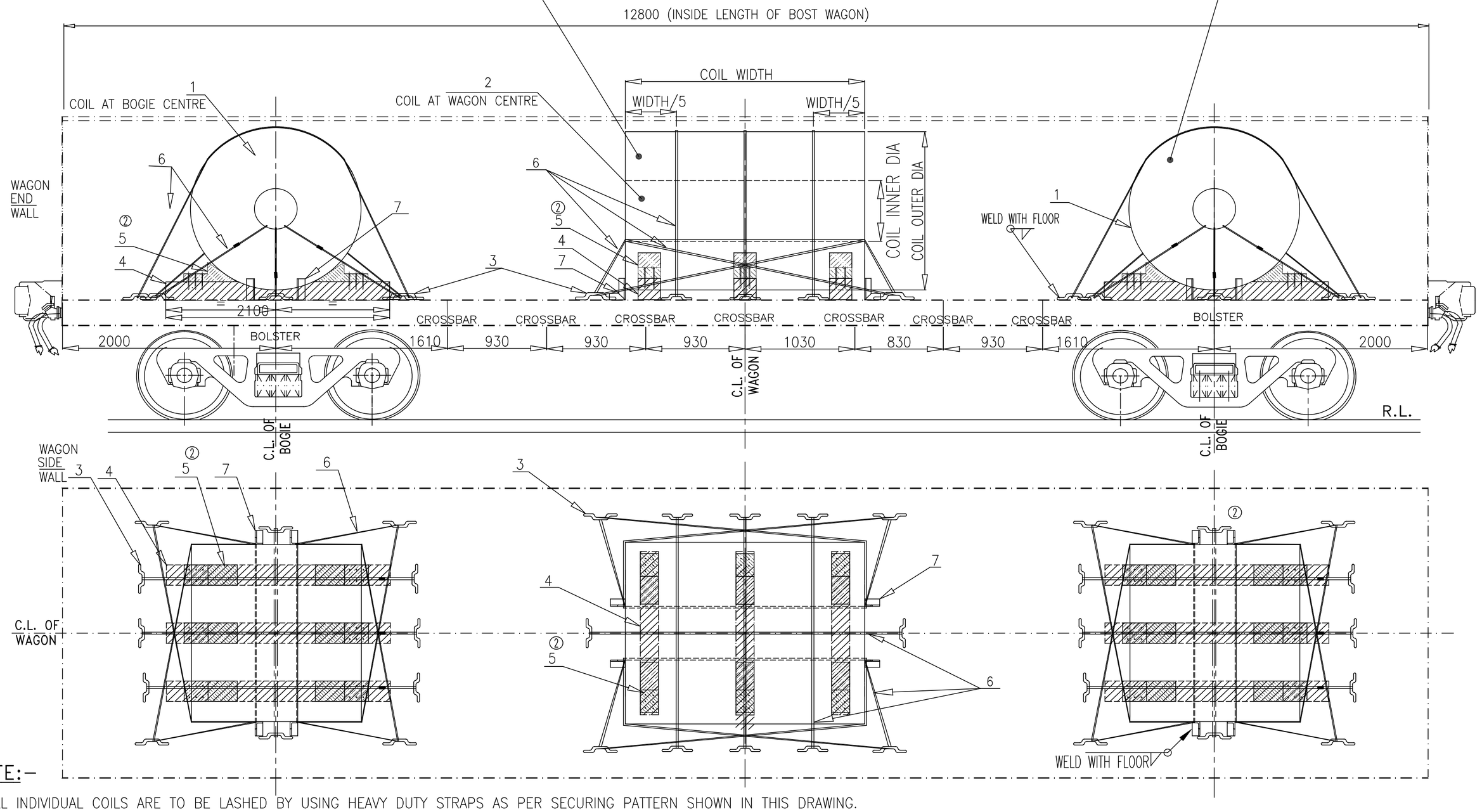
B.G. | R.D.S.O. [W] | GROUP | WD−24027−S−01

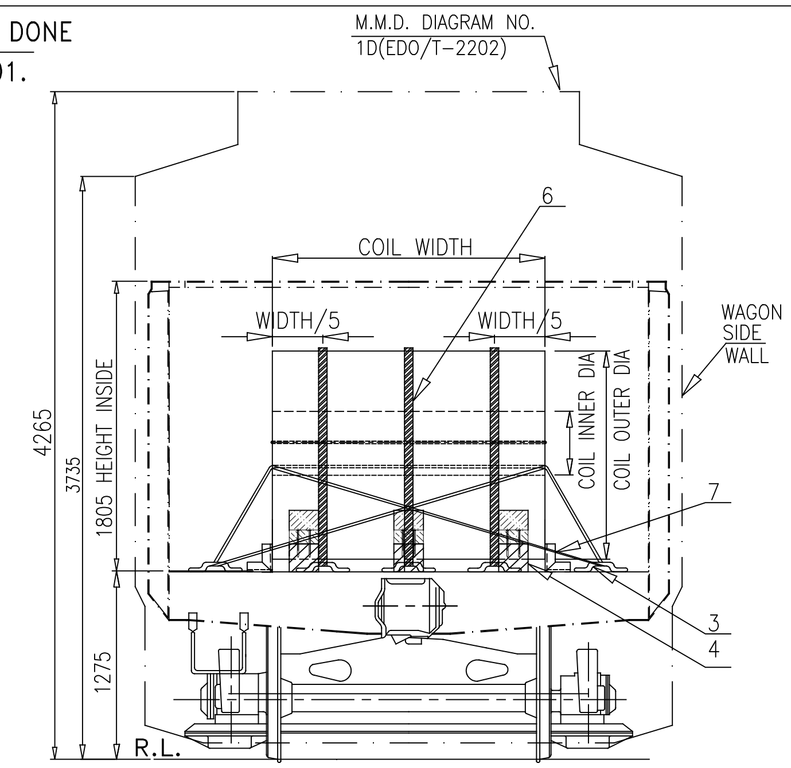
File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED/SW/RDSO

II/69413/2024

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.





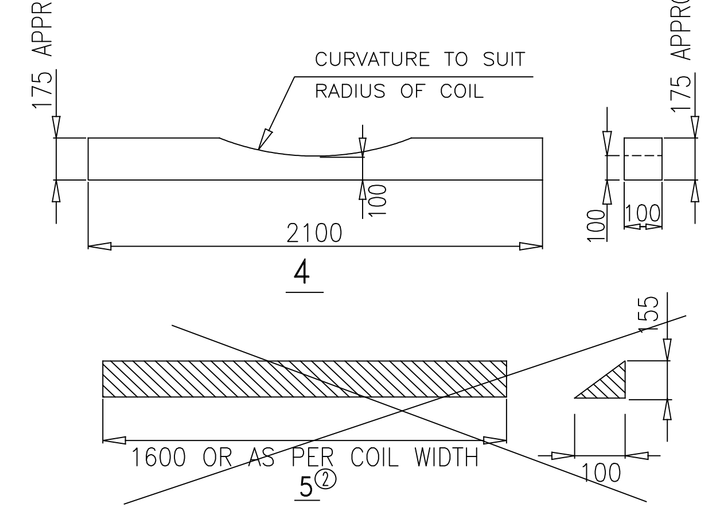
(END VIEW OF STEEL COIL FOR EYE TO SIDE WALL SIDE)

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. WOODEN WEDGE USED ON CRADLE ALONG THE WIDTH OF COIL. ②
6. AFTER PLACING THE COIL ON WOODEN CRADLE, WOODEN WEDGE PLACED AND FIXED ON BOTH SIDE OF COIL ON WOODEN CRADLE. THEN USE ONE STRAP TO EYE & 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; ②

S.N	PARAMETERS	PHYSICAL PROPERTIES (Ref.-EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BREAKING STRENGTH	43KN (4.3 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. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND-HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED. ① ②
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	DRG. NO./REMARKS
7.	ANGLE STOPPER	4	---	AS PER DRAWING NO. WD-24036-S-01,ITEM NO.-4 ①
6.	LASHING CHAIN OR HEAVY DUTY STRAP	8	EN13247:2001	②
5.	WOODEN WEDGE	6	WOOD	WD-24036-S-01, ITEM NO.-5 ②
4.	WOODEN CRADLE	3	WOOD	
3.	ISOLATION HOOK	12	---	AS PER DRAWING NO. WD-24036-S-01,ITEM NO.-3 ① ②
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
②	--	WD-24088	STRAP THICKNESS CHANGED FROM 1.45 TO 1.27 MM IN NOTE NO. 8. ONE STRAP FOR COIL EYE ADDED. WEDGE AND NOTE-10 MODIFIED.	09/24	
1	--	WD-24036	ITEM NO. 3 & 7 DRG. DELETED AND REFERENCE DRG. NO. ADDED IN DESCRIPTION TABLE. NOTE NO.-10 MODIFIED.	04/24	

SUPERSEDED BY
SUPERSEDES
DATE

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

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

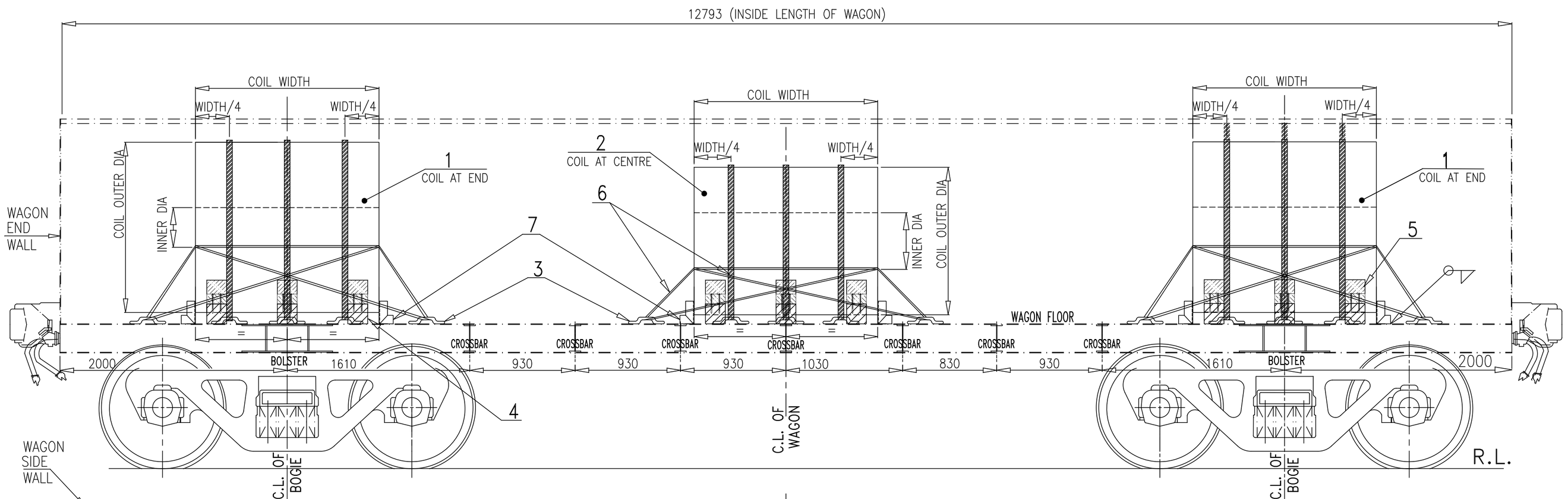
LOADING DIAGRAM FOR STEEL COIL ON BOST WAGON AND ITS VARIANTS WITH WOODEN CRADLE.

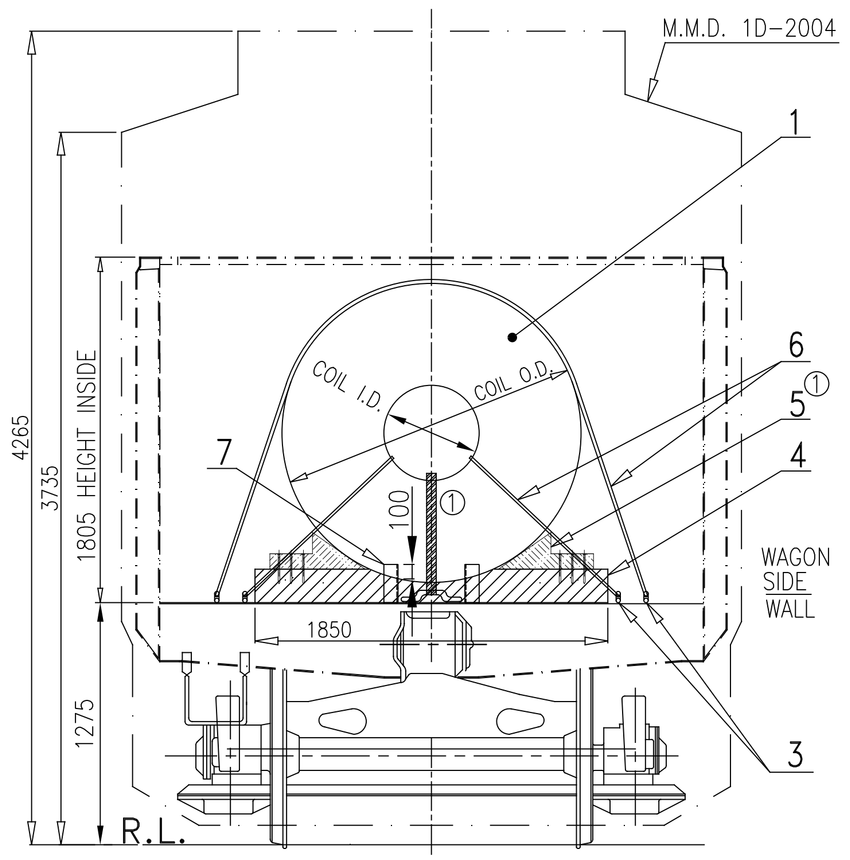
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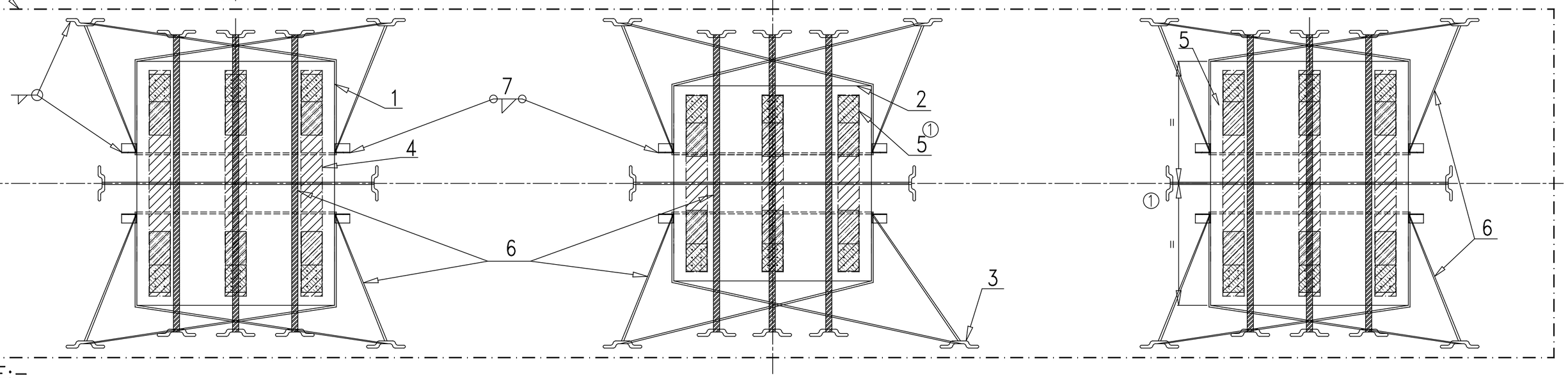
WD-24027-S-02

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

11/03/2024 13:21:02





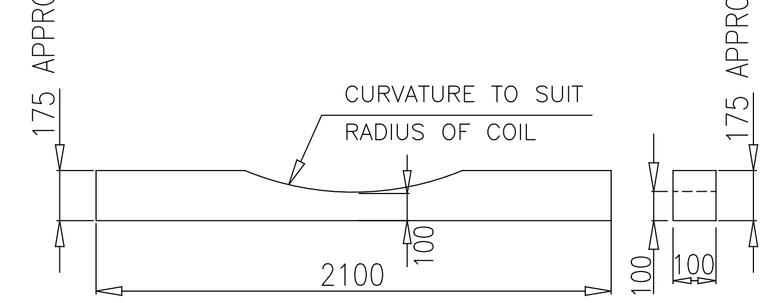


S.NO.	COIL WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 22 TON MAXIMUM	(TOTAL PAY LOAD–22 TON)/2

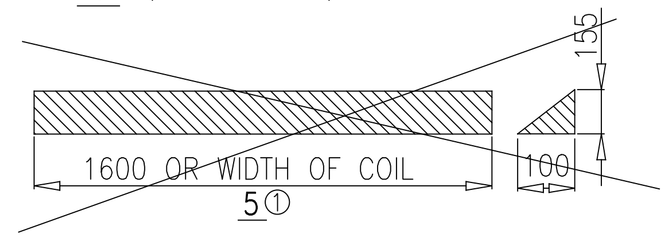
TABLE–A (LOADING SCHEME FOR 03 NO. STEEL COIL)

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 ①

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 ONE STRAP TO EYE & 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
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BREAKING STRENGTH	43KN (4.3 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. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED. ①
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.

ITEM	DESCRIPTION	NO. OF PCS PER COIL	REF. DRG.	MTL&SPEC	REMARKS
7	ANGLE STOPPER	4	WD–24036–S–01 ITEM–4	---	
① 6	LASHING CHAIN OR HEAVY DUTY STRAP	8	EN13247:2001	STEEL	
① 5	WOODEN WEDGE	6	WD–24036–S–01 ITEM–5	WOOD	
4	WOODEN CRADLE	3	––	WOOD	
① 3	ISOLATION HOOK	12	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
①	–	WD–24088	STRAP THICKNESS CHANGED FROM 1.45 TO 1.27 MM IN NOTE NO. 8. ONE STRAP FOR COIL EYE ADDED.WEDGE & NOTE–10 MODIFIED.	09/24	–

SUPERSEDED BY
SUPERSEDES

SCALE			DATE
	PASSED	Sd. R. V SINGH	05/24
	CHECKED	Sd. ANIL KUSHVAHA	05/24
	DRAWN	ASHUTOSH SINGH	04/24
	J.S.NO.	WD–24036	04/24

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

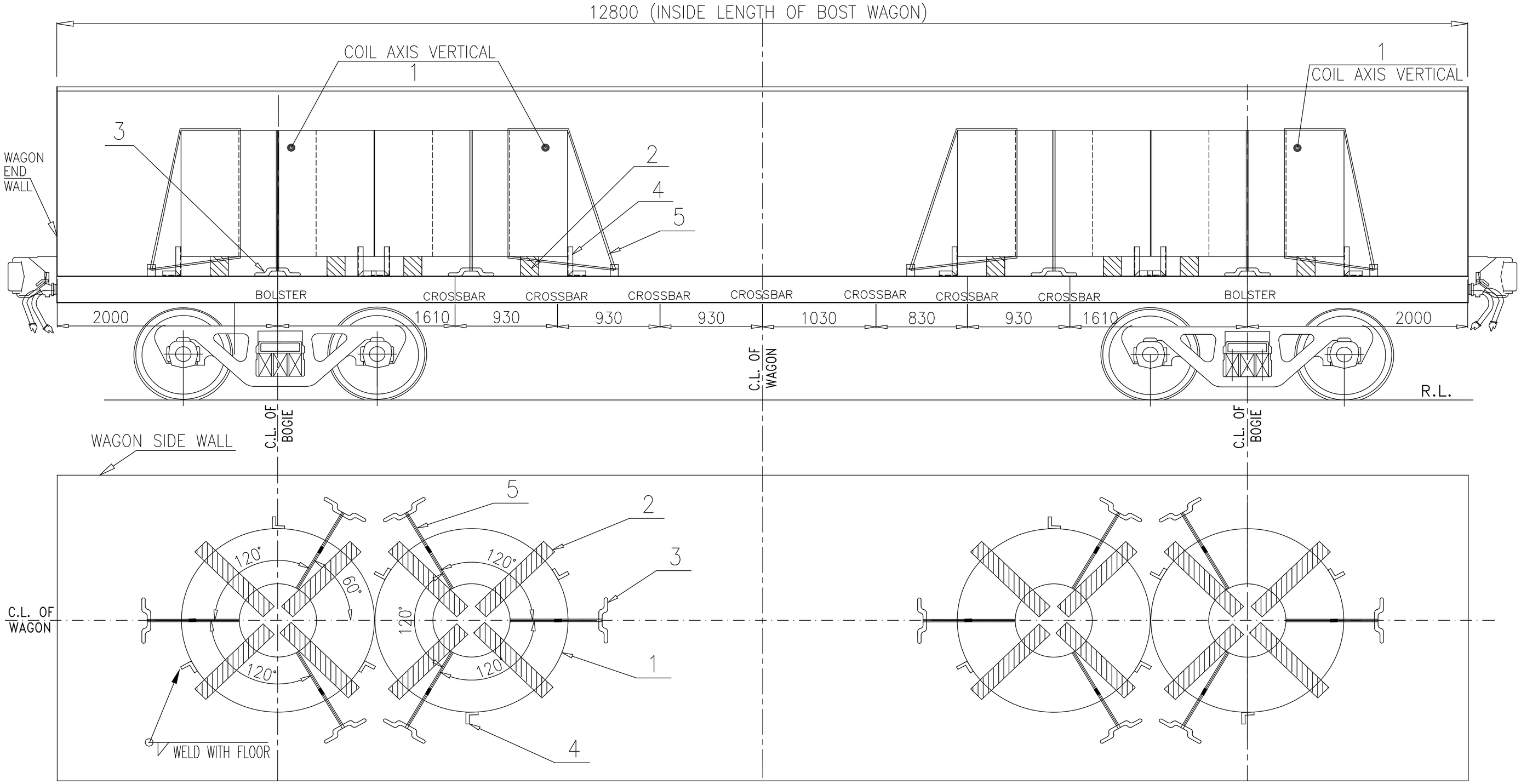
LOADING DIAGRAM FOR STEEL COILS IN IN LONGITUDINAL DIRECTION (EYE TO ENGINE) ON BOST WAGON & ITS VARIANTS

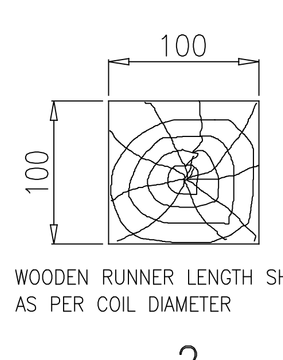
GROUP

WD–24036–S–02

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

1021





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:-** ①
   - 4.1 BEFORE LOADING, ENSURE THAT WOODEN RUNNER LENGTH SHALL BE MORE THAN 100 MM OF THE OUTER RADIUS OF COIL AND WOODEN RUNNER 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, 03 NO's ANGLE STOPPERS AND 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 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. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND-HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED. ①
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.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
1	--	WD-24088	NOTE NO. 4.1 4.2 AND 7 MODIFIED.	09/24	

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	LENGTH OF WOODEN RUNNER SHALL BE 100 MM MORE THAN COIL OUTER RADIUS. ①
1.	STEEL COIL	--	STEEL	

SUPERSEDED BY
SUPERSEDES DATE

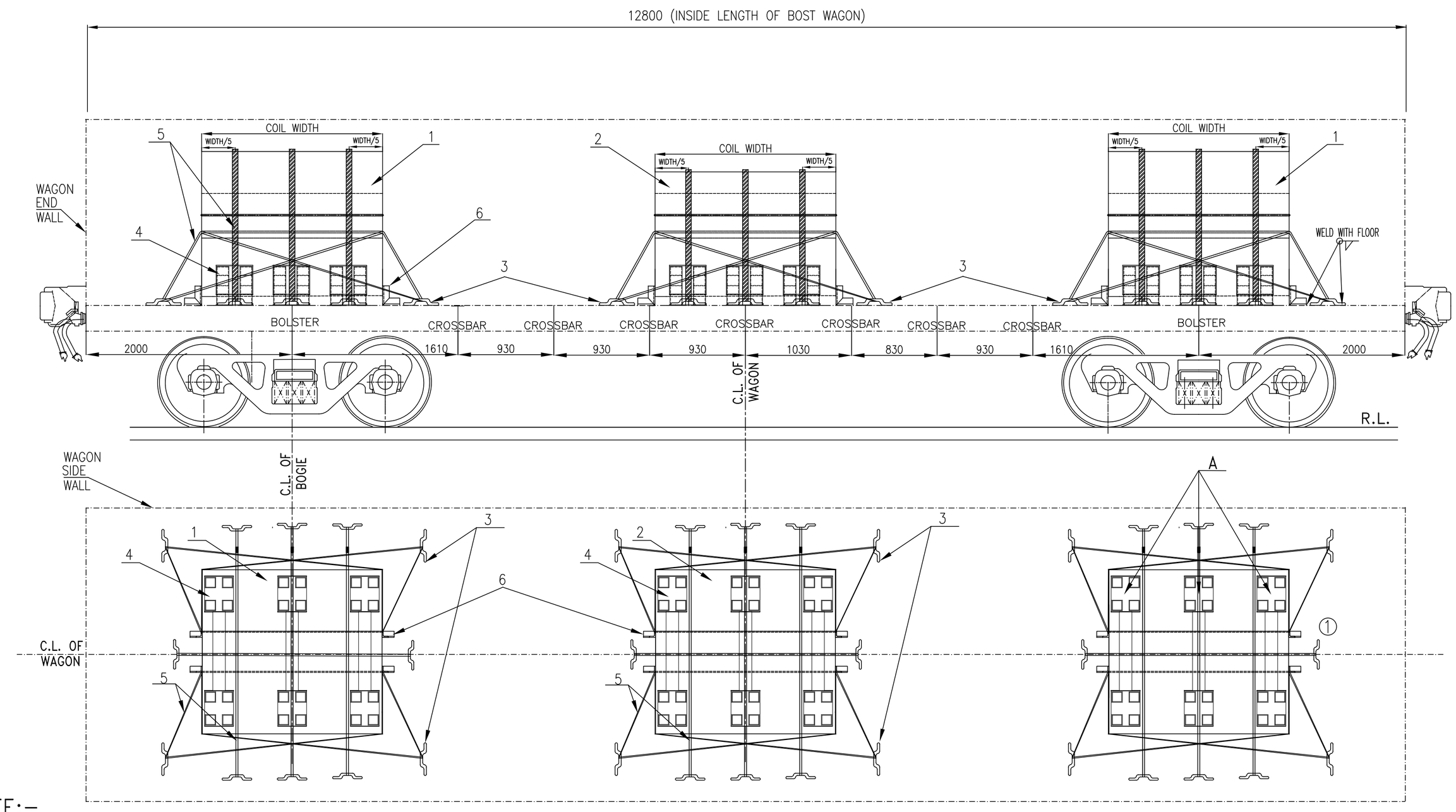
SCALE			
	PASSED	sd-R.V.SINGH	05/24
	CHECKED	sd-A.K.KUSHVAHA	05/24
	DRAWN	SACHIN KUMAR	05/24
	J.S.NO.	WD-24036	04/24

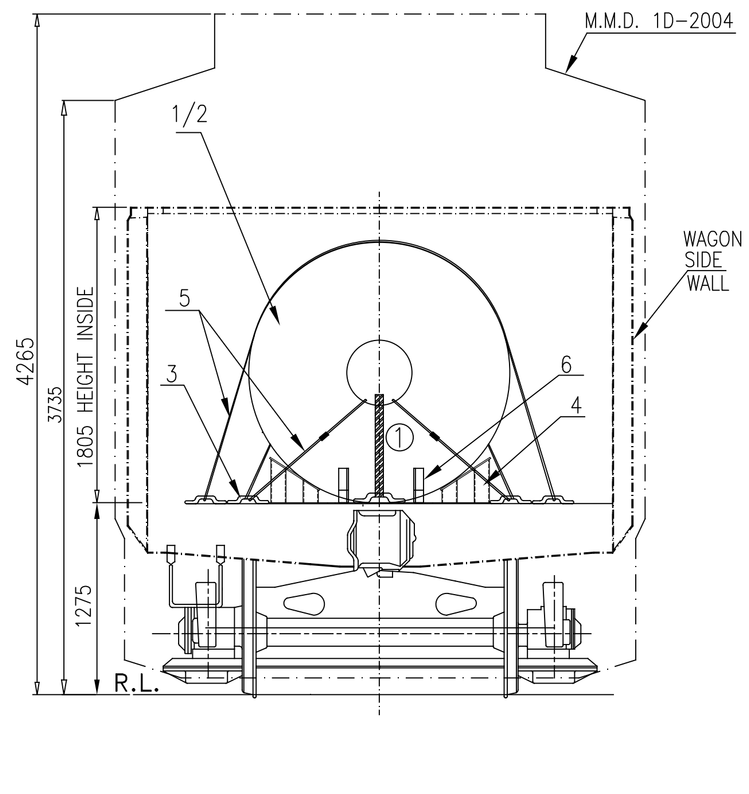
LOADING DIAGRAM FOR 04 NO. STEEL COILS (VERTICAL) ON BOST WAGON & IT'S VARIANTS

B.G. | R.D.S.O. [W] | GROUP | WD-24036-S-03

IR694132024
File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED/SW/RDSO
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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 ONE STRAP TO COIL EYE & 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
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BREAKING 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. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ① ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.
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 .

	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
①	5	LASING CHAIN OR HEAVY DUTY STRAP	8	EN13247:2001	---
	4	METAL SADDLE	3	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–1
①	3	ISOLATION HOOK	12	---	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
①	–	WD–24088	STRAP THICKNESS IS CHANGED FROM 1.45 TO 1.27 MM IN NOTE NO. 7. ONE STRAP FOR COIL EYE ADDED. NOTE NO.–9 MODIFIED.	09/24	–

SUPERSEDED BY
SUPERSEDES
SCALE

PASSED	Sd. R. V SINGH	05/24
CHECKED	Sd. ANIL KUSHWAHA	05/24
DRAWN	ASHUTOSH KUMAR SINGH	05/24
J.S.NO.	WD–24036	04/24

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

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

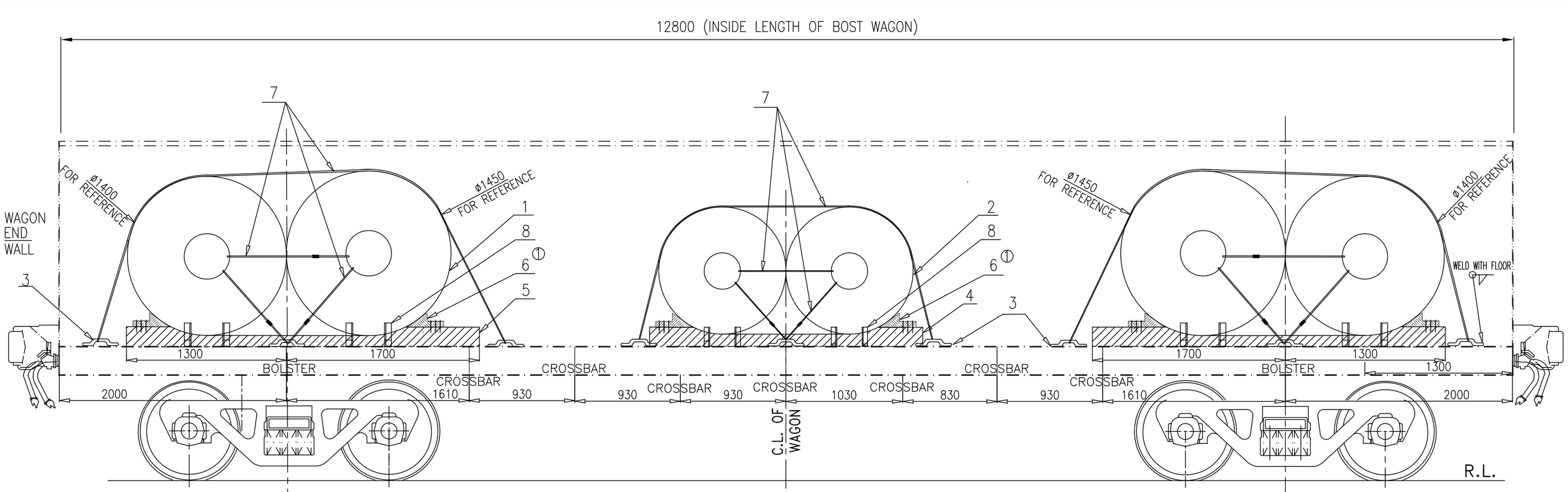
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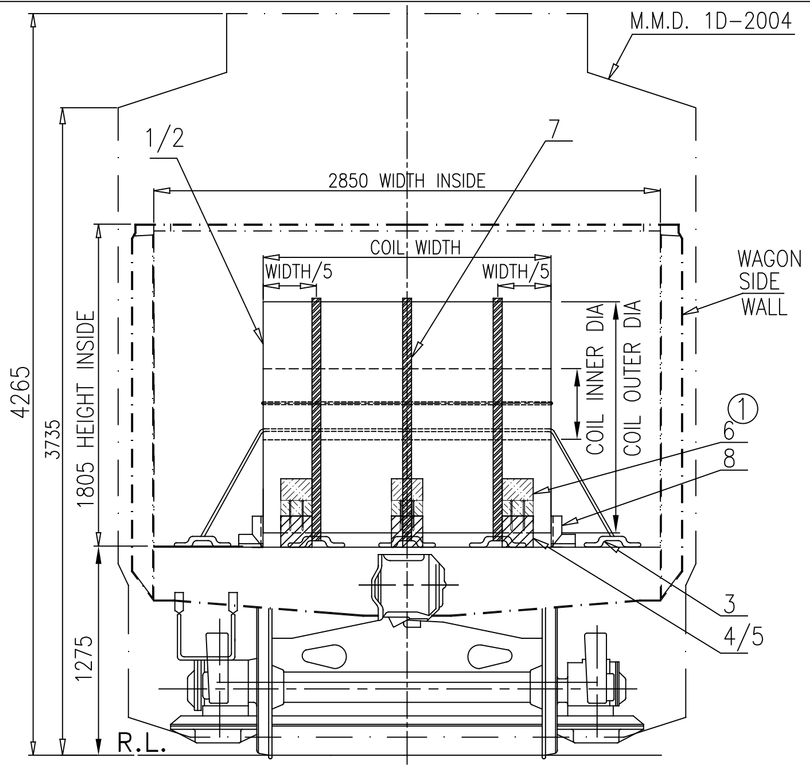
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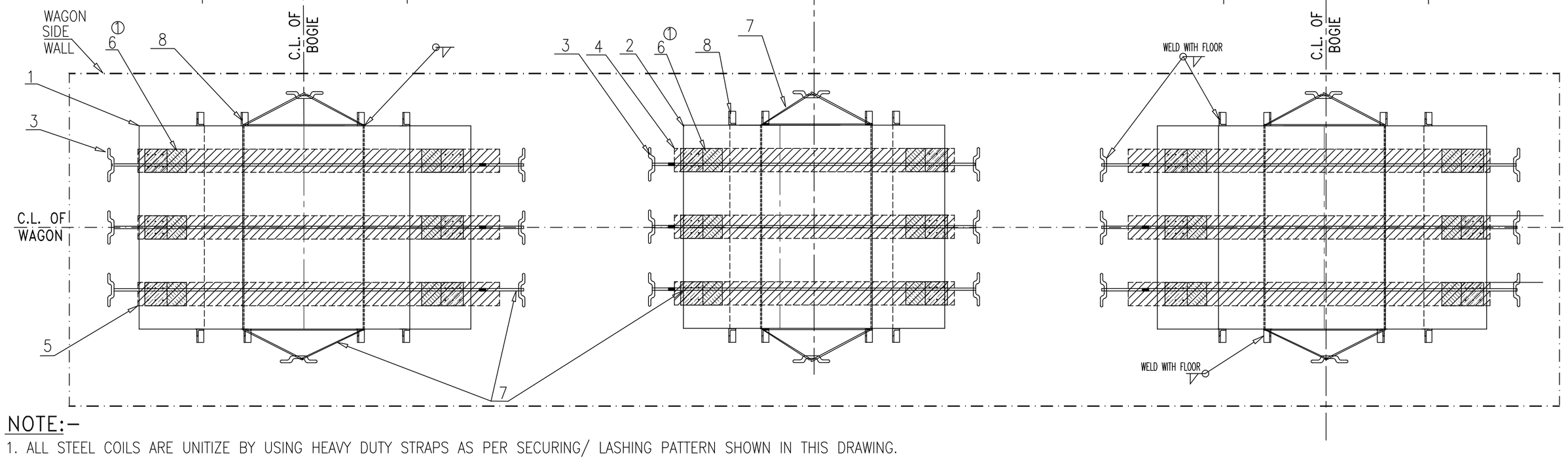
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File No:RDSO-MW06ENE(EOFC)/8/2023-O/o PED/SW/RDSO





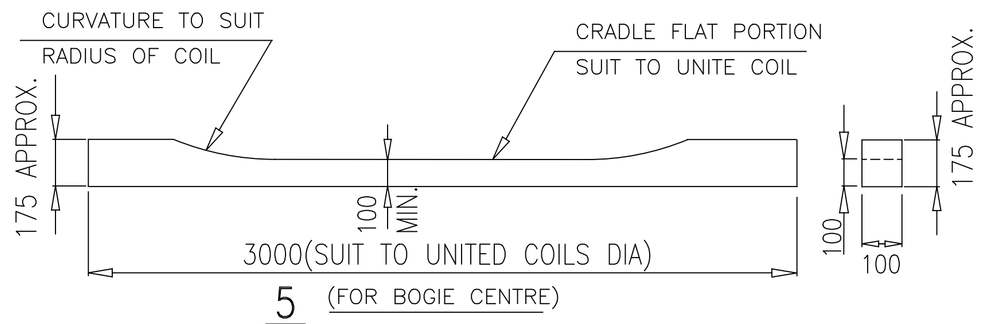


S.NO.	UNITED COIL WEIGHT AT CENTRE OF WAGON	UNITED COILS WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 16 TON MAXIMUM	(TOTAL PAY LOAD–16 TON)/2 (SEE NOTE–3)

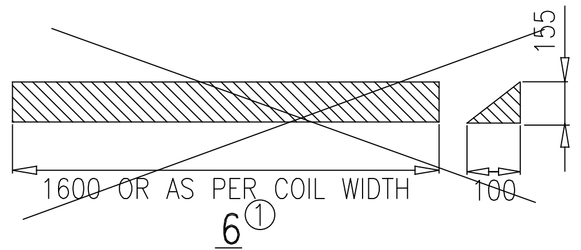
TABLE–A (LOADING SCHEME FOR 06 NO. STEEL COIL)

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)

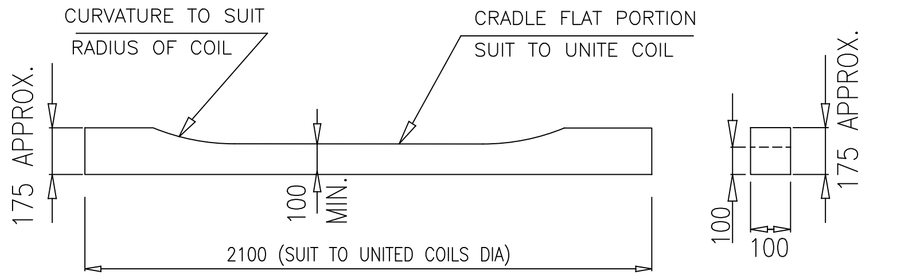
TABLE–B (LOADING SCHEME FOR 04 NO. STEEL COIL)



5 (FOR BOGIE CENTRE)



6 ①



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.
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 COILS 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; ①

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.–EN13247:2001)
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BREAKING STRENGTH	43KN (4.3 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. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED. ①
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	DRAWINGS/ 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	6	WOOD	WD–24036–S–01,ITEM NO.–5
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

① (ITEM 6)

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
①	–	WD–24088	STRAP THICKNESS CHANGED FROM 1.45 TO 1.27 MM IN NOTE–9. WEDGE AND NOTE–11 MODIFIED.	09/24	–

SUPERSEDED BY
SUPERSEDES

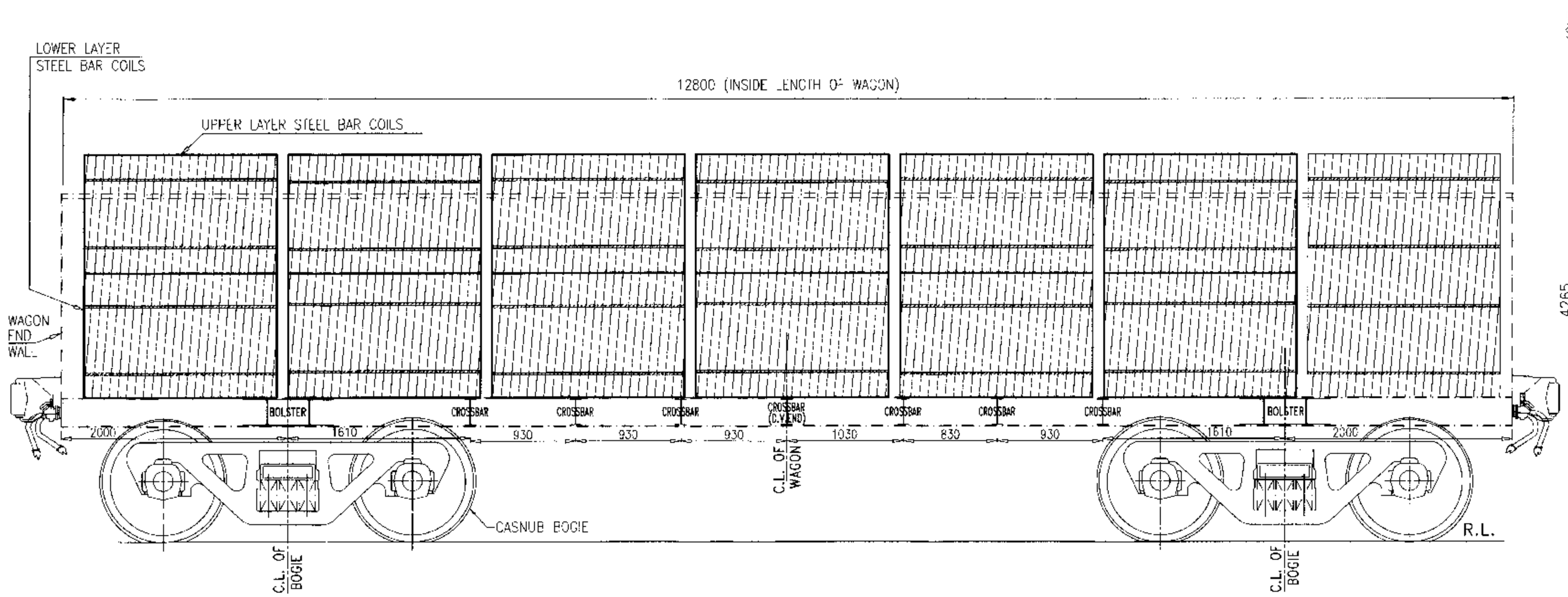
SCALE			DATE
	PASSED	Sd. R. V SINGH	05/24
	CHECKED	Sd. ANIL KUSHWAHA	05/24
	DRAWN	ASHUTOSH KUMAR SINGH	05/24
	J.S.NO.	WD–24036	04/24

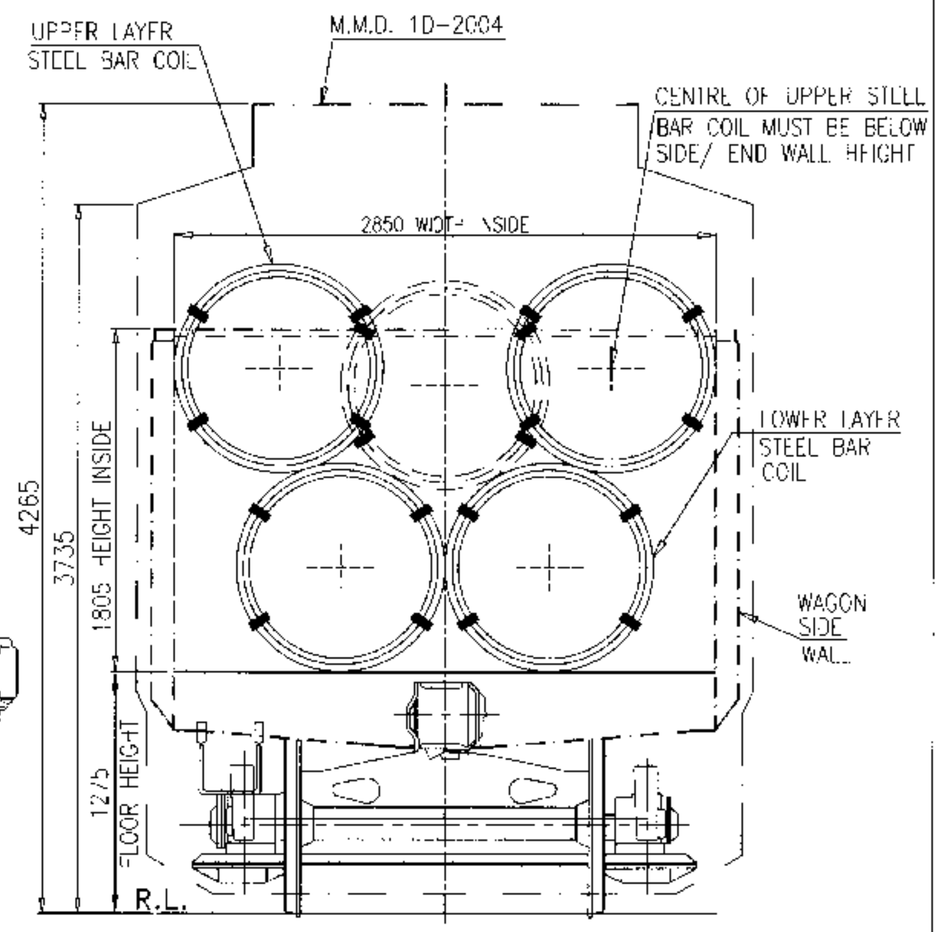
B.G. | R.D.S.O. [W]

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

GROUP | WD–24036–S–06

1024





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 ENSURE THE SYMMETRICAL LOADING & TOTAL HEIGHT OF THE LOADED STEEL WIRE COILS FOR SECURE & SAFE OPERATION.

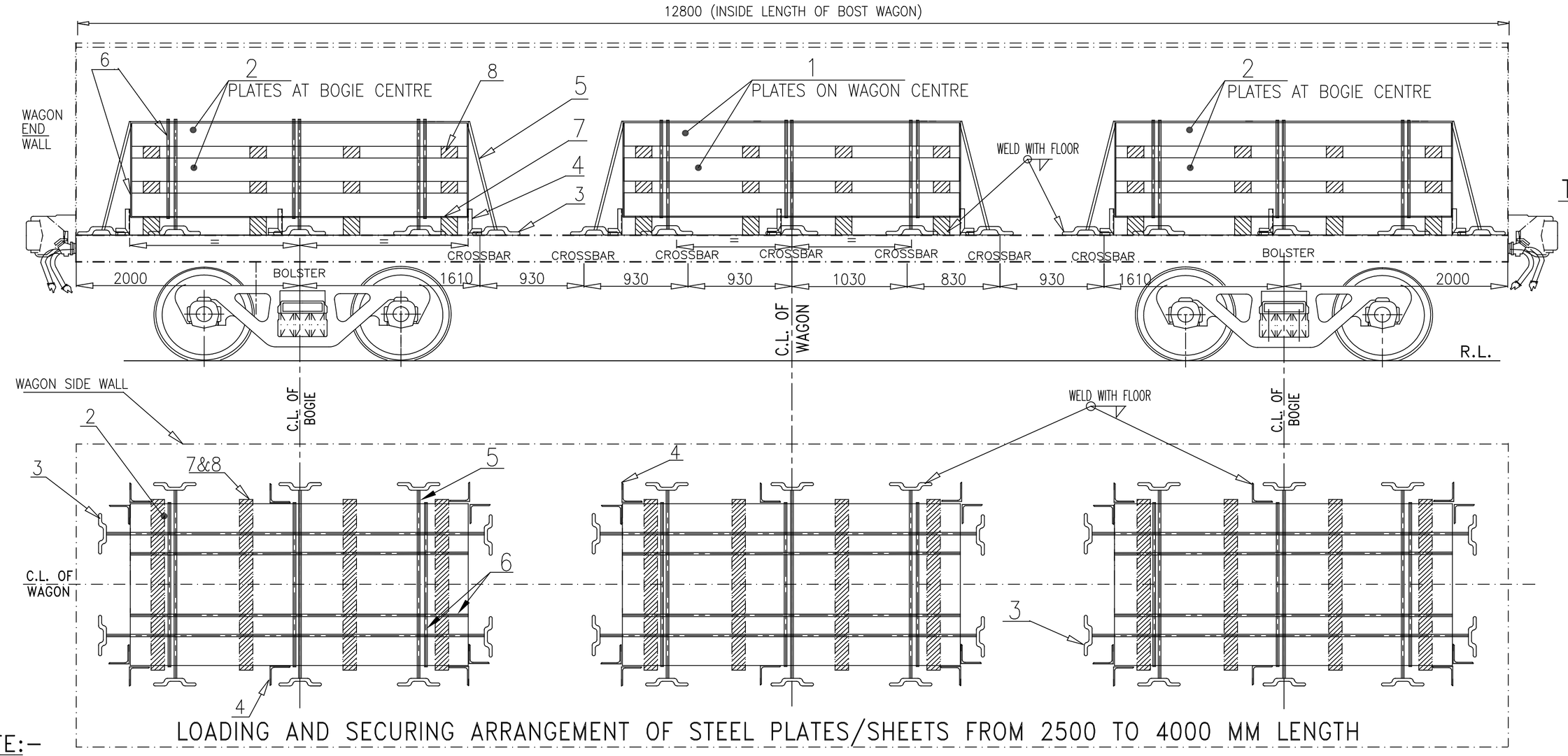
File No.RDSO/MW/GENL/EOFC/I/8/2023-O/o PEDI/SW/RDSO

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

	STEEL WIRE BUNDLES		AS PER STEEL BAR COIL DIA/ LENGTH	STEEL	SEE THE NOTE FOR MAXIMUM HEIGHT & DIAMETER OF STEEL BAR COIL
ITEM	DESCRIPTION		NO. OF PCS PER/ WAGON	MTL.&SPEC.	REMAKS
SUPERSEDED BY					
SUPERSEDES		DATE			
SCALE	PASSED	02/24	LOADING DIAGRAM FOR STEEL BAR COILS ON BOST WAGON & ITS VARIANTS		
	CHECKED	02/24			
	DRAWN	A.K.KUSHWAHA 02/24			
	J.S.NO.	WD-23059 06/23			

B.G.	R.D.S.O. [W]	GROUP	WD-23059-S-03	A1 02/24

1025
1691



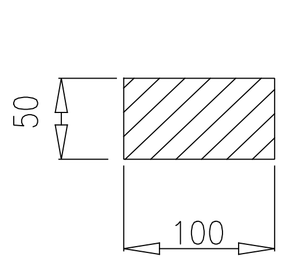
LOADING AND SECURING ARRANGEMENT OF STEEL PLATES/SHEETS FROM 2500 TO 4000 MM LENGTH

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

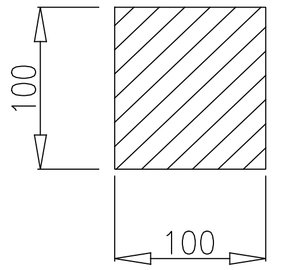
TABLE−A (LOADING SCHEME FOR STEEL PLATES AT BOGIE CENTRE AND WAGON CENTRE)

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

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



8



7

NOTE:−

1. INDIVIDUAL BUNDLES OF STEEL PLATES/SHEETS FROM 2500 TO 4000 MM ARE TO BE UNITIZED BY USING HEAVY DUTY STRAPS AND LOADED AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. THE BUNDLES OF STEEL PLATES/SHEETS LOADED ALONG THE WAGON LENGTH, SHOULD BE SYMMETRICAL ALONG LONGITUDINAL AND TRANSVERSE AXIS OF WAGON.
3. **LOADING PARAMETER OF BUNDLES OF STEEL PLATES/SHEETS BUNDLES SHOULD BE SUCH THAT:−**
   - 3.1 BUNDLES OF STEEL PLATES/SHEETS 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/SHEETS BUNDLES LOADED AT EACH BOGIE/ BOLSTER CENTRE AND AT MIDDLE OF WAGON, THEN MAXIMUM WEIGHT OF STEEL PLATES/ SHEETS BUNDLES LOADED AT WAGON CENTER SHOULD NOT EXCEED BY 22 TON IN ANY CONDITION.
     - 3.1(b) AS PER TABLE−B, BUNDLES OF STEEL PLATES/SHEETS LOADED AT EACH BOGIE/ BOLSTER CENTRE AND NO PLATES/ SHEETS 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/SHEETS BUNDLE WEIGHT IMPOSED ON BOTH SIDE OF WAGON SHOULD BE IDENTICAL.
   - 3.4 MAXIMUM WEIGHT DIFFERENCE IN STEEL PLATES/SHEETS 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/SHEETS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
4. **PROCEDURE OF LOADING STEEL PLATES/SHEETS ON WAGON ARE:−**
   - 4.1 THE STEEL PLATES/SHEETS 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/SHEETS ON WOODEN RUNNER, INTERMEDIATE WOODEN RUNNER PLACED AT CORRECT POSITION BETWEEN STEEL PLATES/SHEETS BUNDLES AS SHOWN IN DRAWING. AFTER UNITIZING THE ALL BUNDLES OF PLATES BY THREE STRAPS ITSELF IN TRANSVERSE DIRECTION AND TWO STRAPS IN LENGTHWISE DIRECTION OF PLATE/SHEETS, THEN USE FIVE STEEL STRAP ON STEEL PLATES/SHEETS BUNDLES FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF BUNDLES OF STEEL PLATES STRICTLY DONE AS PER LASHING INSTRUCTION.
   - 4.4 AFTER TIGHTENING BY FIVE STRAP, BUNDLE OF STEEL PLATES/SHEETS SHALL BE SECURE BY PROVIDING TEN NO.S 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. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND−HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.
8. THE ISOLATION HOOK (ITEM NO.3) SHOULD BE WELD WITH WAGON FLOOR TO ACCOMMODATE 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.

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

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
1	−−	WD−24088	DRAWING REVISED AND REDRAWN.	09/24	

SUPERSEDED BY

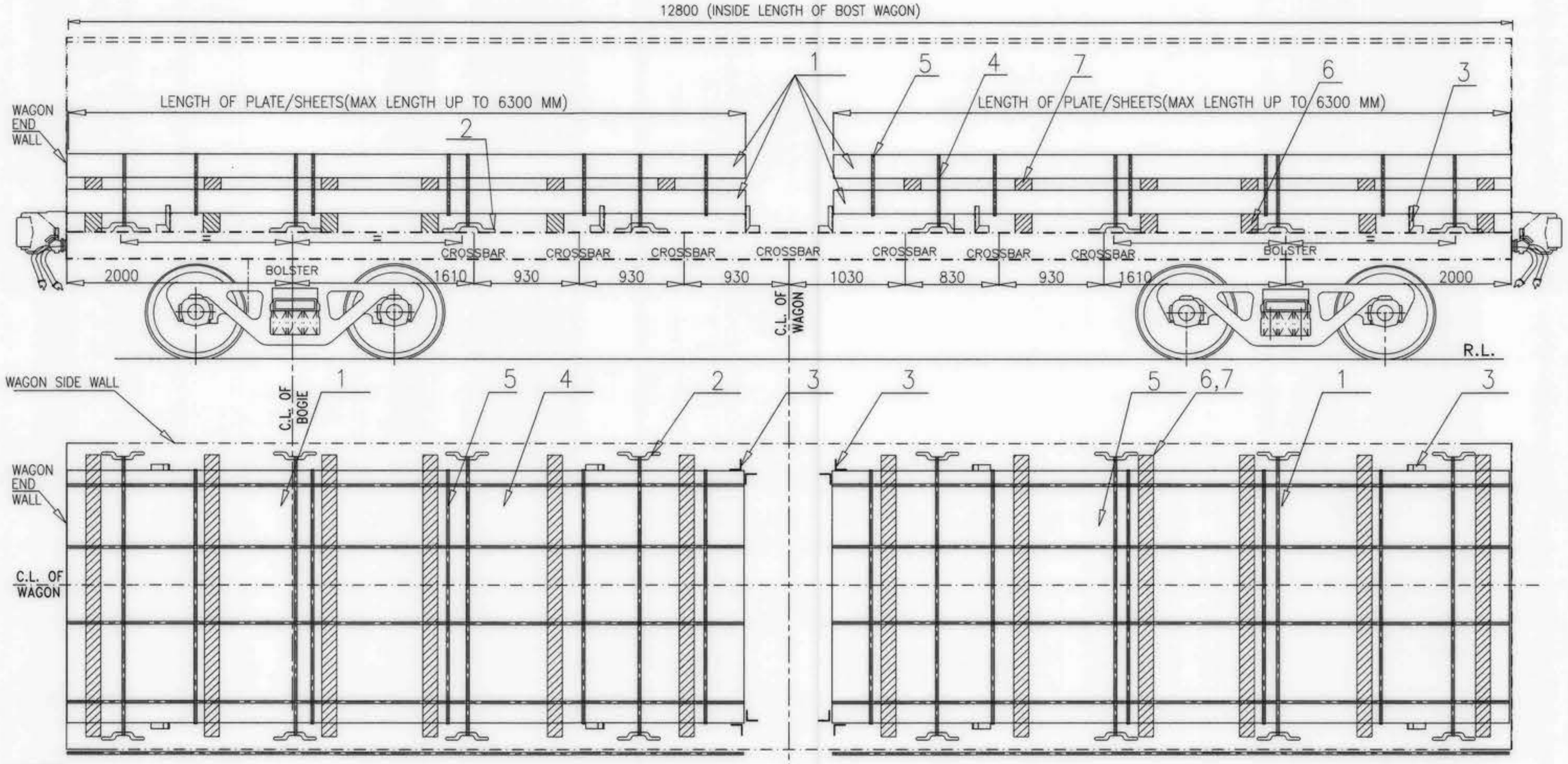
SUPERSEDES

		DATE
SCALE	PASSED	sd/R.V.Singh 05/24
	CHECKED	sd/A.K.Kushwaha 05/24
	DRAWN	ASHUTOSH KUMAR SINGH 05/24
	J.S.NO.	WD−24036 04/24

LOADING OF STEEL PLATES/ SHEETS OF 2.5M TO 4.0M ON BOGIE AND WAGON CENTER ON BOST WAGON & IT'S VARIANTS

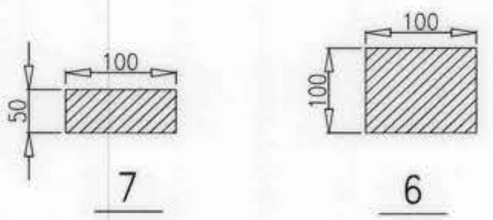
B.G.	R.D.S.O. [W]	GROUP	WD−24036−S−04

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



S.NO.	LENGTH OF BUNDLES OF STEEL PLATES/ SHEETS	WIDTH OF PLATE
1.	FROM 4000 TO 6300 MM	UPTO 2200 MM

(LOADING SCHEME FOR BUNDLE OF STEEL PLATES/SHEETS)



NOTE:-

1. INDIVIDUAL BUNDLES OF STEEL PLATES/SHEETS (FROM 4000 TO 6300 MM) ARE TO BE UNITIZED BY USING HEAVY DUTY STRAPS AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. THE BUNDLES OF STEEL PLATES/SHEETS LOADED ALONG THE WAGON LENGTH, SHOULD BE SYMMETRICAL ALONG LONGITUDINAL AND TRANSVERSE AXIS OF WAGON.
3. **LOADING PARAMETER OF BUNDLES OF STEEL PLATES/SHEETS BUNDLES SHOULD BE SUCH THAT:-**
   - 3.1 BUNDLES OF STEEL PLATES/SHEETS OF SME LENGTH SHALL BE LOADED FROM ADJACENT TO WAGON END WALL ON BOTH SIDE OF WAGON TOWARDS WAGON CENTRE. STACKING OF STEEL BUNDLE SHOULD BE SYMMETRICAL ALONG LONGITUDINAL AND TRANSVERSE AXIS OF WAGON.
   - 3.2 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   - 3.3 THE STEEL PLATES/SHEETS BUNDLE WEIGHT IMPOSED ON BOTH SIDE OF WAGON SHOULD BE IDENTICAL.
   - 3.4 MAXIMUM WEIGHT DIFFERENCE IN STEEL PLATES/SHEETS 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/SHEETS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
4. **PROCEDURE OF LOADING STEEL PLATES/SHEETS ON WAGON ARE:-**
   - 4.1 THE STEEL PLATES/SHEETS 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/SHEETS ON WOODEN RUNNER, INTERMEDIATE WOODEN RUNNER PLACED AT CORRECT POSITION BETWEEN STEEL PLATES/SHEETS BUNDLES AS SHOWN IN DRAWING. AFTER UNITIZING THE ALL BUNDLES OF PLATES BY FOUR STRAPS ITSELF IN TRANSVERSE DIRECTION AND FIVE STRAPS IN LENGTHWISE DIRECTION OF PLATE/SHEETS, THEN USE FOUR STRAP ON STEEL PLATES/SHEETS BUNDLES FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF BUNDLES OF STEEL PLATES STRICTLY DONE AS PER LASHING INSTRUCTION.
   - 4.4 AFTER TIGHTENING BY FOUR STRAP, BUNDLE OF STEEL PLATES/SHEETS 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. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND-HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.
8. THE ISOLATION HOOK (ITEM NO.2) SHOULD BE WELD WITH WAGON FLOOR TO ACCOMMODATE 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-MWOGEN(EOFC)/8/2023-O/o PED(SWIP&SO)

ITEM	DESCRIPTION	NO. OF PCS PER PLATES BUNDLES	MTL&SPEC	REMARKS
7.	INTERMEDIATE WOODEN RUNNER (50X100)FOR STEEL PLATES	12*	WOOD	* NO. OF INTERMEDIATE WOODEN RUNNER AS PER BUNDLES
6.	WOODEN RUNNER (100X100)	6	WOOD	
5.	LASHING CHAIN OR HEAVY DUTY STRAP FOR SELF UNITIZATION	9	EN13247:2001	
4.	LASHING CHAIN OR HEAVY DUTY STRAP TIGHTEN WITH ISOLATION HOOK	4	EN13247:2001	
3.	ANGLE STOPPER	8	---	AS PER DRAWING NO. WD-24036-S-01,ITEM NO.-4
2.	ISOLATION HOOK	8	---	AS PER DRAWING NO. WD-24036-S-01,ITEM NO.-3
1.	STEEL PLATES BUNDLES	--	STEEL	(AS PER TABLE-A & B)

	ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS

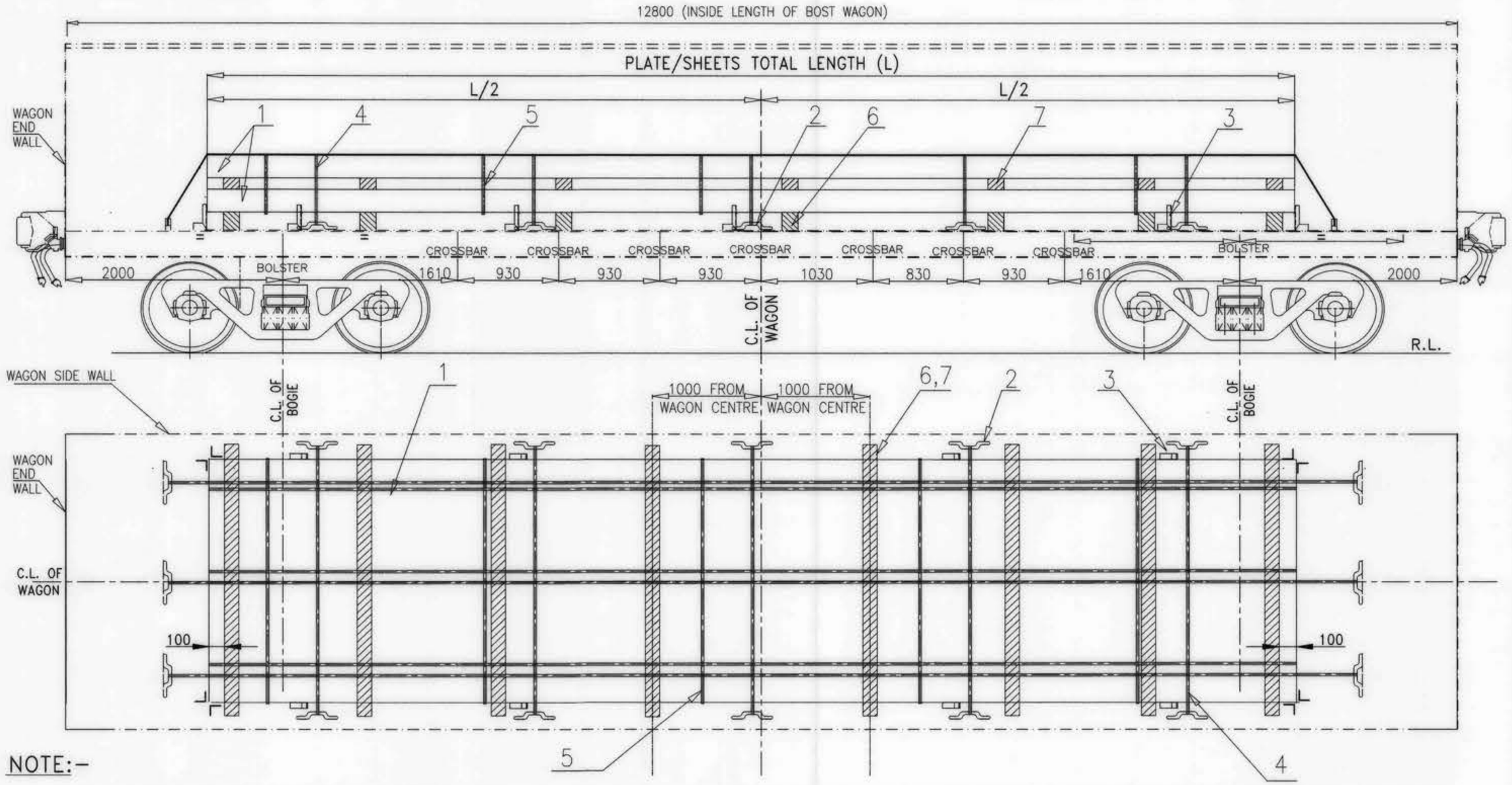
SUPERSEDED BY

SUPERSEDES

		DATE
SCALE	PASSED	11/24
	CHECKED	11/24
	DRAWN: ASHUTOSH SINGH	10/24
	J.S.NO. WD-24088	09/24

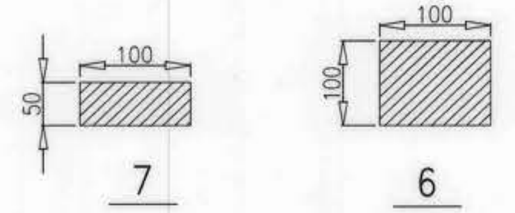
LOADING OF STEEL PLATES/SHEETS(4M TO 6.3M) ON BOST WAGON AND IT'S VARIANTS (ON BOTH BOGIE CENTRES)

B.G. | R.D.S.O. [W] | GROUP | WD-24088-S-04



S.NO.	LENGTH OF BUNDLES OF STEEL PLATE/ SHEETS (L)	WIDTH OF PLATE
1.	FROM 8000 TO 12000 MM	UPTO 2200 MM

TABLE–A (LOADING SCHEME FOR BUNDLE OF STEEL PLATES/SHEETS)



NOTE:–

1. INDIVIDUAL BUNDLES OF STEEL PLATES/ SHEETS (FROM 8000 TO 12000 MM) ARE TO BE UNITIZED BY USING HEAVY DUTY STRAPS AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. THE BUNDLES OF STEEL PLATES/ SHEETS LOADED ALONG THE WAGON LENGTH, SHOULD BE SYMMETRICAL ALONG LONGITUDINAL AND TRANSVERSE AXIS OF WAGON.
3. **LOADING PARAMETER OF BUNDLES OF STEEL PLATES/ SHEETS BUNDLES SHOULD BE SUCH THAT:–**
   - 3.1 BUNDLES OF STEEL PLATES/ SHEETS LOADING COMPOSITION DEPENDING UPON LENGTH & WIDTH, DESCRIBED IN TABLE A. BUNDLES OF STEEL PLATES/ SHEETS LOADED TOWARDS EQUALLY BOTH SIDE OF WAGON CENTRE AS SHOWN IN DRAWING, STACKING OF STEEL PLATE/ SHEETS BUNDLE SHOULD BE SYMMETRICAL ALONG LONGITUDINAL AND TRANSVERSE AXIS OF WAGON.
   - 3.2 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   - 3.3 THE STEEL PLATES/ SHEETS BUNDLE WEIGHT IMPOSED ON CENTER OF WAGON SHOULD BE IDENTICAL.
   - 3.4 MAXIMUM WEIGHT DIFFERENCE IN STEEL PLATES/ SHEETS 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/ SHEETS 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/ SHEETS 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 SHALL BE USED. IT IS THE RESPONSIBILITY OF LOADING PARTY. NO. OFF WOODEN RUNNERS(100X100) SHALL BE USED AS PER PLATE/ SHEETS LENGTH.
   - 4.3 AFTER PLACING THE FIRST BUNDLE OF STEEL PLATES/ SHEETS ON WOODEN RUNNER, INTERMEDIATE WOODEN RUNNER PLACED AT CORRECT POSITION BETWEEN STEEL PLATES/ SHEETS BUNDLES AS SHOWN IN DRAWING. AFTER THAT UNITIZING THE ALL BUNDLES OF PLATES BY FIVE STRAPS ITSELF IN TRANSVERSE DIRECTION AND THREE STRAPS IN LENGTHWISE DIRECTION OF PLATE, THEN USE EIGHT STEEL STRAPS/ LASHING CHAIN ON STEEL PLATES BUNDLES FOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF BUNDLES OF STEEL PLATES/ SHEETS STRICTLY DONE AS PER LASHING INSTRUCTION.
   - 4.4 AFTER TIGHTENING BY EIGHT STRAPS, BUNDLE OF STEEL PLATES/ SHEETS SHALL BE SECURE BY PROVIDING 16 NO.'S 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/ SHEETS.
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. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.
8. THE ISOLATION HOOK (ITEM NO.2) SHOULD BE WELD WITH WAGON FLOOR TO ACCOMMODATE 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/ SHEETS 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/WDGENL(EOFC)/8/2023-O/o PED/SWIRDSO

ITEM	DESCRIPTION	NO. OF PCS	MTL & SPEC	REMARKS
7.	INTERMEDIATE WOODEN RUNNER (50X100)FOR STEEL PLATES	12	WOOD	NO. OF INTERMEDIATE WOODEN RUNNER AS PER BUNDLES
6.	WOODEN RUNNER (100X100)	8(MINIMUM)	WOOD	WOODEN RUNNER NOs INCREASED 01 NO./Mt. IF PLATE/SHEETS LENGTH MORE THAN 9 Mt.
5.	LASHING CHAIN OR HEAVY DUTY STRAP FOR SELF UNITIZATION	8	EN13247:2001	
4.	LASHING CHAIN OR HEAVY DUTY STRAP TIGHTEN ISOLATION HOOK	8	EN13247:2001	
3.	ANGLE STOPPER	16	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–4
2.	ISOLATION HOOK	16	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–3
1.	STEEL PLATES/SHEETS BUNDLES	--	STEEL	(AS PER TABLE–A AND PAY LOAD)

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS

SUPERSEDED BY
SUPERSEDES
SCALE PASSED DATE 11/24
CHECKED 11/24
DRAWN ASHUTOSH SINGH 10/24
J.S.NO. WD–24088 09/24

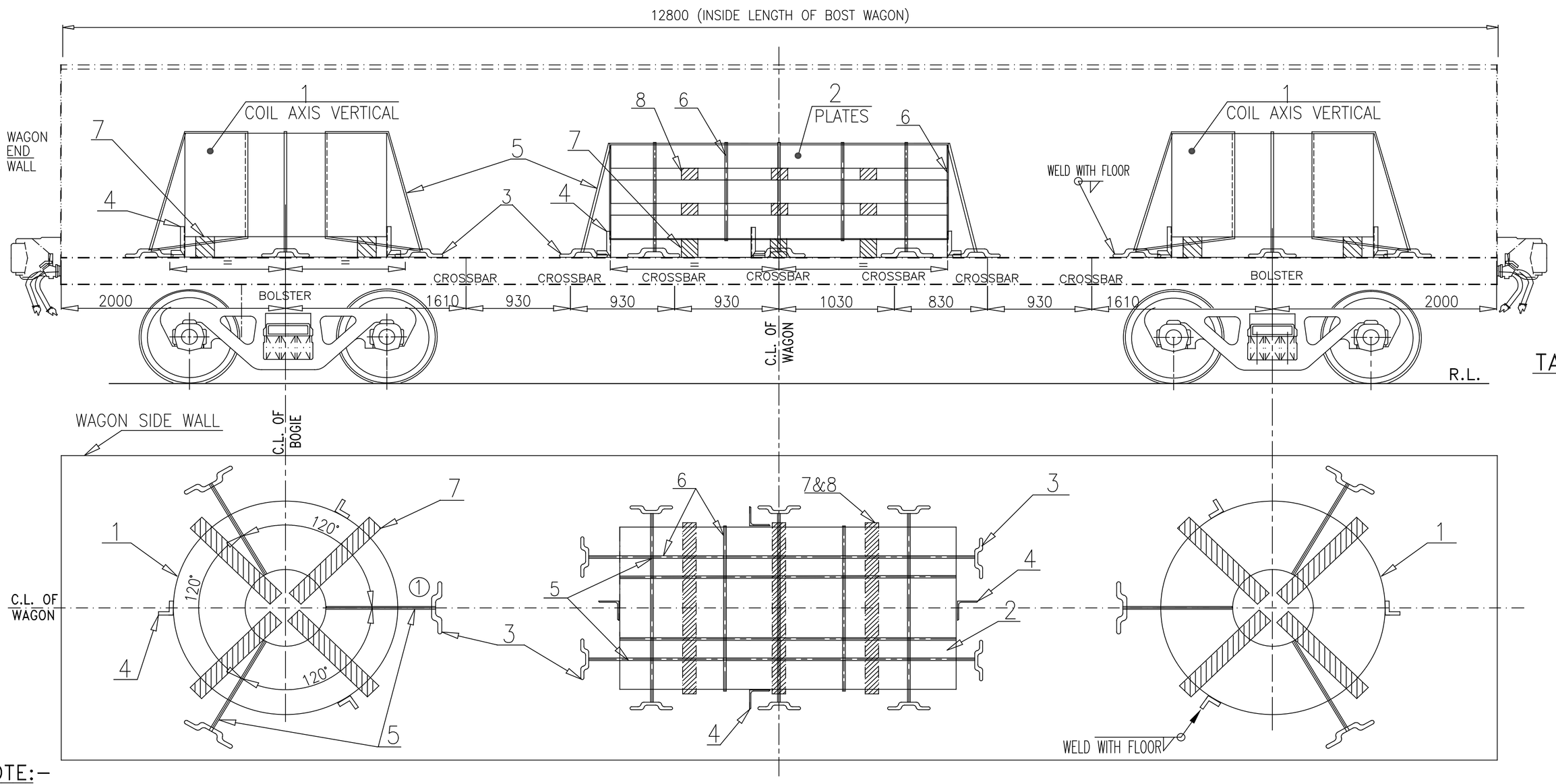
LOADING OF 8M TO 12M BUNDLE OF STEEL PLATES/ SHEETS ON BOST WAGON AND IT'S VARIANTS (ON WAGON CENTRE)

B.G. | R.D.S.O. [W] | GROUP | WD–24088–S–05

A1

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II/69413/2024

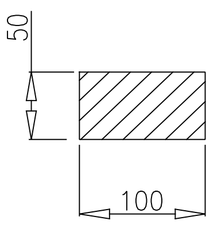


S.NO.	PLATES WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 20 TON MAXIMUM	(TOTAL PAY LOAD−20 TON)/2

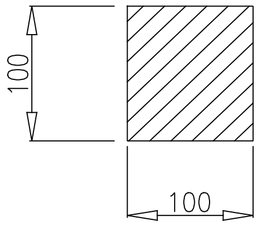
TABLE−A (LOADING SCHEME FOR STEEL COIL & BUNDLE OF STEEL PLATES)

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:−** ②
   - 4.1 BEFORE LOADING, ENSURE THAT WOODEN RUNNER LENGTH SHALL BE MORE THAN 100 MM OF THE OUTER RADIUS OF COIL AND WOODEN RUNNER 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. ①
   - 4.2 AFTER PLACING THE COIL ON WOODEN RUNNER, 03 NO's ANGLE STOPPERS AND 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 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 FOUR 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. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND−HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED. 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.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
2	−−	WD−24088	NOTE NO. 4.1, 4.2 AND 8 MODIFIED.	09/24	
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	

ITEM	DESCRIPTION	NO. OF PCS PER PLATES	NO. OF PCS PER COIL	MTL&SPEC	REMARKS
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	LENGTH OF WOODEN RUNNER SHALL BE 100 MM MORE THAN COIL OUTER RADIUS/PLATE WIDTH ②
6.	LASHING CHAIN OR HEAVY DUTY STRAP FOR SELF UNITIZATION	4	−−		
5.	LASHING CHAIN OR HEAVY DUTY STRAP TIGHTEN WITH ISOLATION HOOK	5	3	EN13247:2001	
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)

① ②

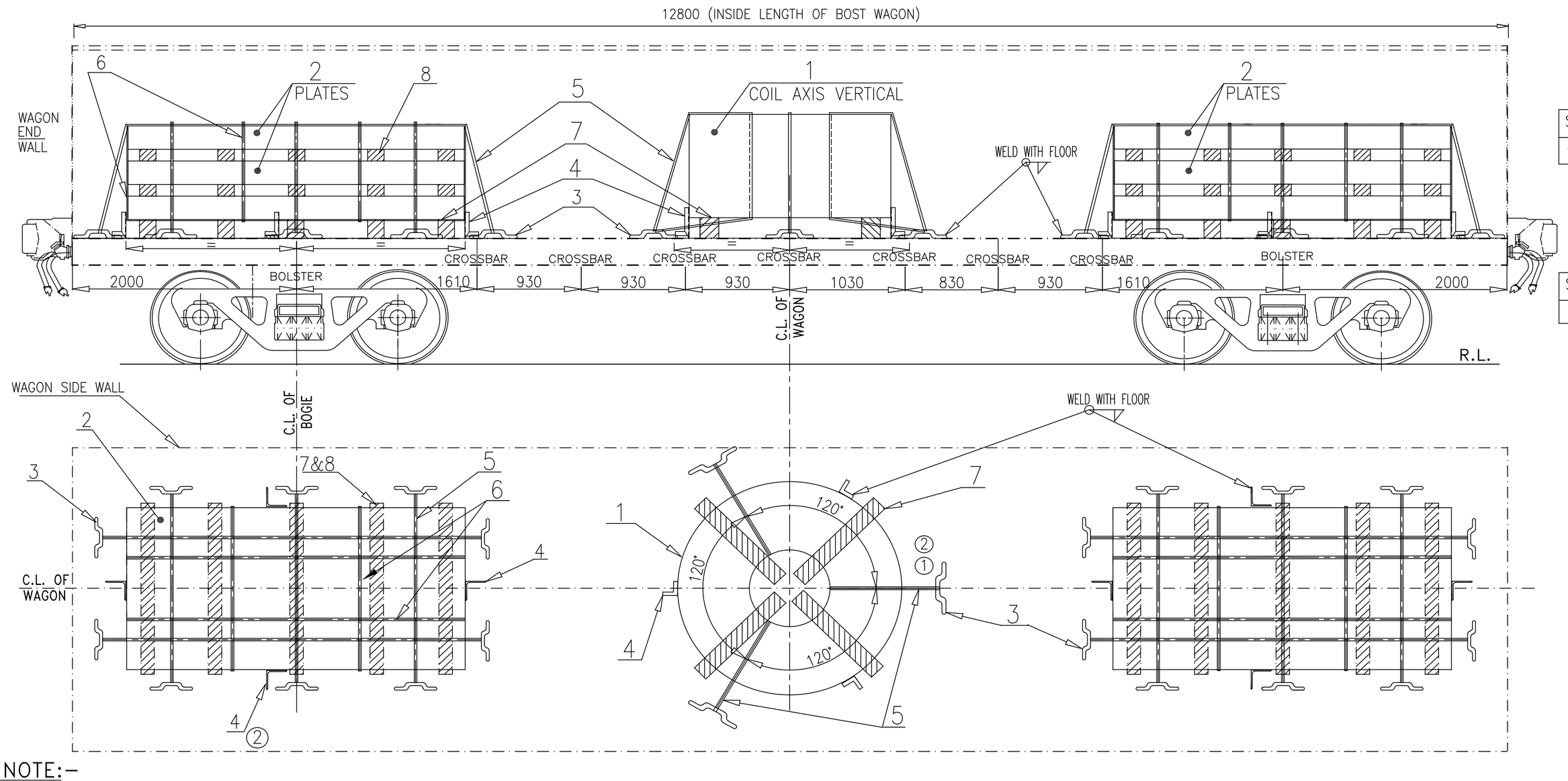
SUPERSEDED BY			
SUPERSEDES		DATE	
SCALE	PASSED	sd−S.M.TRIPATHI	01/24
	CHECKED	sd−A.K.KUSHWAHA	01/24
	DRAWN	KSHITOSH KUMR SINGH	01/24
	J.S.NO.	WD−24001	01/24

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/SWIRDSO

II/694313/2024



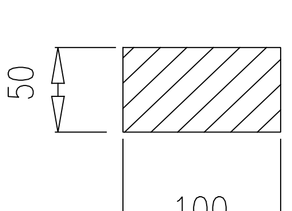
①

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

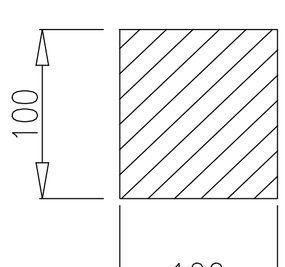
TABLE−A (LOADING SCHEME FOR STEEL COIL & STEEL PLATES)

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)



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 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:− ①③

4.1 BEFORE LOADING, ENSURE THAT WOODEN RUNNER LENGTH SHALL BE MORE THAN 100 MM OF THE OUTER RADIUS OF COIL AND WOODEN RUNNER 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, 03 NO's ANGLE STOPPERS AND 03 NO's STRAPS (TIGHTENED WITH ISOLATION HOOK) SHOULD BE APPLIED FOR SECURING ② OF EACH COIL AS SHOWN IN DRAWING, FOR SAFE OPERATION.

4.3 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 FOUR 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. ② ③ CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND−HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.
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	LENGTH OF WOODEN RUNNER SHALL BE 100 MM MORE THAN COIL OUTER RADIUS/PLATE WIDTH ③
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
3	−−	WD−24088	NOTE NO. 4.1, 4.2 AND 8 MODIFIED.	09/24	
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

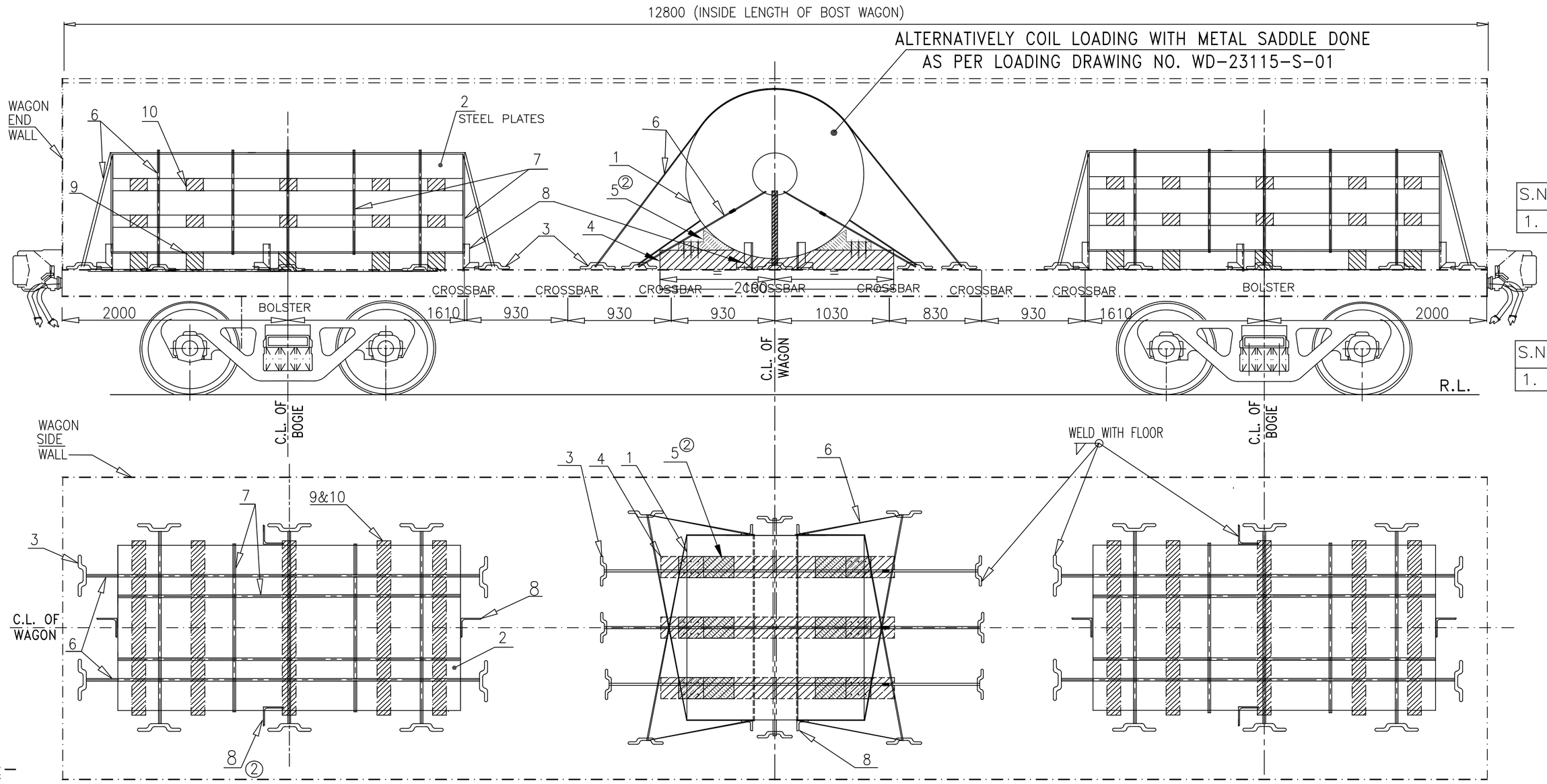
SUPERSEDES

SCALE			DATE
	PASSED	sd−S.M.Tripathi	01/24
	CHECKED	sd−A.K.Kushvaha	01/24
	DRAWN	KSHITOSH KUMR 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-MW0GENE(EOFC)/8/2023-O/o PED/SW/RDSO

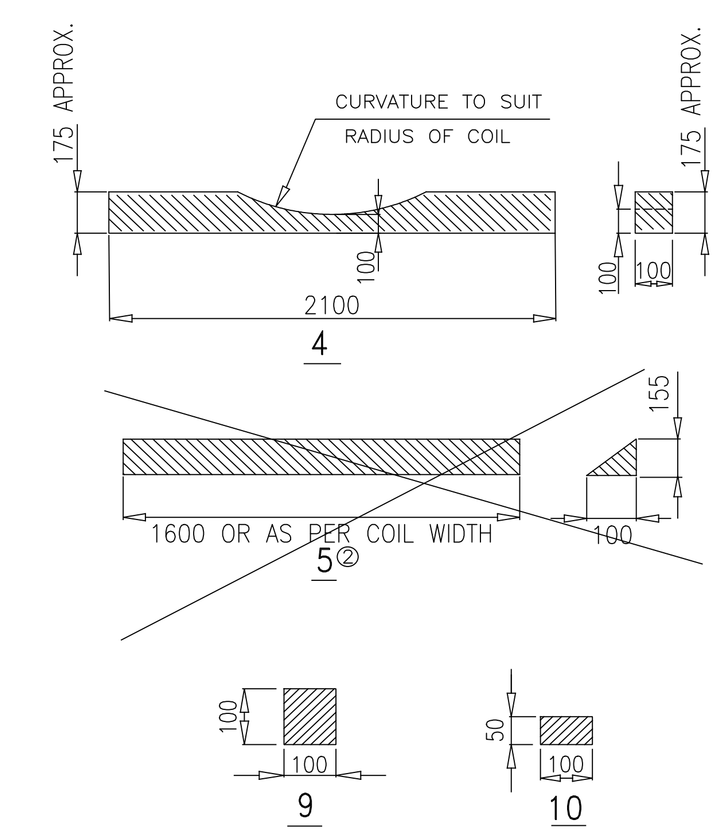


S.NO.	COIL WEIGHT AT CENTRE OF WAGON	PLATES WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 16 TON MAXIMUM	(TOTAL PAY LOAD−16 TON)/2

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 ONE STRAP TO EYE & 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 SELF 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 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. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ② ESSENTIAL TO ACHIEVING MAXIMUM BAND−HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.
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
2	--	WD−24088	STRAP THICKNESS FOR COIL CHANGED FROM 1.45 TO 1.27 MM IN NOTE NO. 6. ONE STRAP FOR COIL EYE ADDED. NOTE NO. 8 MODIFIED.	09/24	
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	

ITEM	DESCRIPTION	NO. OF PCS PER PLATES	NO. OF PCS PER COIL	MTL&SPEC	DRG. NO./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	LENGTH OF WOODEN RUNNER SHALL BE 100 MM MORE THAN PLATE WIDTH ②
8.	ANGLE STOPPER	04	04	---	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	08	EN13247:2001	SEE NOTE NO.−6
② 5.	WOODEN WEDGE FOR COIL	--	02	WOOD	WD−24036−S−01, ITEM NO.−5
4.	WOODEN CRADLE FOR COIL	--	03	WOOD	
② 3.	ISOLATION HOOK	10	12	---	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

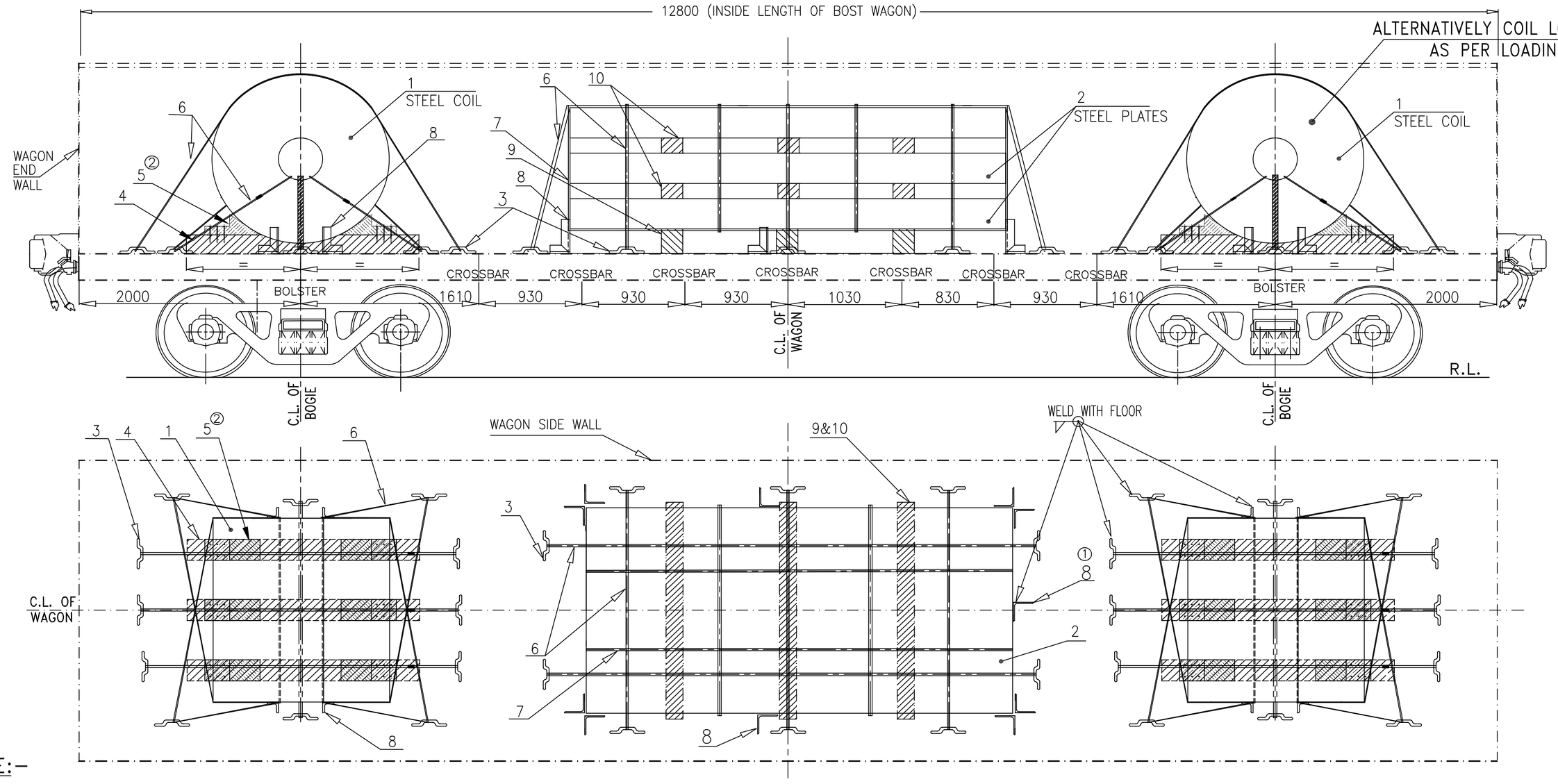
SUPERSEDES

			DATE
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/SWIRDSO

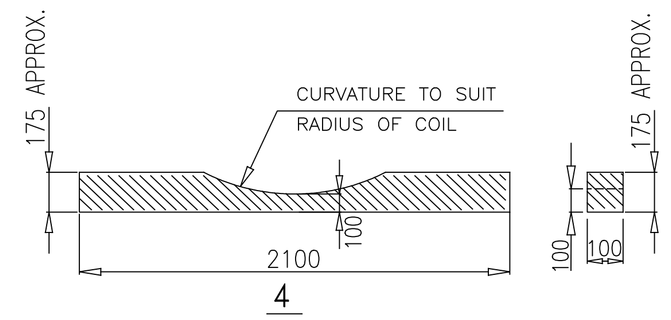


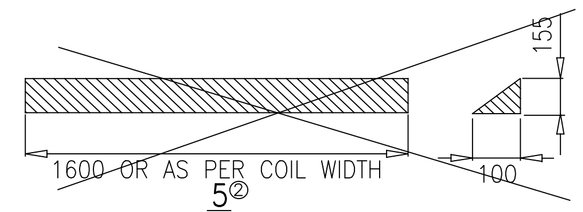
S.NO.	PLATES WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 20 TON MAXIMUM	(TOTAL PAY LOAD–20 TON)/2

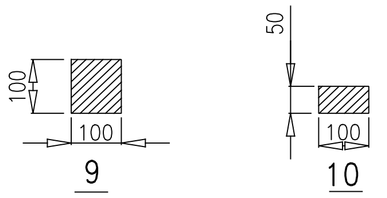
TABLE–A (LOADING SCHEME FOR STEEL COIL & STEEL PLATES)

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(EYE TO SIDE WALL) & 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.
   - 4.2 AFTER PLACING THE COIL ON WOODEN CRADLE, WOODEN WEDGE PLACED AND FIXED ON BOTH SIDE OF COIL, THEN USE ONE STRAP TO EYE & 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 AT BOTH EYE SIDE OF COIL ON WAGON FLOOR 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. ② 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 & PLATE (SPECIFICATION EN13247:2001.) ②

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 ② CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.
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
2	--	WD–24088	IN NOTE NO.6, STRAP THICKNESS FOR COIL CHANGED FROM 1.45 TO 1.27 MM. ONE STRAP FOR COIL EYE ADDED. WEDGE AND NOTE NO. 8 MODIFIED.	09/24	
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	

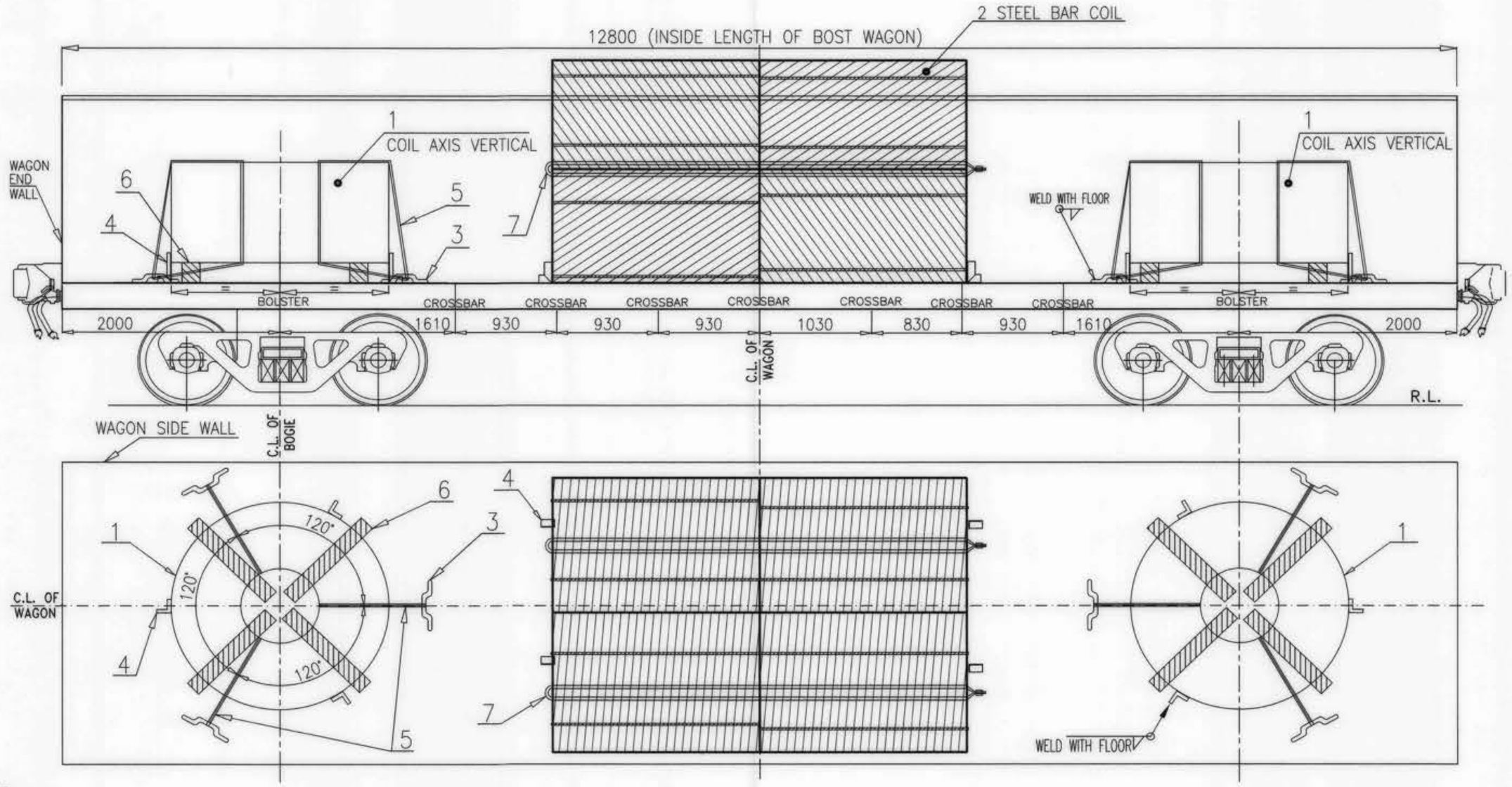
ITEM	DESCRIPTION	NO. OF PCS PER PLATES	NO. OF PCS PER COIL	MTL&SPEC	DRG. NO./ REMARKS
10.	INTERMEDIATE WOODEN RUNNER (50X100)FOR STEEL PLATES	06	--	WOOD	NOs. OF INTERMEDIATE WOODEN RUNNER AS PER NOs. OF BUNDLE
9.	WOODEN RUNNER (100X100) FOR STEEL PLATES	03	--	WOOD	LENGTH OF WOODEN RUNNER SHALL BE 100 MM MORE THAN PLATE WIDTH ②
②① 8.	ANGLE STOPPER	10	04	---	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	
② 6.	LASHING CHAIN OR HEAVY DUTY STRAP WITH ISOLATION HOOK	05	08	EN13247:2001	
② 5.	WOODEN WEDGE FOR COIL	--	06	WOOD	WD–24036–S–01, ITEM NO.–5
4.	WOODEN CRADLE FOR COIL	--	03	WOOD	
② 3.	ISOLATION HOOK	10	12	---	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)

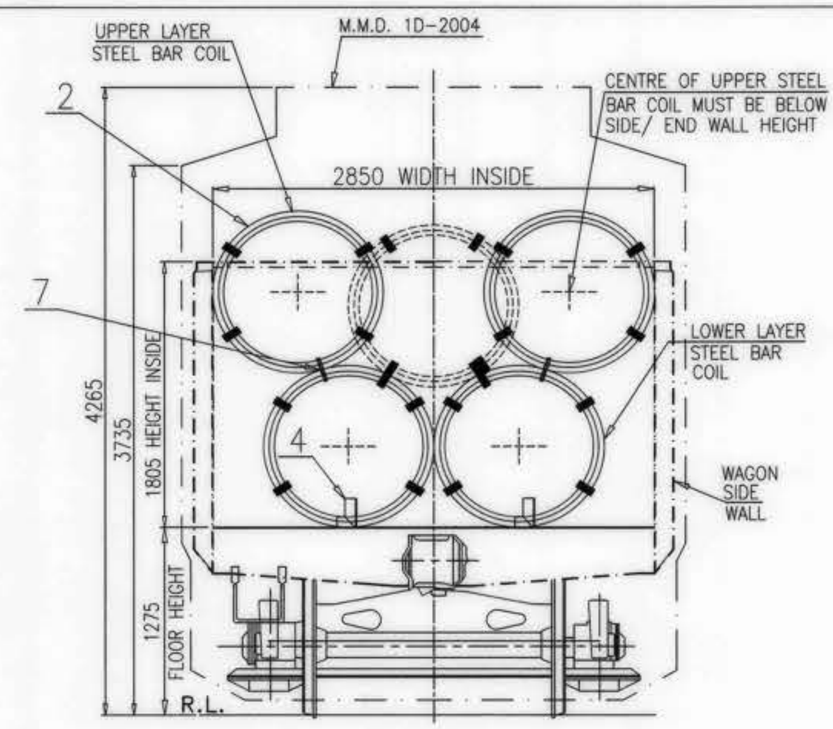
SUPERSEDED BY			
SUPERSEDES			DATE
SCALE	PASSED	sd–S.M.Tripathi	01/24
	CHECKED	sd–A.K.Kushvaha	01/24
	DRAWN	SACHIN KUMAR	01/24
	J.S.NO.	WD–24001	01/24

LOADING OF STEEL 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

I/69413/2024
File No:RDSO-MWDGENL(EOF-C)/8/2023-O/o PED/SWR/RDSO
1032





END VIEW FOR STEEL BAR COIL

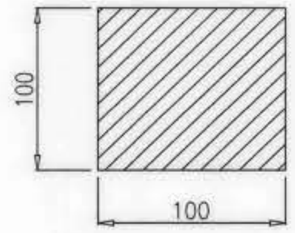
NOTE:–

1. THE STEEL COILS LOADED VERTICALLY (EYE TO SKY) SHOULD BE SYMMETRICAL ALONG LONGITUDINAL AND TRANSVERSE AXIS OF WAGON.
2. INDIVIDUAL LOADED VERTICAL STEEL COILS ARE TO BE LASHED BY USING HEAVY DUTY STRAPS AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
3. TOTAL WEIGHT OF LOADED COILS AND STEEL BAR COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
4. **LOADING PARAMETER AND PROCEDURES OF STEEL COILS SHOULD BE SUCH THAT:–**
   - 4.1 VERTICAL STEEL COIL LOADED AT BOTH SIDE ON EACH BOGIE/ BOLSTER CENTRE.
   - 4.2 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
   - 4.3 THE COIL WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
   - 4.4 MAXIMUM WEIGHT DIFFERENCE IN COIL LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
   - 4.5 RESTRICTION: COIL WIDTH W<=1.5D .
   - 4.6 BEFORE LOADING, ENSURE THAT WOODEN RUNNER LENGTH SHALL BE MORE THAN 100 MM OF THE OUTER RADIUS OF COIL AND WOODEN RUNNER 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.
   - 4.7 AFTER PLACING THE COIL ON WOODEN RUNNER, 03 NO's ANGLE STOPPERS AND 03 NO's STRAPS (TIGHTENED WITH ISOLATION HOOK) SHOULD BE APPLIED FOR SECURING OF EACH COIL AS SHOWN IN DRAWING, FOR SAFE OPERATION.
   - 4.8 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
   - 4.9 THE LOADING/UNLOADING OF STEEL COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.
5. **LOADING PARAMETER AND PROCEDURES OF STEEL BAR COILS SHOULD BE SUCH THAT:–**
   - 5.1 STEEL BAR COILS HAVING OUTER DIAMETER MAXIMUM UP TO 1200 MM CAN BE STACKED IN TWO LAYER AS SHOWN IN LOADING DIAGRAM.
   - 5.2 THE STEEL BAR COILS LOADING SHOULD BE SYMMETRICAL WITH RESPECT TO LENGTH OF WAGON AS WELL AS TRANSVERSE AXIS(WIDTH) OF WAGON.
   - 5.3 LOADING SHALL BE UNIFORMLY DISTRIBUTED AT WAGON CENTRE BETWEEN VERTICAL COILS WITH ADEQUATE DISTANCE FROM ISOLATION HOOK THAT THEY SHOULD NOT DAMAGE ISOLATION HOOK PROVIDED FOR VERTICAL COILS FOR SAFE OPERATION. TO RESTRICT THE MOVEMENT OF STEEL BAR COIL, ANGLE STOPPER MAY BE USED AT WAGON FLOOR.
   - 5.4 EACH STEEL BAR COILS SHALL BE SELF UNITISED AND TIGHTENED ADEQUATELY WITH MINIMUM FOUR NO. STRAPS AND EACH UPPER LAYER OF BAR COILS SHALL BE UNITIZED WITH LOWER LAYER OF BAR COILS WITH MINIMUM ONE STEEL STRAP.
   - 5.5 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.
   - 5.6 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.
6. THE TENSIONAL STEEL STRAPS WITH THICKNESSES OF 1.27 MM SHALL BE USED FOR LASHING & SECURING OF STEEL COIL AND UNITIZED/ LASHING OF STEEL BAR COILS. THE STRAPS MUST COMPLY WITH THE PHYSICAL PROPERTIES SPECIFIED IN EN13247:2001. THE DETAILED PHYSICAL PROPERTIES ARE OUTLINED IN THE TABLE BELOW;

STEEL STRAP (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 TENSOMETER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.
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).
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.
12. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.
13. STEEL COIL AND STEEL BAR COILS SHOULD BE LOADED SLOWLY/ GRADUALLY ON THE FLOOR OF WAGON . IMPACT LOADING NOT TO BE CARRIED OUT IN ANY CIRCUMSTANCE.



(LENGTH AS PER COIL DIA)
6

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

ITEM	DESCRIPTION	No. OF PCS PER COIL	MTL&SPEC	REMARKS
7.	HEAVY DUTY STRAP FOR STEEL BAR COIL	2 OR AS PER COILS NOs.	EN13247:2001	
6.	WOODEN RUNNER (100X100)	4	WOOD	LENGTH OF WOODEN RUNNER SHALL BE 100 MM MORE THAN THE COIL OUTER RADIUS
5.	LASHING CHAIN OR HEAVY DUTY STRAP FOR STEEL COIL	3	EN13247:2001	
4.	ANGLE STOPPER	3 FOR COIL 4 FOR BAR COILS	---	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 BAR COIL (AT WAGON CENTER)	--	STEEL	
1.	STEEL COIL (01 NO./ BOLSTER CENTER)	--	STEEL	

SUPERSEDED BY

SUPERSEDES

SCALE			DATE
	PASSED	[illegible]	11/24
	CHECKED	[illegible]	11/24
	DRAWN	SACHIN KUMAR	10/24
	J.S.NO.	WD–24088	09/24

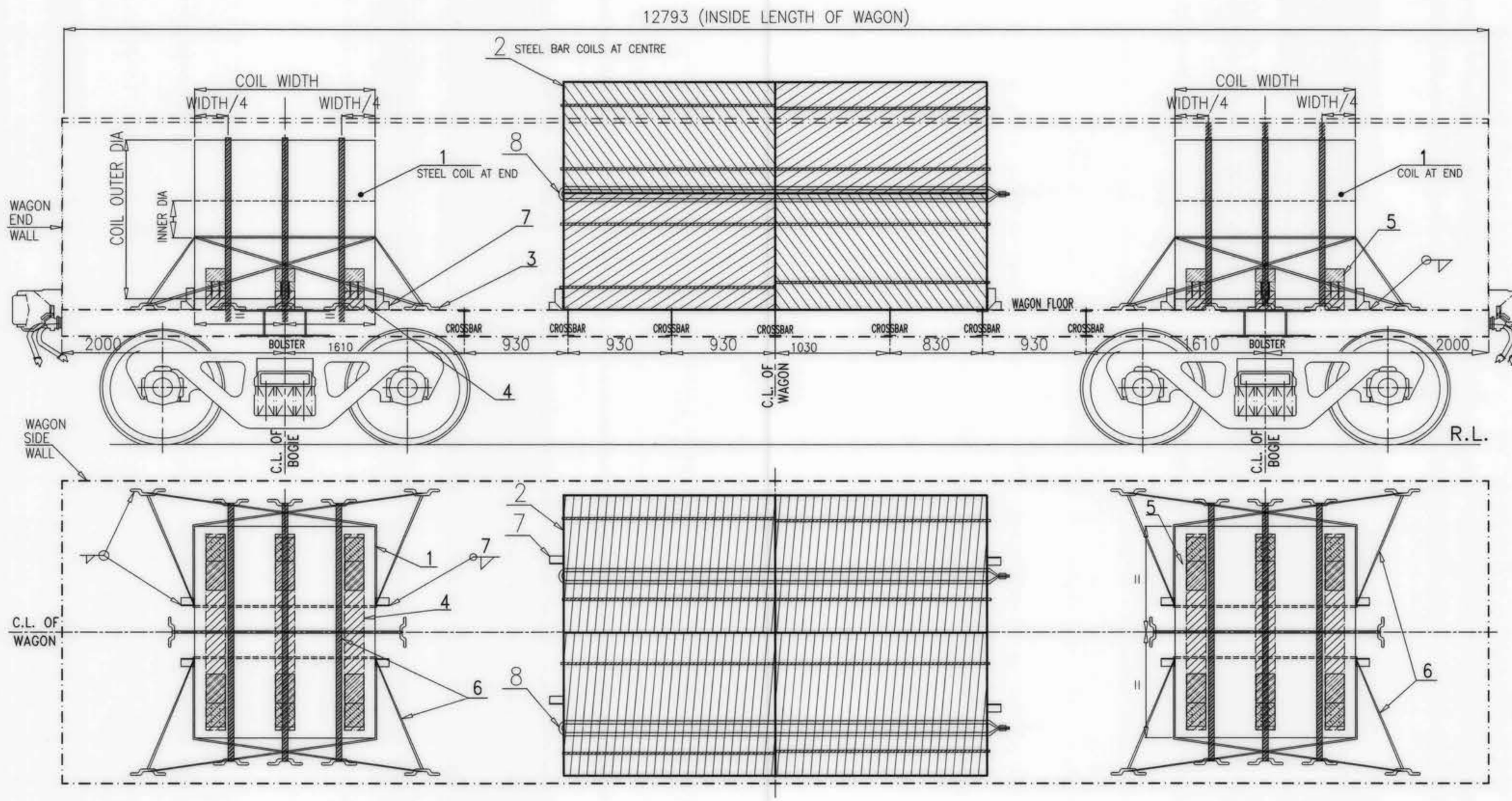
LOADING DIAGRAM OF VERTICAL LOADED STEEL COILS AND STEEL BAR COILS ON BOST WAGON & IT'S VARIANTS

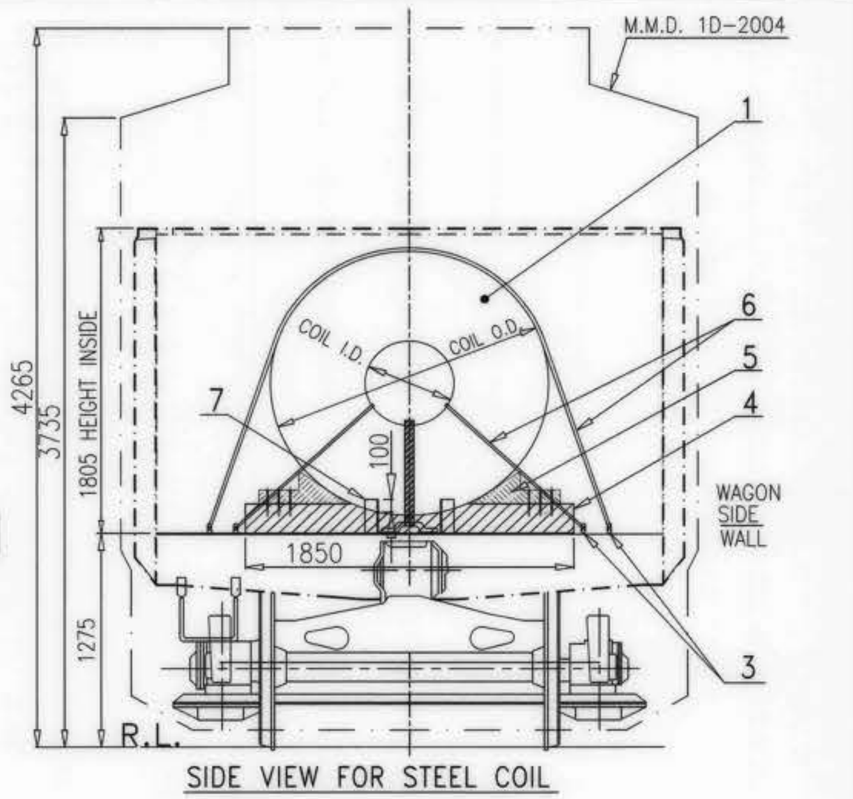
B.G. | R.D.S.O. [W] | GROUP | WD–24088–S–01

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS

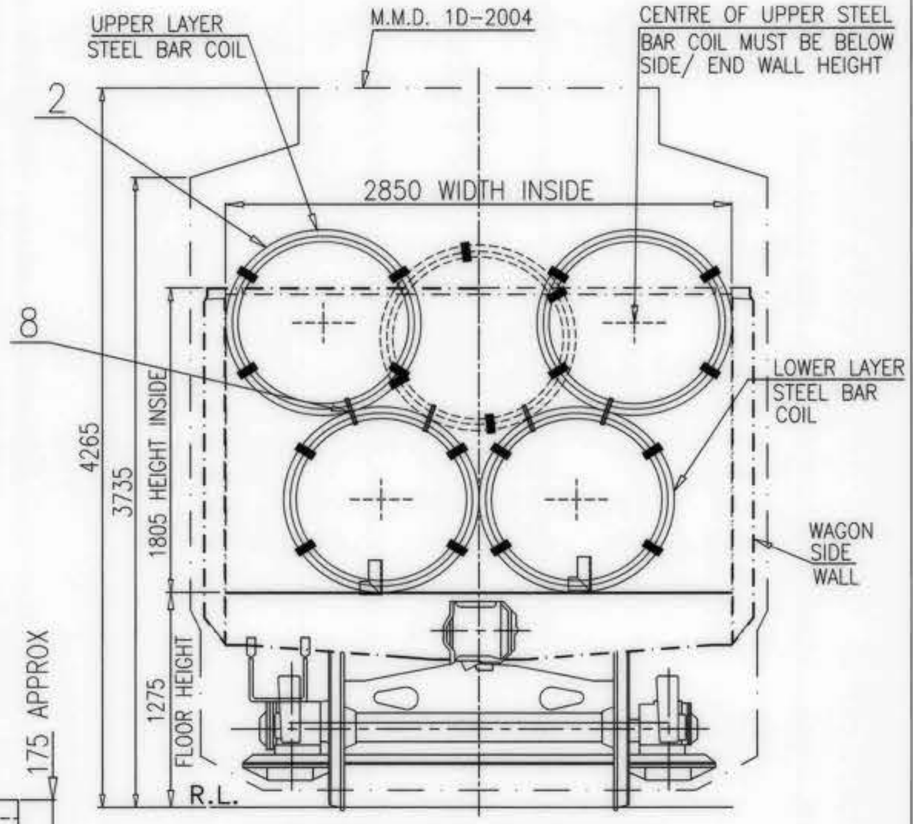
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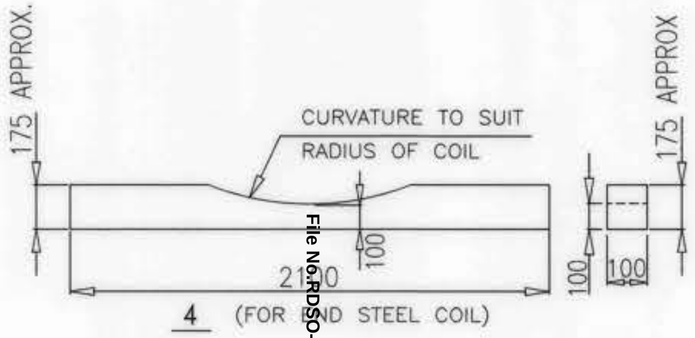




SIDE VIEW FOR STEEL COIL



SIDE VIEW FOR STEEL BAR COIL



4 (FOR 2ND STEEL COIL)

NOTE:-

1. INDIVIDUAL COIL ARE TO BE LASHED BY USING HEAVY DUTY STRAPS AS PER SECURING PATTERN SHOWN IN THIS DRAWING.
2. THE STEEL COIL AND STEEL BAR COIL LOADING ALONG THE WAGON LENGTH, SHOULD BE SYMMETRICALLY ABOUT THE LONGITUDINAL CENTRE LINE AS WELL AS TRANSVERSE AXIS OF THE WAGON.
3. TOTAL WEIGHT OF LOADED COILS AND STEEL BAR COILS ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.

4. LOADING PARAMETER AND PROCEDURES OF STEEL COILS SHOULD BE SUCH THAT:-

4.0 STEEL COIL LOADED AT BOTH SIDE ON EACH BOGIE/ BOLSTER CENTRE.
4.1 THE LOAD ON ANY BOGIE SHOULD NOT EXCEED WAGON'S PAY LOAD/2 .
4.2 THE COIL WEIGHT IMPOSED ON BOTH BOGIES SHOULD BE IDENTICAL.
4.3 MAXIMUM WEIGHT DIFFERENCE IN COIL LOADED ON BOTH BOGIE/ BOLSTER CENTRE OF WAGON, SHOULD NOT BE MORE THAN 2 (TWO) TON.
4.4 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.
4.5 AFTER PLACING THE STEEL COIL ON WOODEN CRADLE, WOODEN WEDGE PLACED AND FIXED ON BOTH SIDE OF COIL ON WOODEN CRADLE. THEN USE ONE STRAP THROUGH COIL EYE AND THREE STRAPS ON EACH COILFOR TIGHTENED WITH ISOLATION HOOK AS SHOWN IN DRAWING, FOR SAFE OPERATION. LASHING OF EACH COIL SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
4.6 AFTER TIGHTENING BY THREE STRAP, EACH COILS SHALL BE TIGHTENED ADEQUATELY BY 04 NOs. OF LASHING CHAIN/ MENTIONED STEEL STRAP WITH ISOLATION HOOK.
4.7 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER COIL.
4.8 THE LOADING/UNLOADING OF STEEL COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON & LOOSE DURING TRANSPORTATION.

5. LOADING PARAMETER AND PROCEDURES OF STEEL BAR COILS SHOULD BE SUCH THAT:-

5.1 STEEL BAR COILS HAVING OUTER DIAMETER MAXIMUM UP TO 1200 MM CAN BE STACKED IN TWO LAYER AS SHOWN IN LOADING DIAGRAM.
5.2 LOADING SHALL BE UNIFORMLY DISTRIBUTED AT WAGON CENTRE BETWEEN STEEL COILS WITH ADEQUATE DISTANCE FROM ISOLATION HOOK THAT THEY SHOULD NOT DAMAGE ISOLATION HOOK PROVIDED FOR COILS FOR SAFE OPERATION. TO RESTRICT THE MOVEMENT OF STEEL BAR COIL, ANGLE STOPPER MAY BE USED AT WAGON FLOOR.
5.3 EACH STEEL BAR COILS SHALL BE SELF UNITISED AND TIGHTENED ADEQUATELY WITH MINIMUM FOUR NO. STRAPS AND EACH UPPER LAYER OF BAR COILS SHALL BE UNITIZED WITH LOWER LAYER OF BAR COILS WITH MINIMUM ONE STEEL STRAP.
5.4 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.
5.5 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 NOT BE MORE THAN THE TOP HEIGHT OF SIDE WALL TOP COPING.
5.6 THE LOADING/UNLOADING OF STEEL BAR COILS TO BE CARRIED OUT IN SUCH A WAY THAT IT WILL NOT DAMAGE THE WAGON.

6. THE TENSIONAL STEEL STRAPS WITH THICKNESSES OF 1.27 MM SHALL BE USED FOR LASHING & SECURING OF STEEL COIL AND UNITIZED/ LASHING OF STEEL BAR COILS. THE STRAPS MUST COMPLY WITH THE PHYSICAL PROPERTIES SPECIFIED IN EN13247:2001. THE DETAILED PHYSICAL PROPERTIES ARE OUTLINED IN THE TABLE BELOW;

STEEL STRAP (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 TENSOMETER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND-HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.
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).
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.
12. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.
13. STEEL COIL AND STEEL BAR COILS 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	REF. DRG.	MTL&SPEC	REMARKS
8	HEAVY DUTY STRAP FOR STEEL BAR COIL	2 OR AS PER COILS NOs.	AS PER COILS NOs.	EN 13247: 2001	
7	ANGLE STOPPER FOR COIL & STEEL BAR COILS	4 & 4	WD-24036-S-01 ITEM-4	---	
6	LASHING CHAIN OR HEAVY DUTY STRAP FOR STEEL COIL	8	--	EN 13247: 2001	
5	WOODEN WEDGE	6	WD-24036-S-01 ITEM-5	WOOD	
4	WOODEN CRADLE	3	--	WOOD	
3	ISOLATION HOOK	12	WD-24036-S-01 ITEM-3	---	
2	STEEL BAR COIL (AT WAGON CENTRE)	--	--	STEEL	
1	STEEL COIL AT BOGIE CENTRE(01 NO./ BOGIE)	--	--	STEEL	

SUPERSEDED BY
SUPERSEDES
SCALE PASSED DATE 09/24
CHECKED 09/24
DRAWN SACHIN KUMAR 09/24
J.S.NO. WD-24088 09/24

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

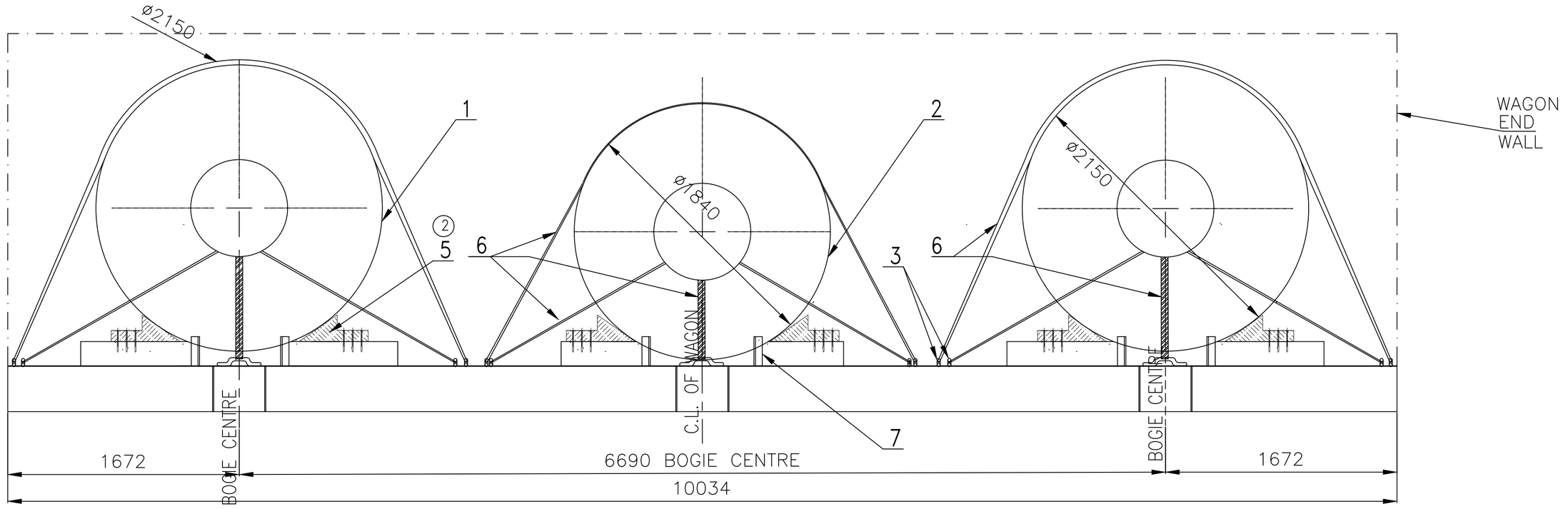
B.G. | R.D.S.O. [W] | GROUP | WD-24088-S-02

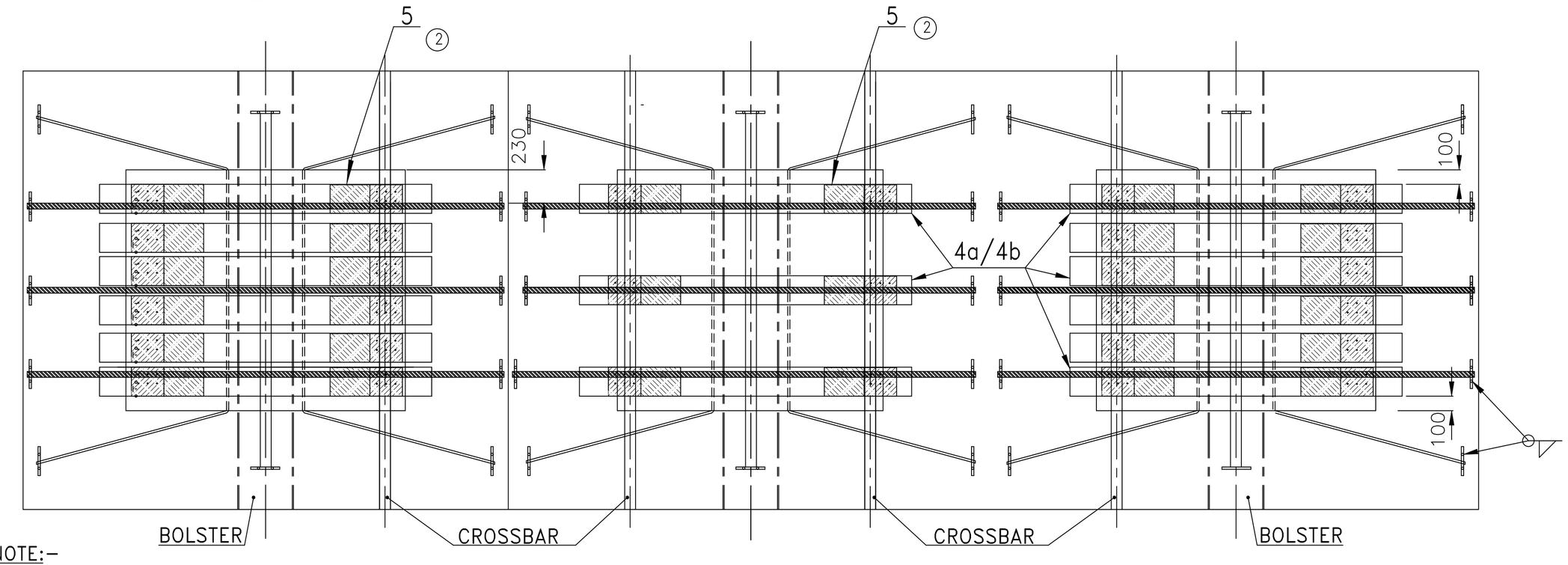
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRG.

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

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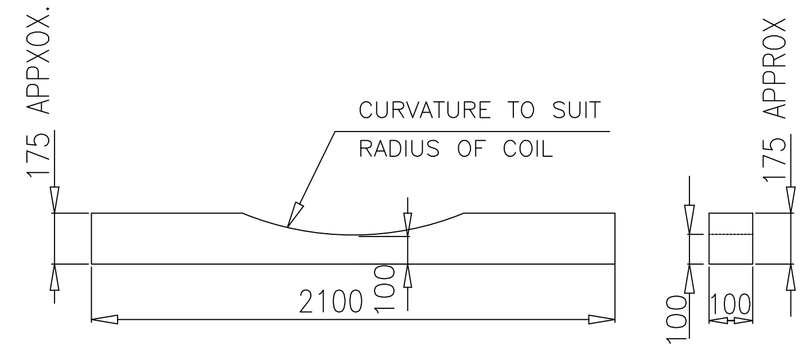
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TABLE–A :

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)

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;

②

S.N.	PARAMETERS	PHYSICAL PROPERTIES (Ref.–EN13247:2001)
		1.27 THICKNESS STRAP
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BREAKING STRENGTH	43KN (4.3 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.
18. ② MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVE MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
②	–	WD–24090	NOTE NO.–9 & WEDGE MODIFIED. NOTE NO.–18 ADDED.	09/24	
①	–	–	SKETCH REVISED & REDRAWN	04/24	

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	–
② 5.	WOODEN WEDGE	12 (AT END) 06 (AT CENTRE)	WOOD	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–5
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)

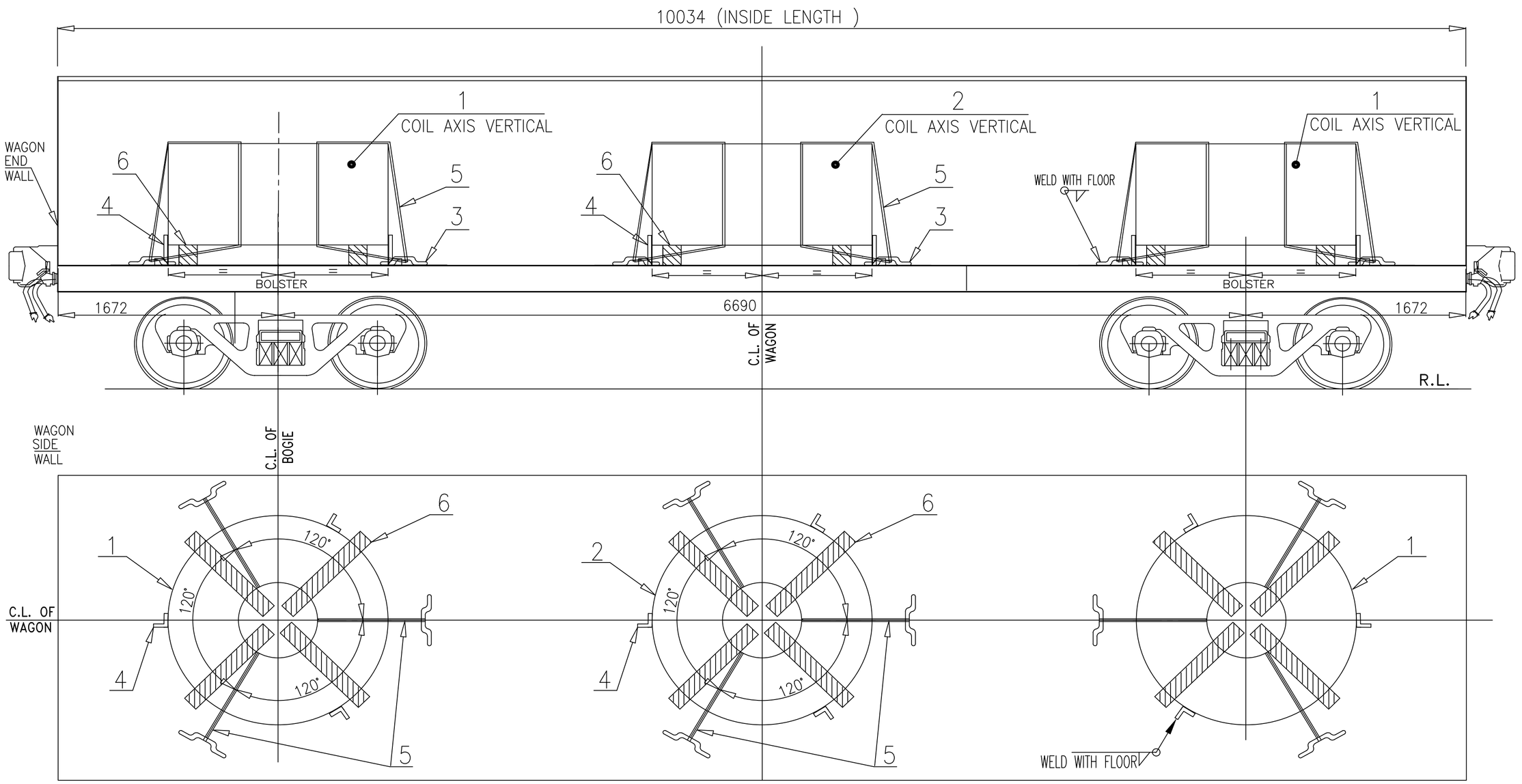
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DRAWN L. MOHAN
J.S.NO.

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

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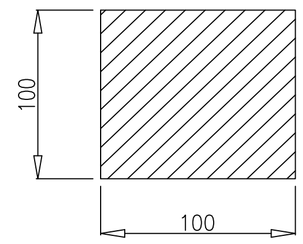


S.NO.	COIL WEIGHT AT WAGON CENTRE	COIL WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 08 TON MAXIMUM	28 TON (MAXIMUM)

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 LENGTH SHALL BE MORE THAN 100 MM OF THE OUTER RADIUS OF COIL AND WOODEN RUNNER 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. (2)
   - 4.2 AFTER PLACING THE COIL ON WOODEN RUNNER, 03 NO's ANGLE STOPPERS AND 03 NO's STRAPS (TIGHTENED WITH ISOLATION HOOK) SHOULD BE APPLIED FOR SECURING OF EACH COIL AS SHOWN IN DRAWING, FOR SAFE OPERATION. (2)
   - 4.3 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)
		1.27 THICKNESS STRAP
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BREAKING 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.
14. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVE MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED. (2)

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

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)

(1)

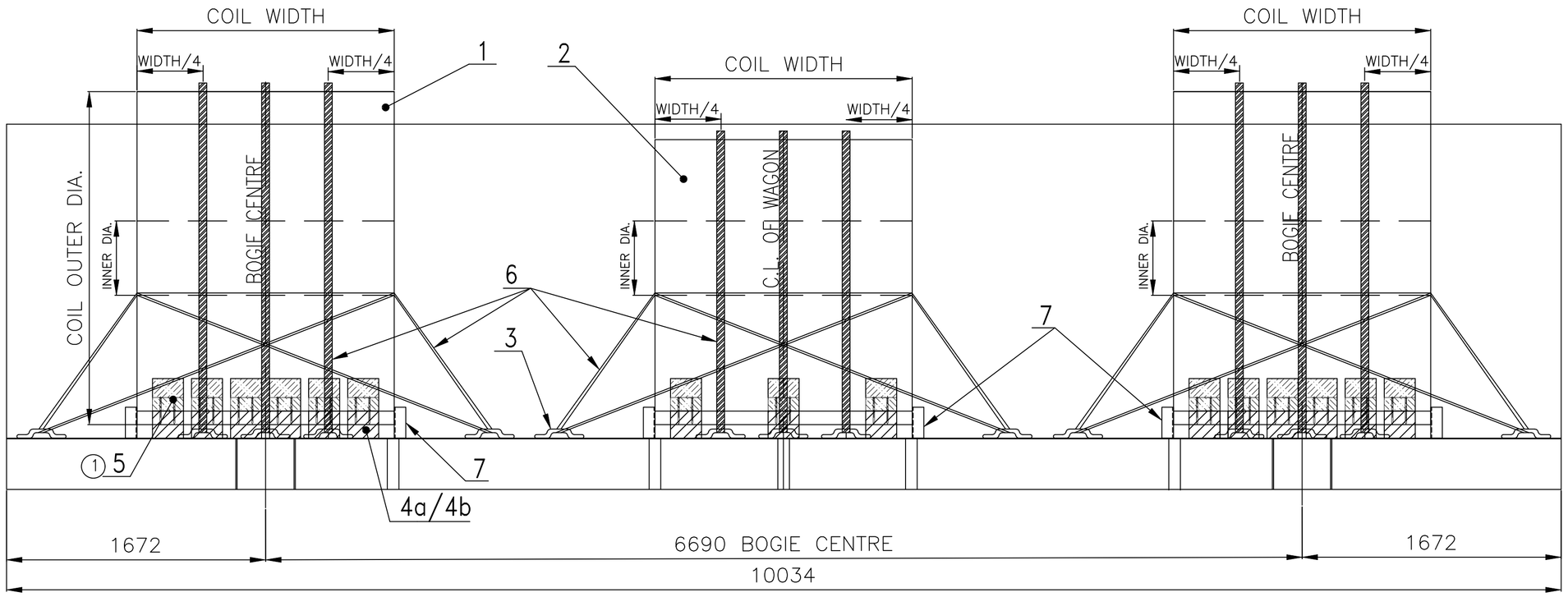
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY.	DRGS
(2)	–	WD–24090	NOTE NO.–4.1 & 4.2 MODIFIED, NOTE NO.–4.3 DELETED. NOTE NO.–4.4 OF PREVIOUS DRAWING BECOME NOTE NO.–4.3. NOTE NO.–14 ADDED.	09/24		
(1)	–	WD–24038	VIEWS OF ITEM NO. 3 & 4 DRG. DELETED AND REFERENCE DRG. NO. ADDED IN DESCRIPTION TABLE. NOTE NO.–4.2,4.3 & 7 MODIFIED. NO. OFF STRAPS, ISOLATION HOOK & ANGLE STOPPER REDUCED FROM 6, 6 & 4 TO 3, 3 & 3 RESPECTIVELY.			

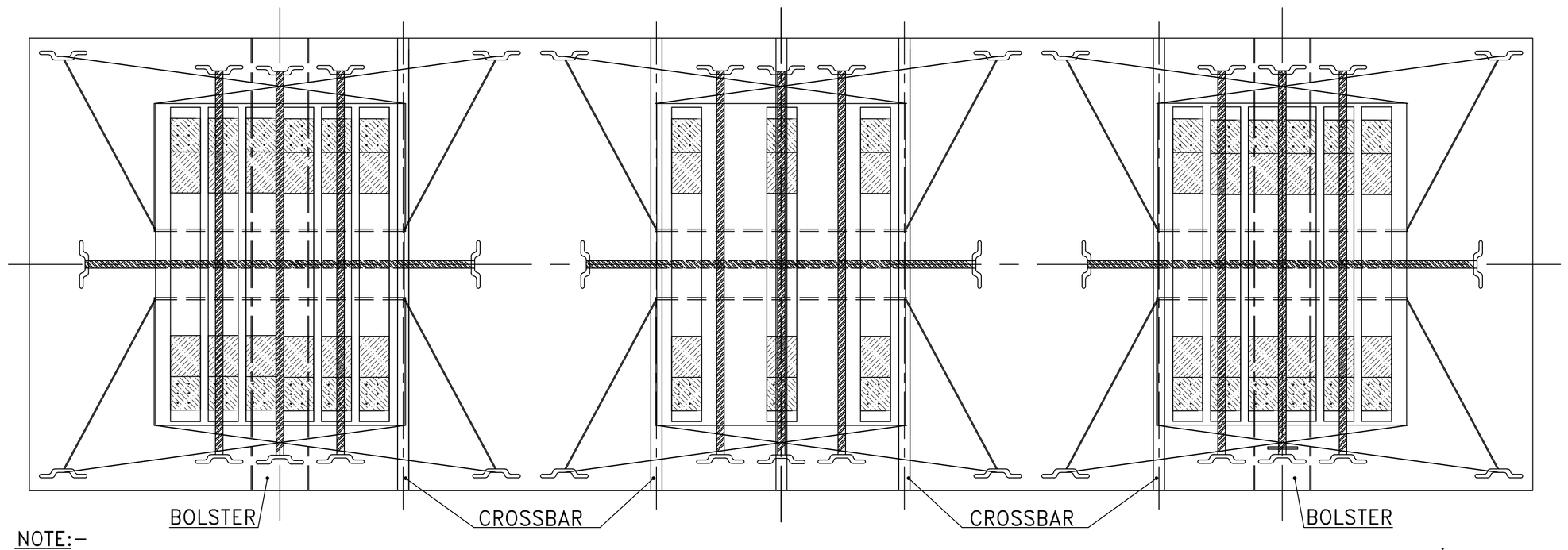
SUPERSEDED BY	
SUPERSEDES	DATE
SCALE PASSED	
CHECKED	
DRAWN D. KUMAR	03/24
J.S.NO.	

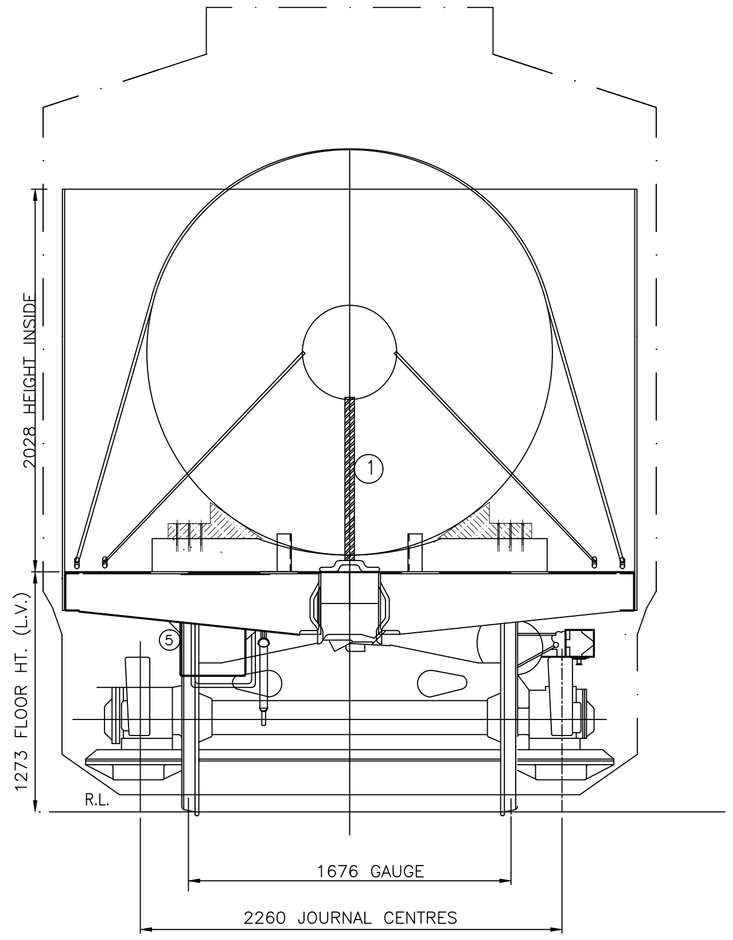
LOADING DIAGRAM OF VERTICAL LOADED STEEL COILS ON BOXNHL WAGON

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

1036 II/69







TABLE–A :

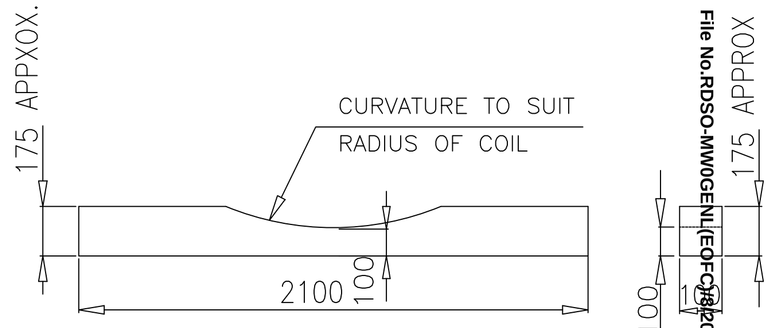
S.NO.	COIL WEIGHT AT EACH BOGIE CENTRE	NUMBER OF SADDLES/CRADLES AT EACH BOGIE CENTRE
1.	28 TONNES	06
2	LESS THAN 28 TONNES	NUMBER OF SADDLES AS PER WIDTH OF COIL BUT NOT LESS THAN THREE

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 05 NOs. OF LASHING CHAIN/ MENTIONED STEEL STRAP WITH ISOLATION HOOK.
① 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) 1.27 THICKNESS STRAP
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BREAKING STRENGTH	43KN (4.3 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.
① 18. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVE MAXIMUM BAND HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.



4a (WOODEN CRADLE)

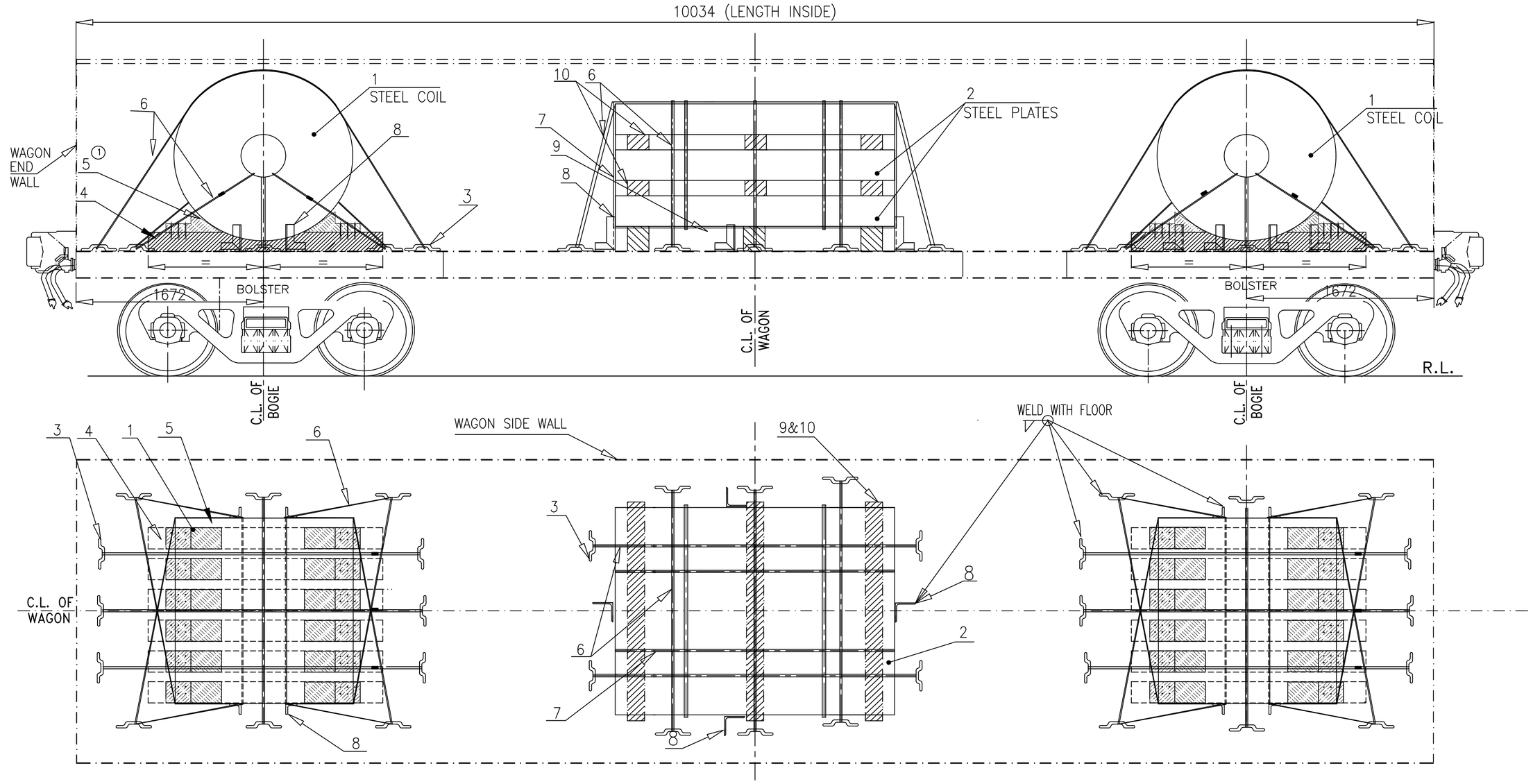
File No.RDSO-MW0GENL(E)OF(2023-O/o PED/SW/RDSO

①	–	WD–24090	NOTE NO.–9 & WEDGE MODIFIED AND QUANTITY FOR ITEM NO.–6 INCREASED FROM 6 TO 8. NOTE NO.–18 ADDED.	09/24	
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

①	7.	ANGLE STOPPER	4	–	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–4
	6.	LASHING CHAIN OR HEAVY DUTY STRAP	8	EN13247:2001	
	5.	WOODEN WEDGE	12 (AT END) 06 (AT CENTRE)	WOOD	WD–24036–S–01 ITEM–5
	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)
ITEM		DESCRIPTION	NO. OF PCS PER COIL	MTL&SPEC	REMARKS

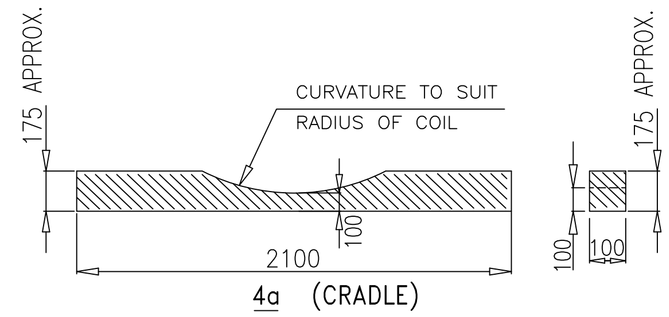
SUPERSEDED BY			LOADING DIAGRAM FOR STEEL COIL ON BOXNHL WAGON (EYE TO ENGINE)
SUPERSEDES		DATE	
SCALE	PASSED		
	CHECKED		
	DRAWN K. PAL	04/24	
	J.S.NO.		
B.G.	R.D.S.O. [W]	GROUP	SKETCH/WD–II/12

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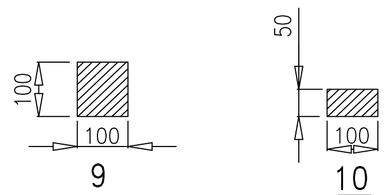


TABLE–A :

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)



9 10

(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 WEDGES 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 05 NOs. OF LASHING CHAIN/ MENTIONED STEEL STRAP WITH ISOLATION HOOK.

① 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	1.27
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.

①17. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVE MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

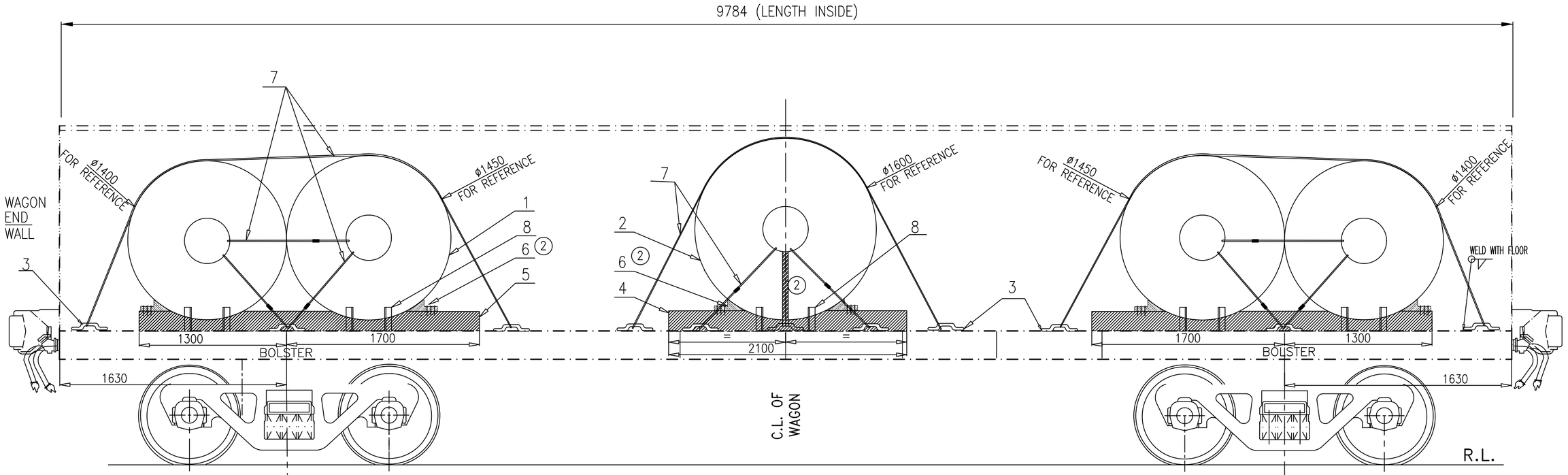
File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SW/RDSO

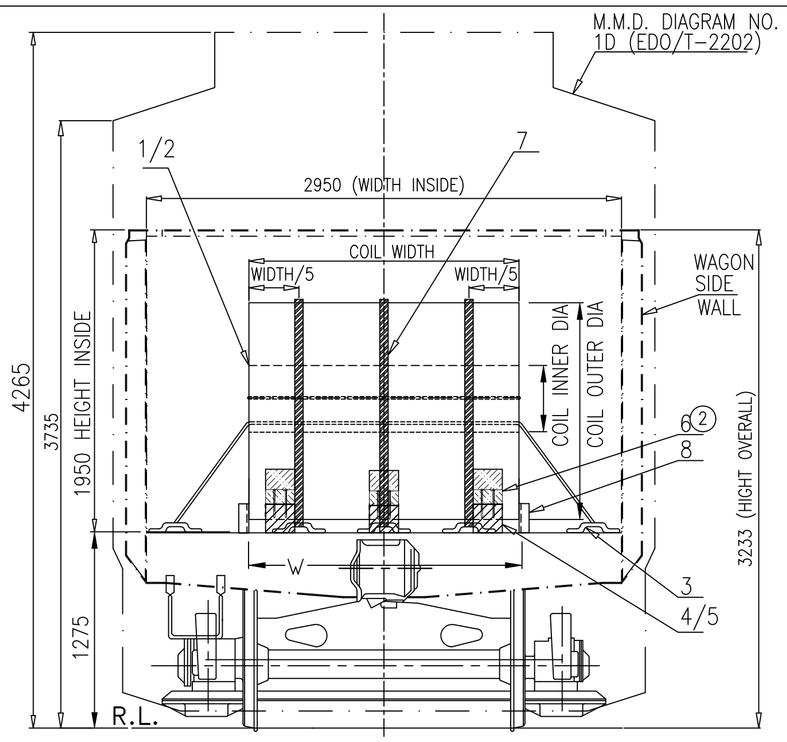
ITEM	DESCRIPTION	NO. OF PCS PER PLATES	NO. OF PCS PER COIL	MTL&SPEC	REMARKS
10.	INTERMEDIATE WOODEN RUNNER (50X100)FOR STEEL PLATES	06	––	WOOD	NOs. OF INTERMEDIATE WOODEN RUNNER AS PER NOs. OF BUNDLE
9.	WOODEN RUNNER (100X100) FOR STEEL PLATES	03	––	WOOD	
① 8.	ANGLE STOPPER	04	04	---	AS PER DRAWING NO. WD–24036–S–01, ITEM NO.–4
7.	LASHING CHAIN OR HEAVY DUTY STRAP FOR SELF UNITIZATION	04	––	EN13247:2001	
① 6.	LASHING CHAIN OR HEAVY DUTY STRAP WITH ISOLATION HOOK	05	08	EN13247:2001	
① 5.	WOODEN WEDGE FOR COIL	––	12	WOOD	WD–24036–S–01, ITEM NO.–5
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)
① 3.	ISOLATION HOOK	10	12	---	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)

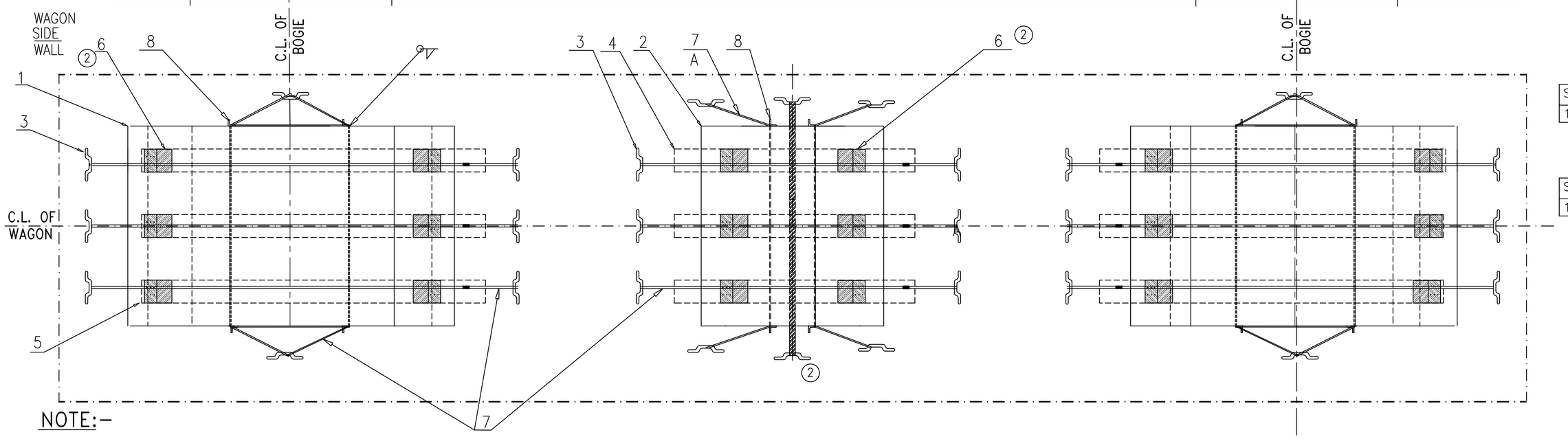
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
①	–	WD–24090	NOTE NO.–7 & WEDGE MODIFIED. QUANTITY OF ANGLE STOPPER ISOLATION HOOK AND LASHING CHAIN FOR COIL CHANGED. NOTE NO.–17 ADDED.	09/24	

SUPERSEDED BY			LOADING OF STEEL PLATES ON WAGON CENTRE & STEEL COILS ALONG WAGON WIDTH ON BOGIE CENTER ON BOXNHL WAGON & IT'S VARIANTS
SUPERSEDES		DATE	
SCALE PASSED			
CHECKED			
DRAWN	L. MOHAN	05/24	
J.S.NO.			
B.G.	R.D.S.O. [W]	GROUP	SKETCH/WD–II/13

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II/69





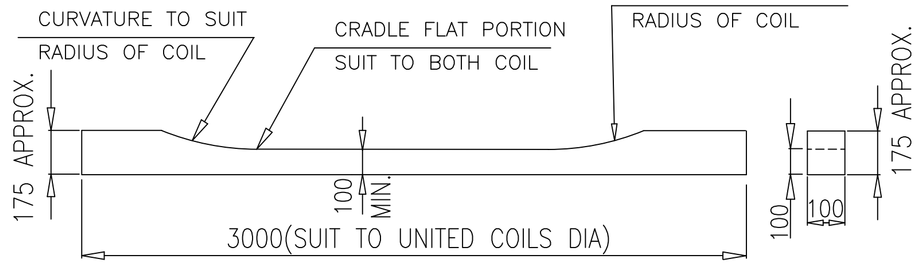


S.NO.	ONE COIL WEIGHT AT CENTRE OF WAGON	UNITED COILS WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 16 TON MAXIMUM	(TOTAL PAY LOAD–16 TON)/2 (SEE NOTE–3)

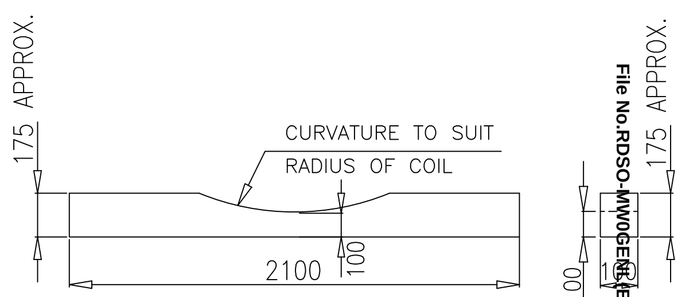
TABLE–A (LOADING SCHEME FOR 05 NO. STEEL COIL)

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)

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

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.
(2) 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)
		1.27 THICKNESS STRAP
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BREAKING STRENGTH	43KN (4.3 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.
(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.
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.
(2) 17. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVE MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

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
(2) 7.	LASHING CHAIN OR HEAVY DUTY STRAP	6 AT MIDDLE 6 AT END	EN13247:2001	
(2) 6.	WOODEN WEDGE	6	WOOD	WD–24036–S–01,ITEM NO.–5
5.	WOODEN CRADLE(LONG)	3	WOOD	
4.	WOODEN CRADLE(SHORT)	3	WOOD	
(2) 3.	ISOLATION HOOK	12 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

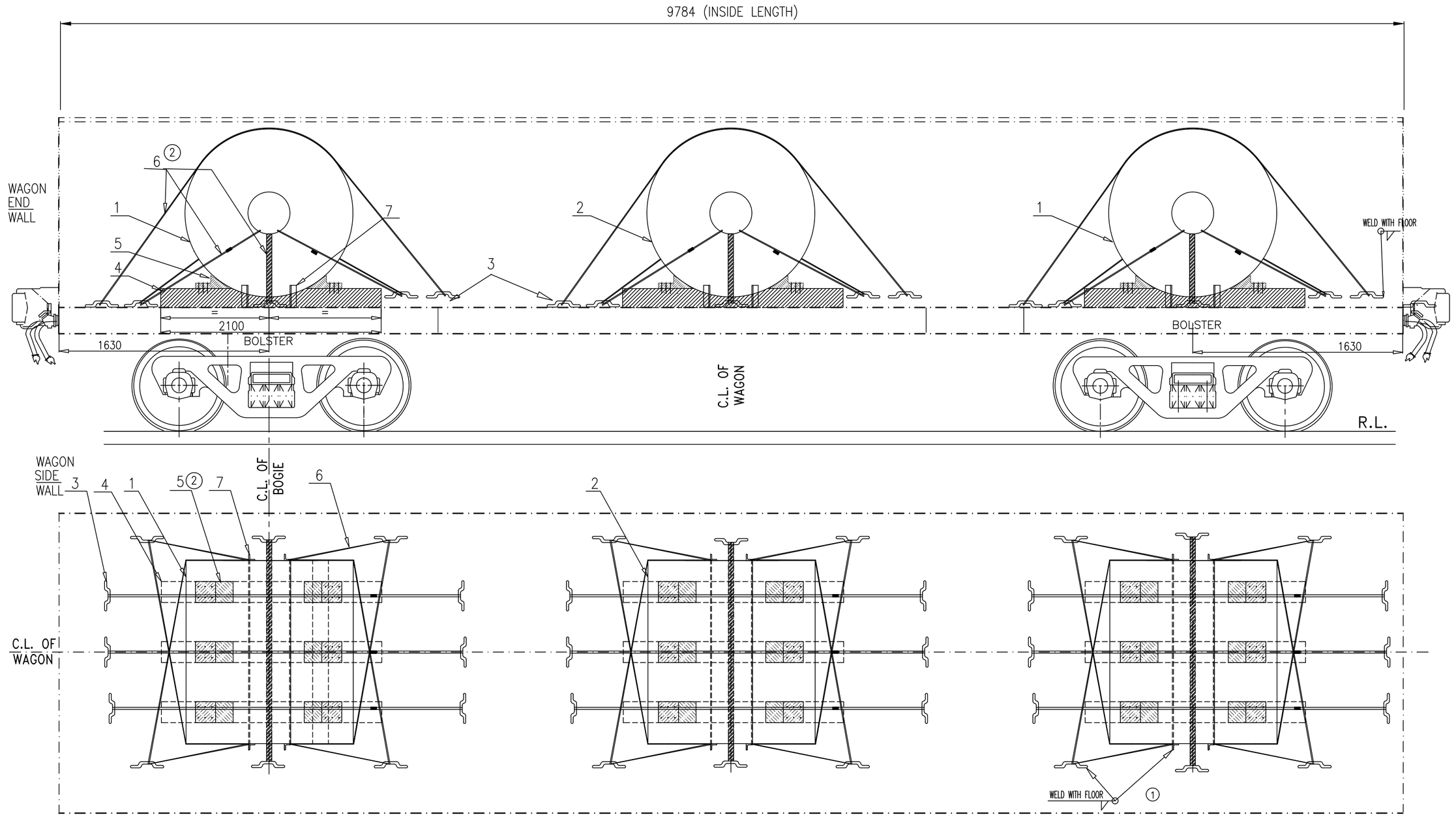
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
(2)	–	WD–24090	NOTE NO.–8 & WEDGE MODIFIED. QUANTITY FOR LASHING CHAIN AND ISOLATION HOOK AT MIDDLE CHANGED FROM 5 TO 6 AND 10 TO 12 RESPECTIVELY. NOTE NO.–17 ADDED.	09/24	
(1)	–	WD–24038	VIEW OF ITEM NO. 3 DELETED . REFERENCE DRG. NO. OF ITEM–3 & 8 ADDED IN DESCRIPTION TABLE. NOTE NO.–10 MODIFIED.	04/24	

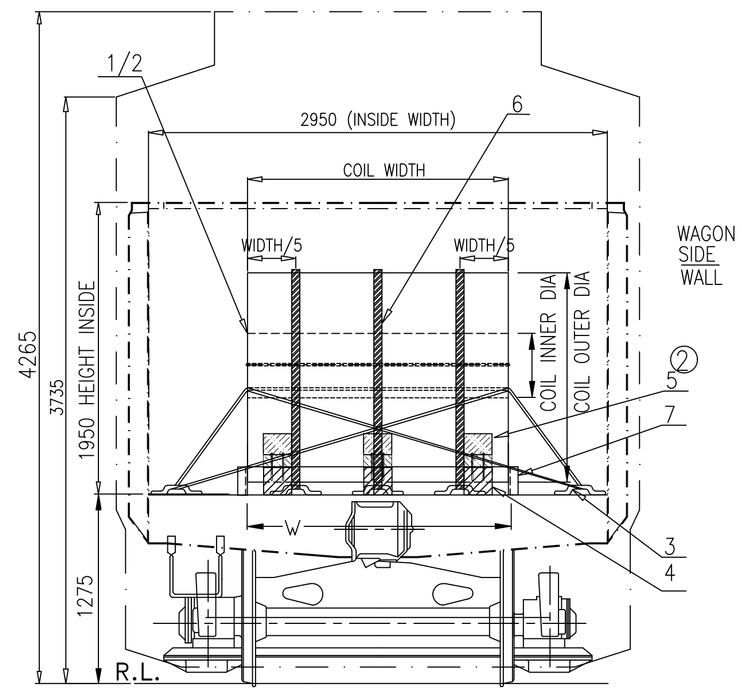
SUPERSEDED BY			
SUPERSEDES			DATE
SCALE	PASSED	ARVIND KUMAR	03/24
	CHECKED	KALINDRA PAL	03/24
	DRAWN	DINESH KR. YADAV	03/24
	J.S.NO.	WD–24028	03/24

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

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

1039
I/69





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

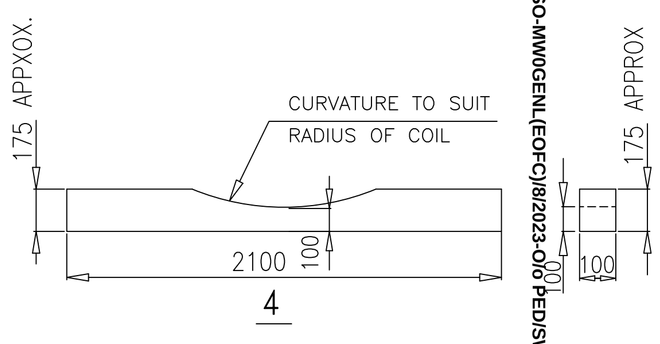
TABLE–B (LOADING SCHEME FOR 02 NO. STEEL COIL)

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.
2. 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) 1.27 THICKNESS STRAP
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BREAKING STRENGTH	43KN (4.3 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.
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. 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. THE CONCERNED RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.
2. 17. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVE MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.



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

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
②	–	WD-24090	NOTE NO.–8 AND WEDGE MODIFIED. QUANTITY FOR LASHING CHAIN AND ISOLATION HOOK CHANGED FROM 7 TO 8 AND 10 TO 12 RESPECTIVELY. NOTE NO.–17 ADDED.	09/24	
①	–	WD-24038	VIEWS OF ITEM NO. 3 & 7 DELETED AND REFERENCE DRG. NO. ADDED IN DESCRIPTION TABLE . NOTE NO.–10 MODIFIED.	04/24	

	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
②	6.	LASHING CHAIN OR HEAVY DUTY STRAP	8	EN13247:2001	
②	5.	WOODEN WEDGE	6	WOOD	WD–24036–S–01,ITEM NO.–5
	4.	WOODEN RUNNER	3		
② ①	3.	ISOLATION HOOK	12	–	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)

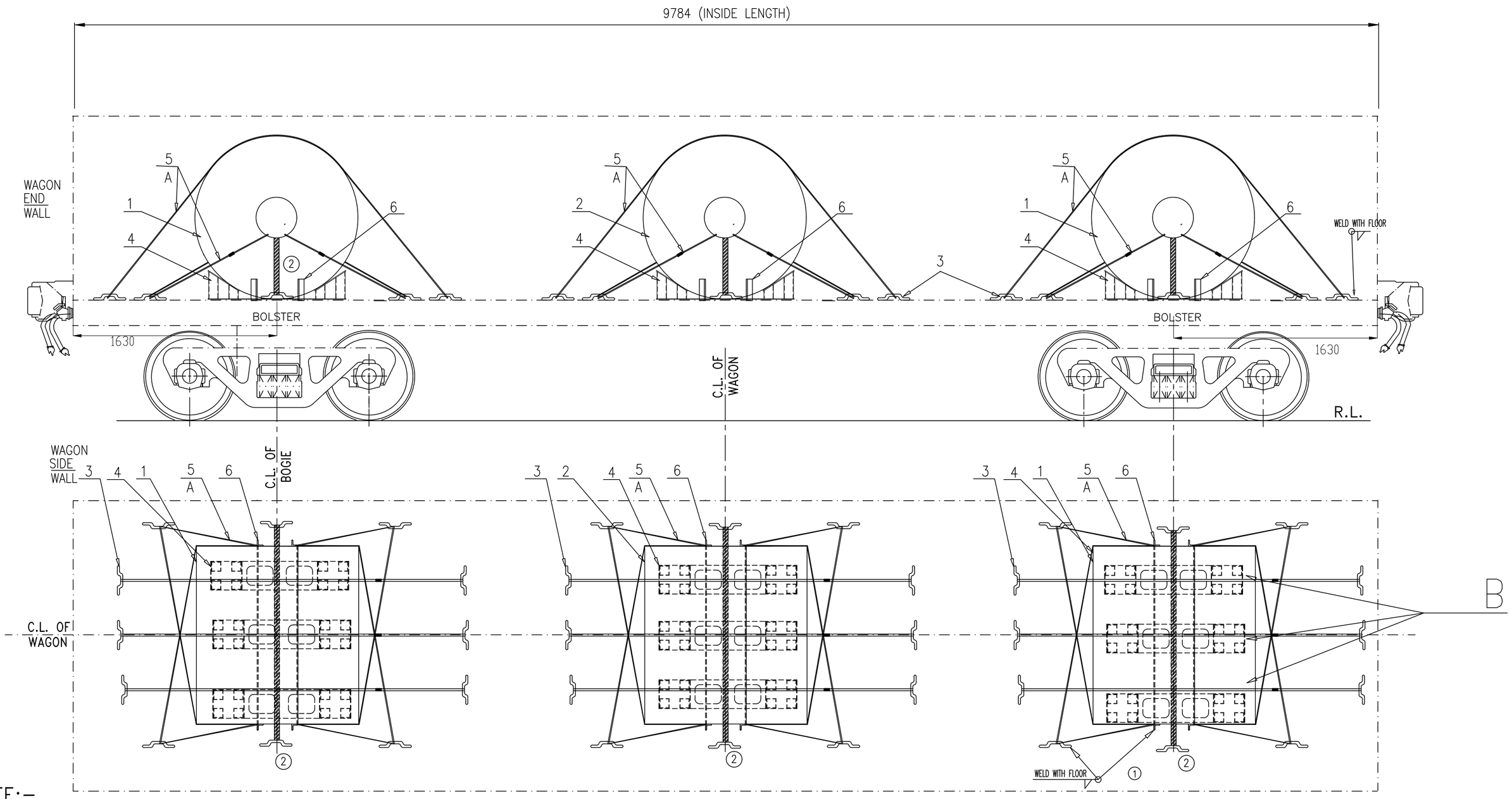
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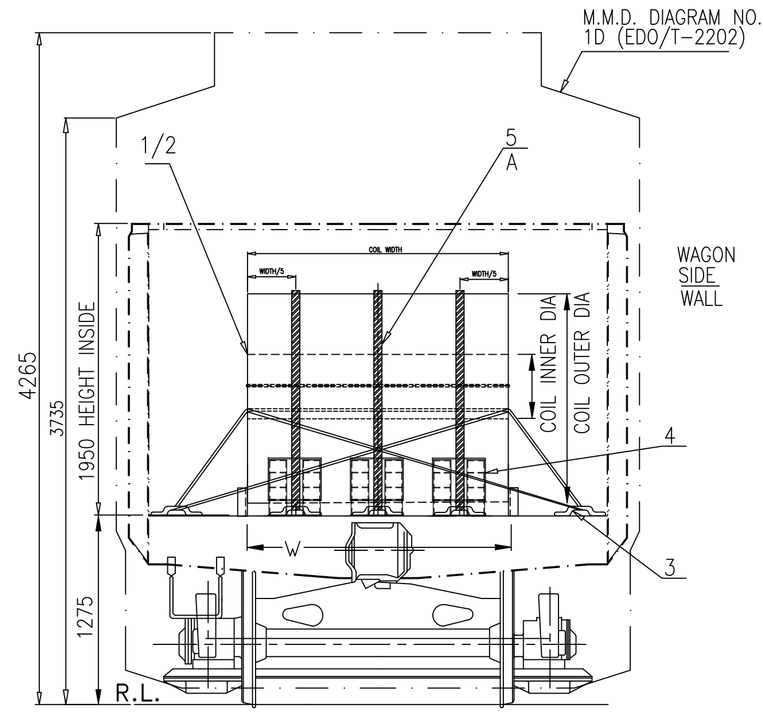
SCALE			DATE
	PASSED	ARVIND KUMAR	03/24
	CHECKED	KALINDRA PAL	03/24
	DRAWN	DINESH KR. YADAV	03/24
	J.S.NO.	WD–24028	03/24

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

1040
I669





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 05 NOs. OF LASHING CHAIN/ MENTIONED STEEL STRAP WITH ISOLATION HOOK.
② 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)
		1.27 THICKNESS STRAP
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BREAKING STRENGTH	43KN (4.3 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.
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. 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.
② 18. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVE MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

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
② 5	LASING CHAIN OR HEAVY DUTY STRAP	8	EN13247:2001	–
4	METAL SADDLE	3	–	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–2
② 3	ISOLATION HOOK	12	–	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–24090	NOTE NO.–8 MODIFIED AND QTY. FOR LASHING CHAIN AND ISOLATION HOOK CHANGED FROM 7 TO 8 AND 10 TO 12 RESPECTIVELY. NOTE NO.–18 ADDED.	09/24	
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

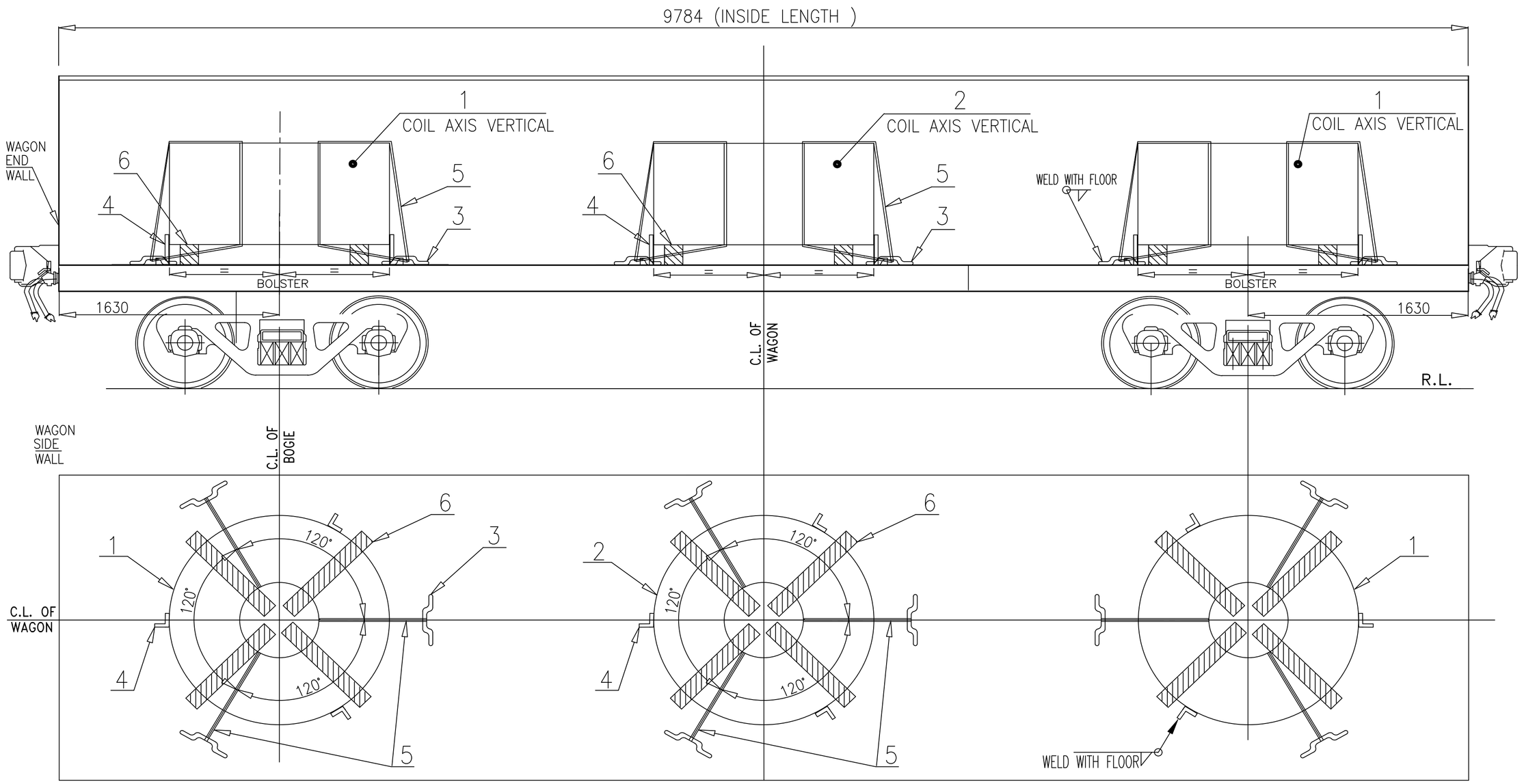
SCALE			DATE
	PASSED	ARVIND KUMAR	03/24
	CHECKED	KALINDRA PAL	03/24
	DRAWN	DINESH KR. YADAV	03/24
	J.S.NO.	WD–24028	03/24

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-MW0GENL(EOFC)/8/2023-O/o PED/SW/RDSO

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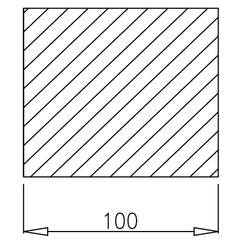


S.NO.	COIL WEIGHT AT WAGON CENTRE	COIL WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 22 TON MAXIMUM	(TOTAL PAY LOAD−22 TON)/2

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:−**
   - (2) 4.1 BEFORE LOADING, ENSURE THAT WOODEN RUNNER LENGTH SHALL BE MORE THAN 100 MM OF THE OUTER RADIUS OF COIL AND WOODEN RUNNER 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.
   - (2) 4.2 AFTER PLACING THE COIL ON WOODEN RUNNER, 03 NO's ANGLE STOPPERS AND 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 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.
- (2) 16. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVE MAXIMUM BAND−HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

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	
(1) 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
(2)	−	WD−2409Q	NOTE NO.−4.1 & 4.2 MODIFIED AND 4.3 DELETED. NOTE NO.−4.4 OF PREVIOUS DRAWING BECOME NOTE NO.−4.3. NOTE NO.−16 ADDED.	09/24	
(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.		

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

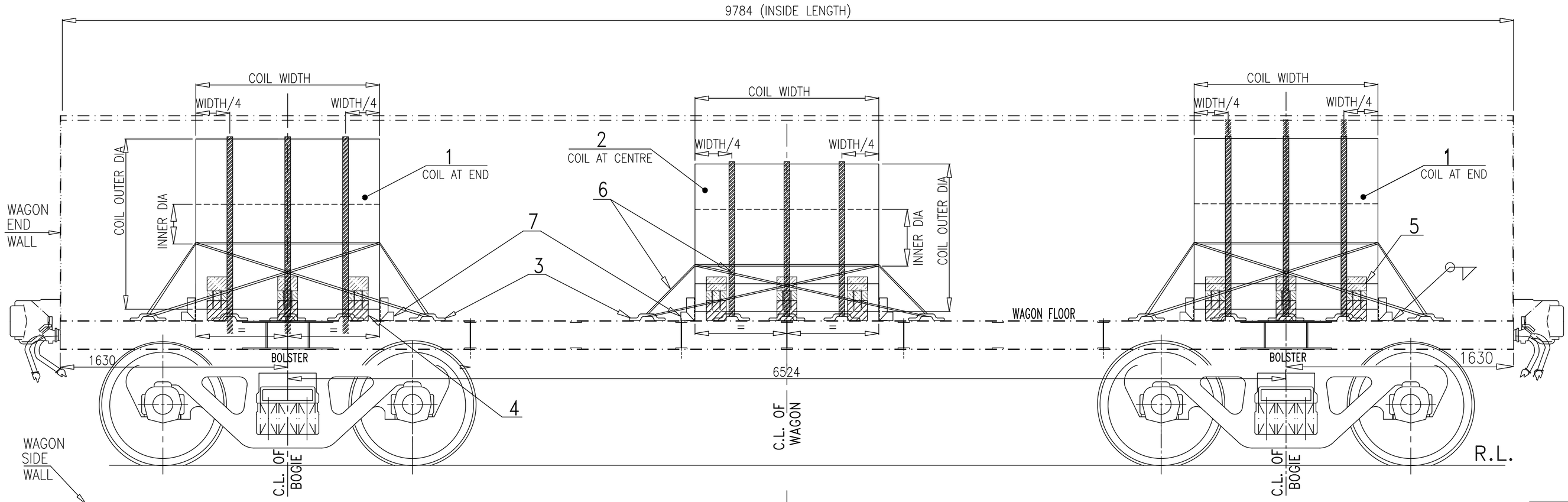
B.G. | R.D.S.O. [W]

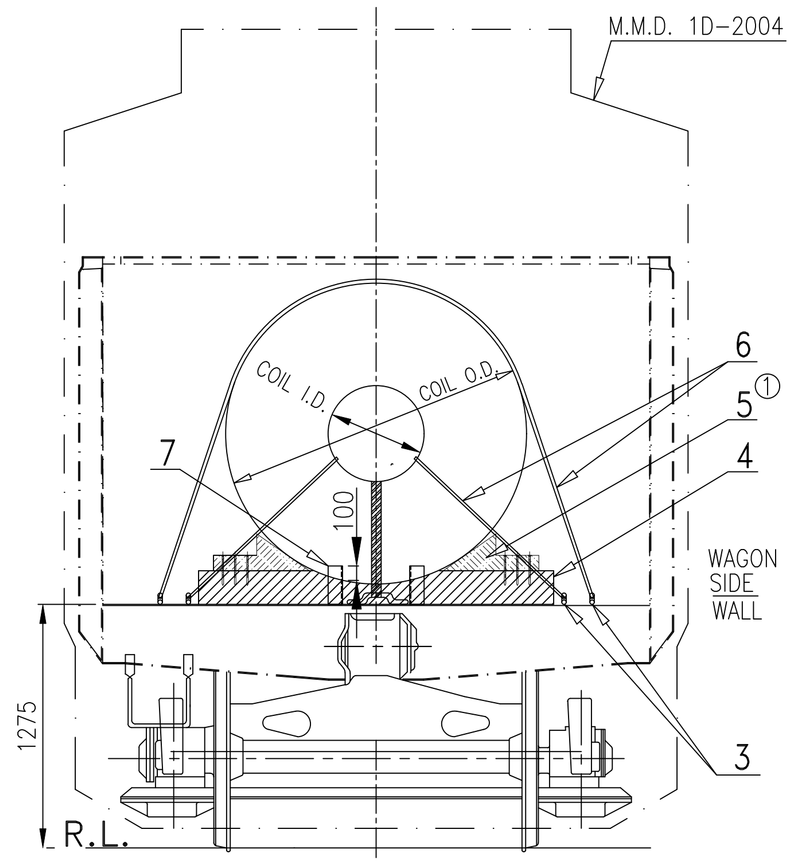
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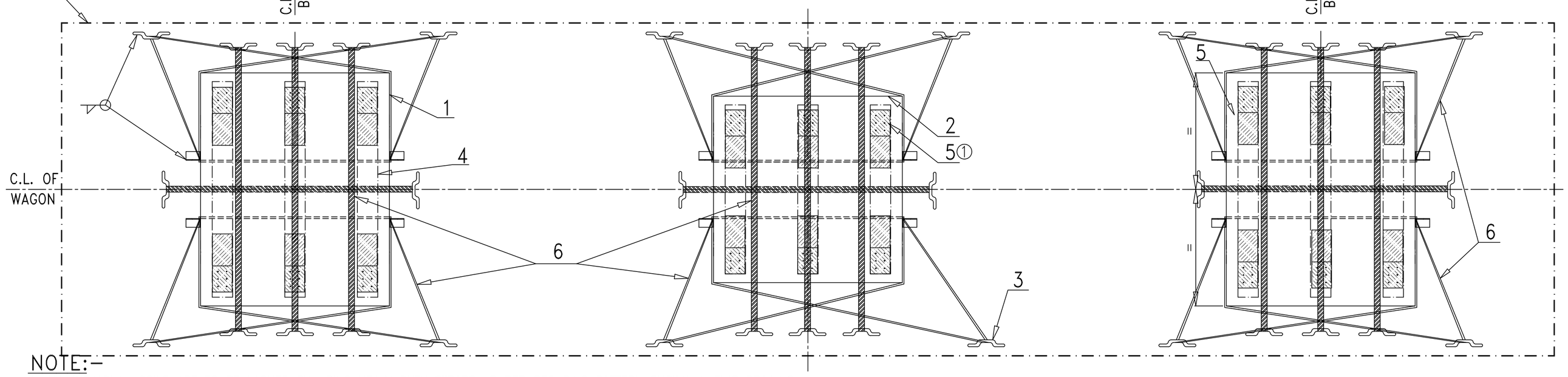
LOADING DIAGRAM OF VERTICAL LOADED STEEL COILS ON BOXN WAGON & IT'S VARIANTS

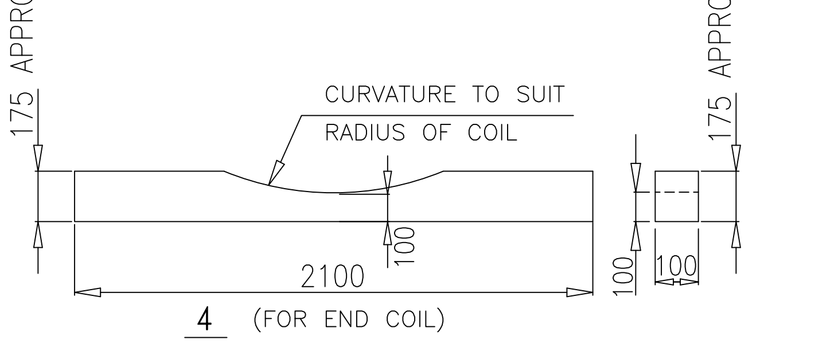
WD−24028−S−04

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 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.
① 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)
		1.27 THICKNESS STRAP
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BREAKING STRENGTH	43KN (4.3 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. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVE MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

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	---	
① 6	LASHING CHAIN OR HEAVY DUTY STRAP		EN13247:2001	STEEL	
① 5	WOODEN WEDGE	6	––	WOOD	WD–24036–S–01 ITEM–5
4	WOODEN CRADLE	3	––	WOOD	
① 3	ISOLATION HOOK	12	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
①	–	WD–24090	NOTE NO.–8 & WEDGE MODIFIED. QUANTITY FOR LASHING CHAIN AND ISOLATION HOOK INCREASED FROM 7 TO 8 AND 10 TO 12 RESPECTIVELY. NOTE NO.–17 ADDED.	09/24	

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

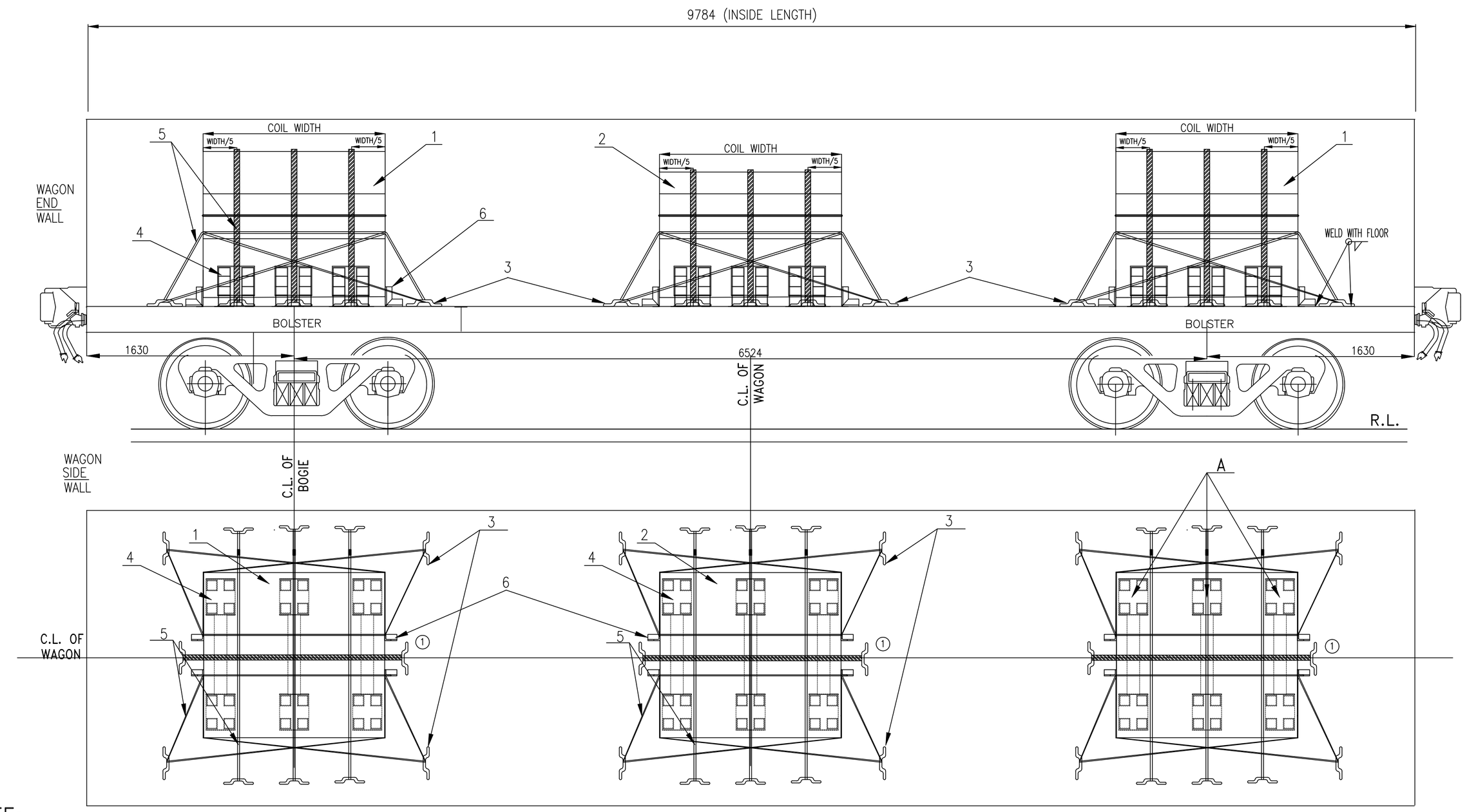
B.G. | R.D.S.O. [W]

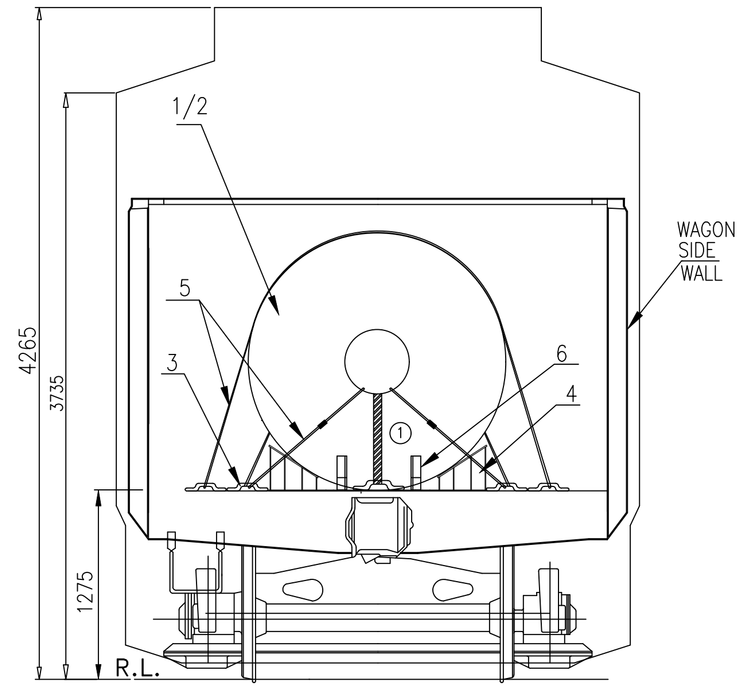
LOADING DIAGRAM FOR STEEL COILS IN LONGITUDINAL DIRECTION (EYE TO ENGINE) ON BOXN WAGON & ITS VARIANTS

GROUP

WD–24038–S–01

10043
I169





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.
① 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)
		1.27 THICKNESS STRAP
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BREAKING 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 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.
①17. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVE MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

File No.RDSO-MW0GENL(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
① 5	LASING CHAIN OR HEAVY DUTY STRAP	8	EN13247:2001	---
4	METAL SADDLE	3	---	AS PER DRAWING NO. WD–24036–S–01,ITEM NO.–1
① 3	ISOLATION HOOK	12	---	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)

SUPERSEDED BY
SUPERSEDES

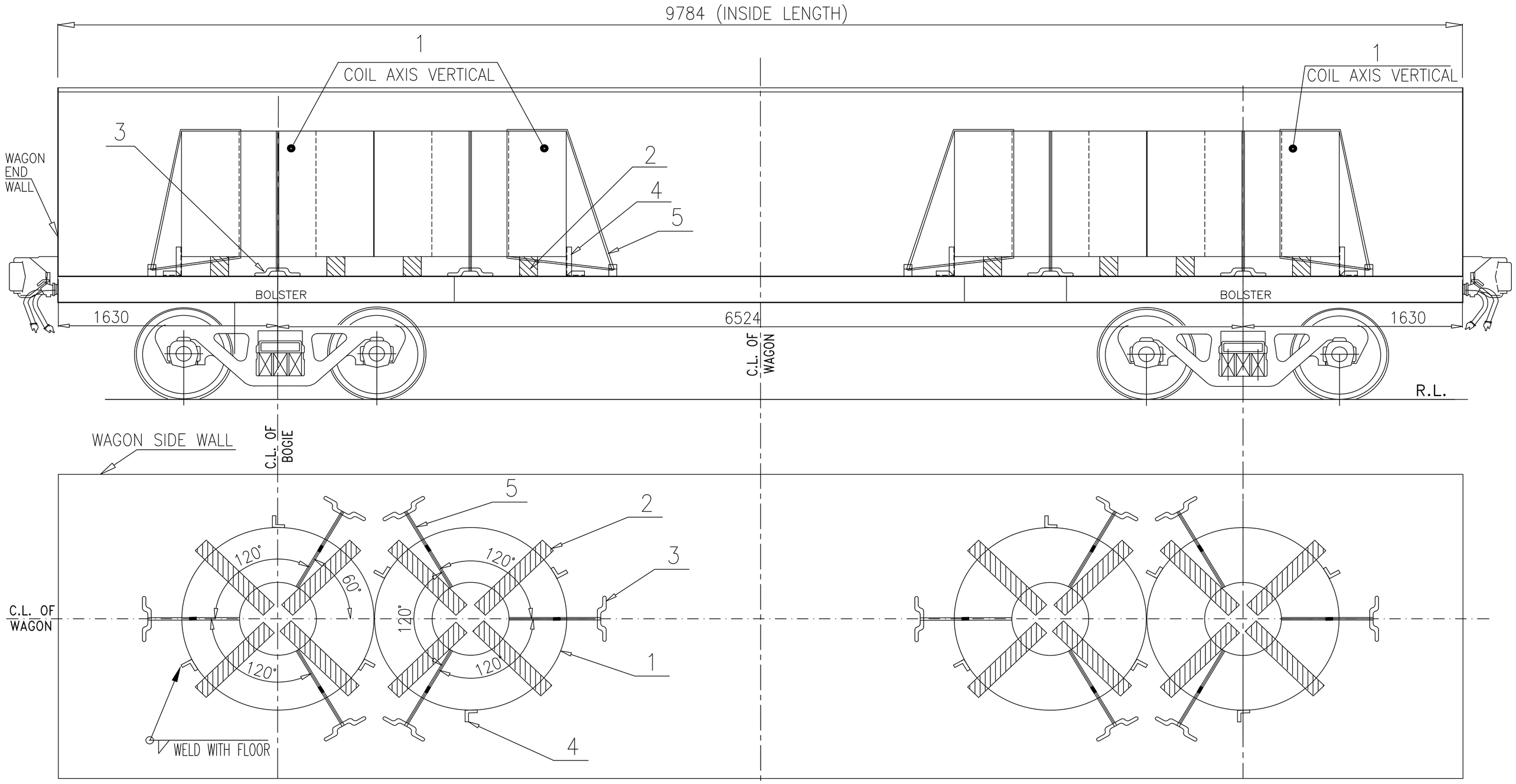
SCALE			DATE
	PASSED	ARVIND KUMAR	05/24
	CHECKED	L MOHAN	05/24
	DRAWN	K.PAL	04/24
	J.S.NO.	WD–24038	04/24

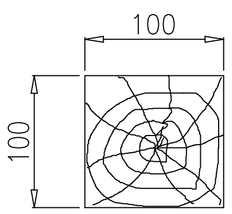
LOADING DIAGRAM FOR STEEL COILS IN LONGITUDINAL DIRECTION (EYE TO ENGINE) ON BOXN WAGON & ITS VARIANTS WITH METAL SADDLE

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

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
①	–	WD–24090	NOTE NO.–8 MODIFIED AND QTY. FOR LASHING CHAIN AND ISOLATION HOOK CHANGED FROM 7 TO 8 AND 10 TO 12 RESPECTIVELY. NOTE NO.–17 ADDED.	09/24	

1044
I/69





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:–**
   - ① 4.1 BEFORE LOADING, ENSURE THAT WOODEN RUNNER LENGTH SHALL BE MORE THAN 100 MM OF THE OUTER RADIUS OF COIL AND WOODEN RUNNER 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.
   - ① 4.2 AFTER PLACING THE COIL ON WOODEN RUNNER, 03 NO's ANGLE STOPPERS AND 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 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.
15. ① MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVE MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
①	–	WD–24090	NOTE NO.–4.1 & 4.2 MODIFIED AND 4.3 DELETED. NOTE NO.–4.4 OF PREVIOUS DRAWING BECOME NOTE NO.–4.3 NOTE NO.–15 ADDED.	09/24	

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

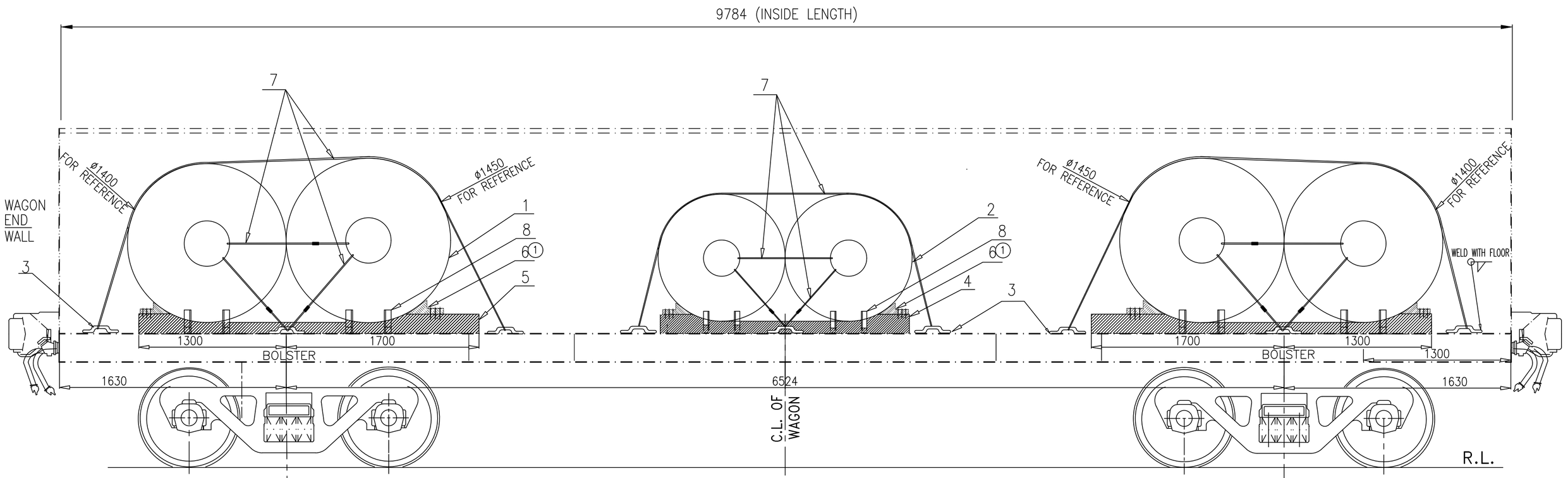
B.G. | R.D.S.O. [W]

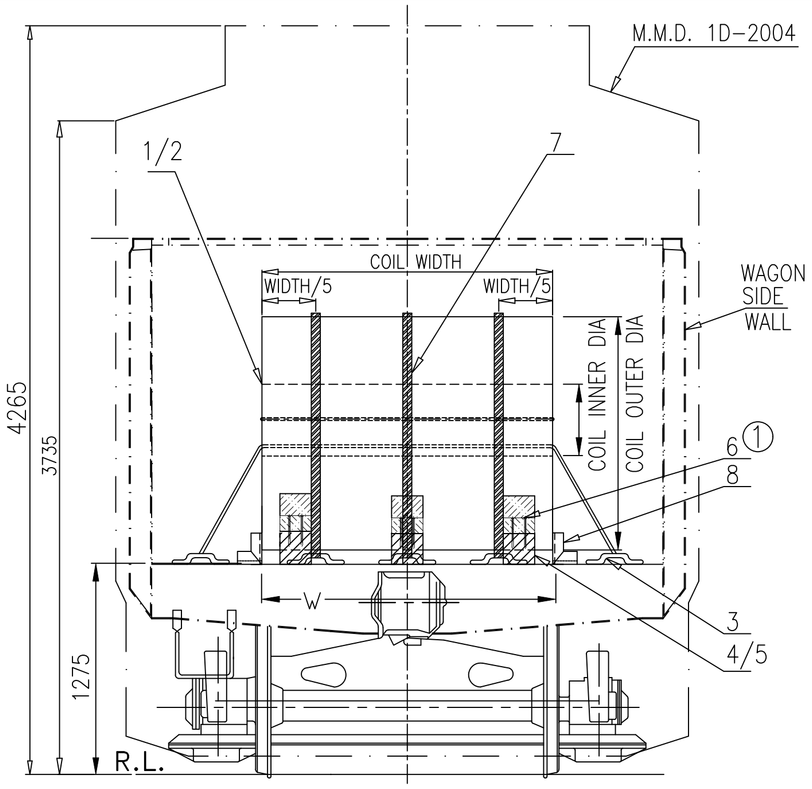
LOADING DIAGRAM FOR 04 NO. STEEL COILS (VERTICAL) ON BOXN WAGON & IT'S VARIANTS

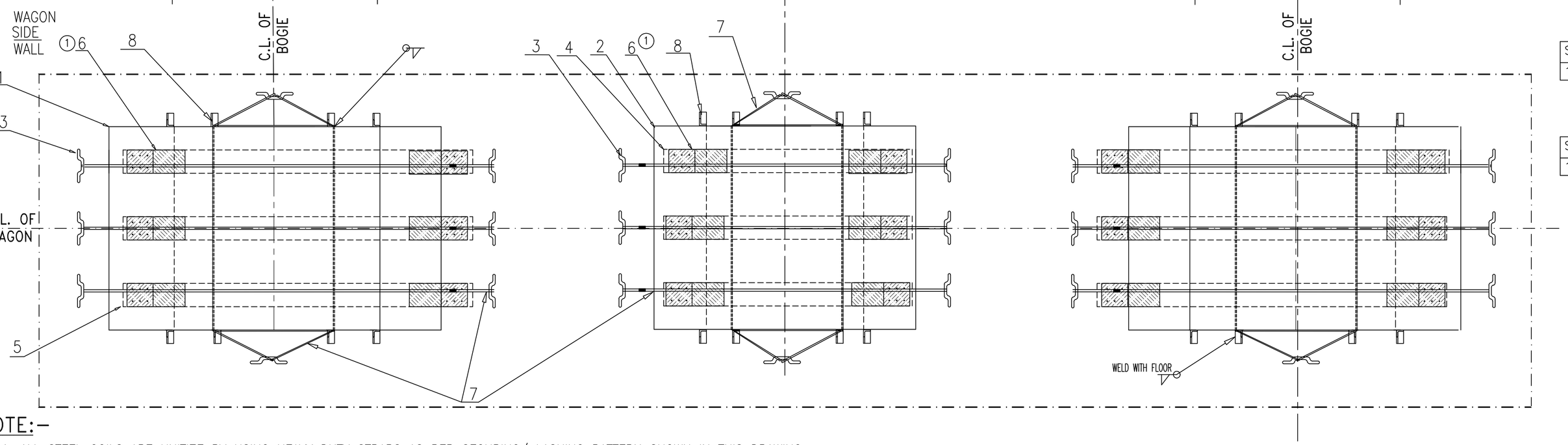
GROUP

WD–24038–S–03

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





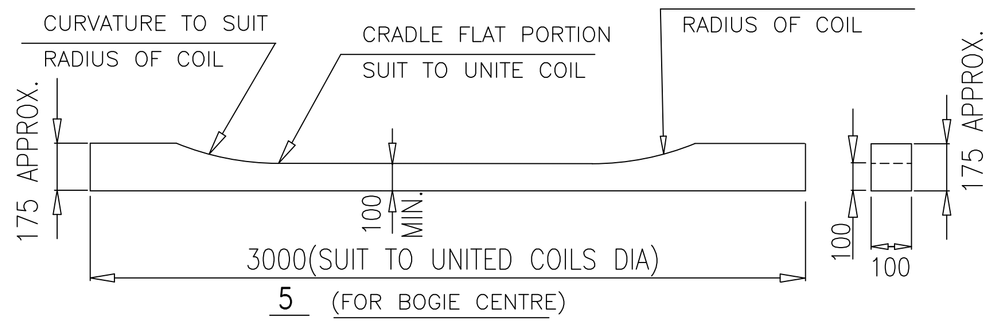


S.NO.	UNITED COIL WEIGHT AT CENTRE OF WAGON	UNITED COILS WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 16 TON MAXIMUM	(TOTAL PAY LOAD-16 TON)/2 (SEE NOTE-3)

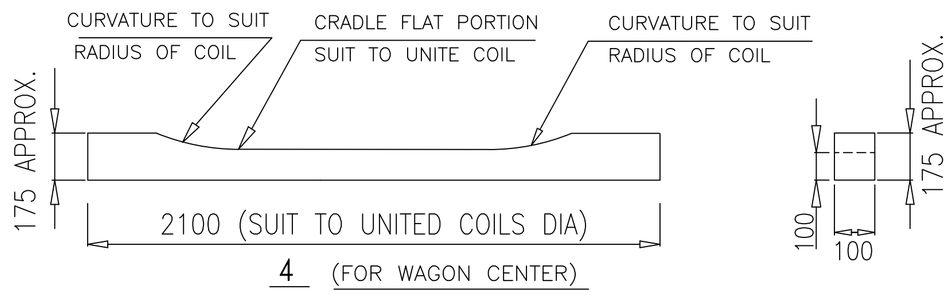
TABLE-A (LOADING SCHEME FOR 06 NO. STEEL COIL)

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)

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

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.
(1) 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)
		1.27 THICKNESS STRAP
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BREAKING STRENGTH	43KN (4.3 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.
(1) 17. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVE MAXIMUM BAND-HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

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	
(1) 6.	WOODEN WEDGE	~~2~~ 6	WOOD	WD-24036-S-01,ITEM NO.-5
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.
(1)	-	WD-24090	NOTE NO.-9 & WEDGE MODIFIED. NOTE NO.-17 ADDED.	09/24	

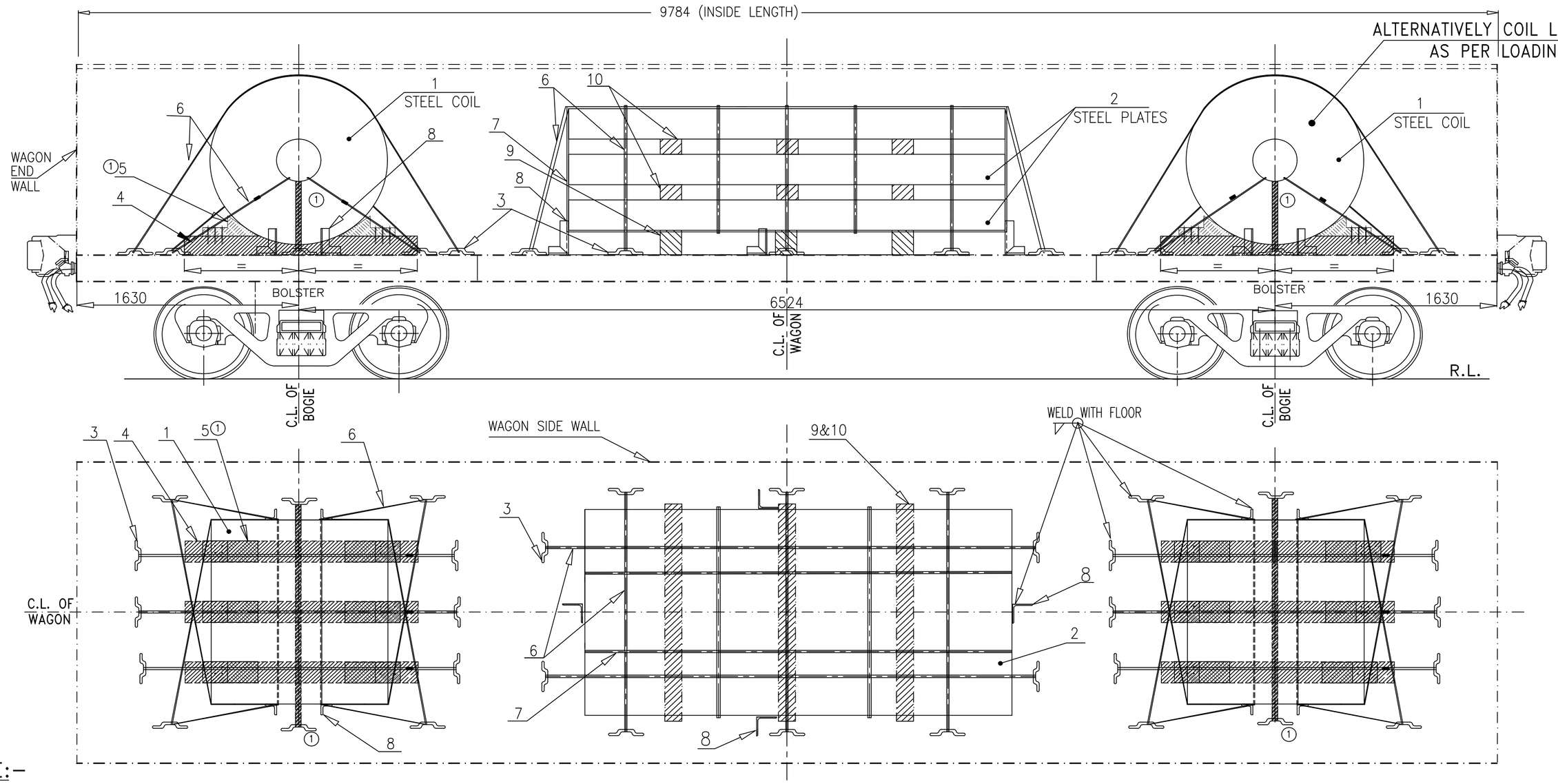
SUPERSEDED BY
SUPERSEDES DATE
SCALE PASSED ARVIND KUMAR 05/24
CHECKED K PAL 05/24
DRAWN D. KUMAR 05/24
J.S.NO. WD-24038 04/24

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

LOADING OF UNITIZED STEEL COILS ON BOXN WAGON & ITS VARIANTS

WD-24038-S-04

1046 I/69

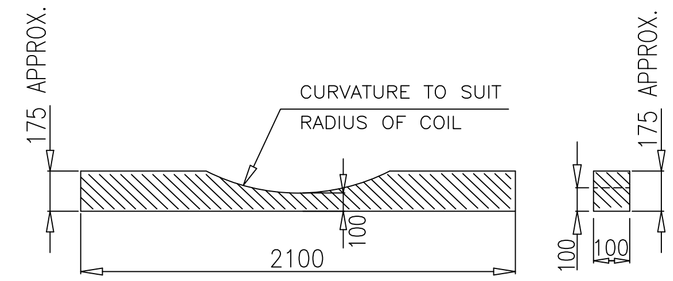


S.NO.	PLATES WEIGHT AT CENTRE OF WAGON	COIL WEIGHT AT EACH BOGIE CENTRE
1.	UP TO 20 TON MAXIMUM	(TOTAL PAY LOAD–20 TON)/2

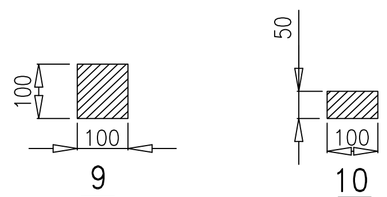
TABLE–A (LOADING SCHEME FOR STEEL COIL & STEEL PLATES)

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)



4



9 10

(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.
1. 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)
		1.27 THICKNESS STRAP
1.	NOMINAL WIDTH	31.75
2.	NOMINALTHICKNEES	1.27
3.	MINIMUM BREAKING 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.
1. 14. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVE MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

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	
1 6.	LASHING CHAIN OR HEAVY DUTY STRAP WITH ISOLATION HOOK	05	~~07~~ 08	EN13247:2001	
1 5.	WOODEN WEDGE FOR COIL	––	~~02~~ 06	WOOD	WD–24036–S–01, ITEM NO.–5
4.	WOODEN CRADLE FOR COIL	––	03	WOOD	
1 3.	ISOLATION HOOK	10	~~10~~ 12	---	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)

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS
1	–	WD–24090	NOTE NO.–6 & WEDGE MODIFIED. QUANTITY FOR LASHING CHAIN AND ISOLATION HOOK FOR COIL CHANGED FROM 7 TO 8 AND 10 TO 12 RESPECTIVELY. NOTE NO.–14 ADDED.	09/24	

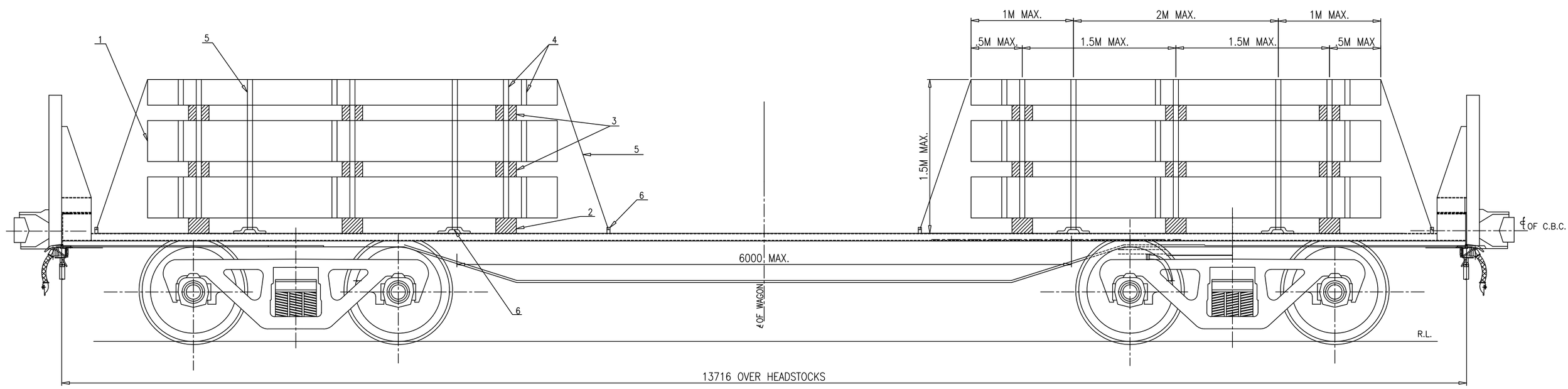
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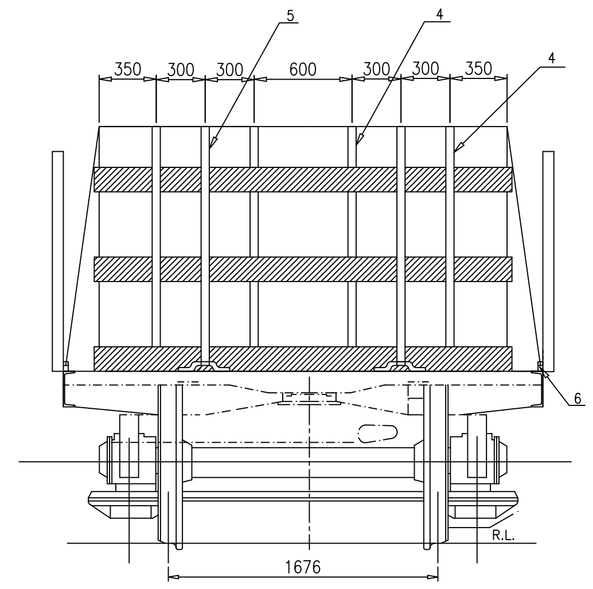
SCALE	PASSED	ARVIND KUMAR	05/24
	CHECKED	K PAL	05/24
	DRAWN	DK YADAV	04/24
	J.S.NO.	WD–24038	04/24

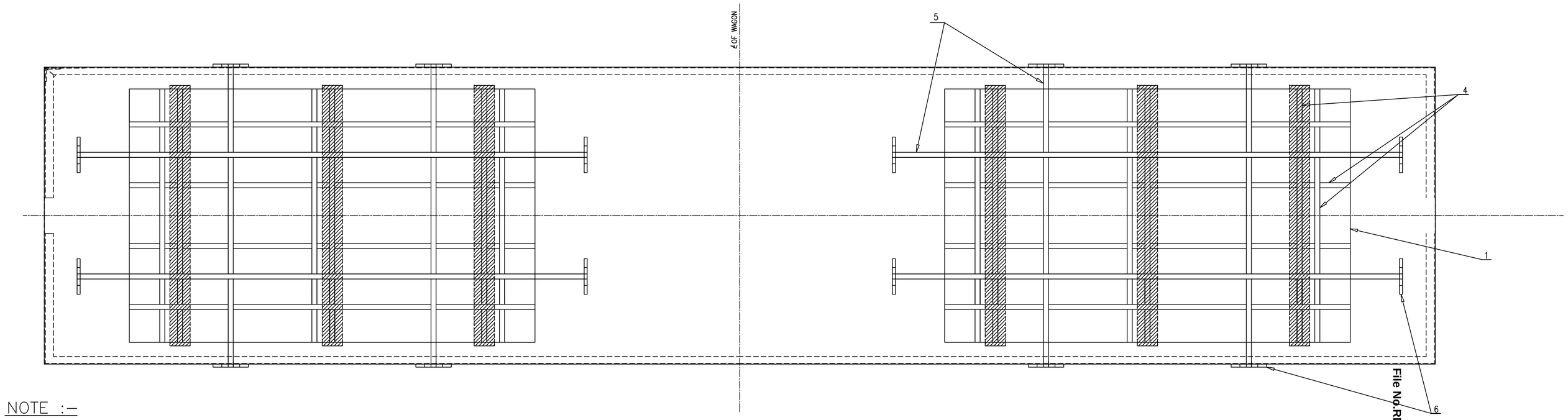
LOADING OF STEEL PLATES ON WAGON CENTRE & STEEL COILS ALONG WAGON WIDTH ON BOGIE CENTER ON BOXN WAGON & IT'S VARIANTS

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, ①)
3. ~~HEIGHT TO WIDTH RATIO OF CONSIGNMENT SHOULD NOT EXCEED 1.5 IN ANY CASE.~~ (②)
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. (③)
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 :–
   - (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 HR SHEETS/PLATES).
9. (④) 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	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3TON)

   ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002–1
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. (①, ③) 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. (③) CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.
18. (④) MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

ITEM	DESCRIPTION	NO.OFF	MTL&SPEC	REMARKS
③ 6	ISOLATION HOOK	AS PER REQUIREMENT	WD–24036–S–01 ITEM–3	
④① 5	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	AS PER REQUIREMENT	EN 13247:2001	
④① 4	HIGH TENSILE STEEL STRAP (FOR BUNDLING & UNITIZATION)	AS PER REQUIREMENT	EN 13247:2001	
3	INTERMEDIATE WOODEN RUNNER	AS PER REQUIREMENT	WOOD	
2	WOODEN RUNNER	AS PER REQUIREMENT	WOOD	
1	HR SHEETS/PLATES	AS PER REQUIREMENT	STEEL	

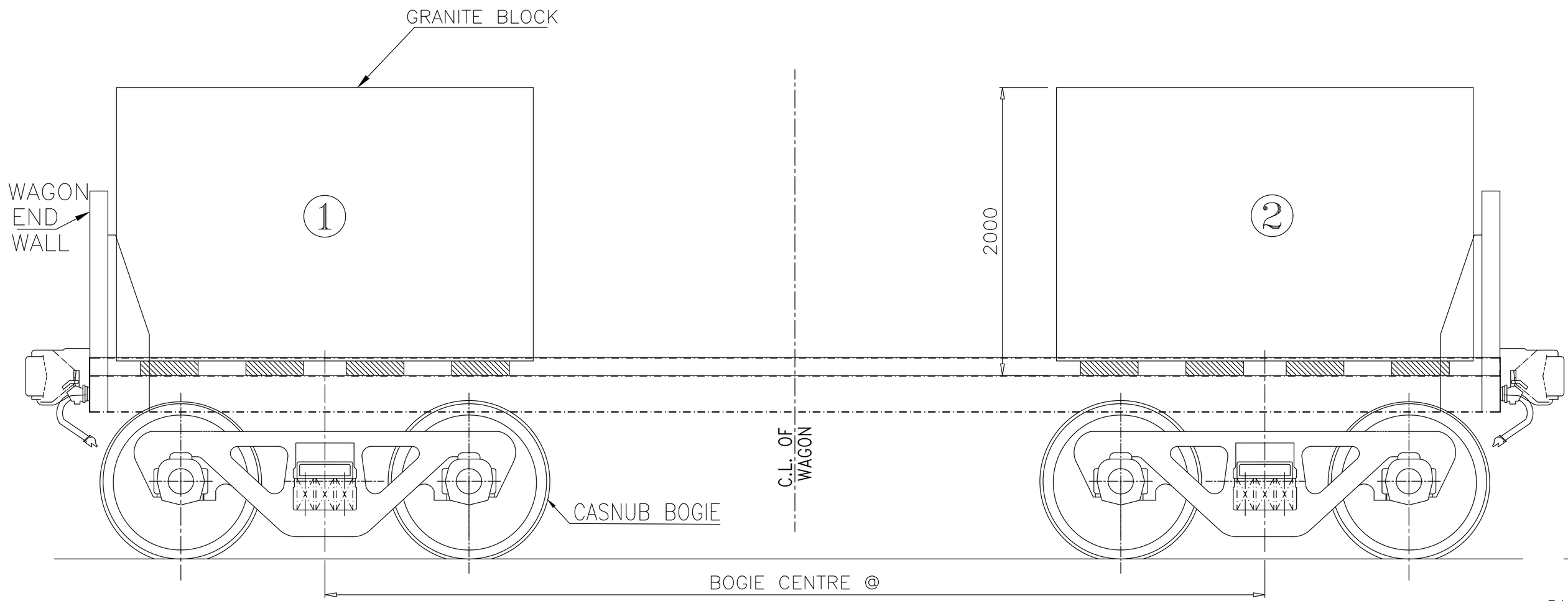
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
④.	–	WD–24088	STEEL STRAP SPECIFICATION CHANGED FROM EN–13246 TO EN–13247 & NOTE NO.18 ADDED	10/24	–
③.	–	WD–24036	INITIAL TENSION OF STRAP CHANGED&ISOLATION HOOK REFERENCE DRAWING NO. CHANGED	05/24	–
②.	–	WD–24029	NOTE NO. 3 REMOVED	03/24	–
①.	–	WD–23075	NOTE NO. 11 TO 16 ADDED.	08/23	–

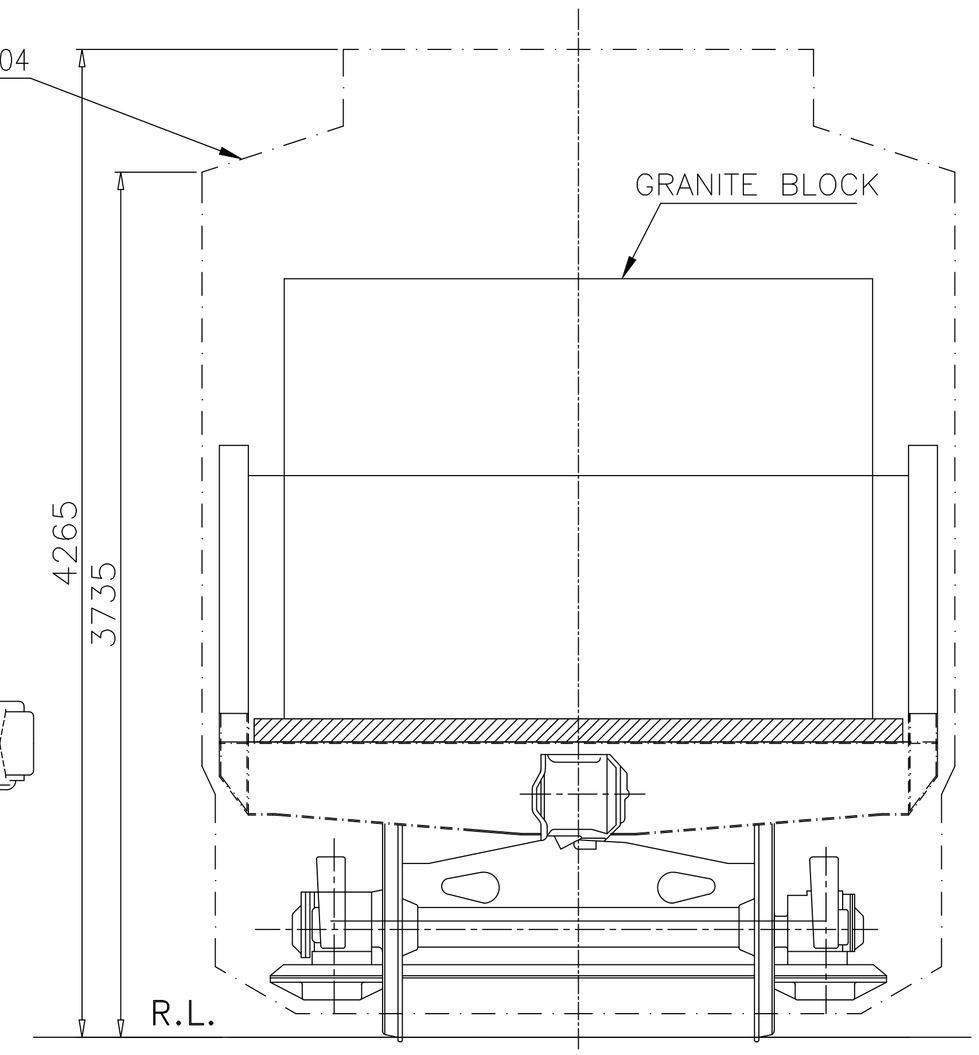
SUPERSEDED BY			
SUPERSEDES		DATE	
SCALE	PASSED	S.M.TRIPATHI	01/22
	CHECKED	A.P.SINGH	01/22
	DRAWN	SACHIN KUMAR	01/22
	TRACED		
	COMPARED		
	J.S.NO.	WD–21112	12/21

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

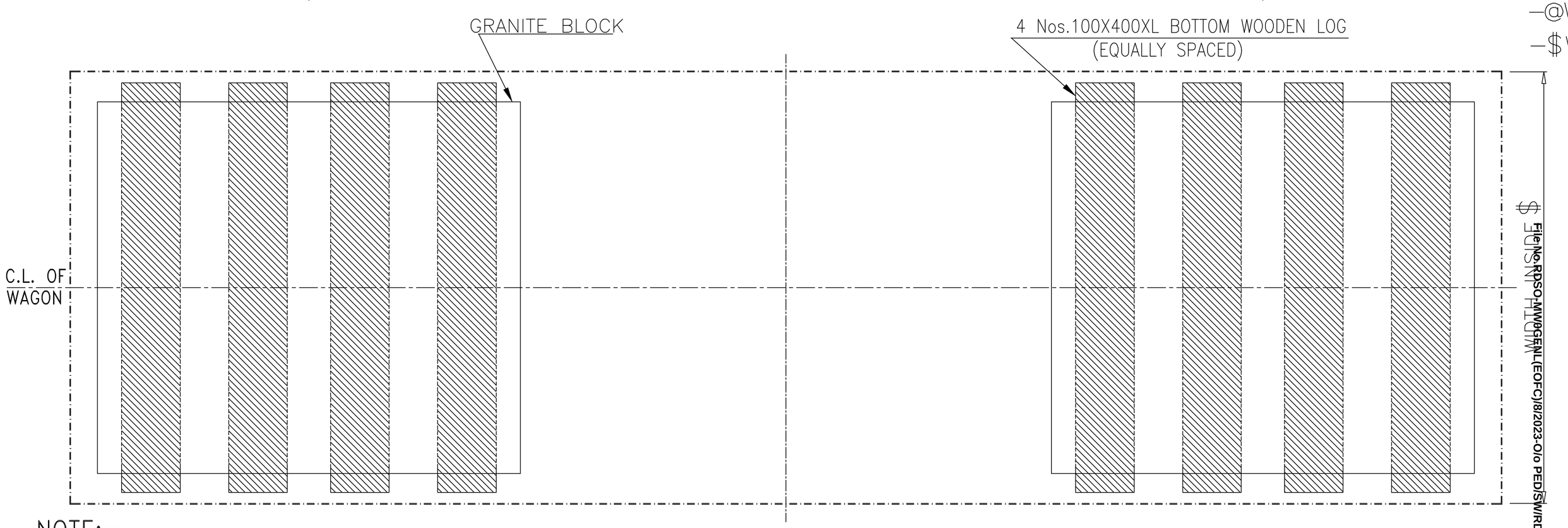
B.G.	R.D.S.O. [W]	GROUP	WD–21112–S–03

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





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



File No.RDSO/WD/GEN/LEOFC/J/8/2023-O/o PED/SWR/RDSO
JUSNI FILE/M

NOTE:–

①1. THE DIFFERENCE IN WEIGHT OF GRANITE BLOCK 1 & 2 SHOULD NOT BE MORE THAN 2t.
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. BEFORE LOADING, IT MUST BE ENSURED THAT WAGON IS FREE FROM SAGGING.
9. ALL DIMENSIONS ARE IN mm.
10. SECURING ARRANGEMENT AS DEEMED FIT AT THE SITE TO BE ENSURED.
①11. 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.

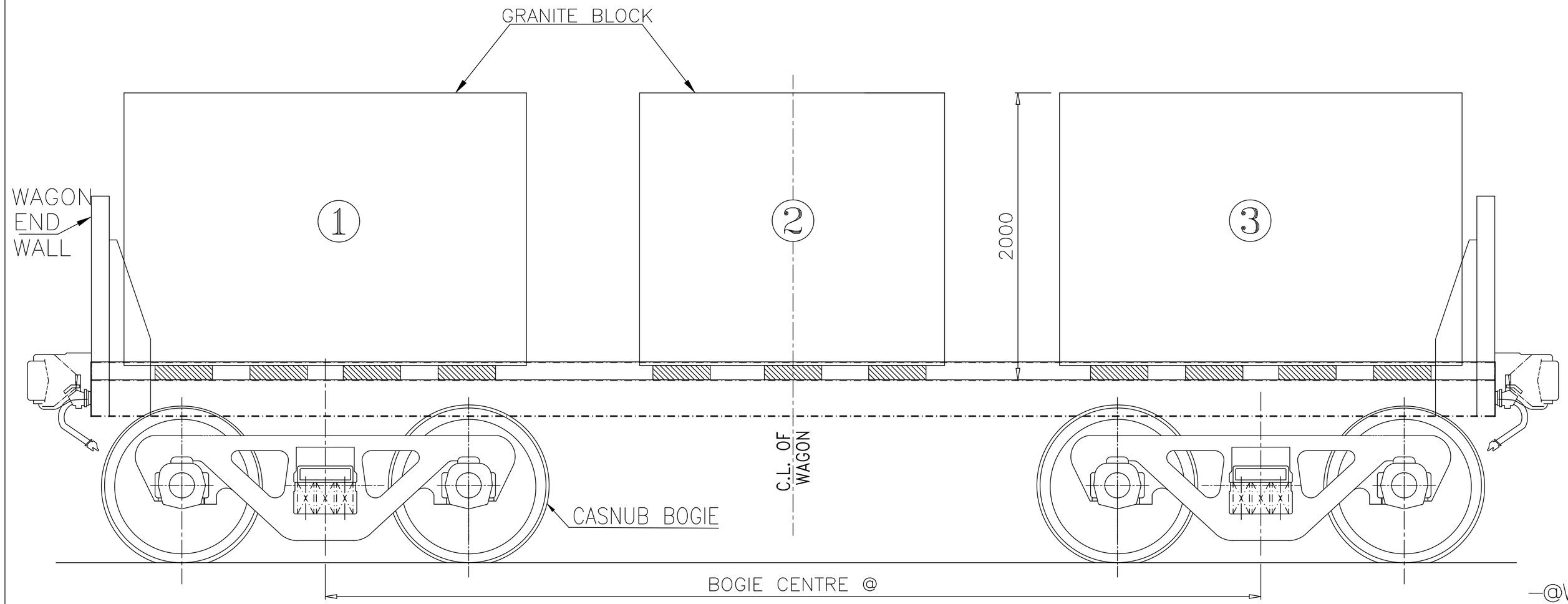
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
①	–	WD–24088	NOTE NO. 1 MODIFIED	10/24	

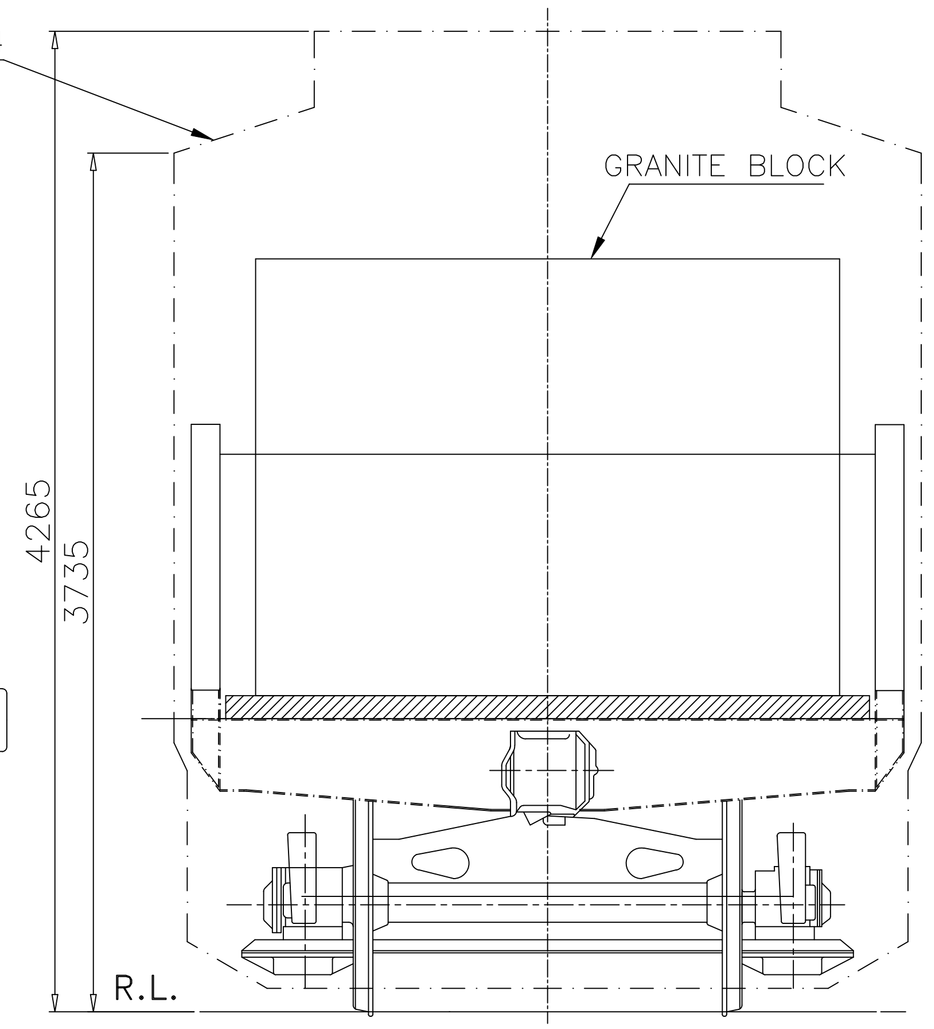
SUPERSEDED BY			
SUPERSEDES			DATE
SCALE	PASSED	Sd. G.R.SHARMA	06/21
	CHECKED	Sd. A.P.SINGH	06/21
	DRAWN	SANTOSH GAUR	06/21
	J.S.NO.	WD–21048	06/21

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

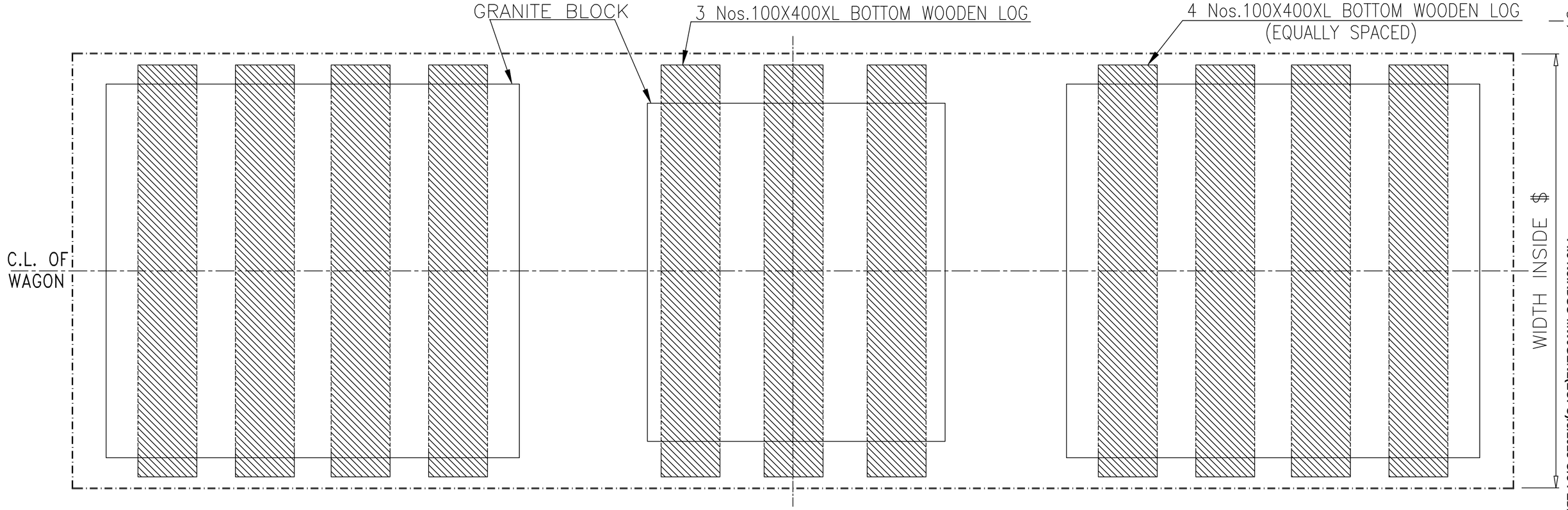
B.G.	R.D.S.O. [W]	GROUP	WD–21048–S–01

1049
H69





–@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:–

①1. THE DIFFERENCE IN WEIGHT OF GRANITE BLOCK 1 & 3 SHOULD NOT BE MORE THAN 2t.
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. BEFORE LOADING, IT MUST BE ENSURED THAT WAGON IS FREE FROM SAGGING.
9. ALL DIMENSIONS ARE IN mm.
10. SECURING ARRANGEMENT AS DEEMED FIT AT THE SITE TO BE ENSURED.
①11. 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.

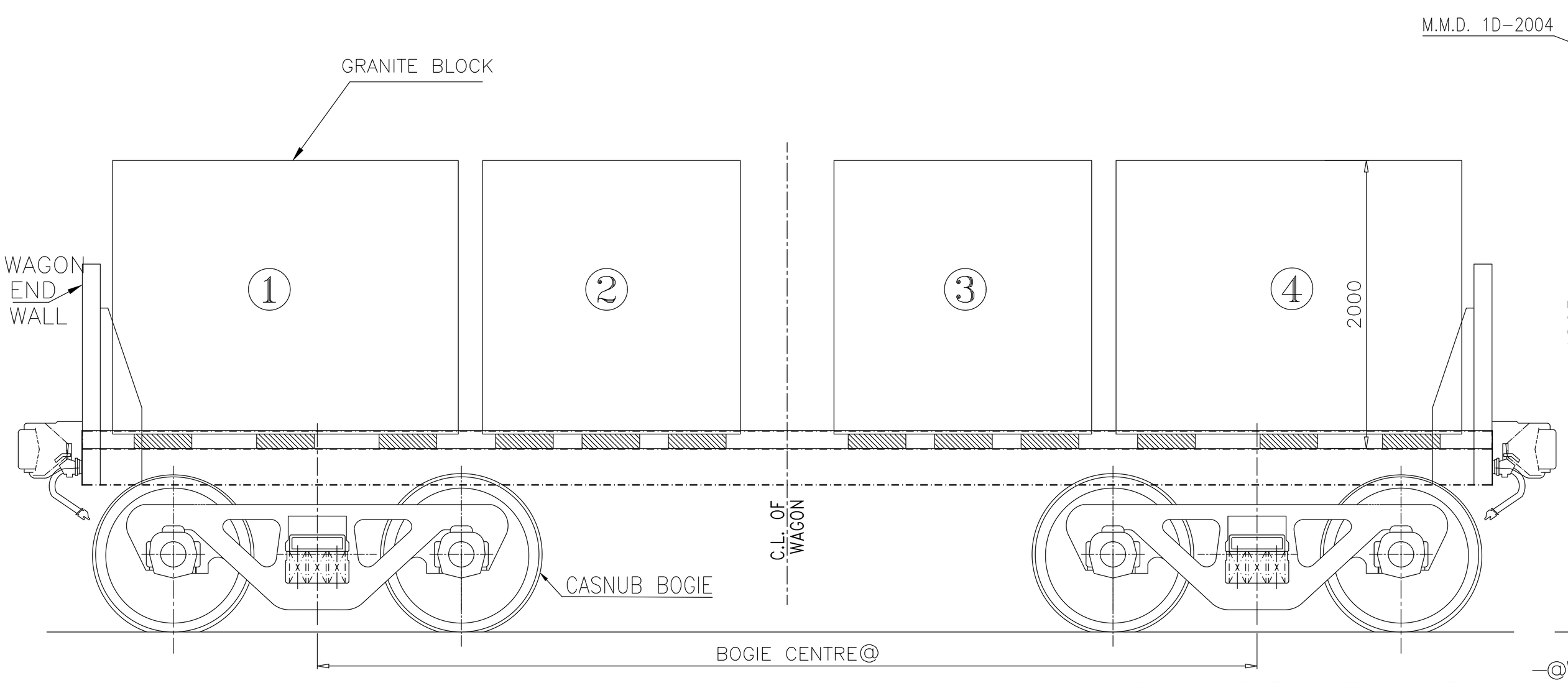
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
①	–	WD–24088	NOTE NO. 1 MODIFIED	10/24	

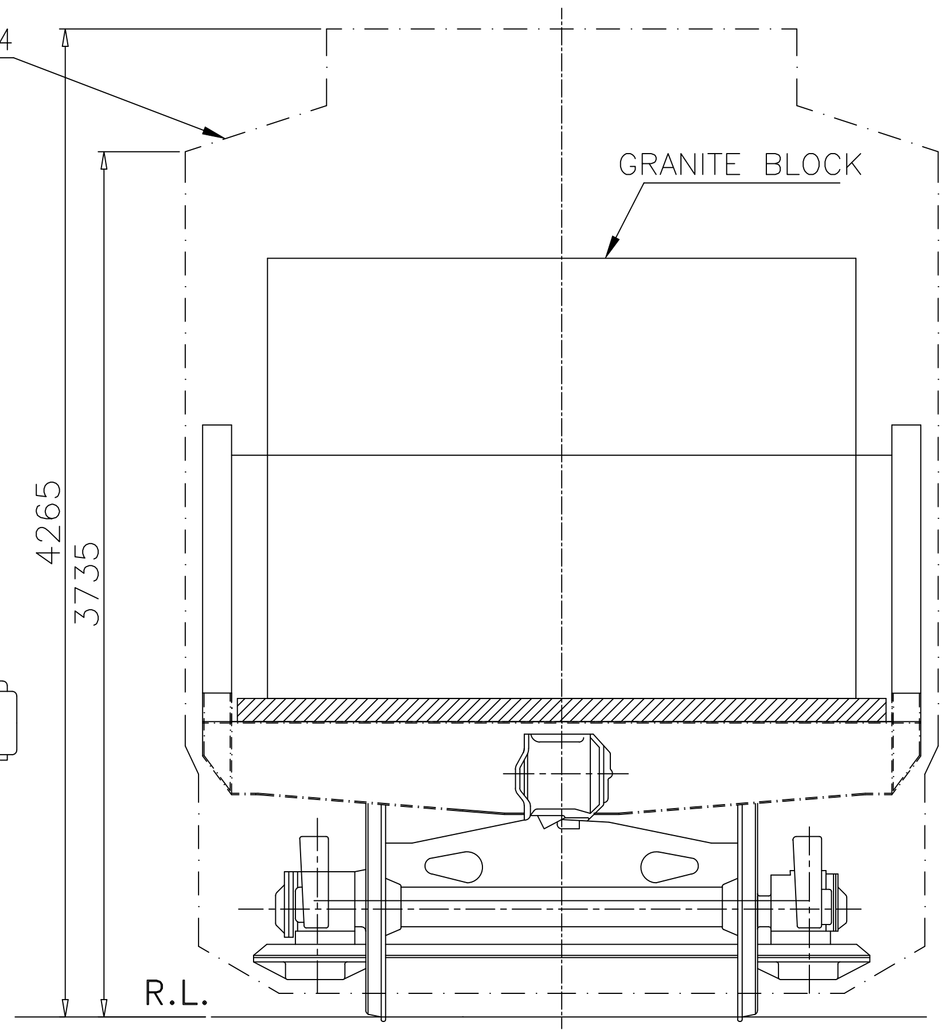
SUPERSEDED BY			
SUPERSEDES			DATE
SCALE	PASSED	Sd. G.R.SHARMA	06/21
	CHECKED	Sd. A.P.SINGH	06/21
	DRAWN	SANTOSH GAUR	06/21
	J.S.NO.	WD–21048	06/21

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

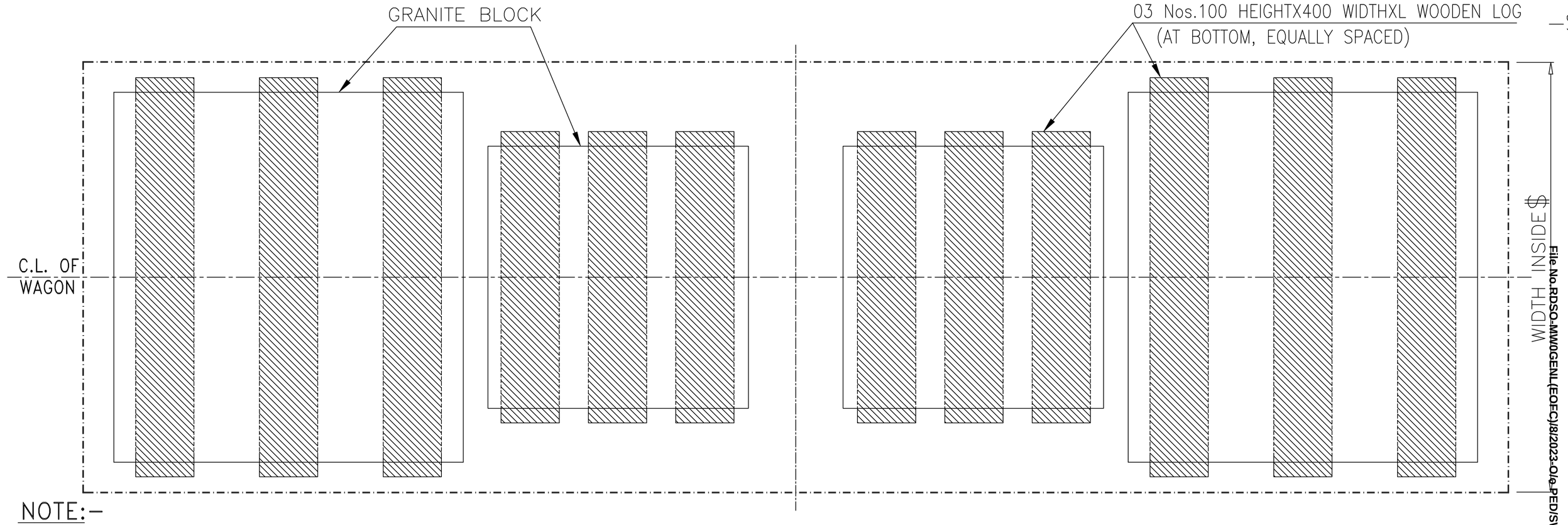
B.G.	R.D.S.O. [W]	GROUP	WD–21048–S–02

1050
II/69





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



NOTE:-

① 1. THE DIFFERENCE IN WEIGHT OF GRANITE BLOCK 1+2 & 3+4 SHOULD NOT BE MORE THAN 2t.
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. 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.
① 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.

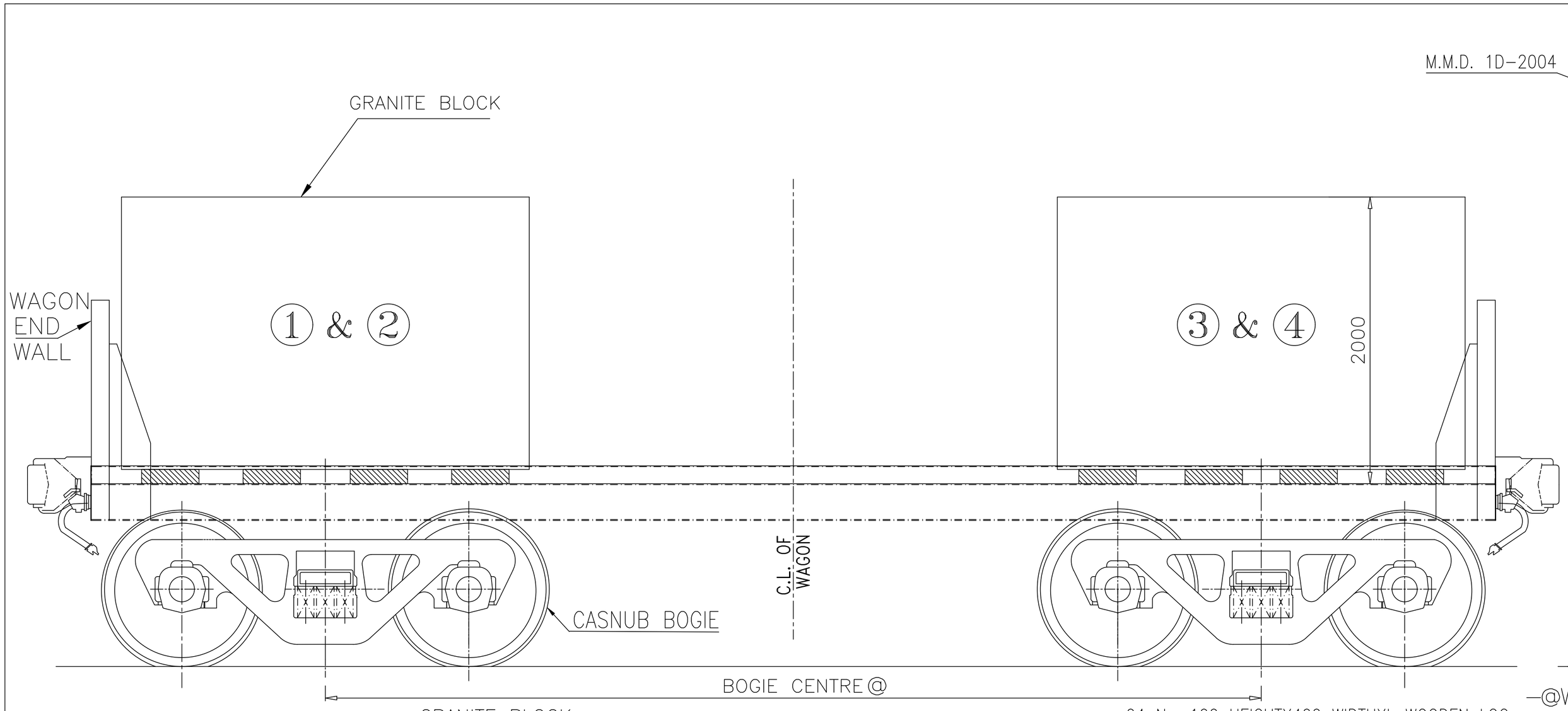
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
①	–	WD-24088	NOTE NO. 1 MODIFIED	10/24	

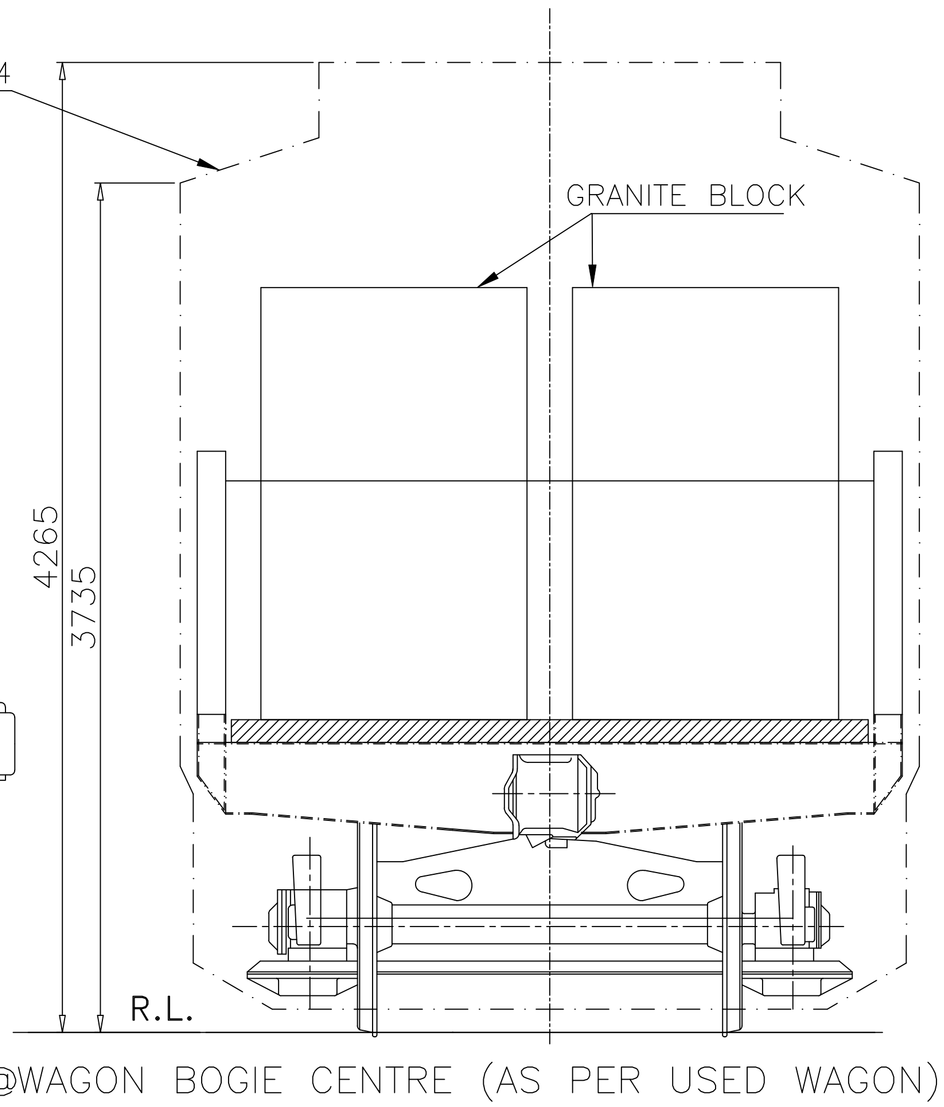
SUPERSEDED BY			
SUPERSEDES			DATE
SCALE	PASSED	Sd. G.R.SHARMA	06/21
	CHECKED	Sd. A.P.SINGH	06/21
	DRAWN	SANTOSH GAUR	06/21
	J.S.NO.	WD-21048	06/21

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

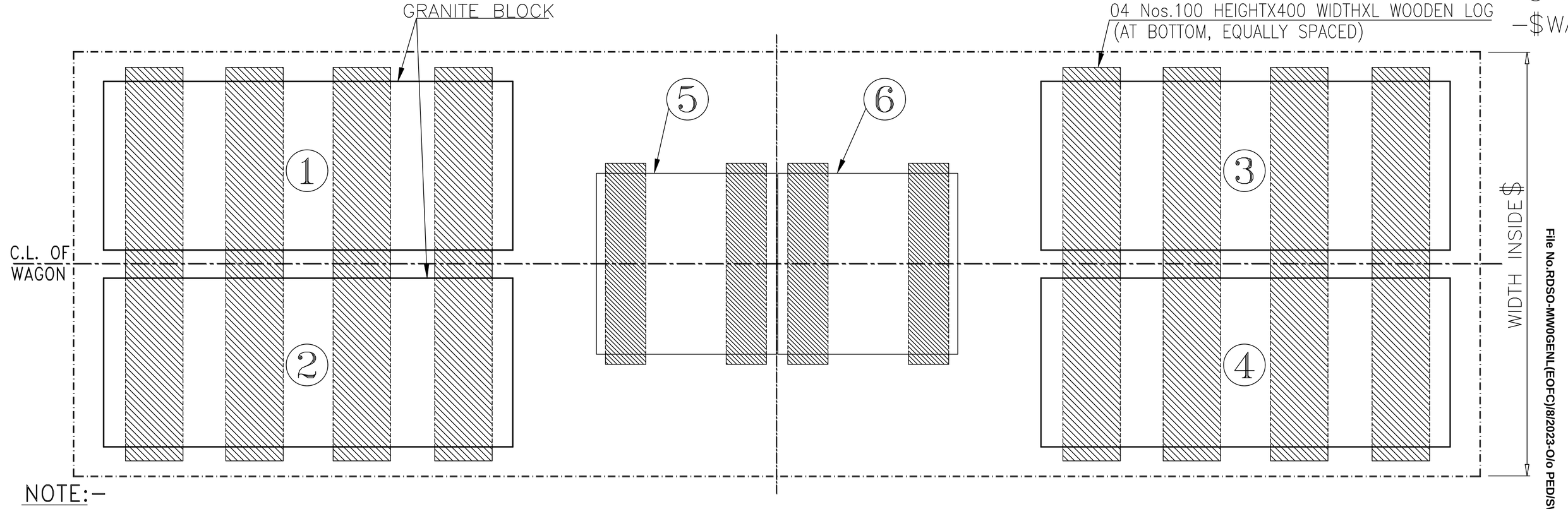
B.G.	R.D.S.O. [W]	GROUP	WD-21048-S-03

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





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



NOTE:—

① 1. THE DIFFERENCE IN WEIGHT OF GRANITE BLOCK 1+2 & 3+4 SHOULD NOT BE MORE THAN 2t.

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.LOADING OF GRANITE BLOCKS SHALL BE SYMMETRICAL W.R.T. LONGITUDINAL AXIS AS WELL AS TRANSVERSE AXIS PASSING THROUGH CENTRE OF WAGON TO AVOID UNEVEN LOADING.

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. 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.

①12. 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.

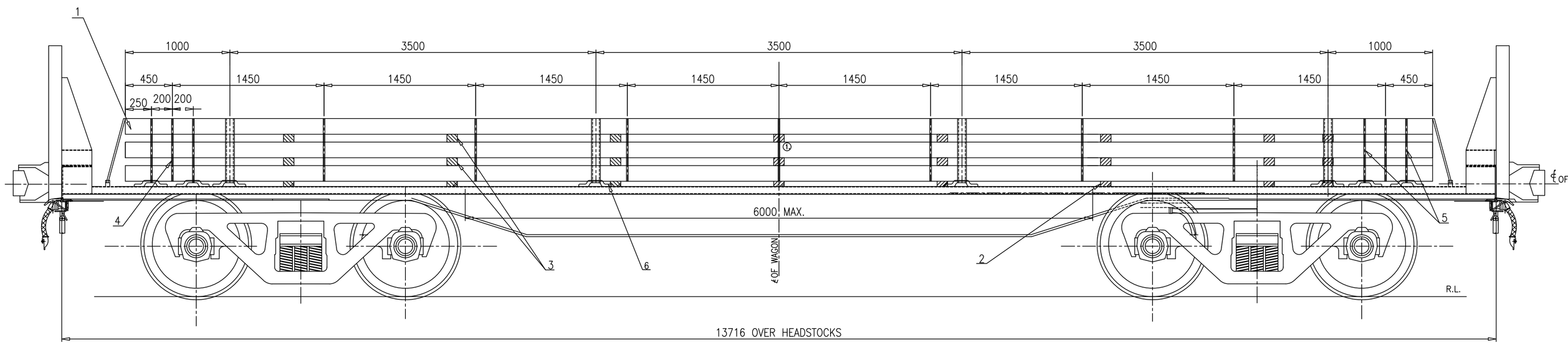
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
①	—	WD-24088	NOTE NO.1, 4 & 12 MODIFIED & BLOCK NO. 5 & 6 ADDED	10/24	

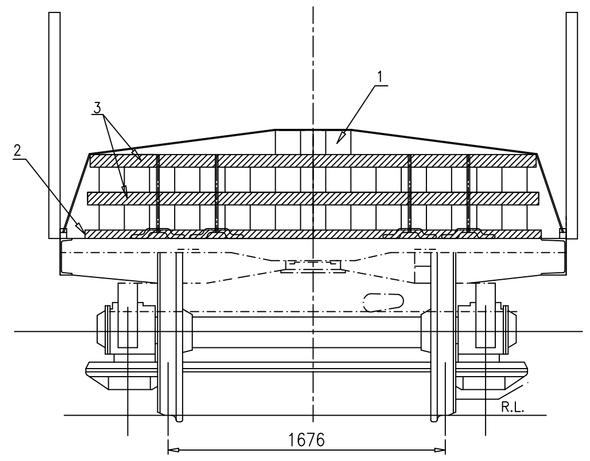
SUPERSEDED BY			
SUPERSEDES			DATE
SCALE	PASSED	Sd. G.R.SHARMA	06/21
	CHECKED	Sd. A.P.SINGH	06/21
	DRAWN	SANTOSH GAUR	06/21
	J.S.NO.	WD-21048	06/21

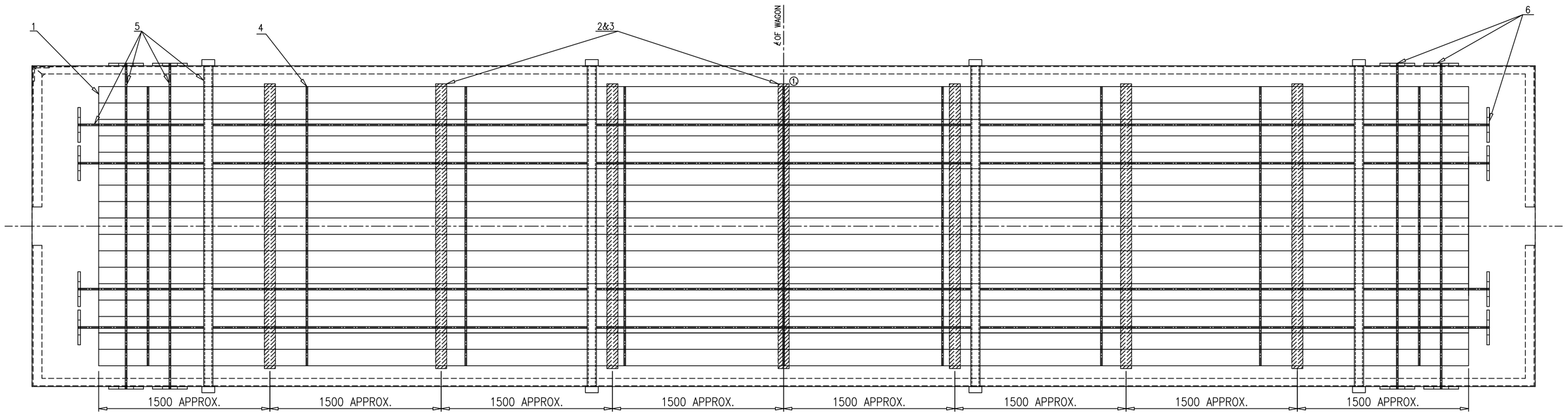
LOADING DIAGRAM OF GRANITE STONES IN BRN22.9/BRN22.9M1 WAGON
(FOR 04/06 NO. GRANITE STONE BLOCKS)

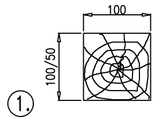
B.G.	R.D.S.O. [W]	GROUP	WD-21048-S-04

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









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.
2. 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.
3. ~~HEIGHT TO WIDTH RATIO OF CONSIGNMENT SHOULD NOT EXCEED 1.5 IN ANY CASE.~~ ①, ②
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.
6. ③ 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).
   - ④ 8.3 THE MAXIMUM DIFFERENCE IN WEIGHT OF TWO BOGIE SHALL NOT EXCEED MORE THAN 2 TON.
9. ④ 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	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3TON)

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

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.
12. ① ③ 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.
16. ③ CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.
17. ④ MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

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

ITEM	DESCRIPTION	NO.OFF	MTL&SPEC	REMARKS
③ 6	ISOLATION HOOK	AS PER REQUIREMENT	WD–24036–S–01 ITEM–3	
④① 5	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	AS PER REQUIREMENT	EN 13247:2001	
④① 4	HIGH TENSILE STEEL STRAP (FOR BUNDLING & UNITIZATION)	AS PER REQUIREMENT	EN 13247:2001	
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.
④	–	WD–24088	STEEL STRAP SPECIFICATION CHANGED FROM EN–13246 TO EN–13247 & NOTE NO. 8.3 & 17 ADDED	10/24	–
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	–

SUPERSEDED BY

SUPERSEDES

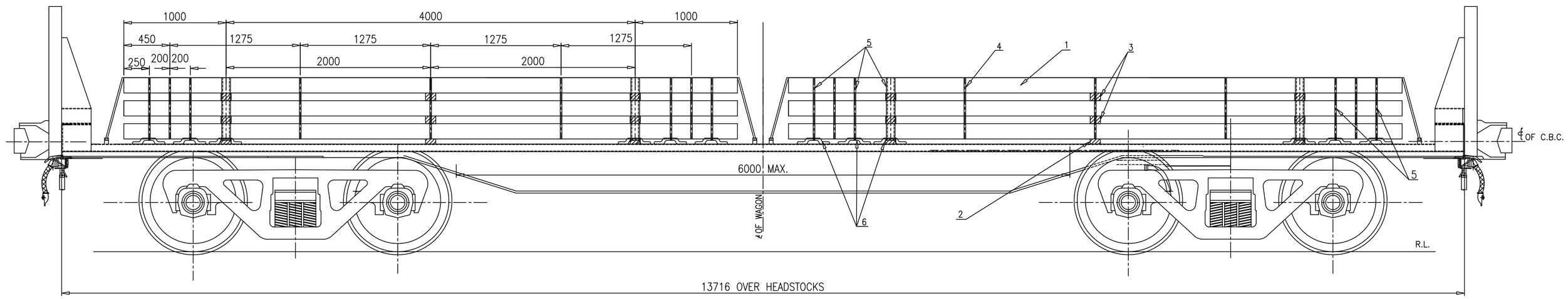
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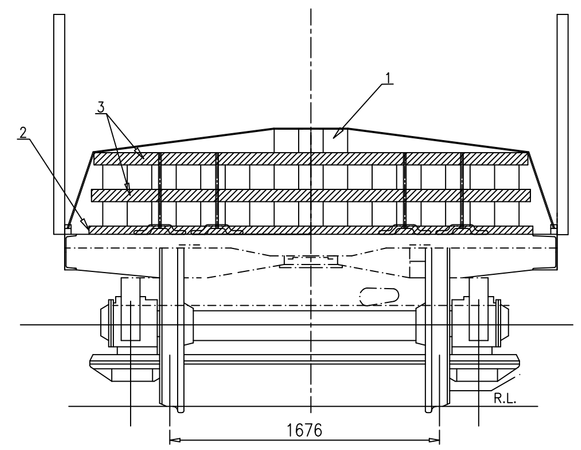
SCALE			
	PASSED	S.M.TRIPATHI	01/22
	CHECKED	A.P.SINGH	01/22
	DRAWN	SACHIN KUMAR	01/22
	TRACED		
	COMPARED		
	J.S.NO.	WD–21112	12/21

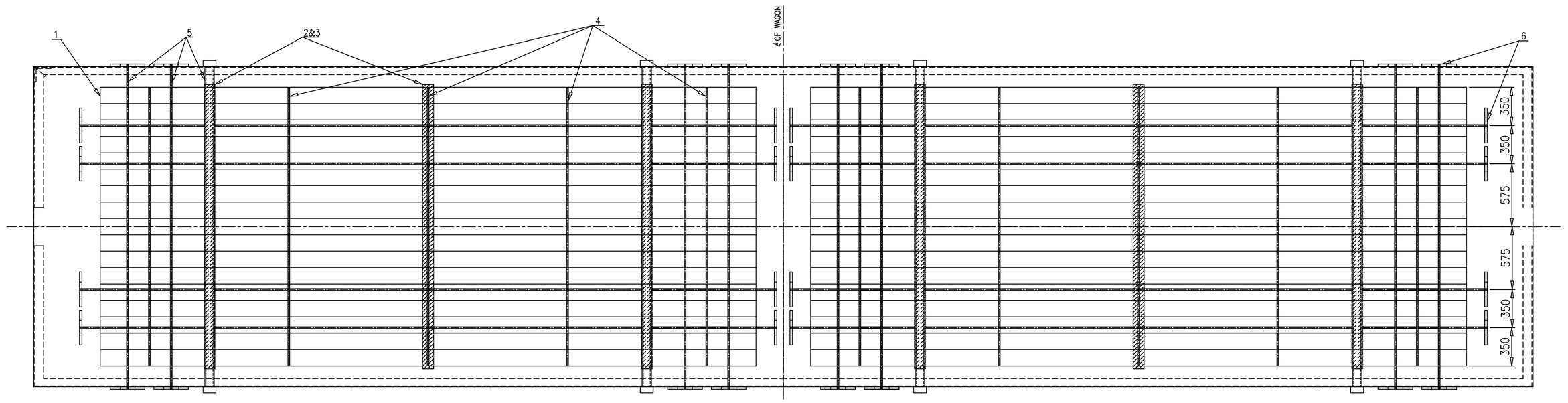
LOADING AND SECURING ARRANGEMENT OF STEEL SLABS/BILLETS (8 TO 12MTRS) ON BRN & ITS ④ VARIANTS

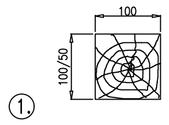
B.G. | R.D.S.O. [W] | GROUP

WD–21112–S–01









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. 2. 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. (1.)
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).
   4. 8.3 THE MAXIMUM DIFFERENCE IN WEIGHT OF TWO BOGIE SHALL NOT EXCEED MORE THAN 2 TON.
4. 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	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3TON)

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

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.
4. 17. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

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

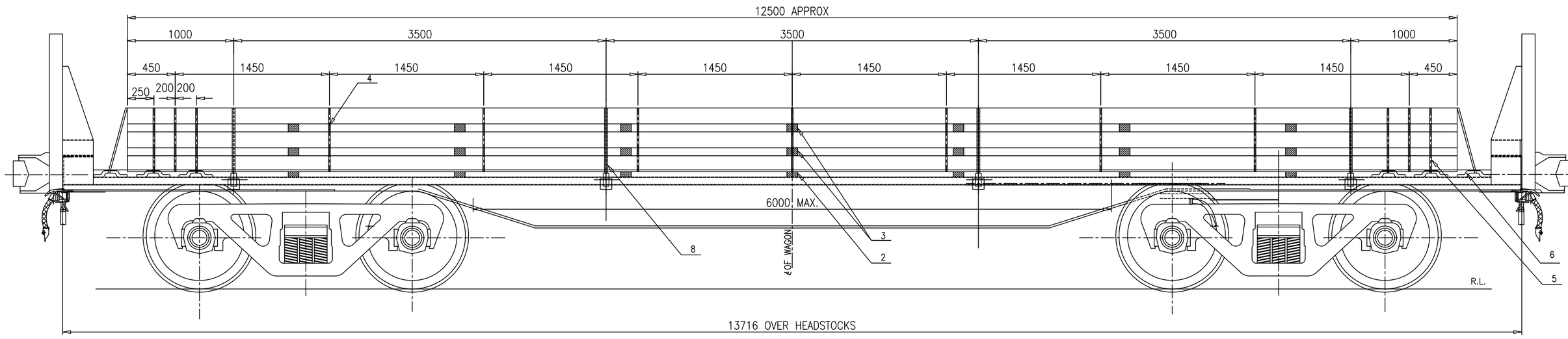
ITEM	DESCRIPTION	NO.OFF	MTL&SPEC	REMARKS
3. 6	ISOLATION HOOK	AS PER REQUIREMENT	WD–24036–S–01 ITEM–3	
4. 1. 5	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	AS PER REQUIREMENT	EN 13247:2001	
4. 1. 4	HIGH TENSILE STEEL STRAP (FOR BUNDLING & UNITIZATION)	AS PER REQUIREMENT	EN 13247:2001	
3	INTERMEDIATE WOODEN RUNNER	AS PER REQUIREMENT	WOOD	
2	WOODEN RUNNER	AS PER REQUIREMENT	WOOD	
1	BILLETS	AS PER REQUIREMENT	STEEL	

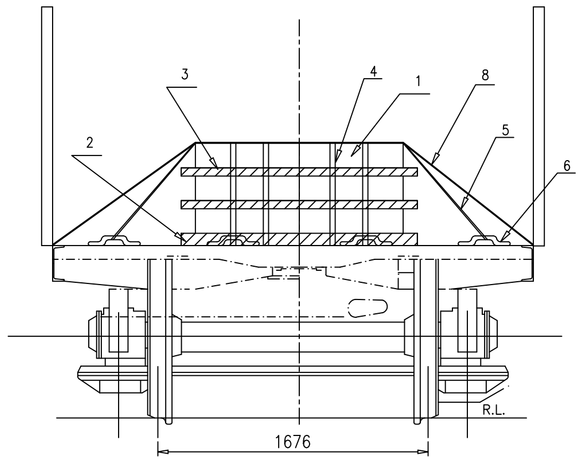
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
4.	–	WD–24088	STEEL STRAP SPECIFICATION CHANGED FROM EN–13246 TO EN–13247, NOTE NO. 8.3 & 17 ADDED & TITAL BLOCK REVIED	10/24	–
3.	–	WD–24036	INITIAL TENSION OF STRAP CHANGED&ISOLATION HOOK REFERENCE DRAWING NO. CHANGED	05/24	–
2.	–	WD–24029	NOTE NO. 3 REMOVED	03/24	–
1.	–	WD–23075	NOTE NO. 10 TO 15 ADDED.	08/23	–

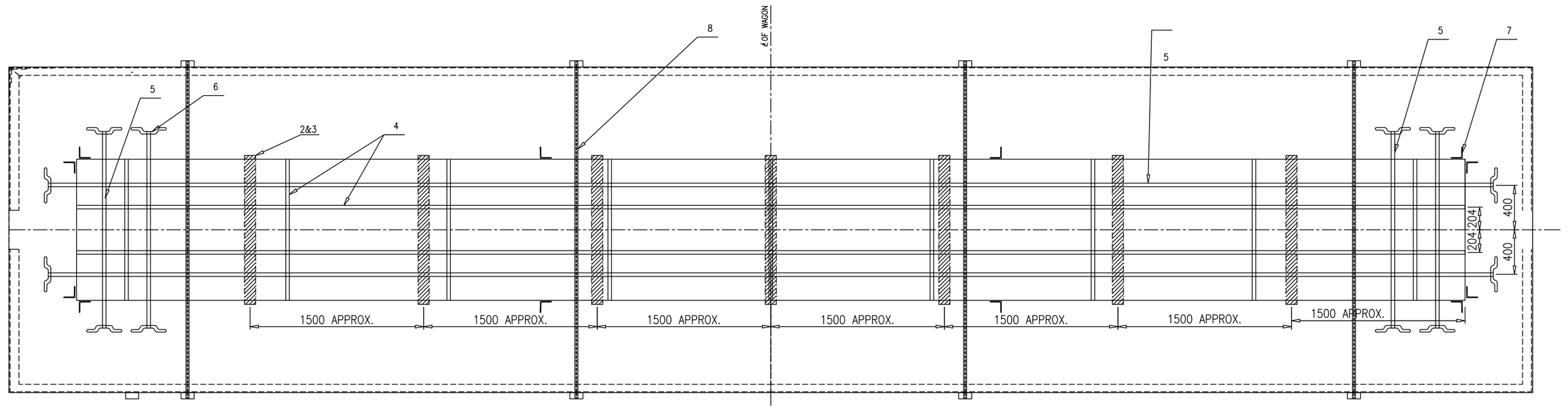
SUPERSEDED BY			
SUPERSEDES		DATE	
SCALE	PASSED	S.M.TRIPATHI	01/22
	CHECKED	A.P.SINGH	01/22
	DRAWN	SACHIN KUMAR	01/22
	TRACED		
	COMPARED		
	J.S.NO.	WD–21112	12/21

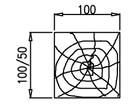
LOADING AND SECURING ARRANGEMENT OF STEEL SLABS/ BILLETS (4.)(2.5 TO 6MTRS) ON BRN & ITS VARIANTS

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.
3. ARE PROVIDED IN INTERMEDIATE LAYERS IN ADDITION TO THE BOTTOM WOODEN RUNNER OF SIZE 100MMX100 MM.
4. ~~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 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 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).
6. 12. 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	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3TON)

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

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.
6. 23. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

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

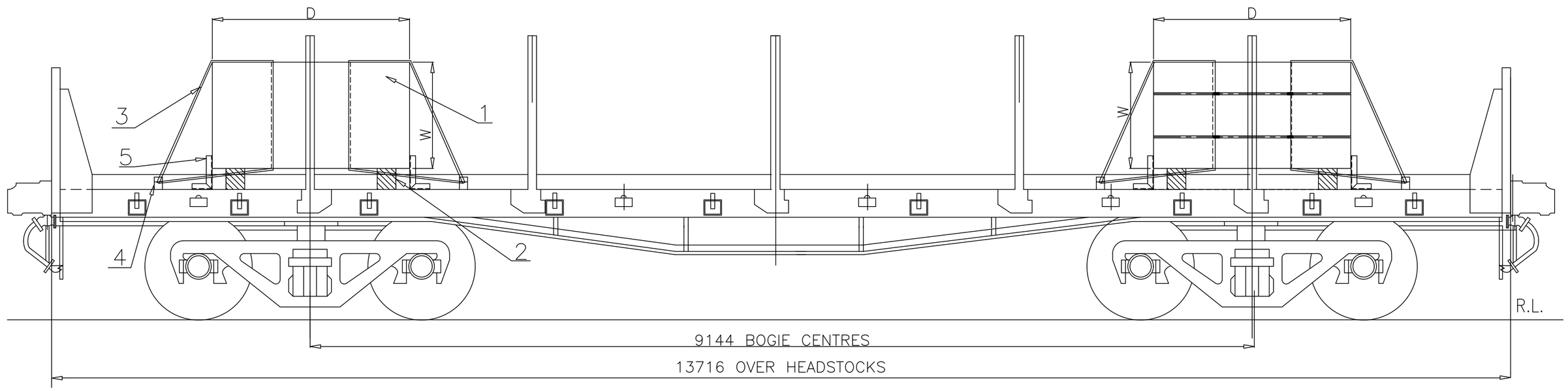
ITEM	DESCRIPTION	NO.OFF	MTL&SPEC	REMARKS
8	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	AS PER REQUIREMENT	EN 13246 TYPE 3.2	ONLY FOR BRN WAGON VARIANTS
7	ANGLE STOPPER	AS PER REQUIREMENT	WD–24036–S–01 PART–4	
6	ISOLATION HOOK	AS PER REQUIREMENT	WD–24036–S–01 PART–3	
5	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	AS PER REQUIREMENT	EN 13247:2001	3. 6.
4	HIGH TENSILE STEEL STRAP (FOR BUNDLING & UNITIZATION)	AS PER REQUIREMENT	EN 13247:2001	
3	INTERMEDIATE WOODEN RUNNER	AS PER REQUIREMENT	WOOD	
2	WOODEN RUNNER	AS PER REQUIREMENT	WOOD	
1	STEEL SLABS	AS PER REQUIREMENT	STEEL	

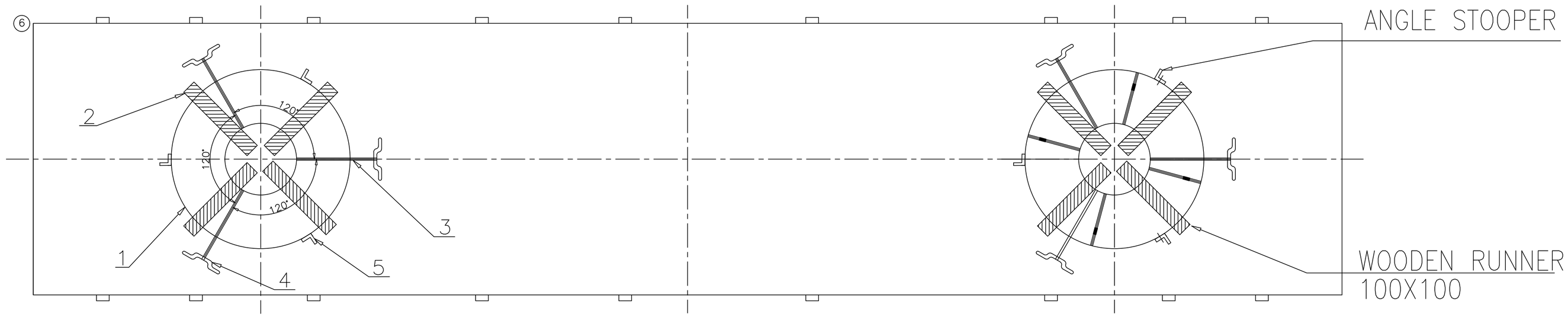
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
6	–	WD–24088	STEEL STRAP SPECIFICATION CHANGED FROM EN–13246 TO EN–13247 & NOTE NO. 23 ADDED.	10/24	–
5	–	WD–24036	DRAWING REVISED	05/24	–
4	–	WD–24029	NOTE NO. 3 REMOVED	03/24	–
3	–	WD–23075	NOTE NO. 16 TO 21 ADDED.	08/23	–
2	–	WD–21112	NOTE NO. 16 ADDED	01/22	
1	–	WD–21119	NOTE NO. 14 & 15 ADDED AND BOST WAGON & ITS VARIANTS ADDED IN TITLE BLOCK.	12/21	

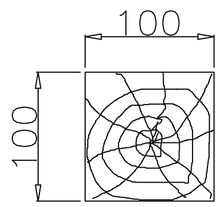
SUPERSEDED BY			
SUPERSEDES			DATE
SCALE	PASSED	G.R.SHARMA	10/21
	CHECKED	A.P.SINGH	10/21
	DRAWN	DINESH	10/21
	TRACED		
	COMPARED		
	J.S.NO.	WD–21095	10/21

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.
⑦⑥ 14. 03 NO's OF ANGLE STOPPER AND 03 NO's OF STEEL STRAPS SHOULD BE APPLIED FOR SECURING EACH COIL.
⑦ 15. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

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

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
⑦	–	WD–24088	NOTE NO 14 MODIFIED & NOTE NO 15 ADDED	10/24	–
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

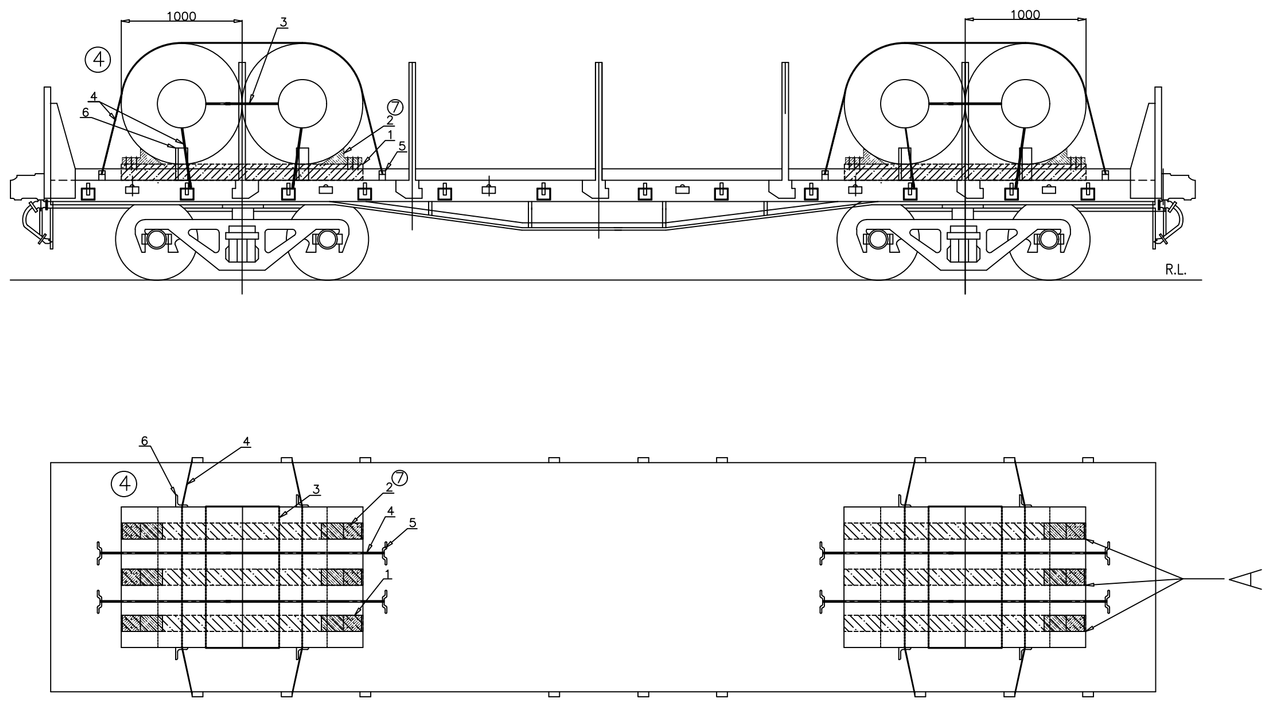
SCALE			DATE
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	CHECKED	MANJEET SINGH –Sd–	07/94
	DRAWN	S.K.KHARE –Sd–	02/94
	TRACED		
	COMPARED		
	J.S.NO.	WD3–94/66	02/94

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

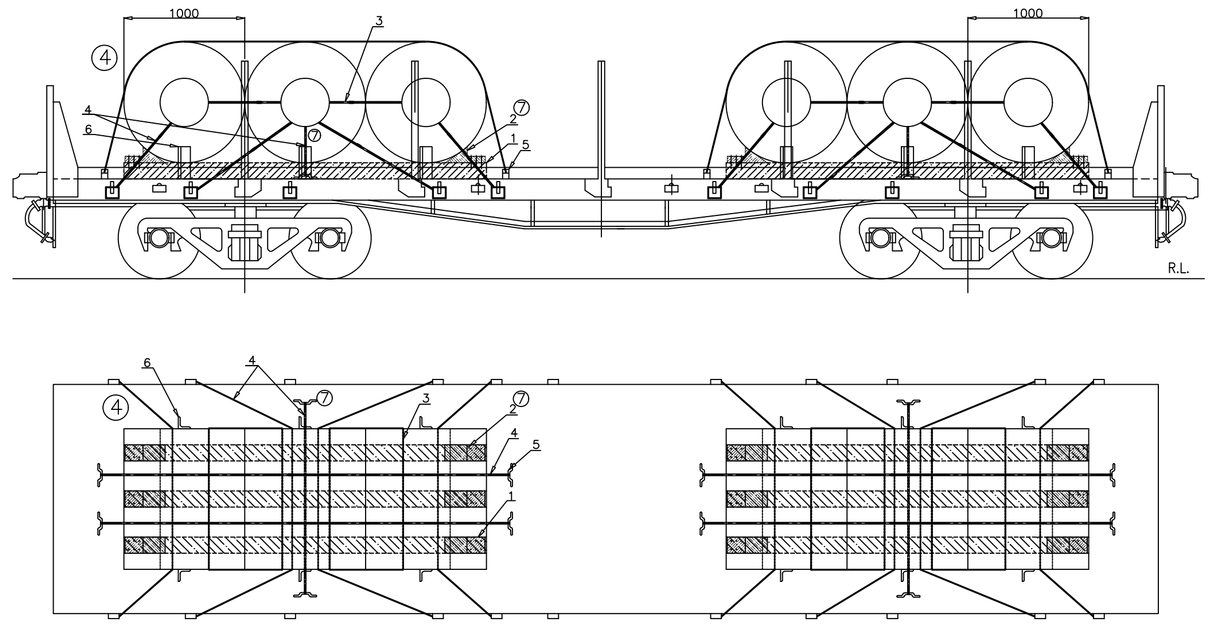
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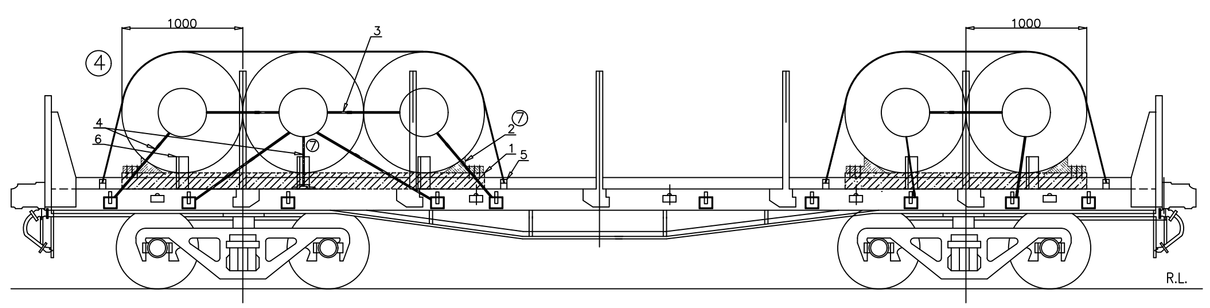
UNITISED IN 2 COILS PACK

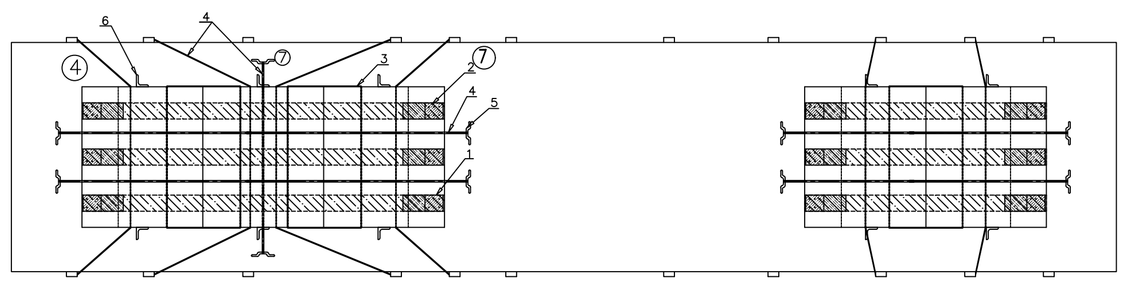
FIG.1



UNITISED IN 3 COILS PACK

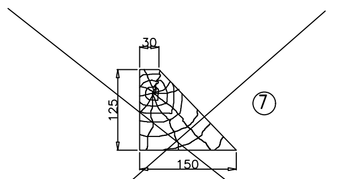
FIG.2



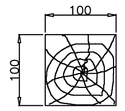


UNITISED IN 2 AND 3 COILS PACK(5 PER WAGON)

FIG.3



WOODEN TRIANGULAR BATTEN
SECTIONAL VIEW



WOODEN LONGITUDINAL RUNNER
SECTIONAL VIEW

METHOD OF LOADING

(4) 1. UNITIZED IN PACKS OF 2/3 COILS
2. COIL AXIS PERPENDICULAR TO THE LENGTH OF WAGON.

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) 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.
(7) 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	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3TON)

(4) 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.
(7) 14. MINIMUM TWO NO'S. CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

RDSO/WAGON(ENDT)/DFC/I8/2023-O/o PED/SW/RDSO

ITEM	DESCRIPTION	NO.OFF	MTL&SPEC.	REMARKS (4)
(6) 6	ANGLE STOPPER	AS PER DRAWING	WD–24036–S–01 PART–4	
5	ISOLATION HOOK	AS PER DRAWING	WD–24036–S–01 PART–3	
4	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	AS PER DRAWING	EN13247:2001	
3	HIGH TENSILE STEEL STRAP (FOR BUNDLING & UNITIZATION)	AS PER DRAWING	EN13247:2001	
(7) 2	WOODEN WEDGE	06 ON. PER BUNDLE	WD–24036–S–01 PART–5	
1	WOODEN RUNNER	03 ON. PER BUNDLE	WOOD	

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
(7)	–	WD–24088	NOTE NO. 9 MODIFIED, NOTE NO.14,STRAP & WEDGE REF. ADDED IN DESCRIPTION TABLE	10/24	–
(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	–

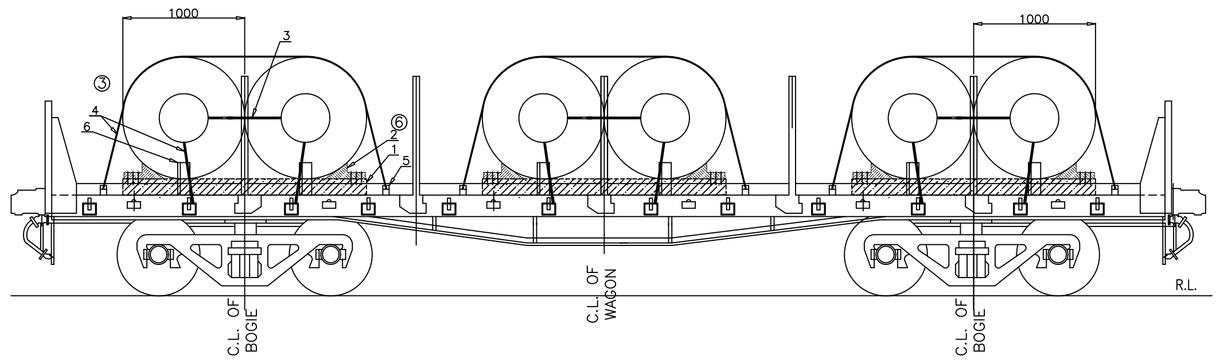
SUPERSEDED BY
SUPERSEDES — DATE
SCALE — PASSED A.N.MEHTA –Sd– 05/94
CHECKED MANJEET SINGH –Sd–
DRAWN S.K.KHARE –Sd– 05/94
TRACED
COMPARED
J.S.NO. WD3–94/10 05/94

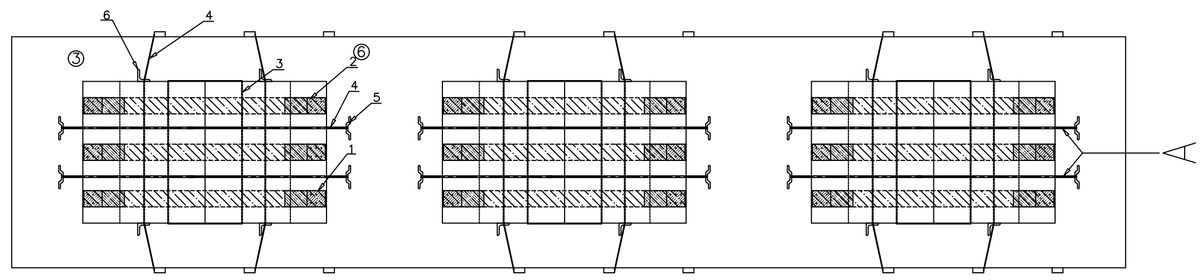
BOGIE FLAT WAGON TYPE 'BRN', 'BRHC','BRHT', 'BRNA' & 'BRNAHS'

LOADING AND SECURING OF HR/CR COILS IN UNITISED PACKS

B.G. | R.D.S.O. [W] | GROUP | WD–94038–S–02

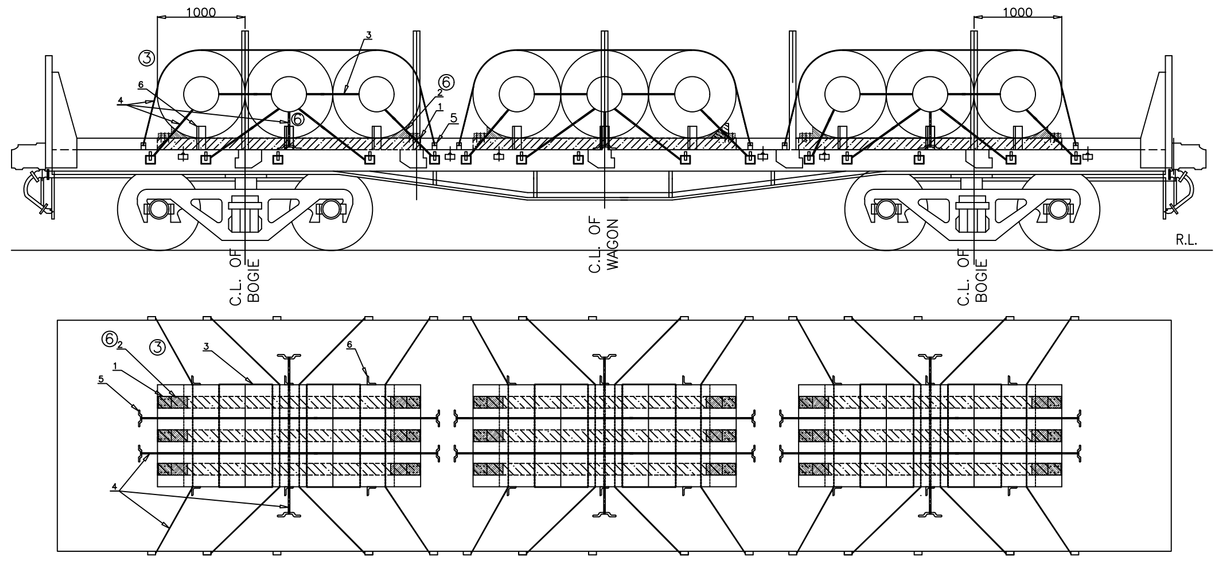
1057
I69





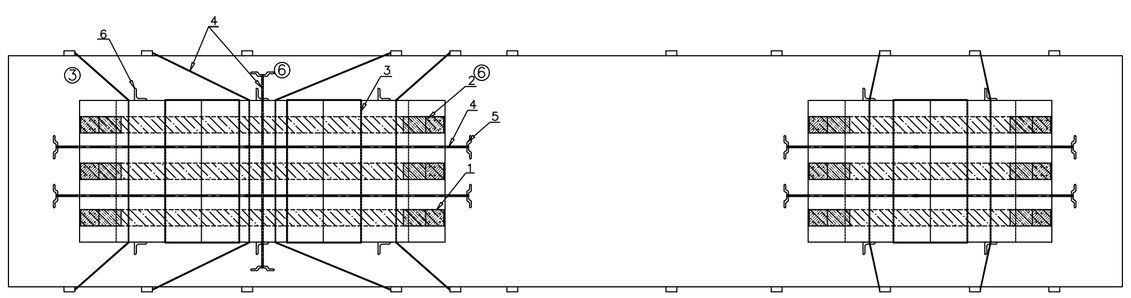
UNITISED IN 2 COILS PACK

FIG.1



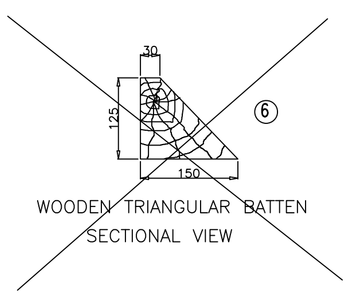
UNITISED IN 3 COILS PACK

FIG.2



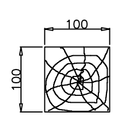
UNITISED IN 2 AND 3 COILS PACK(5 PER WAGON)

FIG.3



WOODEN TRIANGULAR BATTEN

SECTIONAL VIEW



WOODEN LONGITUDINAL RUNNER

SECTIONAL VIEW

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.
⑥ 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	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3TON)

③
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. MINIMUM TWO NOS. CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

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

THE NO. RDSO/WD/GEN/(EOFC)/II/2023-O/o PED/SW/RDSO

ITEM	DESCRIPTION	NO.OFF	MTL&SPEC.	REMARKS
⑤ 6	ANGLE STOPPER	AS PER DRAWING	WD–24036–S–01 PART–4	
⑤ 5	ISOLATION HOOK	AS PER DRAWING	WD–24036–S–01 PART–3	
4	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	AS PER DRAWING	EN13247:2001	
3	HIGH TENSILE STEEL STRAP (FOR BUNDLING & UNITIZATION)	AS PER DRAWING	EN13247:2001	
⑥ 2	WOODEN WEDGE	06 NO. PER BUNDLE	WD–24036–S–01 PART–5	
1	WOODEN RUNNER	03 NO.PER BUNDLE	WOOD	

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
⑥	–	WD–24088	NOTE NO.9 MODIFIED AND NOTE 14,STRAP & WEDGE REF. ADDED IN DESCRIPTION TABLE	10/24	–
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
SUPERSEDES DATE

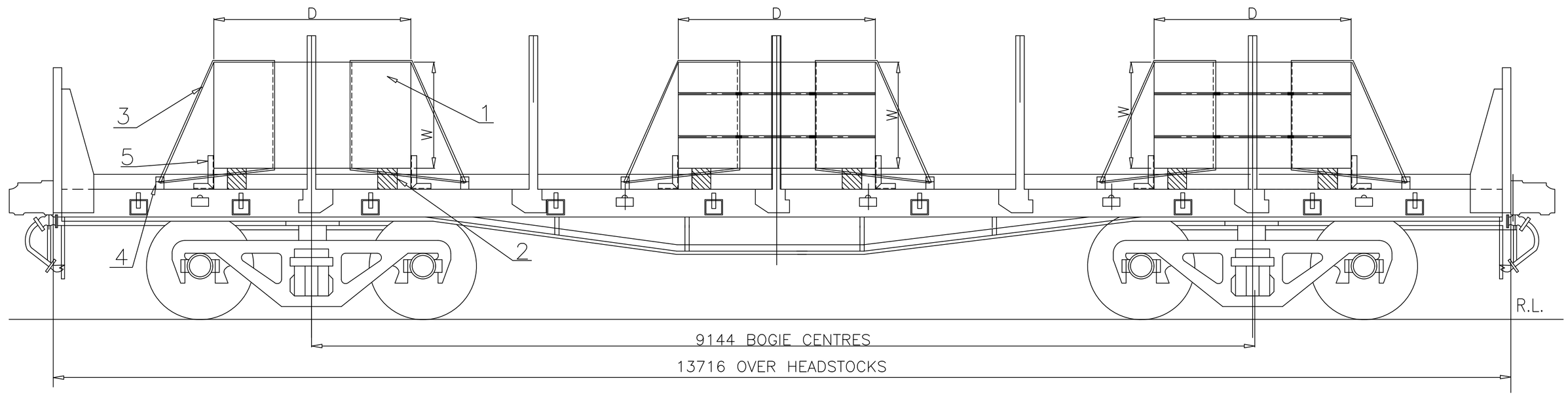
BOGIE FLAT WAGON TYPE 'BRN 22.9'

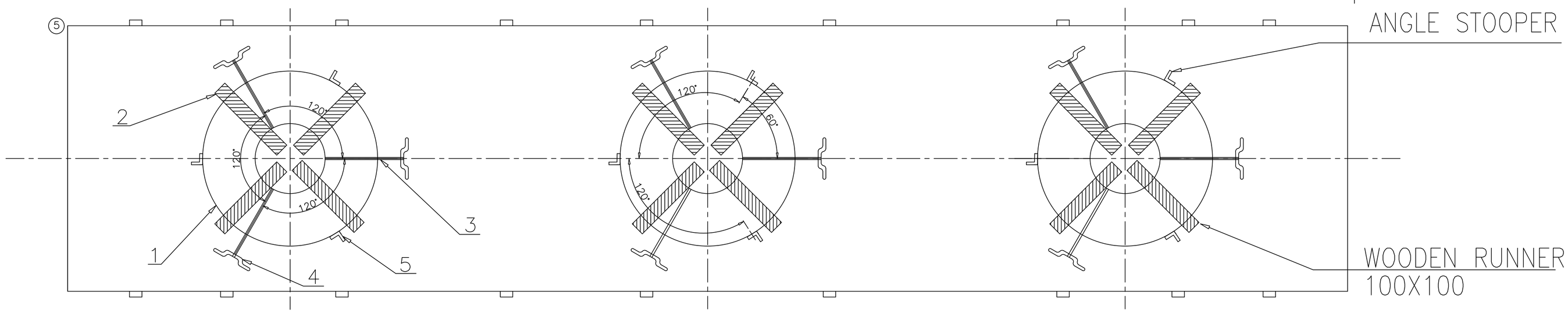
SCALE			
PASSED	V.SINGHAL	11/15	
CHECKED	D.KUMAR	11/15	
DRAWN	A.P.SINGH	11/15	
TRACED			
COMPARED			
J.S.NO.	WD–15060	11/15	

LOADING AND SECURING OF HR/CR COILS IN UNITISED PACKS

B.G. | R.D.S.O. [W] | GROUP | WD–15060–S–01

1058
I/69





NOTE: LOADING OF COILS SHOULD BE SHUCH THAT :-

4 3. 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)

3.

4 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.

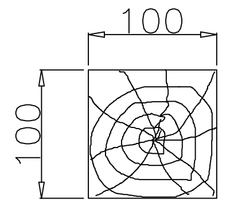
12. THIS RDSO DRAWING IS AN INDICATIVE DRAWING AS THE SIZE AND SHAPE OF CONSIGNMENT VARIES. THE CONSIGNEE MAY TAKE ADDITIONAL MEASURE TO SECURE THE LOAD FOR SAFE OPERATION.

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 6 14. 03 NO's OF ANGLE STOPPER AND 03 NO's OF STEEL STRAPS SHOULD BE APPLIED FOR SECURING EACH COIL.

15. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

6



2

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
6	–	WD–24088	NOTE NO. 14 MODIFIED & 15 ADDED	10/24	–
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	–

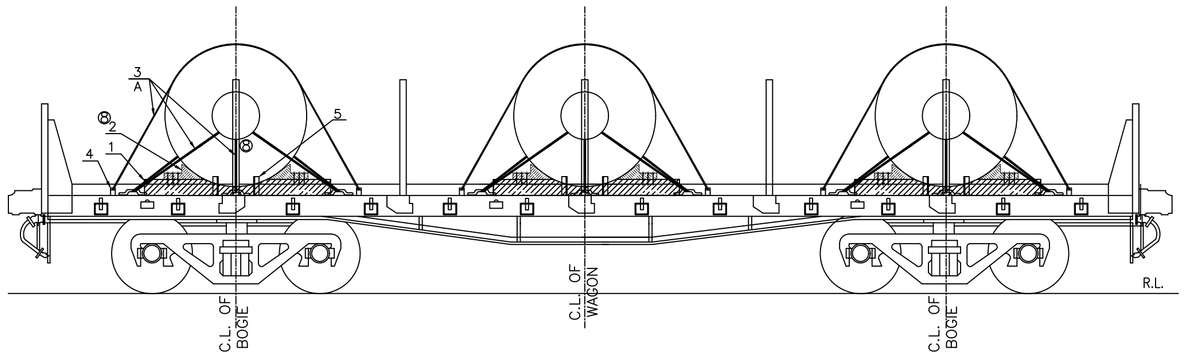
5 ITEM	DESCRIPTION	NO.OFF	MTL&SPEC	REMARKS
5	ANGLE STOPPER	03 NO FOR EACH COIL	WD–24036–S–01 ITEM–4	
4	ISOLATION HOOK	03 NO FOR EACH COIL	WD–24036–S–01 ITEM–3	
3	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	03 NO FOR EACH COIL	EN13247:2001	
2	WOODEN RUNNER	04 NO FOR EACH COIL	WOOD	
1	HR/CR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

SUPERSEDED BY			
SUPERSEDES			DATE
SCALE	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/0 PED/SW/RDSO



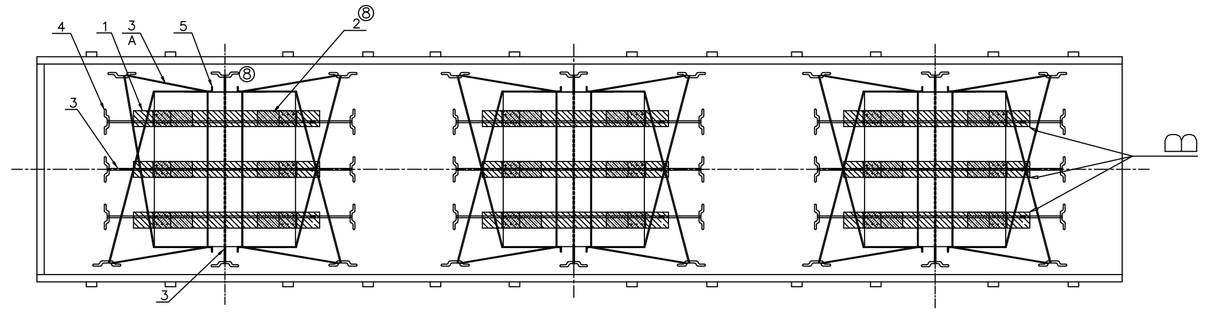
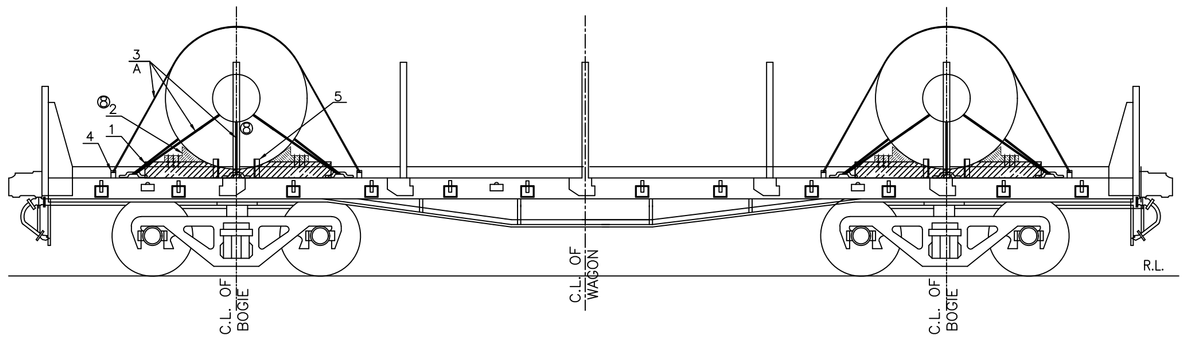


DIAGRAM OF 3 COIL LOADING ON BRN 22.9 WAGON

MAX. WEIGHT OF INDIVIDUAL COIL < 23T

FIG.1



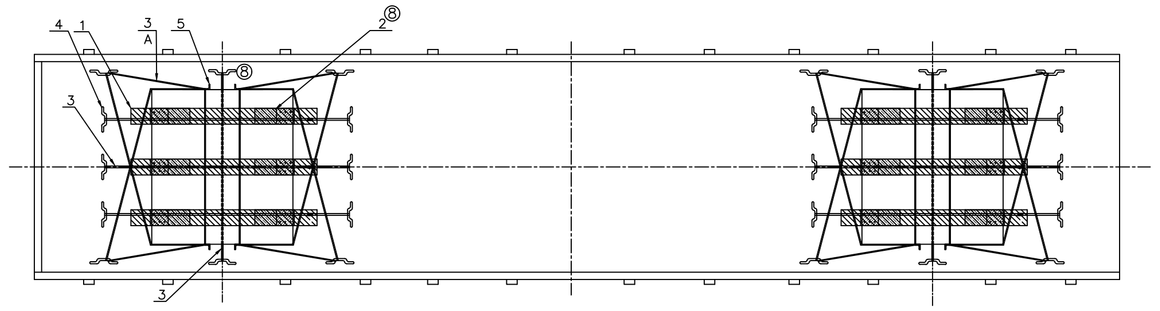
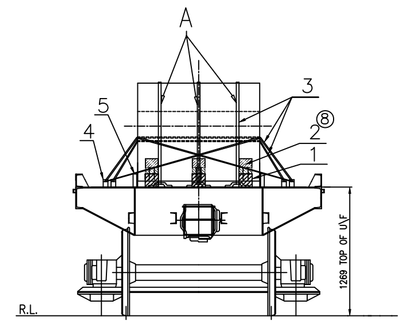
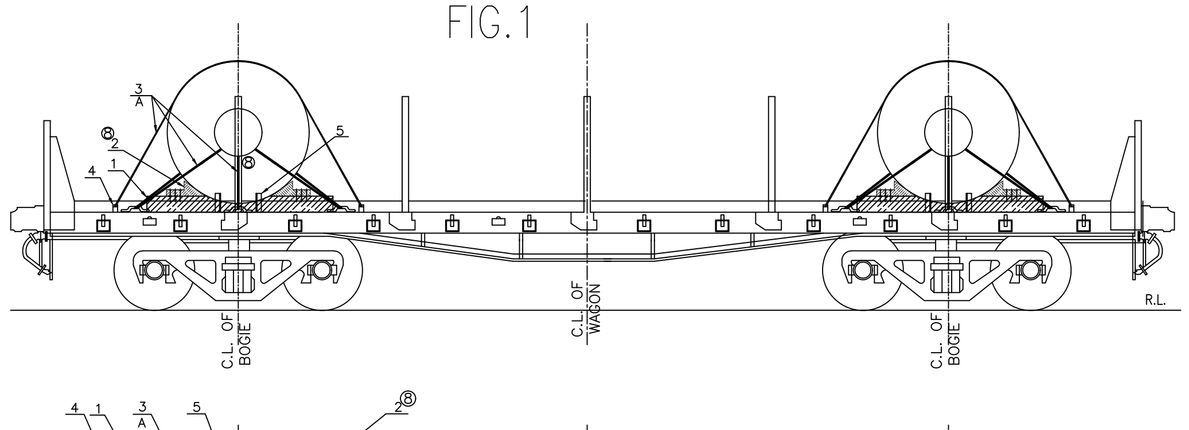


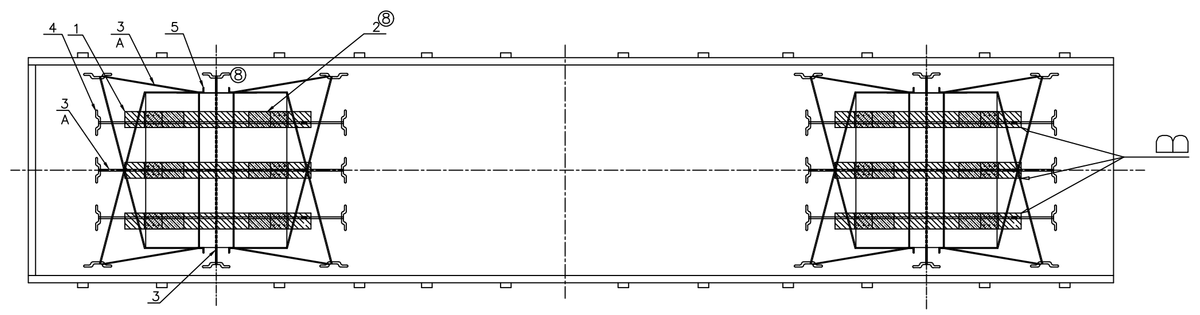
DIAGRAM OF 2 COIL LOADING ON BRN 22.9 WAGON

MAX. WEIGHT OF INDIVIDUAL COIL <= 34T

FIG.2



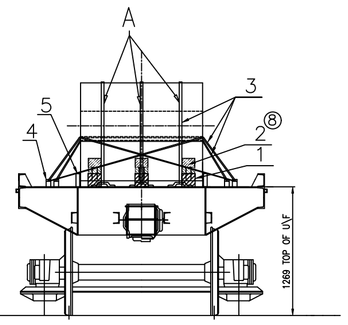


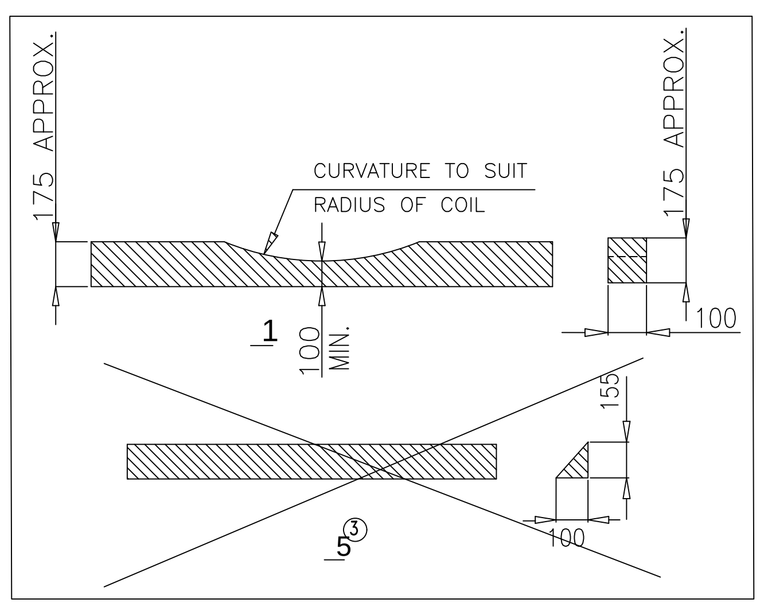


LOADING DIAGRAM OTHER THAN BRN 22.9 WAGON

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

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

⑥ 4. 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.

5. 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 6. STEEL STRAPES SHOULD BE UNIFORMLY TIGHTEND AT EACH STAGE BY TENSOMETER.

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

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

⑧ 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	1.27
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.

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

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

⑧ 16. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

File No:RDSO-MWG-CENTRE OF EX/8/2023-O/o PED/SW/RDSO

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
⑧	–	WD–24088	NOTE NO.10 MODIFIED AND NOTE 14,STRAP & WEDGE REF. ADDED IN DESCRIPTION TABLE	10/24	–
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
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	06 NO. PER COIL	WD–24036–S–01PART–5	⑧
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

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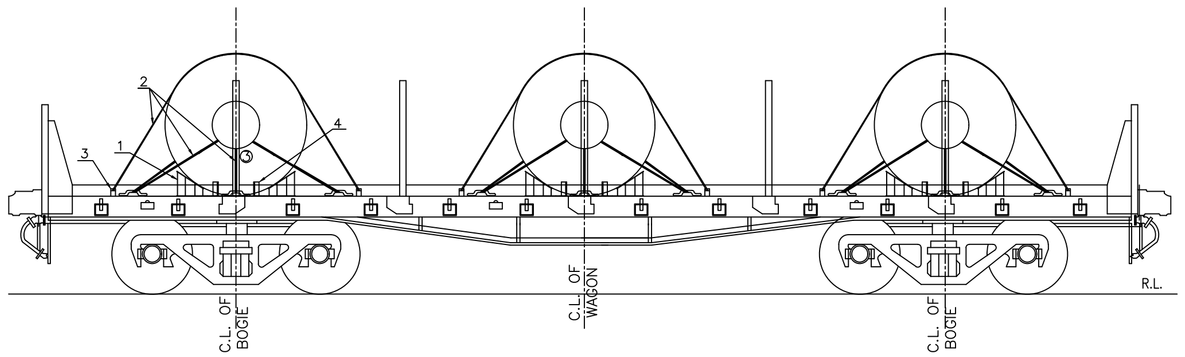


DIAGRAM OF 3 COIL LOADING ON BRN 22.9 WAGON

MAX. WEIGHT OF INDIVIDUAL COIL < 23T

FIG.1

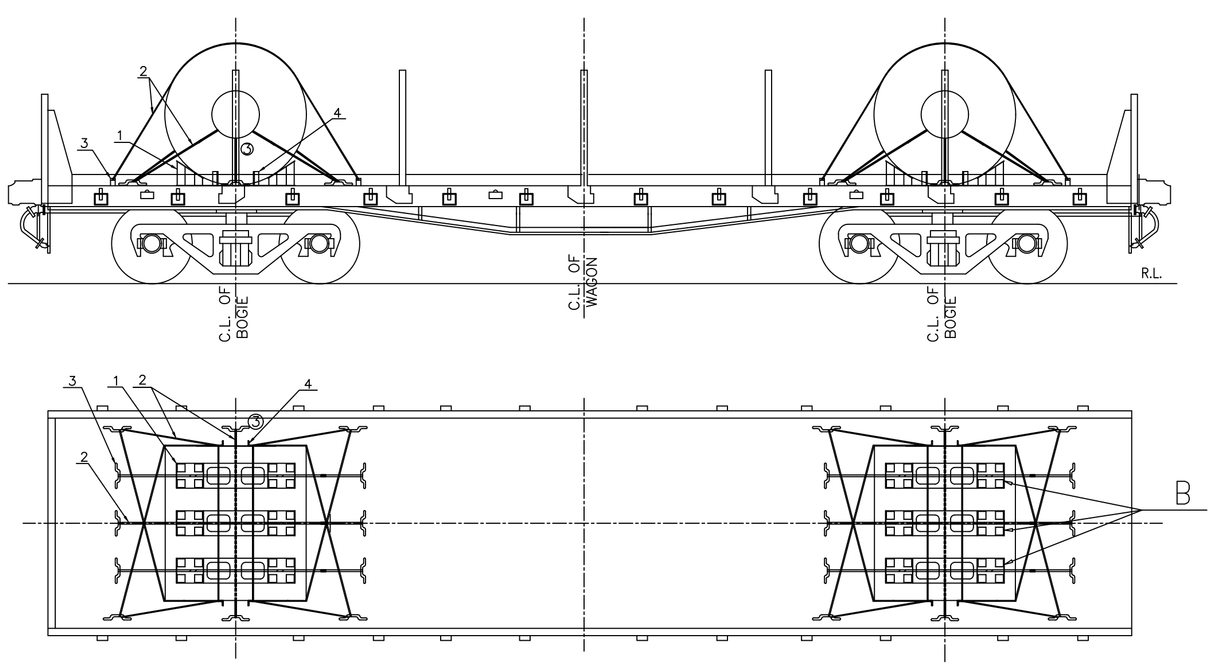
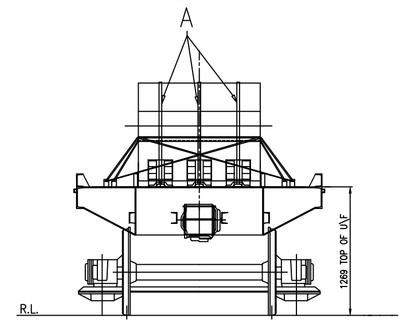
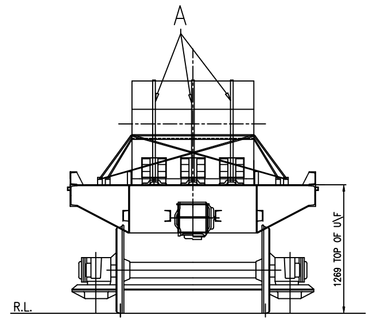


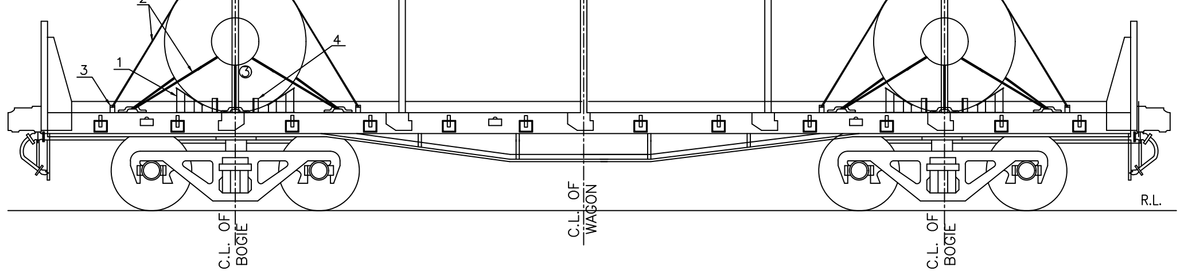
DIAGRAM OF 2 COIL LOADING ON BRN 22.9 WAGON

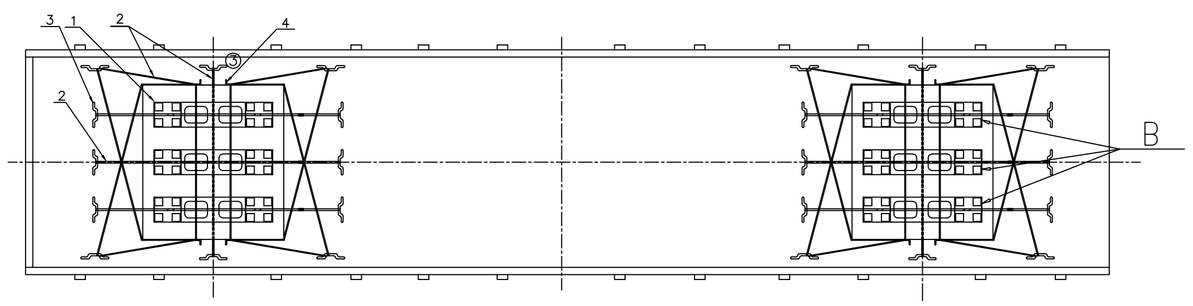
MAX. WEIGHT OF INDIVIDUAL COIL <= 34T

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.
(2) 3. 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) 4. 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.
5. 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.
6. STEEL STRAPES SHOULD BE UNIFORMLY TIGHTEND AT EACH STAGE BY TENSOMETER.
7. SIDE STANCHION (L.H. & R.H.) MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING AND DOWNWARD POSITION DURING LOADING/UNLOADING.
8. THE MAXIMUM DIFFERENCE IN WEIGHT ON TWO BOGIE SHALL NOT EXCEED MORE THAN 2 TON.
(3) 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	1.27
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. 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. IF COIL LOADING IS DONE WITH WOODEN CRADLE THEN LOADING SHALL BE DONE AS PER DRAWING NO. WD–16042–S–01 .
(2) 14. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.
(3) 15. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

File:S:\RDSO\WD\GENERIC\FOR\I&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.
(3)	–	WD–24088	NOTE NO. 10 MODIFIED & NOTE NO.16, STRAP ADDED	10/24	–
(2)	–	WD–24036	DRAWING REVISED	05/24	–
(1)	–	WD–24029	NOTE NO. 5 MODIFIED	03/24	–

SUPERSEDED BY
SUPERSEDES
DATE

BOGIE FLAT WAGON

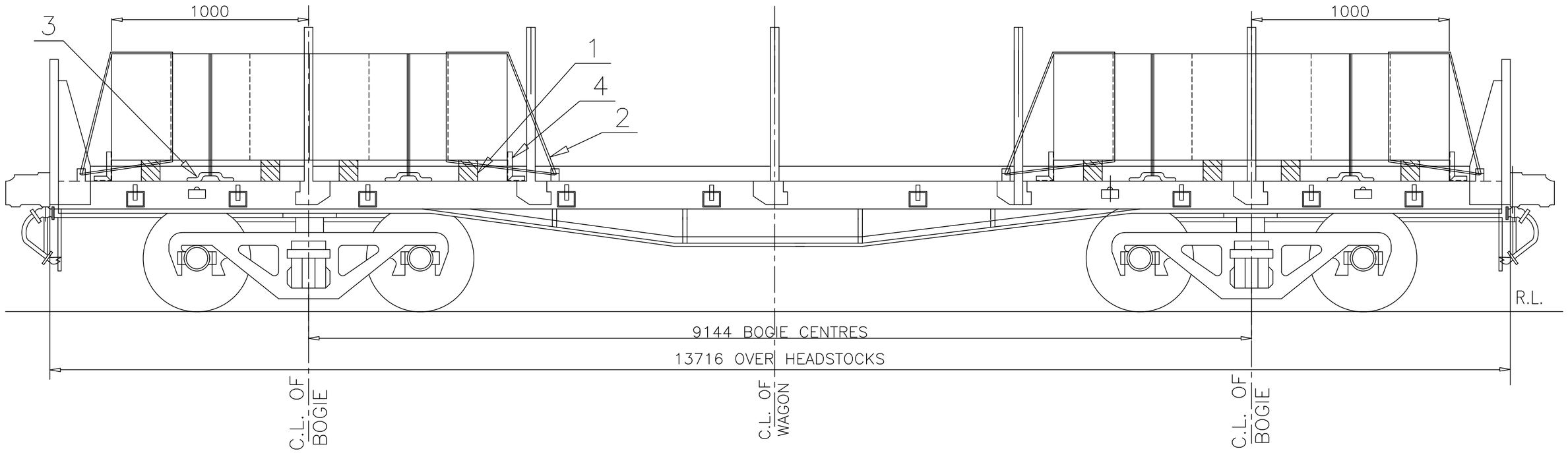
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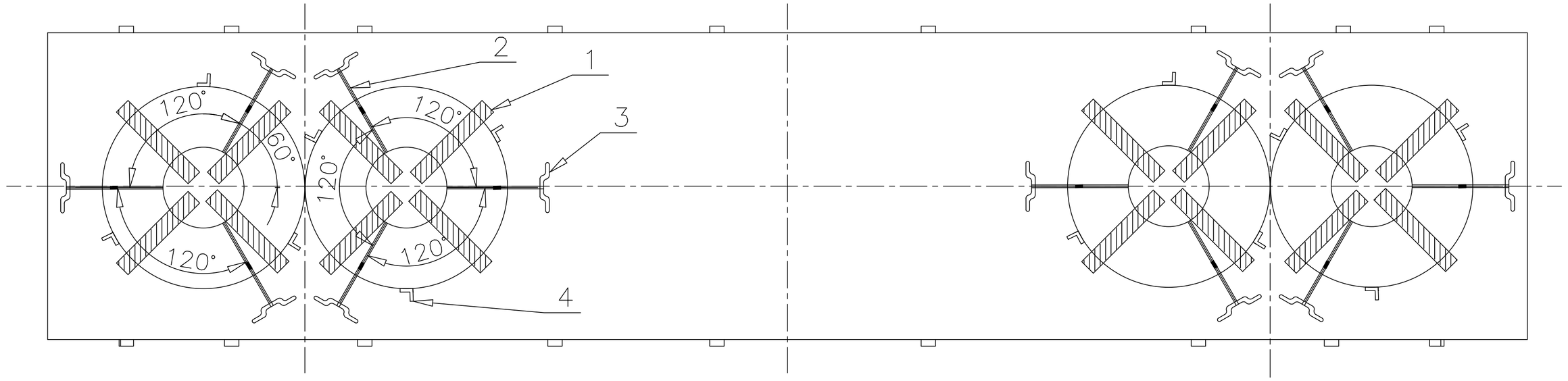
PASSED	S.M.TRIPATHI	11/23
CHECKED	A.P.SINGH	11/23
DRAWN	SACHIN KUMAR	11/23
TRACED		
COMPARED		
J.S.NO.	WD–23115	11/23

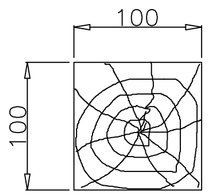
LOADING AND SECURING OF HR/CR COILS IN NON UNITISED PACKS ON BRN & ITS VARIANTS (BY USING METAL SADDLE)

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.
2. 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	1.27
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 TRAIN OPERATION.
14. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.
1. 15. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.
2. 16. 03 NO's OF ANGLE STOPPER AND 03 NO's OF STEEL STRAPS SHOULD BE APPLIED FOR SECURING THE COIL WITH VERTICAL AXIS ONLY.
2. 17. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

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

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
2	–	WD–24088	NOTE NO.9 & 16 MODIFIED &17 ADDED	10/24	–
1	–	WD–24036	DRAWING REVISED	05/24	–

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	

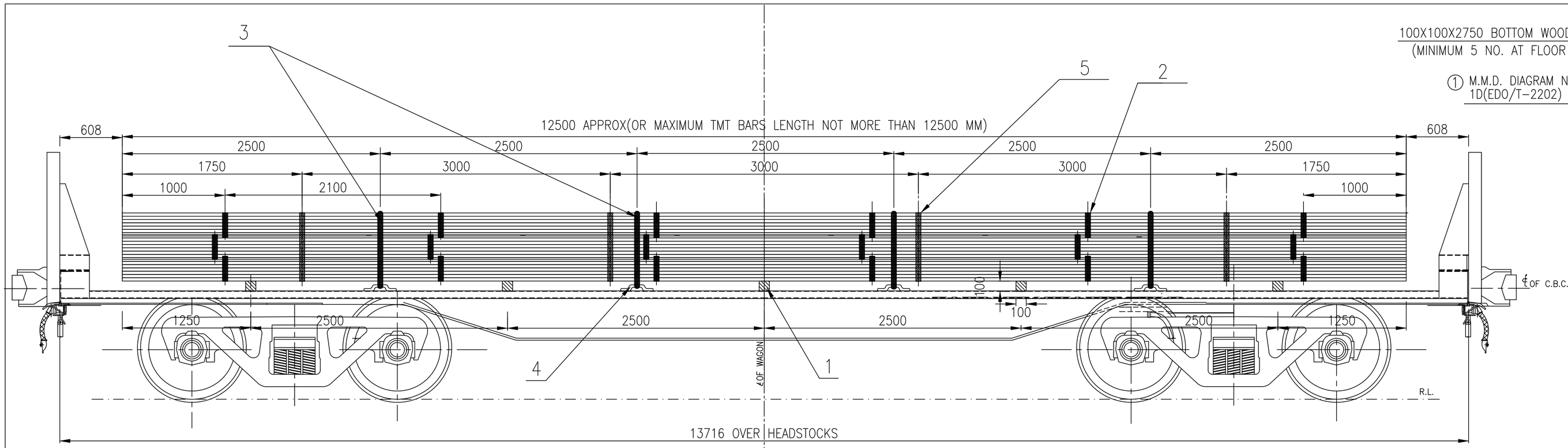
SUPERSEDED BY			
SUPERSEDES		DATE	
SCALE	PASSED	S.M.TRIPATHI	08/23
	CHECKED	A.P.SINGH	08/23
	DRAWN	S.K.GAUR	08/23
	TRACED		
	COMPARED		
	J.S.NO.	WD–23080	08/23

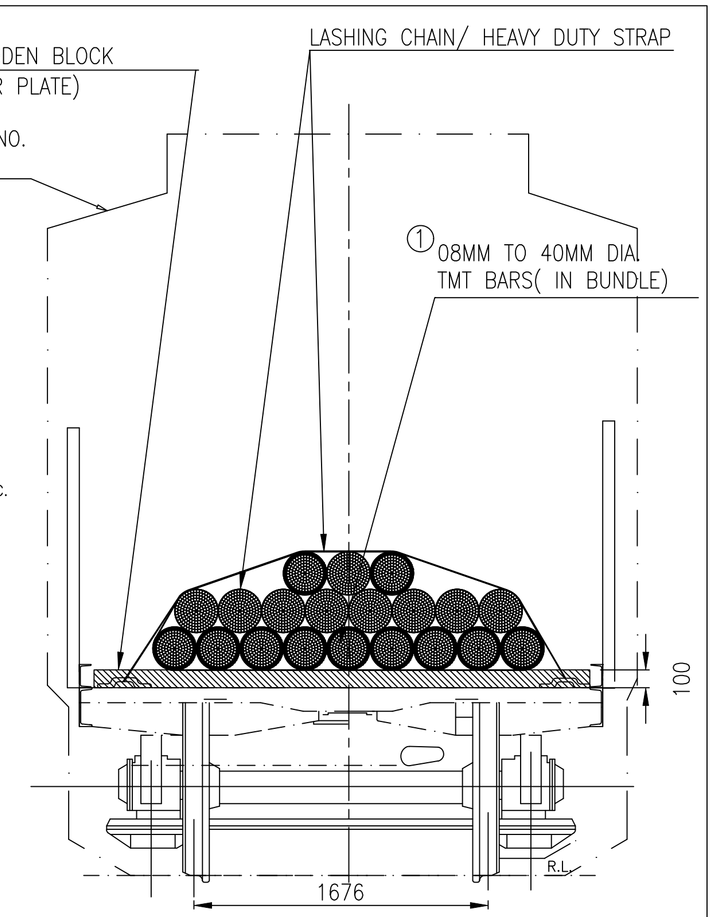
BOGIE FLAT WAGON

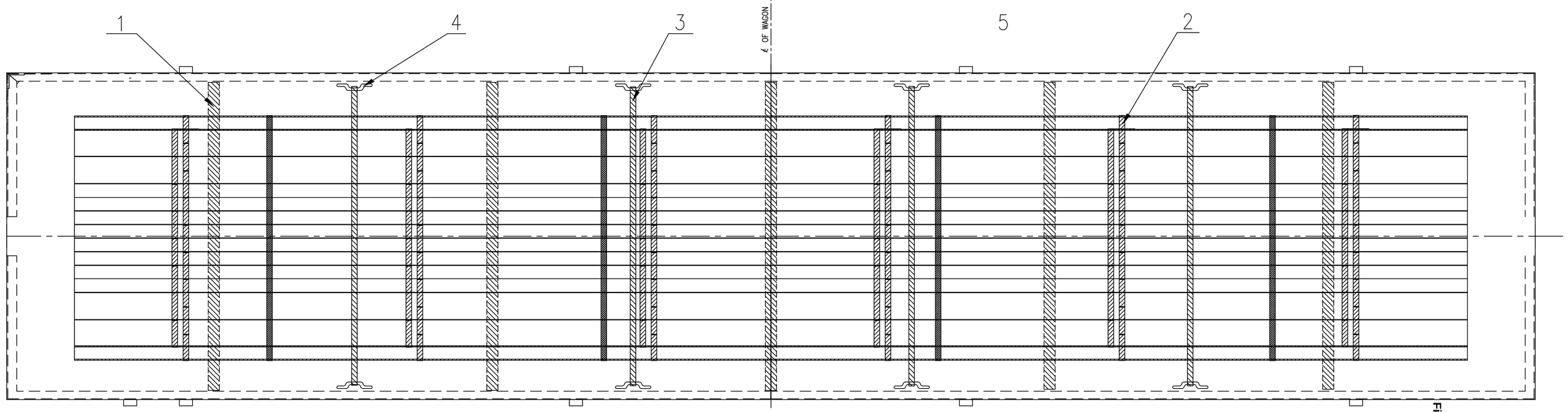
LOADING OF H.R./C.R. COILS ON BRN22.9/BRN22.9M1 WAGONS (UNITISED FORM)

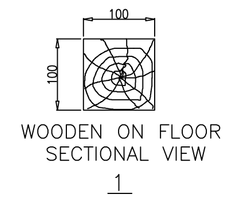
B.G.	R.D.S.O. [W]	GROUP	WD–23080–S–05

1062
I/69









WOODEN ON FLOOR
SECTIONAL VIEW
1

NOTE:-

① 1. TMT BARS/STEEL ROUNDS HAVING DIAMETER OF 8MM TO 100MM SHOULD BE STACKED IN 03 ROWS AS SHOWN IN LOADING DIAGRAM.
① 2. IN CASE OF VARIATION IN LENGTH OF TMT BARS/STEEL ROUNDS BUNDLE ,SMALL LENGTH TMT BARS/STEEL ROUNDS BUNDLE SHOULD BE KEPT AT UPPERSIDE & CENTERED TO WAGON CENTRE.
① 3. TMT BARS/STEEL ROUNDS LOADED IN BUNDLE FORM AND WEIGHT OF EACH BUNDLE NOT MORE THAN 10 TON.
4. EACH TMT BARS/STEEL ROUNDS BUNDLE WILL BE UNITIZED BY 06 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP AND TO BE TIGHTEN ADEQUATELY.
③① 5. 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	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3TON)

② 6. ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002-1
② 7. THE INITIAL TENSION IN THE STRAP SHALL BE IN THE RANGE OF 500kg TO 800kg.
8. TMT BARS/STEEL ROUNDS BUNDLES ARE LOADED ALONG THE LENGTH AND AT THE CENTRE OF WAGON AS SHOWN IN DRAWING.
9. BEFORE LOADING TMT BARS/STEEL ROUNDS IN THE WAGON, ENSURE THAT WOODEN BLOCKS ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING.
① 10. WHILE LOADING AND UNLOADING THE BUNDLES OF TMT BAR/STEEL ROUNDS 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/STEEL ROUNDS BUNDLES SHALL BE ALSO UNITIZED TOGETHER BY 04 NOs. OF LASHING CHAIN/ HEAVY DUTY STRAP AND TO BE TIGHTEN ADEQUATELY.
① 12. AFTER UNITIZING OF ALL TMT BARS/STEEL ROUND 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/STEEL ROUNDS SHOULD BE STRICTLY DONE AS PER LASHING INSTRUCTION.
13. THE TOTAL LOAD OF LOADED CONSIGNMENT SHOULD NOT EXCEED THE PAY LOAD OF THE WAGON.
① 14. 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/STEEL ROUNDS 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.
② 19. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UPTO THE BREAKING POINT OF STEEL STRAP.
③ 20. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND-HOLDING STRENGTH.WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

	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	

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
③	–	WD-24088	NOTE NO. 5 MODIFIED,NOTE NO.20 ADDED & TITLE BLOCK REVISED	10/24	–
②	–	WD-24036	DRAWING REVISED	05/24	–
①	–	WD-24027	NOTE,TITLE BLOCK AND MMD REVISED	03/24	–

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
DATE

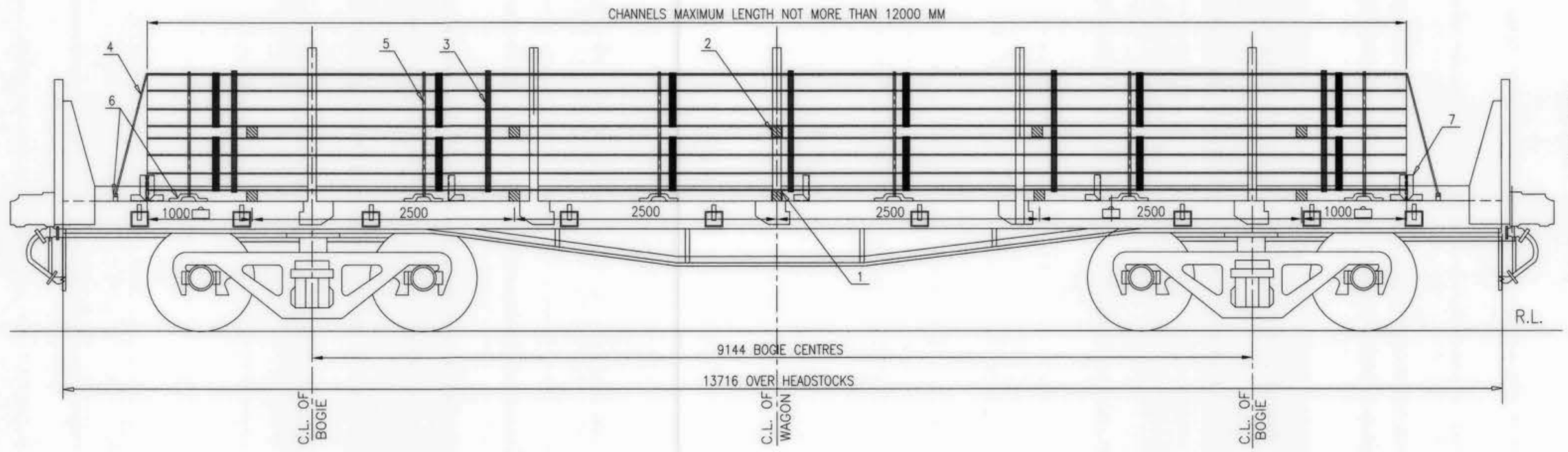
B.G. | R.D.S.O. [W]

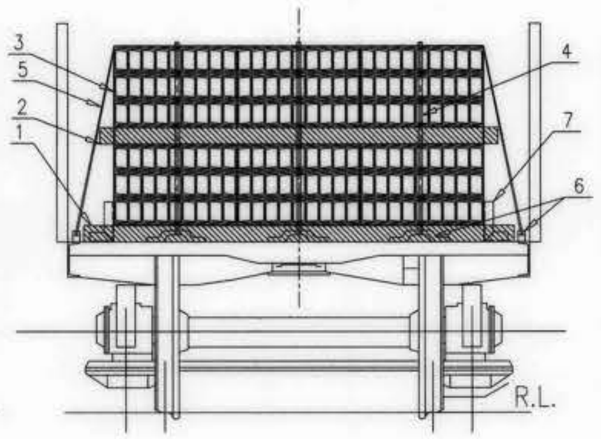
LOADING DIAGRAM FOR 08 MM TO 100 MM TMT BARS/STEEL ROUNDS IN BRN22.9, BRN & IT'S VARIANTS.①

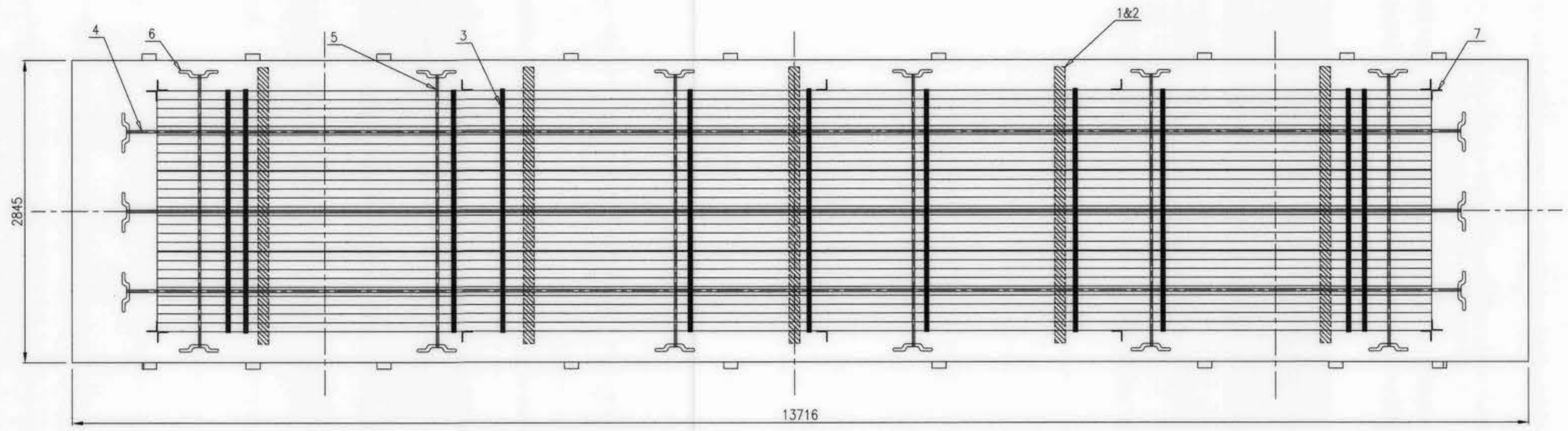
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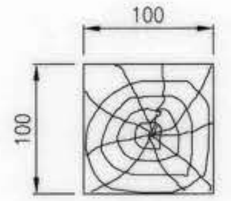
WD-24024-S-01

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









CROSS SECTION VIEW
1&2

LOADING AND SECURING ARRANGEMENT DIAGRAM FOR CHANNELS BUNDLE

NOTE:-

1. ISMC CHANNELS BUNDLE SHOULD BE STACKED IN 02 LAYERS AS SHOWN IN DRAWING.
2. LOADING OF ISMC CHANNELS BUNDLE 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 ISMC CHANNELS BUNDLE, SMALL LENGTH CHANNEL BUNDLE SHOULD BE KEPT AT UPPER SIDE LAYER AT CENTRE OF WAGON.
4. ISMC CHANNELS BUNDLE LOADED IN BUNDLE FORM & ANY BUNDLE WEIGHT NOT MORE THAN 10 TON. ISMC CHANNELS BUNDLES ARE LOADED ALONG THE LENGTH AND CENTRE OF WAGON AS SHOWN IN DRAWING.
5. **PROCEDURE OF LOADING CHANNELS BUNDLES ON WAGON ARE:-**
   - 5.1 BEFORE LOADING CHANNELS BUNDLES, 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.
   - 5.2 AFTER PLACING FIRST LAYER OF CHANNELS BUNDLES ON WOODEN RUNNER, INTERMEDIATE WOODEN RUNNERS TO BE PLACED AT CORRECT POSITION BEFORE LOADING ANOTHER LAYER OF CHANNELS BUNDLES AS SHOWN IN DRAWING.
   - 5.3 AFTER PLACING CHANNELS BUNDLES IN SECOND LAYER THEN BUNDLES TO BE UNITIZE WITH THE HELP OF 05 NO.'s STEEL STRAPS AS SHOWN IN DRAWING.
   - 5.4 AFTER UNITIZING THE BUNDLES TOGETHER WITH STEEL STRAPS, THEN USE 03 NO.'S OF STEEL STRAP FOR SECURING THE SLAB LONGITUDINALLY WITH ISOLATION HOOK AS SHOWN IN DRAWING.
   - 5.5 AFTER SECURING THE BUNDLES LONGITUDINALLY, THEN USE 06 NO.'s OF STEEL STRAPS FOR SECURING THE BUNDLES TRANSVERSELY WITH ISOLATION HOOK, TIGHTEN ADEQUATELY FOR SAFE OPERATION AS SHOWN IN DRAWING.
   - 5.6 AFTER TIGHTENING BY STRAP, BUNDLES SHALL BE SECURE BY PROVIDING 14 NO.'s OF ANGLE STOPPER AS SHOWN IN DRAWING.
   - 5.7 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER FIRST LAYER OF CHANNELS BUNDLES.
6. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

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)

7. 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.
8. 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 .
9. SIDE STANCHION (L.H. & R.H.) MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING AND IN DOWNWARD POSITION DURING LOADING/UNLOADING.
10. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD-CS-01-LOAD SECURING CHECK SHEET (LATEST).
11. THE LOADING/UNLOADING OF CHANNELS BUNDLES TO BE CARRIED OUT IN SUCH A WAY, THAT LOADING/UNLOADING DONE IN SAFE WAY AND IT WILL NOT DAMAGE WAGON.
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. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND-HOLDING STRENGTH.WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

ITEM	DESCRIPTION	NO.OFF	MTL&SPEC.	REMARKS
7	ANGLE STOPPER	14	WD-24036-S-01 PART-4	
6	ISOLATION HOOK	18	WD-24036-S-01 PART-3	
5	LASHING CHAIN/HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY TRANSVERSELY)	06	EN13247:2001	
4	LASHING CHAIN/HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY LONGITUDINALY)	03	EN13247:2001	
3	HIGH TENSILE STEEL STRAP (FOR BUNDLING & UNITIZATION)	05	EN13247:2001	
2	INTERMEDIATE WOODEN RUNNER	05	WOOD	
1	WOODEN RUNNER	05	WOOD	

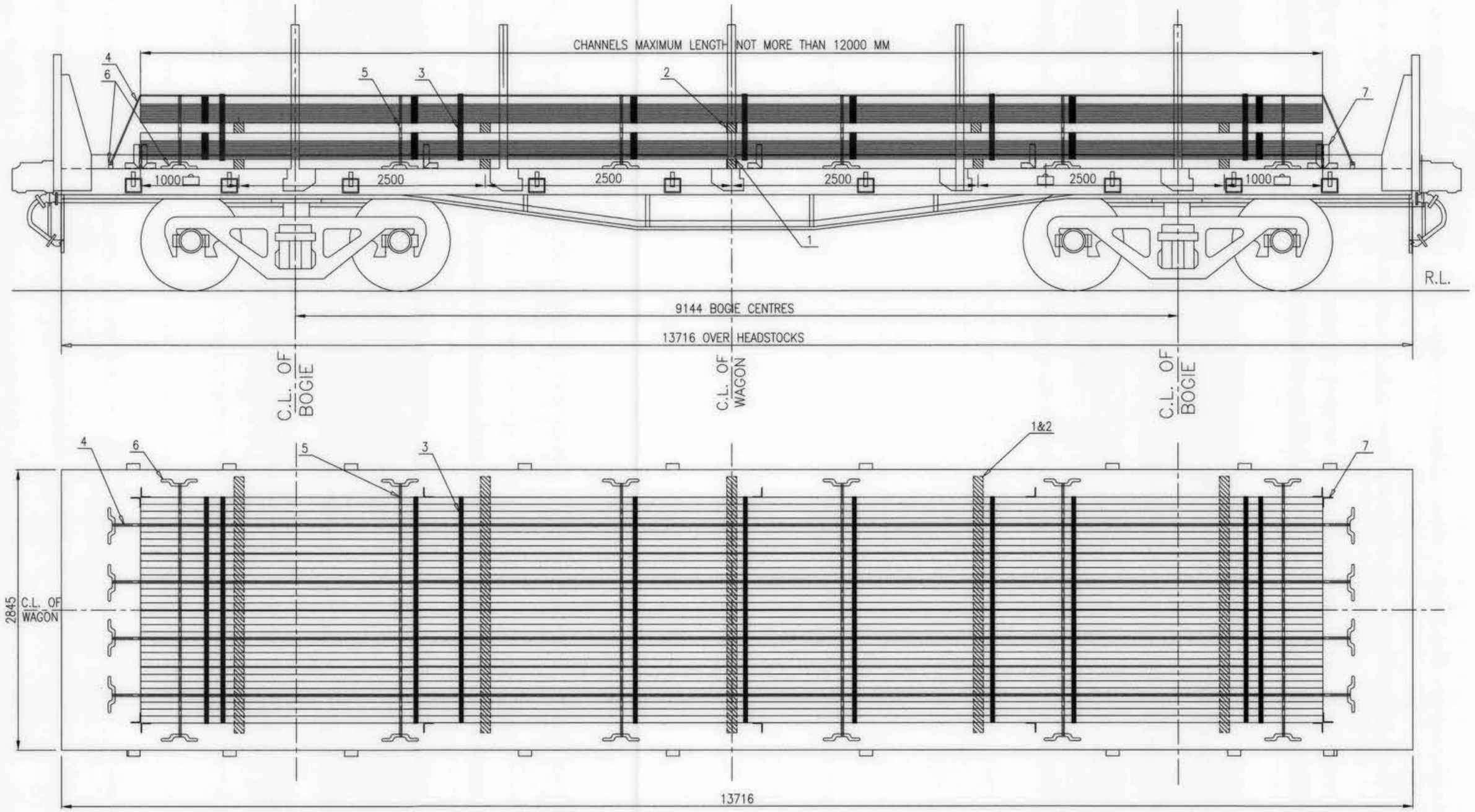
SUPERSEDED BY		
SUPERSEDES	DATE	
SCALE PASSED		10/24
CHECKED		10/24
DRAWN	SACHIN KUMAR	10/24
TRACED		
COMPARED		
J.S.NO.	WD-24088	09/24

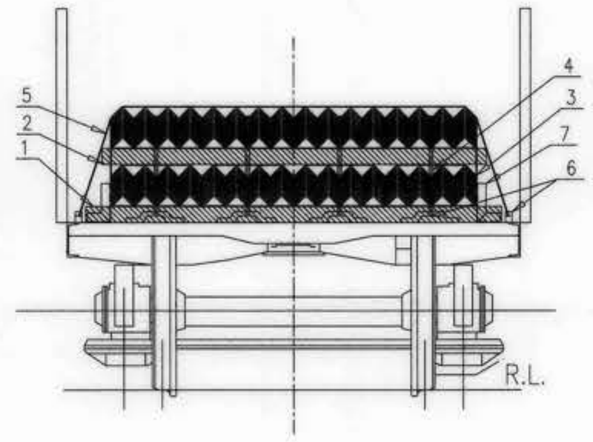
BOGIE FLAT WAGON

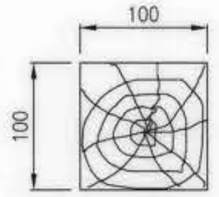
LOADING AND SECURING ARRANGEMENT DIAGRAM FOR CHANNELS BUNDLES ON BRN WAGON & IT'S VARIANT

B.G.	R.D.S.O. [W]	GROUP	WD-24088-S-09

File No:RDSO-MW/GEN/EOFC/9/2023-O/o PED(SW)RDSO







CROSS SECTION VIEW
1&2

LOADING AND SECURING ARRANGEMENT DIAGRAM FOR ANGLES BUNDLE

NOTE:-

1. ANGLES BUNDLES SHOULD BE STACKED IN 02 LAYERS AS SHOWN IN DRAWING.
2. LOADING OF ANGLES 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 ISMC ANGLES BUNDLES, SMALL LENGTH ANGLES BUNDLES SHOULD BE KEPT AT UPPER SIDE LAYER AT CENTRE OF WAGON.
4. ANGLES BUNDLES LOADED IN BUNDLE FORM & ANY BUNDLE WEIGHT NOT MORE THAN 10 TON. ANGLES BUNDLES ARE LOADED ALONG THE LENGTH AND CENTRE OF WAGON AS SHOWN IN DRAWING.
5. **PROCEDURE OF LOADING CHANNELS BUNDLES ON WAGON ARE:-**
   - 5.1 BEFORE LOADING ANGLES BUNDLES, 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.
   - 5.2 AFTER PLACING FIRST LAYER OF ANGLES BUNDLES ON WOODEN RUNNER, INTERMEDIATE WOODEN RUNNERS TO BE PLACED AT CORRECT POSITION BEFORE LOADING ANOTHER LAYER OF ANGLES BUNDLES AS SHOWN IN DRAWING.
   - 5.3 AFTER PLACING ANGLES BUNDLES IN SECOND LAYER THEN BUNDLES TO BE UNITIZE WITH THE HELP OF 05 NO.'s STEEL STRAPS AS SHOWN IN DRAWING.
   - 5.4 AFTER UNITIZING THE BUNDLES TOGETHER WITH STEEL STRAPS, THEN USE 04 NO.'s OF STEEL STRAP FOR SECURING THE SLAB LONGITUDINALLY WITH ISOLATION HOOK AS SHOWN IN DRAWING.
   - 5.5 AFTER SECURING THE BUNDLES LONGITUDINALLY, THEN USE 06 NO.'s OF STEEL STRAPS FOR SECURING THE BUNDLES TRANSVERSELY WITH ISOLATION HOOK, TIGHTEN ADEQUATELY FOR SAFE OPERATION AS SHOWN IN DRAWING.
   - 5.6 AFTER TIGHTENING BY STRAP, BUNDLES SHALL BE SECURE BY PROVIDING 14 NO.'s OF ANGLE STOPPER AS SHOWN IN DRAWING.
   - 5.7 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER FIRST LAYER OF CHANNELS BUNDLES.
6. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

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)

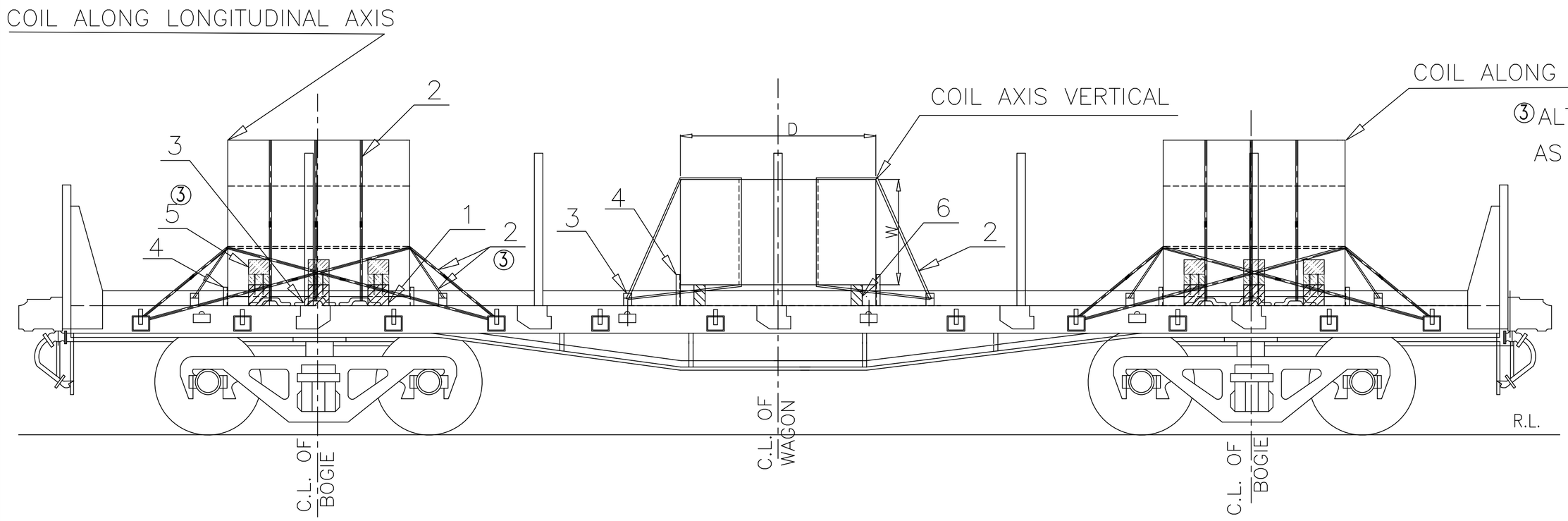
7. FOR EN13247:2001, ELONGATION OF STEEL STRAP SHALL BE GREATER THAN 7% MEASURED USING A GAUGE LENGTH OF 100MM, WHEN TESTED IN ACCORDANCE WITH EN10002-1.
8. INITIAL TENSION FOR STEEL STRAP SHALL BE IN RANGE OF 500kg TO 800 kg. ALL STEEL STRAPS SHOULD BE UNIFORMLY TIGHTENED AND MEASURED BY TENSION METER. CRIMPING OF THE STRAPS SHOULD BE SUCH THAT IT DOES NOT ALLOW SLIPPING OF THE STRAP UP TO THE BREAKING .
9. SIDE STANCHION (L.H. & R.H.) MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING AND IN DOWNWARD POSITION DURING LOADING/UNLOADING.
10. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD-CS-01-LOAD SECURING CHECK SHEET (LATEST).
11. THE LOADING/UNLOADING OF CHANNELS BUNDLES TO BE CARRIED OUT IN SUCH A WAY, THAT LOADING/UNLOADING DONE IN SAFE WAY AND IT WILL NOT DAMAGE WAGON.
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. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND-HOLDING STRENGTH.WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

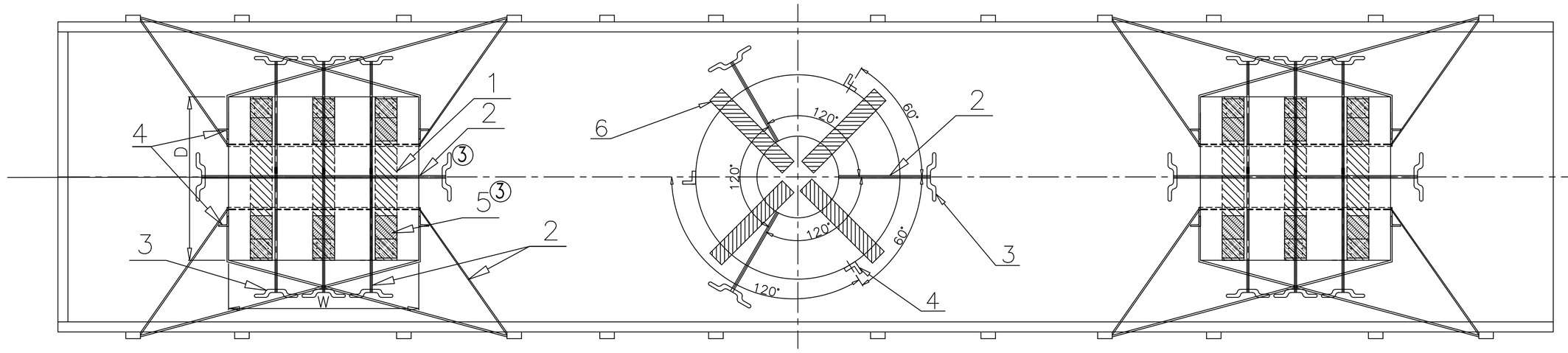
File No:RDSO-MW/GENL/EOFC/J8/2023-O/o PED/SWIRDSO

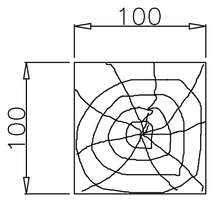
ITEM	DESCRIPTION	NO.OFF	MTL&SPEC.	REMARKS
7	ANGLE STOPPER	14	WD-24036-S-01 PART-4	
6	ISOLATION HOOK	20	WD-24036-S-01 PART-3	
5	LASHING CHAIN/HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY TRANSVERSELY)	06	EN13247:2001	
4	LASHING CHAIN/HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY LONGITUDINALY)	04	EN13247:2001	
3	HIGH TENSILE STEEL STRAP (FOR BUNDLING & UNITIZATION)	05	EN13247:2001	
2	INTERMEDIATE WOODEN RUNNER	05	WOOD	
1	WOODEN RUNNER	05	WOOD	

SUPERSEDED BY			BOGIE FLAT WAGON
SUPERSEDES		DATE	
SCALE	PASSED	10/24	LOADING AND SECURING ARRANGEMENT DIAGRAM FOR ANGLES BUNDLES ON BRN WAGON & IT'S VARIANT
	CHECKED	10/24	
	DRAWN SACHIN KUMAR	10/24	
	TRACED		
	COMPARED		
	J.S.NO. WD-24088	09/24	
B.G.	R.D.S.O. [W]	GROUP	WD-24088-S-10

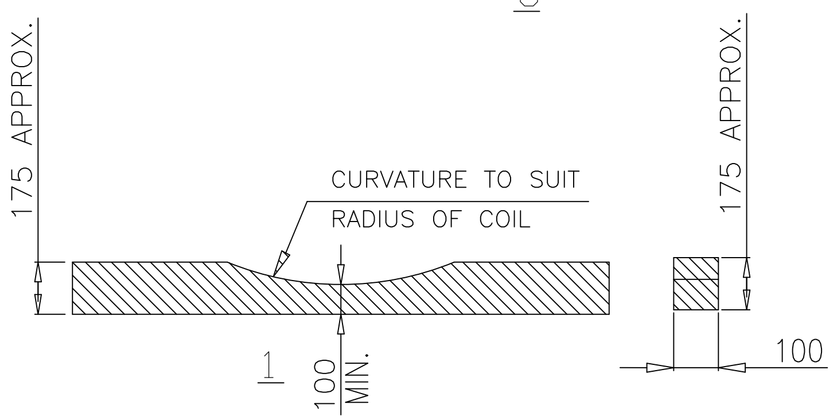


③ALTERNATIVELY COIL LOADING WITH METAL SADDLE DONE AS PER LOADING DIAGRAM NO. WD-23115-S-02

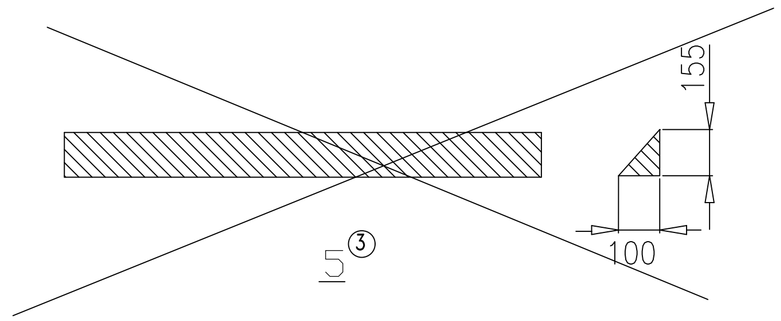




6



1



5 ③

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.
3. 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	1.27
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 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.
2. 3. 15. 03 NO's OF ANGLE STOPPER AND 03 NO's OF STEEL STRAPS SHOULD BE APPLIED FOR SECURING THE COIL WITH VERTICAL AXIS ONLY.
16. METAL SADDLE MAY BE USED FOR LOADING OF COIL ALONG LONGITUDINAL AXIS(EYE TOWARD ENGINE).
17. METAL SADDLE REFERENCE DRAWING NO. WD-24036-S-01 PART-1.
3. 18. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND-HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
③	-	WD-24088	NOTE NO. 8 , 15 MODIFIED & NOTE NO.18,STRAP AND WEDGE REF. ADDED IN DESCRIPTION TABLE	10/24	-
②	-	WD-24036	DRAWING REVISED	05/24	-
①	-	WD-24029	WEIGHT AT CENTRE MODIFIED	03/24	

ITEM	DESCRIPTION	NO.OFF	MTL&SPEC.	REMARKS
6	WOODEN RUNNER	04 NO FOR EACH COIL	WOOD	
③ 5	WOODEN WEDGE	06 NO PER COIL	WD-24036-S-01 PART-5	
4	ANGLE STOPPER	04 NO EACH COIL	WD-24036-S-01 PART-4	
3	ISOLATION HOOK	AS PER DRAWING	WD-24036-S-01 PART-3	
2	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	AS PER DRAWING	EN13247:2001	
1	WOODEN CRADLE	03 NO PER COIL	WOOD	

② ITEM

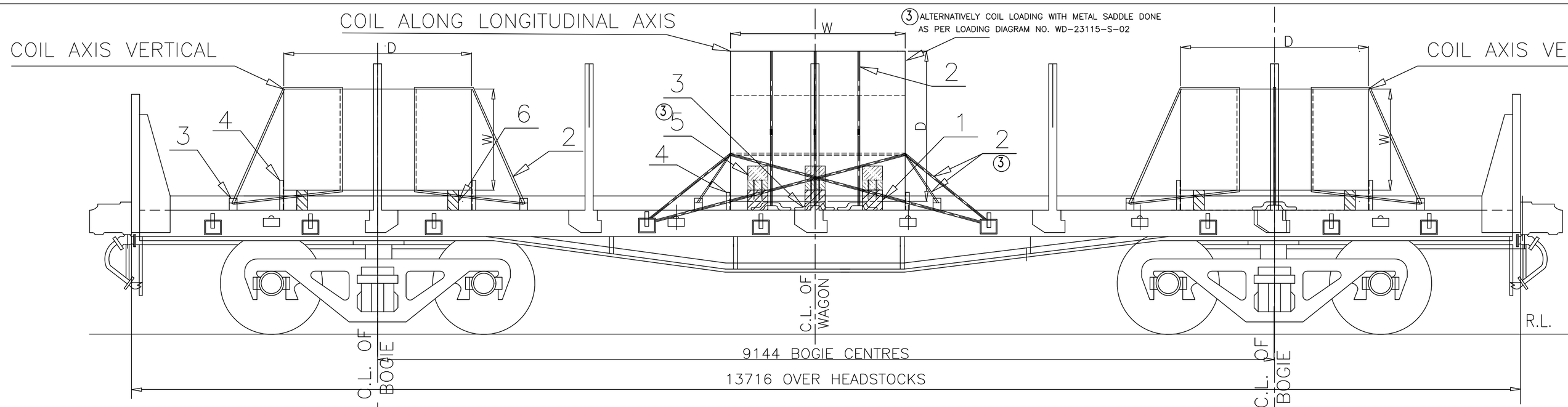
SUPERSEDED BY			
SUPERSEDES		DATE	
SCALE	PASSED	S.M.TRIPATHI	08/23
	CHECKED	A.P.SINGH	08/23
	DRAWN	S.K.GAUR	08/23
	TRACED		
	COMPARED		
	J.S.NO.	WD-23080	08/23

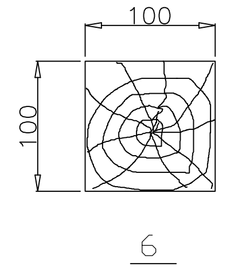
BOGIE FLAT WAGON

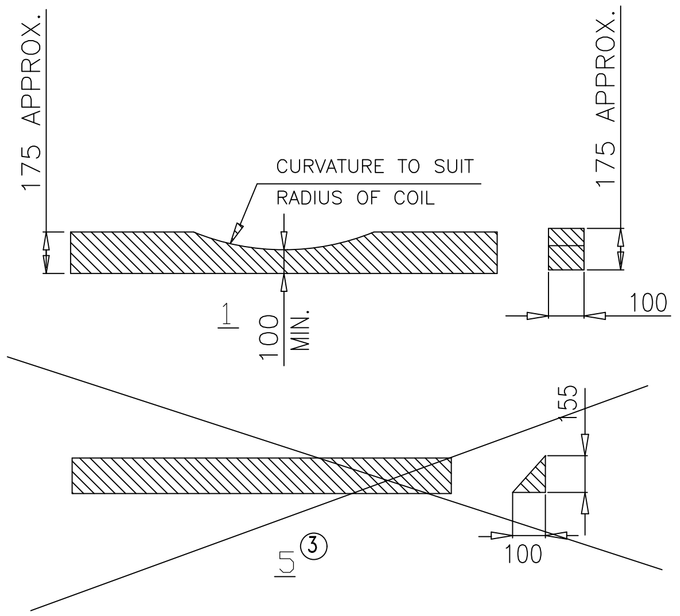
LOADING OF H.R./C.R. COILS ON BRN22.9/BRN22.9M1 WAGONS

B.G.	R.D.S.O. [W]	GROUP	WD-23080-S-01

File No.RDSO-MWDGENL(EOFC)/8/2023-O/o 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.
(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.
(3) 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	1.27
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 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.
(2)–(3) 15. 03 NO's OF ANGLE STOPPER AND 03 NO's OF STEEL STRAPS SHOULD BE APPLIED FOR SECURING THE COIL WITH VERTICAL AXIS ONLY.
16. METAL SADDLE MAY BE USED FOR LOADING OF COIL ALONG LONGITUDINAL AXIS(EYE TOWARD ENGINE).
17. METAL SADDLE REFERENCE DRAWING NO. WD–24036–S–01 PART–1.
(3) 18. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
(3)	–	WD–24088	NOTE NO. 8 , 15 MODIFIED & NOTE NO.18, STRAP AND WEDGE REF. ADDED IN DESCRIPTION TABLE	10/24	–
(2)	–	WD–24036	DRAWING REVISED	05/24	–
(1)	–	WD–24029	WEIGHT AT CENTRE MODIFIED	03/24	

ITEM	DESCRIPTION	NO.OFF	MTL&SPEC.	REMARKS
6	WOODEN RUNNER	04 NO FOR EACH COIL	WOOD	
(3) 5	WOODEN WEDGE	06 NO PER COIL	WD–24036–S–01 PART–5	
4	ANGLE STOPPER	04 NO EACH COIL	WD–24036–S–01 PART–4	
3	ISOLATION HOOK	AS PER DRAWING	WD–24036–S–01 PART–3	
2	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	AS PER DRAWING	EN13247:2001	
1	WOODEN CRADLE	03 NO PER COIL	WOOD	

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

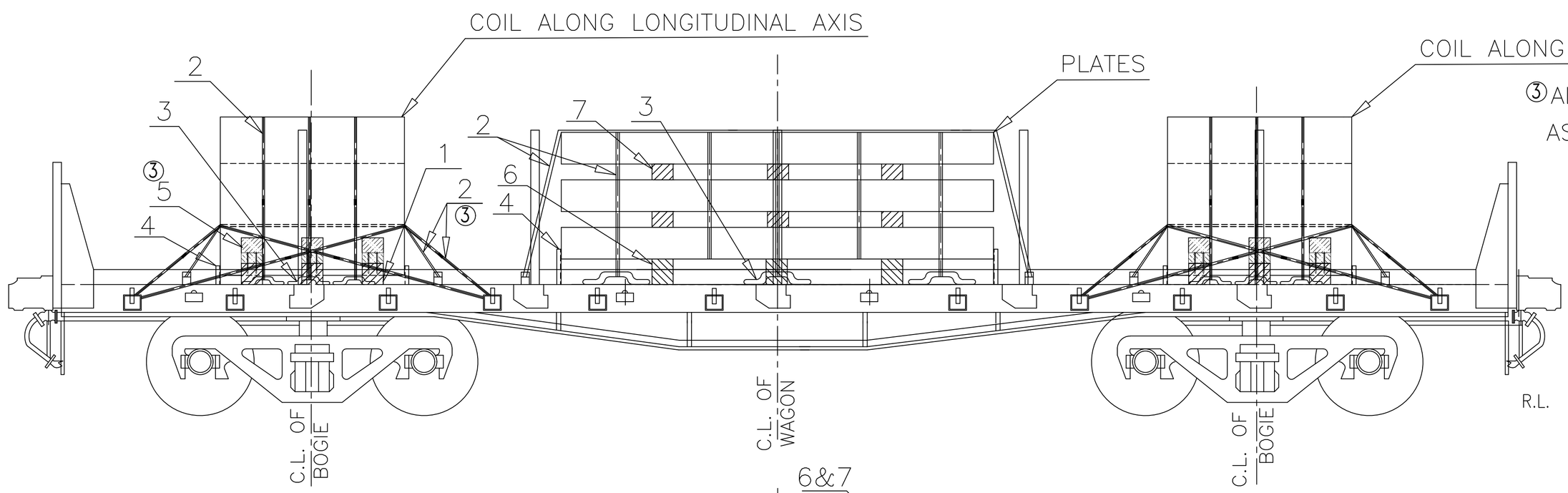
SUPERSEDED BY			
SUPERSEDES			DATE
SCALE	PASSED	S.M.TRIPATHI	08/23
	CHECKED	A.P.SINGH	08/23
	DRAWN	S.K.GAUR	08/23
	TRACED		
	COMPARED		
	J.S.NO.	WD–23080	08/23

BOGIE FLAT WAGON

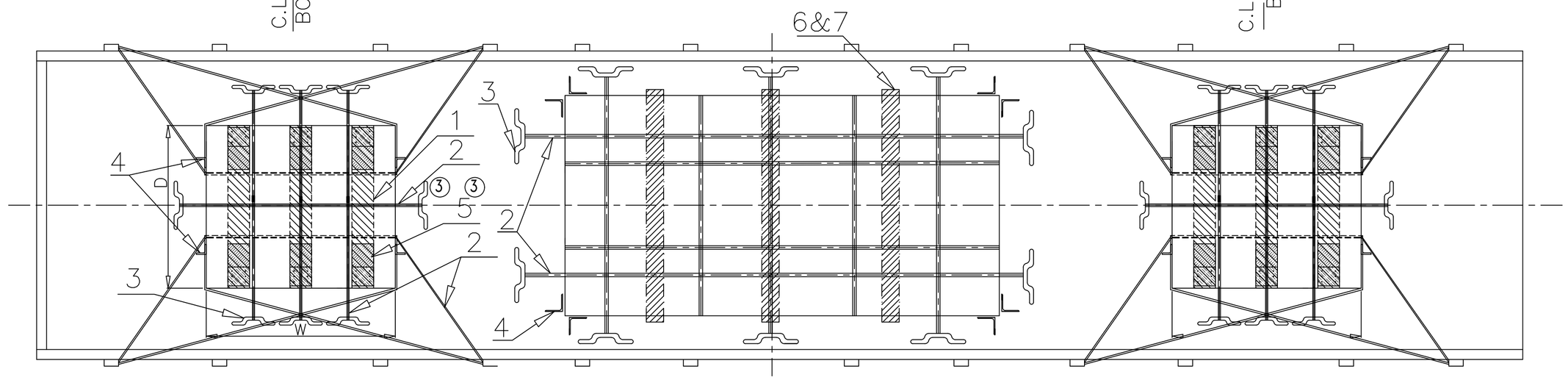
LOADING OF H.R./C.R. COILS ON BRN22.9/BRN22.9M1 WAGONS

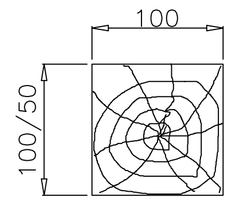
B.G.	R.D.S.O. [W]	GROUP	WD–23080–S–02

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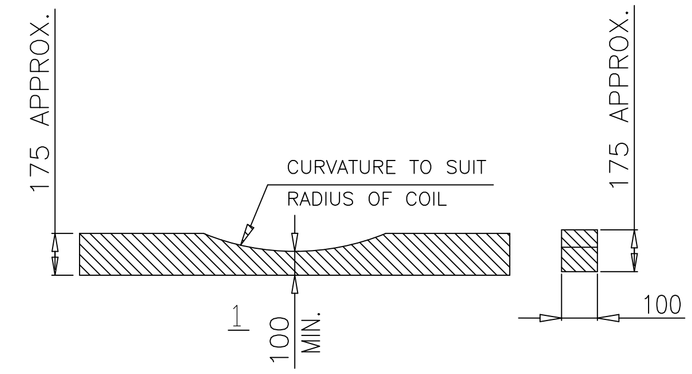


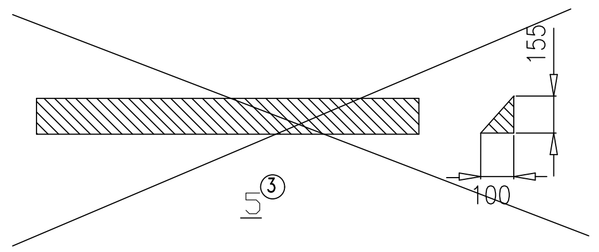
③ALTERNATIVELY COIL LOADING WITH METAL SADDLE DONE AS PER LOADING DIAGRAM NO. WD-23115-S-02





6&7
SECTION VIEW





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.

③9. 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	1.27
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 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.

②16. 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.

③19. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND-HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

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

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
③	-	WD-24088	NOTE NO. 9 MODIFIED, NOTE NO.19, STRAP & WEDGE REF. ADDED IN DESCRIPTION TABLE	10/24	-
②	-	WD-24036	DRAWING REVISED	05/24	-
①	-	WD-24029	WEIGHT AT CENTRE MODIFIED	03/24	-

SUPERSEDED BY
SUPERSEDES DATE

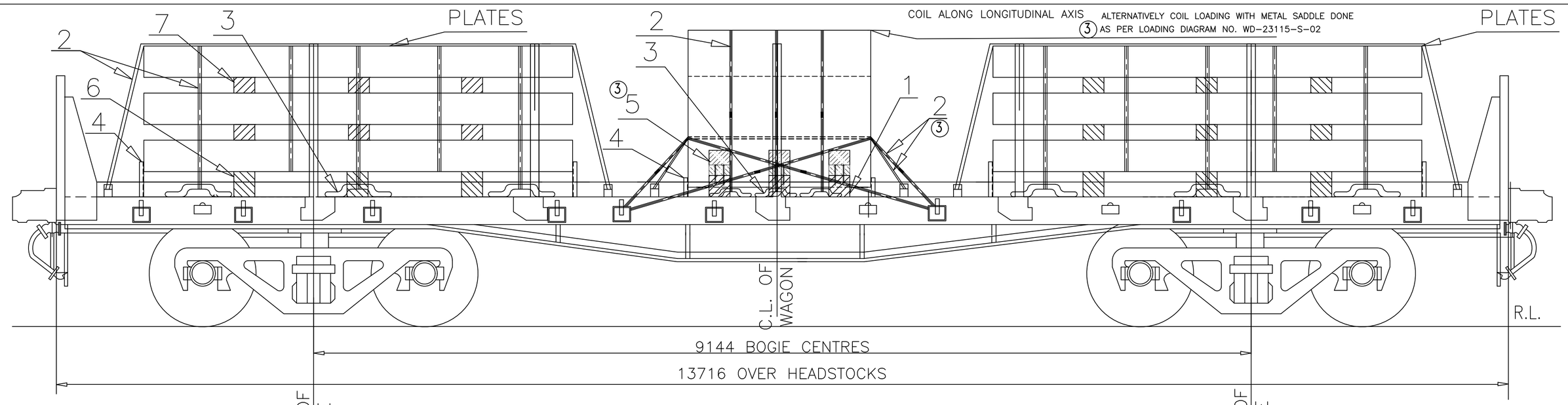
SCALE			
	PASSED	S.M.TRIPATHI	08/23
	CHECKED	A.P.SINGH	08/23
	DRAWN	S.K.GAUR	08/23
	TRACED		
	COMPARED		
	J.S.NO.	WD-23080	08/23

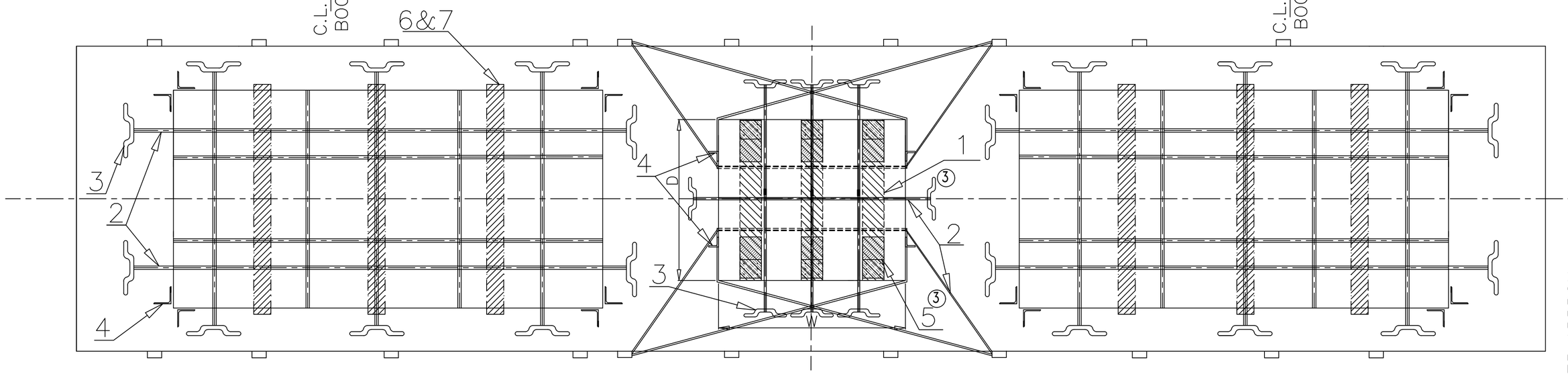
BOGIE FLAT WAGON

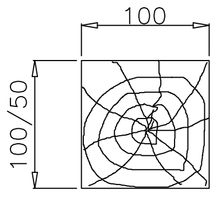
LOADING OF PLATES WITH COIL ON BRN22.9/BRN22.9M1 WAGONS

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

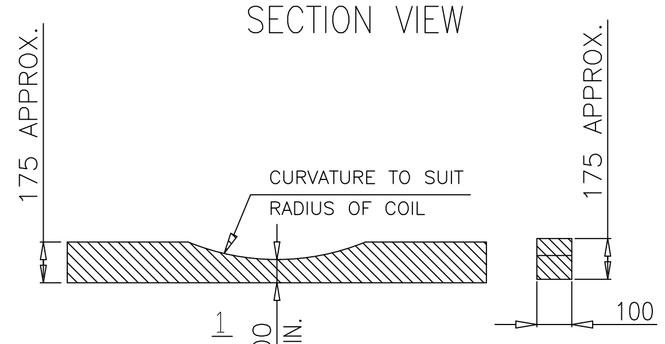
File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED/SW/RDSO

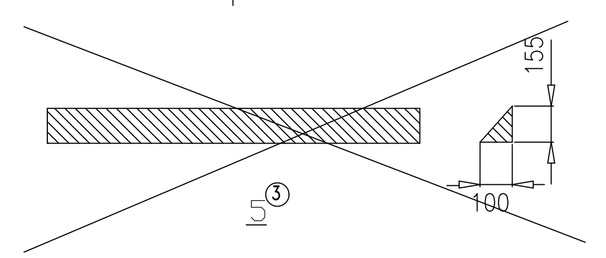






6&7
SECTION VIEW





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. THE WIDTH OF THE PLATES SHALL NOT BE MORE THAN 2500MM.
MAXIMUM WEIGHT OF COIL AT MIDDLE OF THE WAGON SHALL BE <=23T
② 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.
③ 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	1.27
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 TRAIN OPERATION.
14. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.
① 15. TOTAL WEIGHT OF LOADED CONSIGNMENT ON WAGON SHOULD NOT EXCEED THE CARRYING CAPACITY (PAY LOAD) OF THE WAGON.
② 16. 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.
③ 19. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
③	–	WD–24088	NOTE NO. 9 MODIFIED, NOTE NO.19,STRAP & WEDGE REF. ADDED IN DESCRIPTION TABLE	10/24	–
②	–	WD–24036	DRAWING REVISED	05/24	–
①	–	WD–24029	WEIGHT AT CENTRE MODIFIED	03/24	–

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

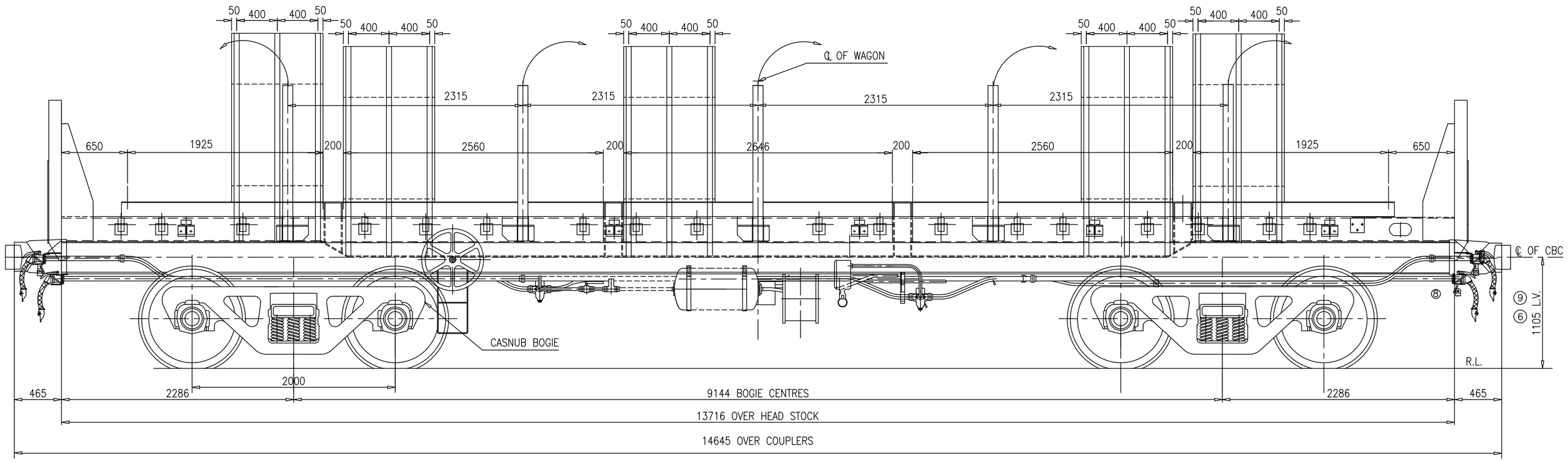
SUPERSEDED BY			
SUPERSEDES		DATE	
SCALE	PASSED	S.M.TRIPATHI	08/23
	CHECKED	A.P.SINGH	08/23
	DRAWN	S.K.GAUR	08/23
	TRACED		
	COMPARED		
	J.S.NO.	WD–23080	08/23

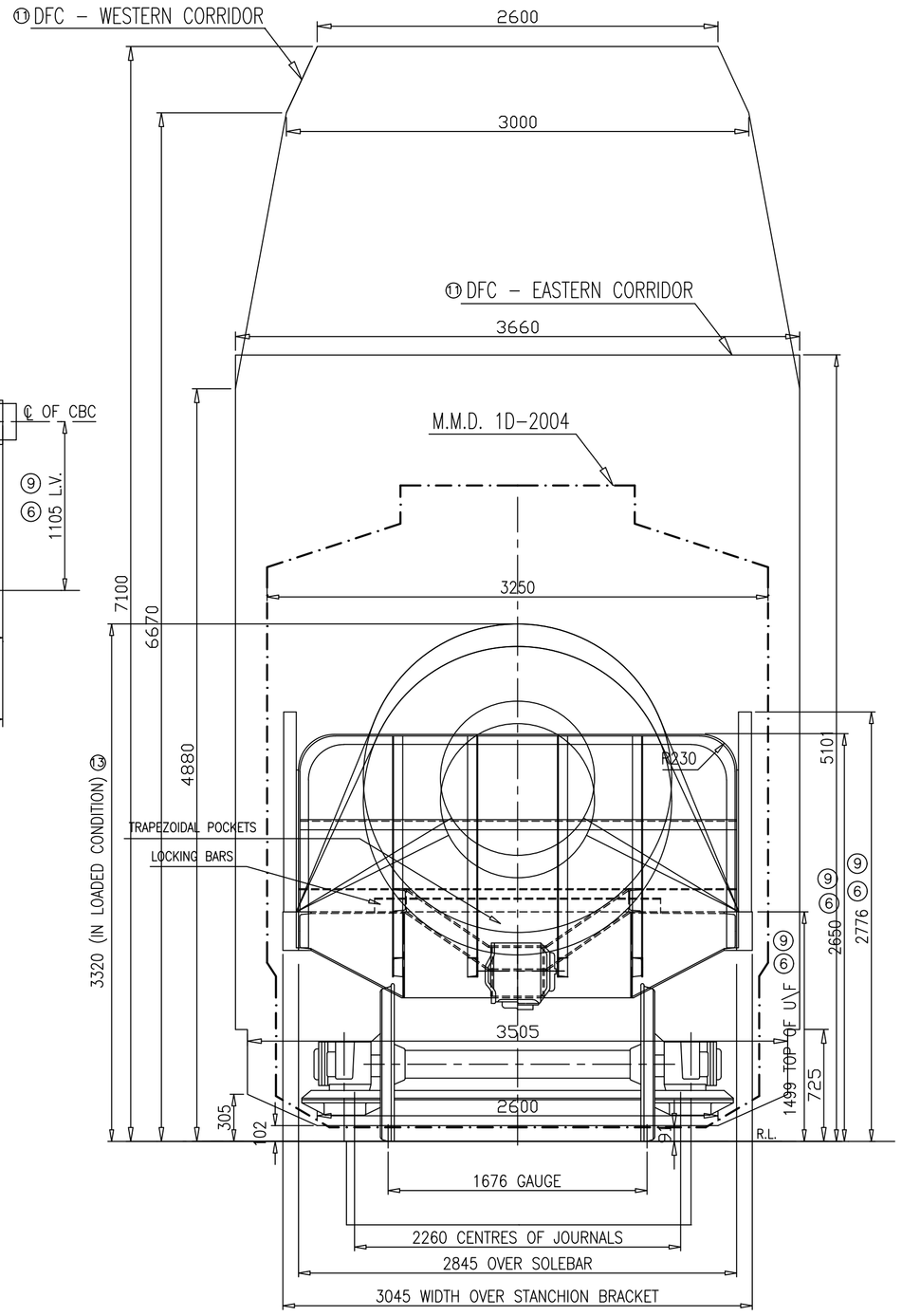
BOGIE FLAT WAGON

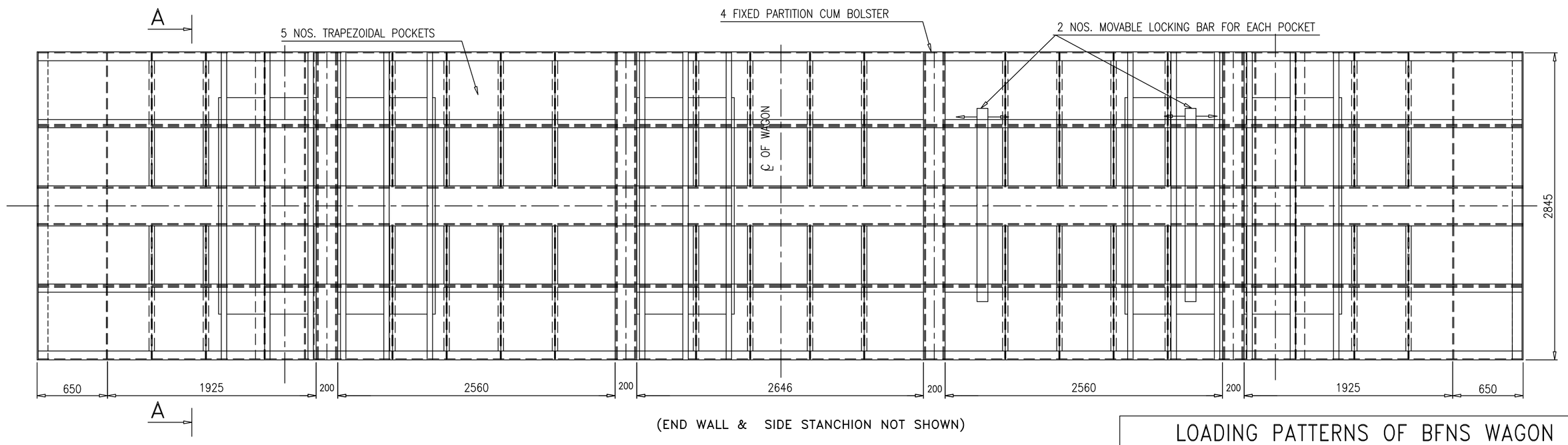
LOADING OF PLATES WITH COIL ON BRN22.9/BRN22.9M1 WAGONS

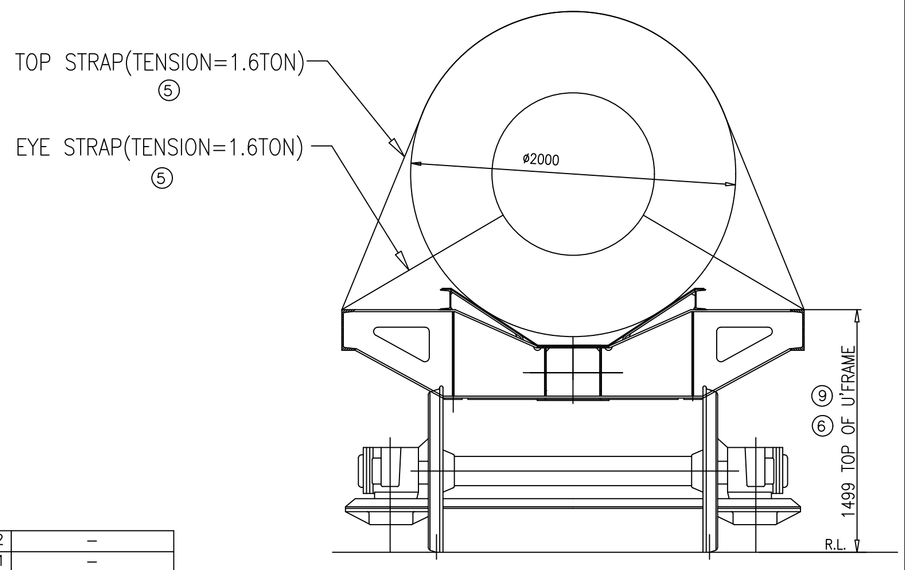
B.G.	R.D.S.O. [W]	GROUP	WD–23080–S–04

File No.RDSO-MW0GENL(EOFC)/8/2023-O/o PED(SW/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	⑨⑩⑦ BFNS22.9 22.9 TONNES	⑭ FLATCOIL3 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
⑮ 3.	DOUBLE POCKET		32		32		64.89
⑯ 4.	THREE POCKET	24		22		24	64.89
5.	FOUR POCKET	22	20		20	22	64.89
6.	FIVE POCKET	19	19	11	19	19	64.89

NOTE:– 1. THE LOADING SHOULD BE SUCH THAT HIGHER LOADS ARE PLACED IN THE END POCKET AS FAR AS POSSIBLE.
⑮ 2. 32 TON COIL SHALL BE LOADED IN 1ST AND 5TH POCKET ONLY. IF THE WIDTH OF THE COIL IS NOT ACCOMMODATED IN THESE POCKETS. THEN ONLY IT SHALL BE LOADED IN 2ND AND 4TH POCKET.

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

⑭

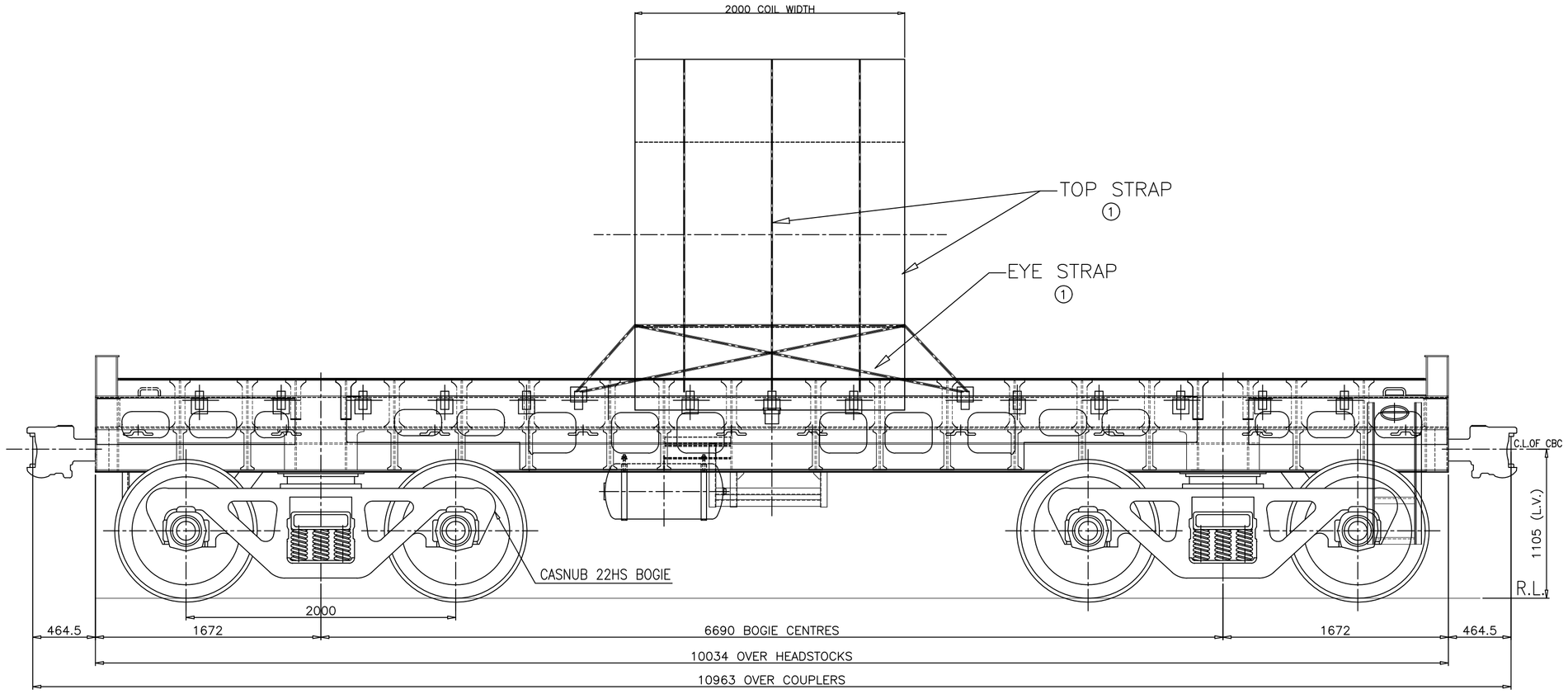
S.NO.	PER BOGIE SPRING GROUP COMPOSITION, FRICTION WEDGE AND SIDE BEARER DETAILS						
	WAGON	BOGIE	OUTER	INNER	SNUBBER	FRICTION WEDGE	SIDE BEARER
1.	BFNS	CASNUB 22 HS	14	12	4	METALLIC	PU
2.	BFNS22.9	CASNUB 22 HS	14	14	4	METALLIC	PU
2.	FLATCOIL3	CASNUB 22 RFT	14	14	4 (OUTER) 4 (INNER)	DRG. NO. WD–22055–S/5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

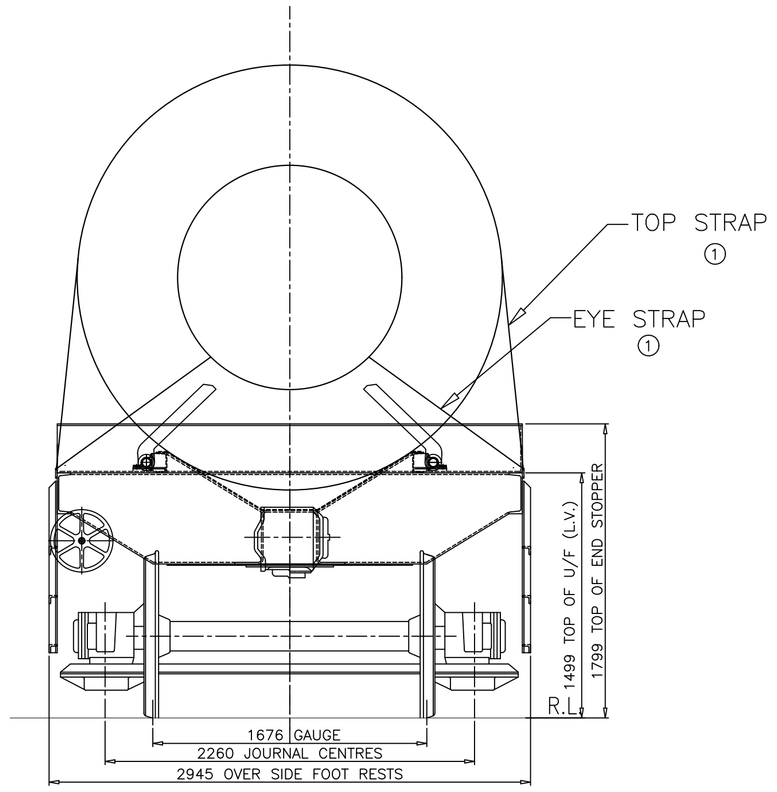
⑦ NOTE: 1. THE LOADING SHOULD BE SUCH THAT IN NO CASE THE LOAD ON ANY BOGIES EXCEED THE 22.9T AXLE LOAD.
⑱ 2. BFNS WAGON ARE FITTED WITH TWIN PIPE GRADUATED RELEASE AIR BRAKE SYSTEM.
⑬ 3. ALL SIDE STANCHION MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING.
⑯ 4. MAXIMUM DIFFERENCE IN COILS WEIGHT LOADED ON BOTH/ BOLSTER CENTRE OF WAGON SHOULD NOT BE MORE THAN 2 TON.

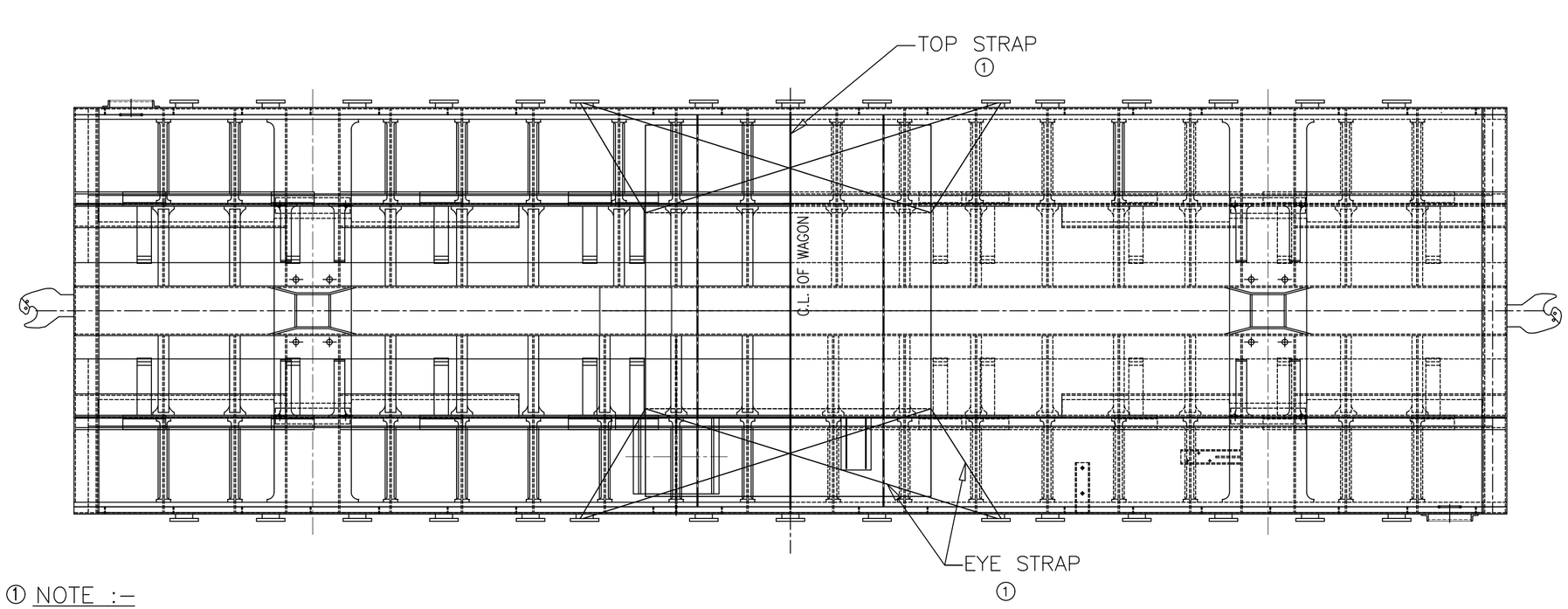
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
⑯	–	WD–24088	S.NO. 4 IN LOADING PATTERN MODIFIED BY ALLOWING MAX. WT. 22T INSTEAD OF 20 T AT CENTRE AND NOTE 4 ADDED	11/24	–
⑮	–	WD–24070	ONE MORE DOUBLE POCKET LOADING PATTERN FOR 2ND & 4TH POCKET ADDED WITH NOTE NO.2	7/24	–
⑭	–	WD–23023	FLATCOIL3 IS ADDED 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	–
⑧	–	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	–

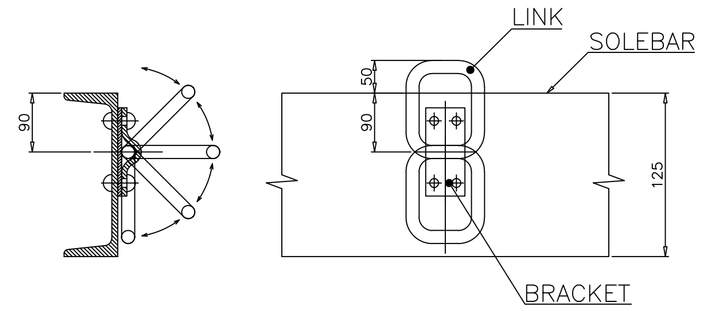
SUPERSEDED BY			BOGIE FLAT STEEL WAGON TYPE 'BFNS','BFNS22.9' ⑫ & FLATCOIL3 ⑭
SUPERSEDES		DATE	
SCALE	PASSED	D.D.SRIVASTVA 6/99	DIAGRAM
1:20	CHECKED	A.K.SAXENA 6/99	
	DRAWN	D.R.RIZVI 5/99	
	TRACED		
	COMPARED		
	J.S.NO.	WD–98057 11/98	
B.G.	R.D.S.O. [W]	GROUP	WD–98057–S–02

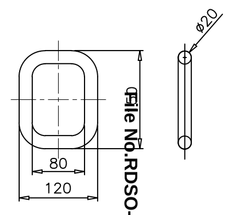
10/09



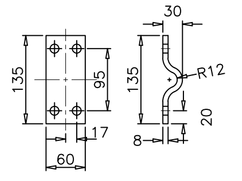




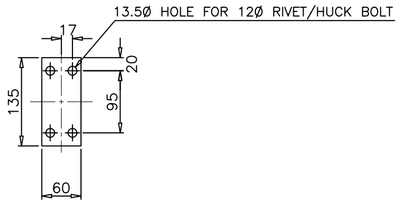




1. LINK



2. BRACKET



3. BASE PLATE
(6mm THICK)

① NOTE :–

②1. ALL COILS ARE TO BE STRAPPED AS SHOWN. THE STRAPPED SHALL BE AS PER EN 13247 : 2001

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.
②11. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

① SPECIFICATION FOR STEEL STRAP

② EN 13247 : 2001

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

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

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
②	–	WD–24088	NOTE NO. 1 REVISED & NOTE NO.11 ADDED	09/24	–
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)

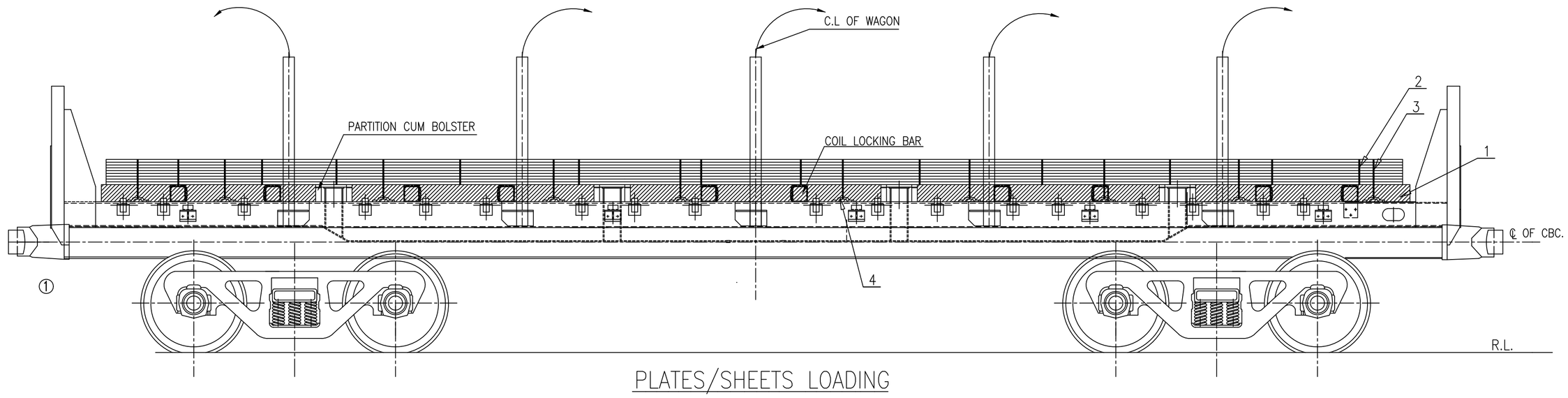
SUPERSEDED BY		
SUPERSEDES		DATE
SCALE	PASSED	G.R.SHARMA 7/18
1:20	CHECKED	R.TAMRKAR 7/18
	DRAWN	A.P.SINGH 7/18
	TRACED	
	COMPARED	
	J.S.NO.	WD–18052

BOGIE FLAT STEEL WAGON TYPE 'BFNSM22.9'

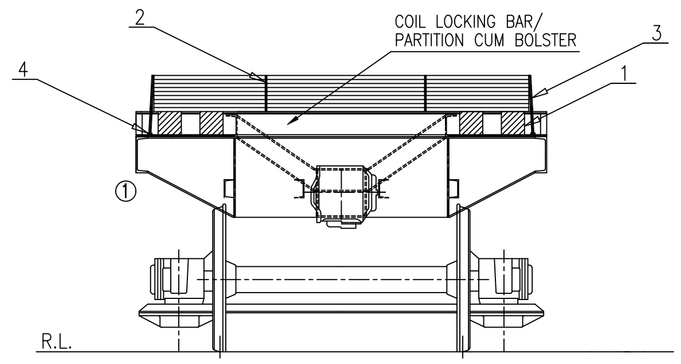
LASHING ARRANGEMENT

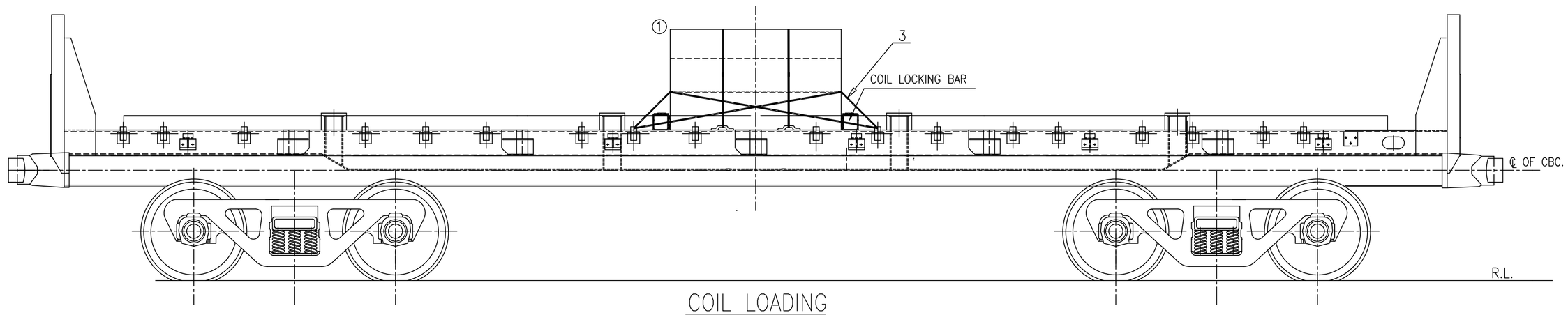
B.G. | R.D.S.O. [W] | GROUP | WD–18052–S–01

1071
I69

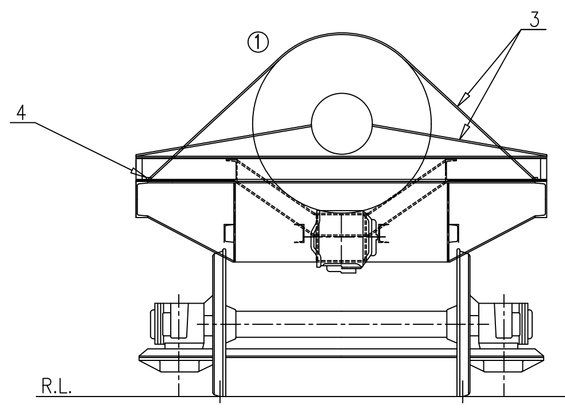


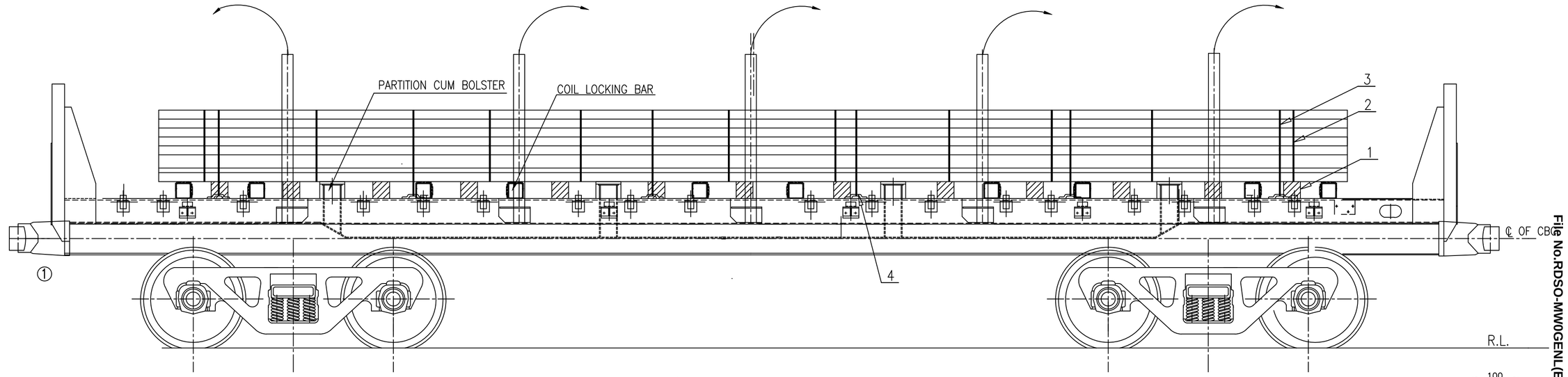
PLATES/SHEETS LOADING



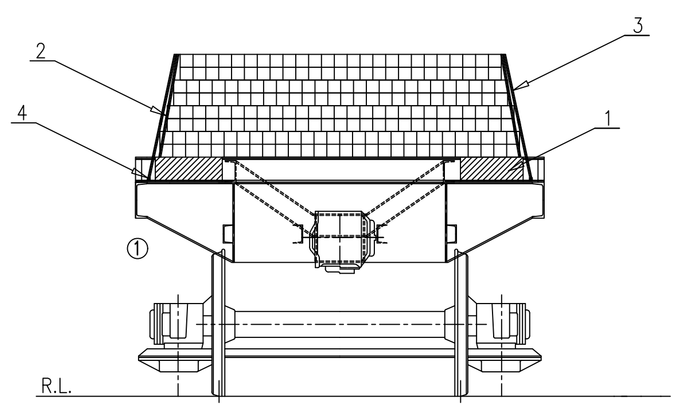


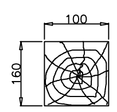
COIL LOADING





BILLETS/BLOOMS LOADING





① WOODEN LONGITUDINAL RUNNER
SECTIONAL VIEW

NOTE :–

②1. ALL COILS,PLATES/SHEETS & BILLETS/BLOOMS ARE TO BE STRAPPED AS SHOWN. THE STRAPPED SHALL BE AS PER EN 13247:2001

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.

①
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. 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.

②
12. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

① SPECIFICATION FOR STEEL STRAP

② EN 13247 : 2001

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

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

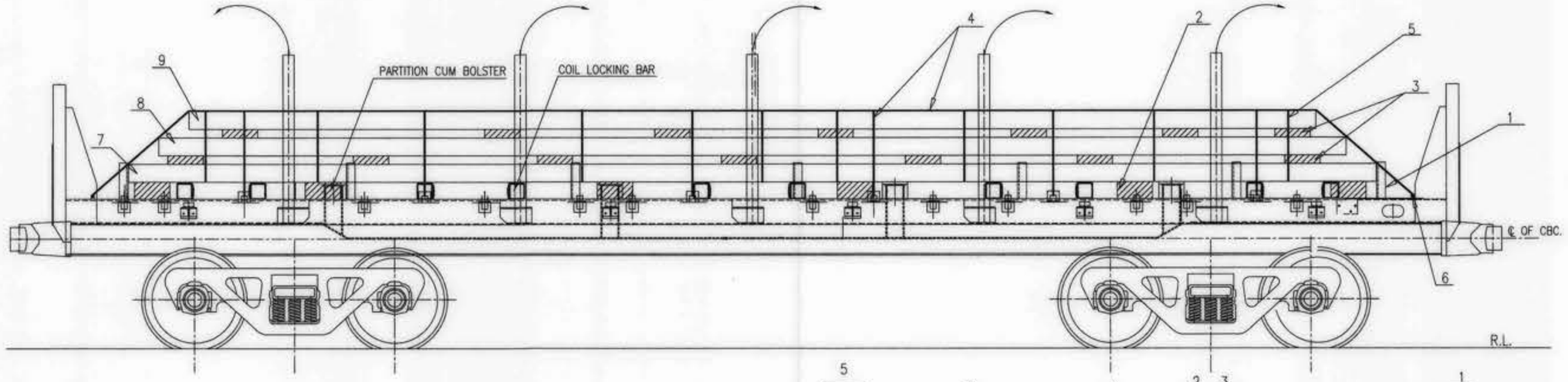
ONLY FOR PROTOTYPE APPLICATION UNDER GUIDANCE OF R.D.S.O.(WAGON)

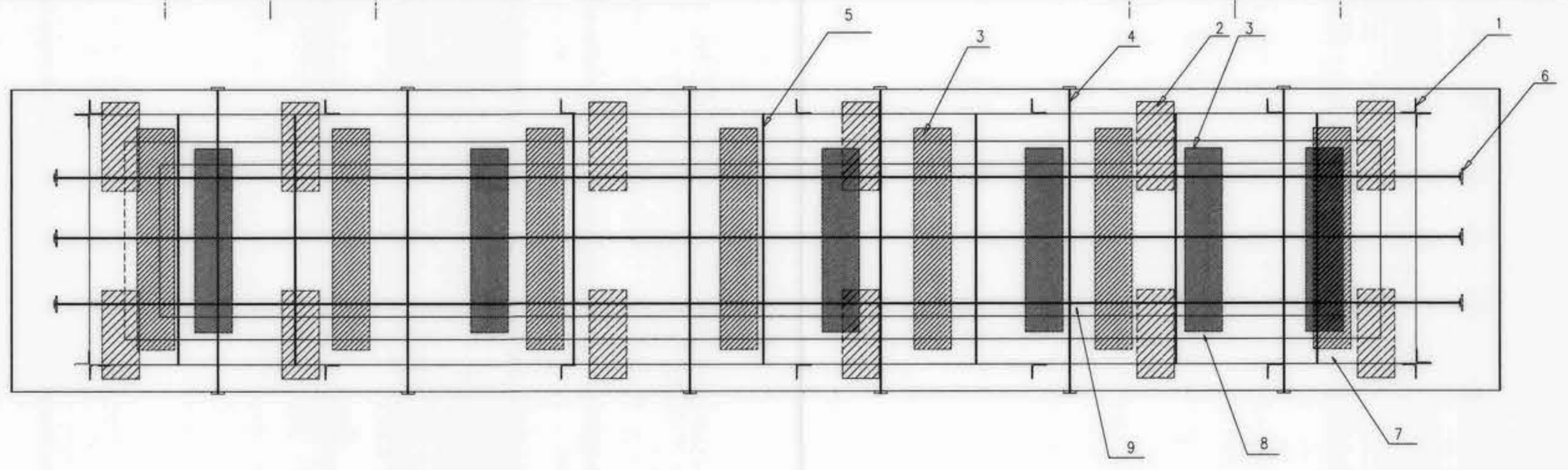
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
②	–	WD–24088	NOTE NO. 1 REVISED & NOTE NO.12 ADDED	09/24	–
①	–	WD–24036	DRAWING REVISE	05/24	–

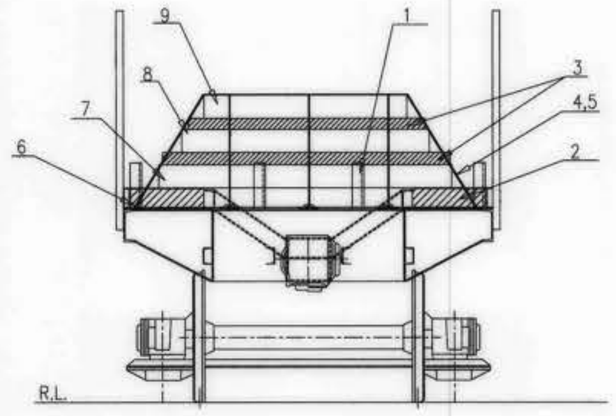
SUPERSEDED BY			BOGIE FLAT STEEL WAGON TYPE 'BFNS22.9'
SUPERSEDES		DATE	
SCALE	PASSED	A.K.ROY	9/17
1:20	CHECKED	R.TAMRKAR	9/17
	DRAWN	A.P.SINGH	9/17
	TRACED		
	COMPARED		
	J.S.NO.	WD–17047	

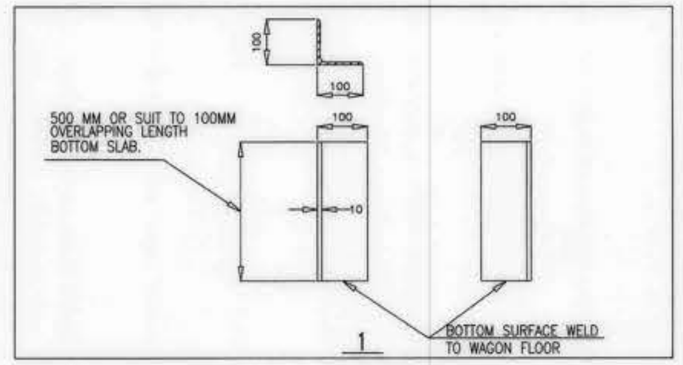
B.G. | R.D.S.O. [W] | GROUP | LOADING ARRANGEMENT | WD–17047–S–01

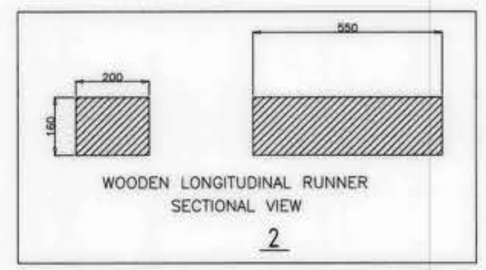
File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SWIRDSO

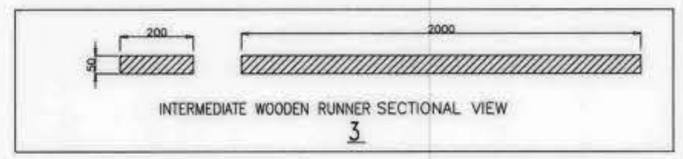












CONFIGURATION FOR LOADING 03 NO.'S OF SLAB

S.No.	SLAB	LENGTH RANGE OF SLAB (mm)	WIDTH RANGE OF SLAB (mm)	THICKNESS RANGE OF SLAB (mm)	LOAD RANGE OF SLAB (tonnes)	REMARK
1.	UPPER SLAB (SMALLER & NARROWER)	8500–7400	1250–675	235–210	BELOW OR EQUAL TO 17 T	UNITIZED SLAB SHOULD NOT EXCEED THE PAY LOAD OF THE WAGON.
2.	MIDDLE SLAB	10000–8500	1700–1300	235–210	28T to 17T	
3.	BOTTOM SLAB (LONGER & WIDER)	12500–10000	1850–1700	235–210	ABOVE 28T	

TABLE A

CONFIGURATION FOR LOADING 02 NO.'S OF SLAB

S.No.	SLAB	LENGTH RANGE OF SLAB (mm)	WIDTH RANGE OF SLAB (mm)	THICKNESS RANGE OF SLAB (mm)	LOAD RANGE OF SLAB (tonnes)	REMARK
1.	UPPER SLAB (SMALLER & NARROWER)	10000–7400	1700–675	235–210	BELOW OR EQUAL TO 28 T	UNITIZED SLAB SHOULD NOT EXCEED THE PAY LOAD OF THE WAGON.
2.	BOTTOM SLAB (LONGER & WIDER)	12500–10000	1850–1700	235–210	ABOVE 28T	

TABLE B

NOTE:–

1. LOADING OF SLAB 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.
2. SLAB SHOULD BE STACKED IN LAYERS AND UNITIZE AS SHOWN IN LOADING DIAGRAM.
3. **LOADING PARAMETER OF SLAB SHOULD BE SUCH THAT:–**
   - 3.1 SLAB LOADING COMPOSITION DEPENDING UPON DIMENSION & WEIGHT, CAN BE DESCRIBED BY TABLE A & B.
   - 3.1(a) IF LOADING IS DONE AS PER TABLE–A, 03 NO.'S OF SLAB IS LOADED AND MAXIMUM WEIGHT SHOULD NOT EXCEED THE PAY LOAD OF THE WAGON AS SHOWN IN TABLE A.
   - 3.1(b) IF LOADING IS DONE AS PER TABLE–B, 02 NO.'S OF SLAB IS LOADED AND MAXIMUM WEIGHT SHOULD NOT EXCEED THE PAY LOAD OF THE WAGON AS SHOWN IN TABLE B.
4. LENGTH OF WOODEN RUNNERS MUST BE MORE THAN WIDTH OF SLAB.
5. **PROCEDURE OF LOADING STEEL SLAB ON WAGON ARE:–**
   - 5.1 BEFORE LOADING BOTTOM SLAB, 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.
   - 5.2 AFTER PLACING THE BOTTOM STEEL SLAB ON WOODEN RUNNER, INTERMEDIATE WOODEN RUNNERS TO BE PLACED AT CORRECT POSITION BEFORE LOADING ANOTHER SLAB (MIDDLE/ UPPER SLAB) AS SHOWN IN DRAWING.
   - 5.3 AFTER PLACING OF 02 NO.'S/ 03 NO.'S SLAB (AS PER TABLE A/ TABLE B), SLAB TO BE UNITIZE WITH THE HELP OF STEEL STRAPS.
   - 5.4 AFTER UNITIZING THE SLAB TOGETHER WITH STEEL STRAPS, THEN USE 03 NO.'S OF STEEL STRAP FOR SECURING THE SLAB LONGITUDINALLY WITH ISOLATION HOOK AS SHOWN IN DRAWING.
   - 5.5 AFTER SECURING THE SLAB LONGITUDINALLY, THEN USE STEEL STRAPS FOR SECURING THE SLAB TRANSVERSELY WITH CLIT, TIGHTEN ADEQUATELY FOR SAFE OPERATION AS SHOWN IN DRAWING.
   - 5.6 AFTER TIGHTENING BY STRAP, SLAB'S SHALL BE SECURE BY PROVIDING EIGHT NO. OF ANGLE STOPPER AS SHOWN IN DRAWING.
   - 5.7 OVERLAPPING LENGTH/ HEIGHT OF ANGLE STOPPER SHALL NOT BE LESS THAN 100 MM OVER BOTTOM STEEL SLAB.
6. SIDE STANCHION (L.H. & R.H.) MUST BE ENSURED IN UPRIGHT POSITION AFTER LOADING AND IN DOWNWARD POSITION DURING UNLOADING AND UPRIGHT OF SIDE STANCHION SHOULD MAKE INTACT AFTER LOADING.
7. THE TENSIONAL STEEL STRAP USED FOR LASHING AND SECURING SHALL MEET THE SPECIFICATION EN13247:2001. PHYSICAL PROPERTIES ARE MENTIONED BELOW;

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)

8. 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.
9. 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 .
10. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD–CS–01–LOAD SECURING CHECK SHEET (LATEST).
11. THE LOADING/UNLOADING OF SLABS TO BE CARRIED OUT IN SUCH A WAY, THAT LOADING/UNLOADING DONE IN SAFE WAY AND IT WILL NOT DAMAGE THE POCKET AREA AS WELL AS THE WAGON.
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. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM BAND–HOLDING STRENGTH.WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

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

ITEM	DESCRIPTION	NO.OFF (FOR LOADING 3 NO.'S SLAB)	MTL&SPEC	NO.OFF (FOR LOADING 2 NO.'S SLAB)	MTL&SPEC	REMARKS
9	UPPER SLAB (SMALLER & NARROWER)	1	AS PER TABLE NO. A	1	AS PER TABLE NO. B	
8	MIDDLE SLAB	1	AS PER TABLE NO. A	0	----------	
7	BOTTOM SLAB (LONGER & WIDER)	1	AS PER TABLE NO. A	1	AS PER TABLE NO. B	
6	ISOLATION HOOK	6	WD–24036–S–01 PART–3	6	WD–24036–S–01 PART–3	
5	HIGH TENSILE STEEL STRAP (FOR BUNDLING & UNITIZATION)	7	EN 13247 : 2001	7	EN 13247 : 2001	
4	HIGH TENSILE STEEL STRAP (FOR SECURING WITH WAGON BODY)	6	EN 13247 : 2001	6	EN 13247 : 2001	
3	INTERMEDIATE WOODEN RUNNER (2000X100X75)	AS PER REQUIREMENT	WOOD	AS PER REQUIREMENT	WOOD	
2	WOODEN LONGITUDINAL RUNNER (550X200X160)	AS PER REQUIREMENT	WOOD	AS PER REQUIREMENT	WOOD	
1	ANGLE STOPPER	18	–	18	–	

PRELIMINARY SKETCH

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

SUPERSEDED BY

SUPERSEDES

DATE

SCALE 1:20

PASSED 10/24

CHECKED 10/24

DRAWN 10/24

TRACED

COMPARED

J.S.NO. WD–24088

BOGIE FLAT STEEL WAGON TYPE 'BFNS22.9'

LOADING ARRANGEMENT OF SLAB ON BFNS22.9 WAGON.

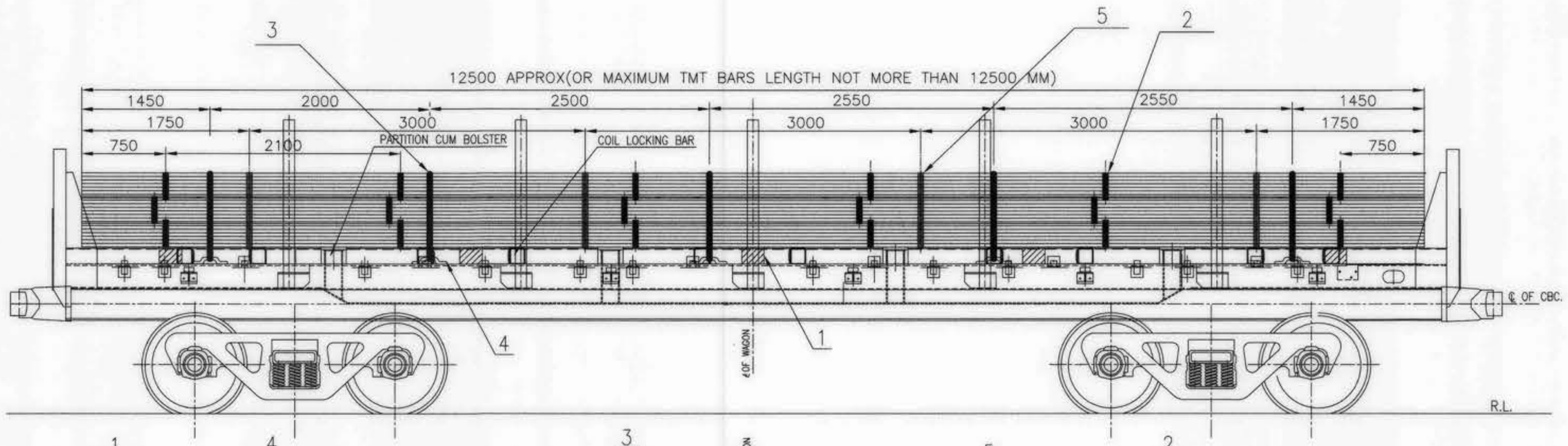
B.G. R.D.S.O.

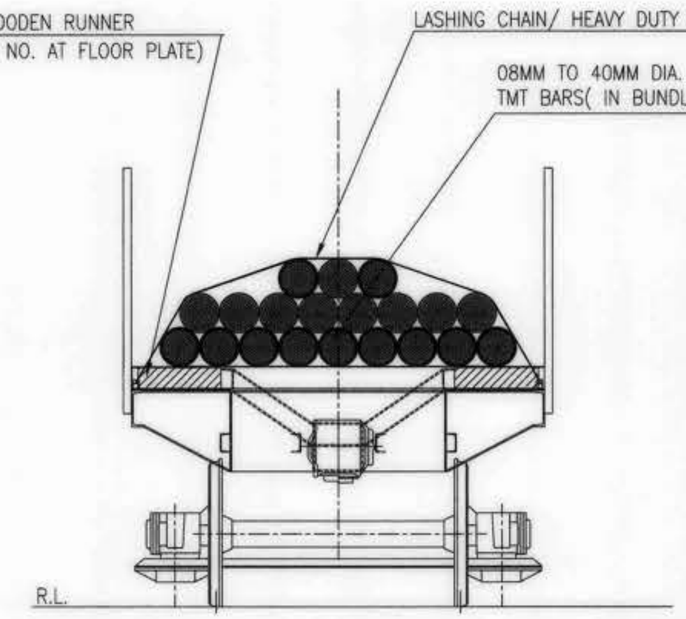
GROUP [W]

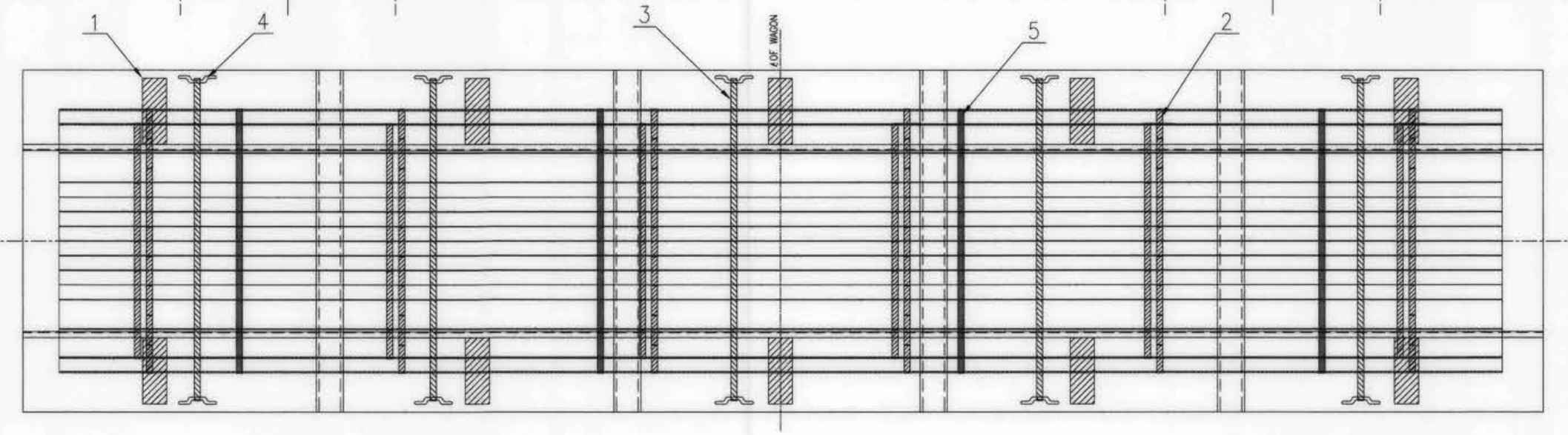
WD–24088–S–03

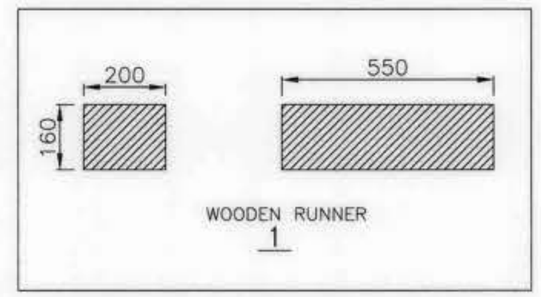
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

1073
I/693









NOTE:-

1. TMT BARS HAVING DIAMETER OF 8MM TO 40MM SHOULD BE STACKED IN 03 ROWS AS SHOWN IN LOADING DIAGRAM.
2. IN CASE OF VARIATION IN LENGTH OF TMT BARS BUNDLE ,SMALL LENGTH BARS BUNDLE SHOULD BE KEPT AT UPPERSIDE & CENTERED TO WAGON CENTRE.
3. 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.
5. 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	1.27
3.	MINIMUM BRAKING STRENGTH	43KN (4.3TON)

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. THE INITIAL TENSION IN THE STRAP SHALL BE IN THE RANGE OF 500kg TO 800kg.
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. TMT BARS/ BUNDLES ARE LOADED ALONG THE LENGTH AND AT THE CENTRE OF WAGON AS SHOWN IN DRAWING.
10. BEFORE LOADING TMT BARS IN THE WAGON, ENSURE THAT WOODEN RUNNERS ARE PLACED AT CORRECT POSITION AS SHOWN IN DRAWING.
11. 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 .
12. 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.
13. AFTER UNITIZING OF ALL TMT BARS BUNDLES TOGETHER, THE WHOLE BUNDLES UNITIZED TO BE AGAIN SECURED WITH ISOLATION HOOK BY 05 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.
14. THE TOTAL LOAD OF LOADED CONSIGNMENT SHOULD NOT EXCEED THE PAY LOAD OF THE WAGON.
15. THERE SHALL BE SYMMETRICAL LOADING. THE WEIGHT DIFFERENCE ON BOGIE CENTER SHALL NOT EXCEED MORE THAN 2 TONS.
16. 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.
17. SECURING ARRANGEMENT SHALL BE CERTIFIED BY CONCERN RAILWAY AS PER CHECK SHEET NO. WD-CS-01-LOAD SECURING CHECK SHEET (LATEST).
18. 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.
19. THE CONCERN RAILWAY SHALL ENSURE PROPER LOADING AND SECURING OF THE CONSIGNMENT ON THE WAGON FOR SAFE TRAIN OPERATION.
20. MINIMUM TWO NO'S CRIMPS SHALL BE APPLIED. PROPER FORMED SEAL JOINTS ARE ESSENTIAL TO ACHIEVING MAXIMUM
    BAND-HOLDING STRENGTH. WHETHER CRIMP OR NOTCH TYPE JOINTS ARE USED, THE APPROPRIATE TYPE OF SEALS AND
    NUMBER OF CRIMP OR NOTCH PAIRS MUST BE APPLIED.

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

5	LASHING CHAIN/ HEAVY DUTY STRAP FOR BUNDLES UNITIZATION	4	EN13247:2001	
4	ISOLATION HOOK	10	WD-24036-S-01 PART-3	
3	LASHING CHAIN/ HEAVY DUTY STRAP TIGHTEN WITH ISOLATION HOOK FOR SECURING WITH WAGON BODY	5	EN13247:2001	
2	LASHING CHAIN/ HEAVY DUTY STRAP FOR BUNDLING	AS PER REQUIREMENT	EN13247:2001	
1	WOODEN RUNNER	10	WOOD	
ITEM	DESCRIPTION	NO.OFF	MTL&SPEC	REMARKS

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

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.

SUPERSEDED BY
SUPERSEDES — DATE

SCALE 1:20 — PASSED 10/24 — CHECKED 10/24 — DRAWN SACHIN KUMAR 10/24 — TRACED — COMPARED — J.S.NO. WD-24088

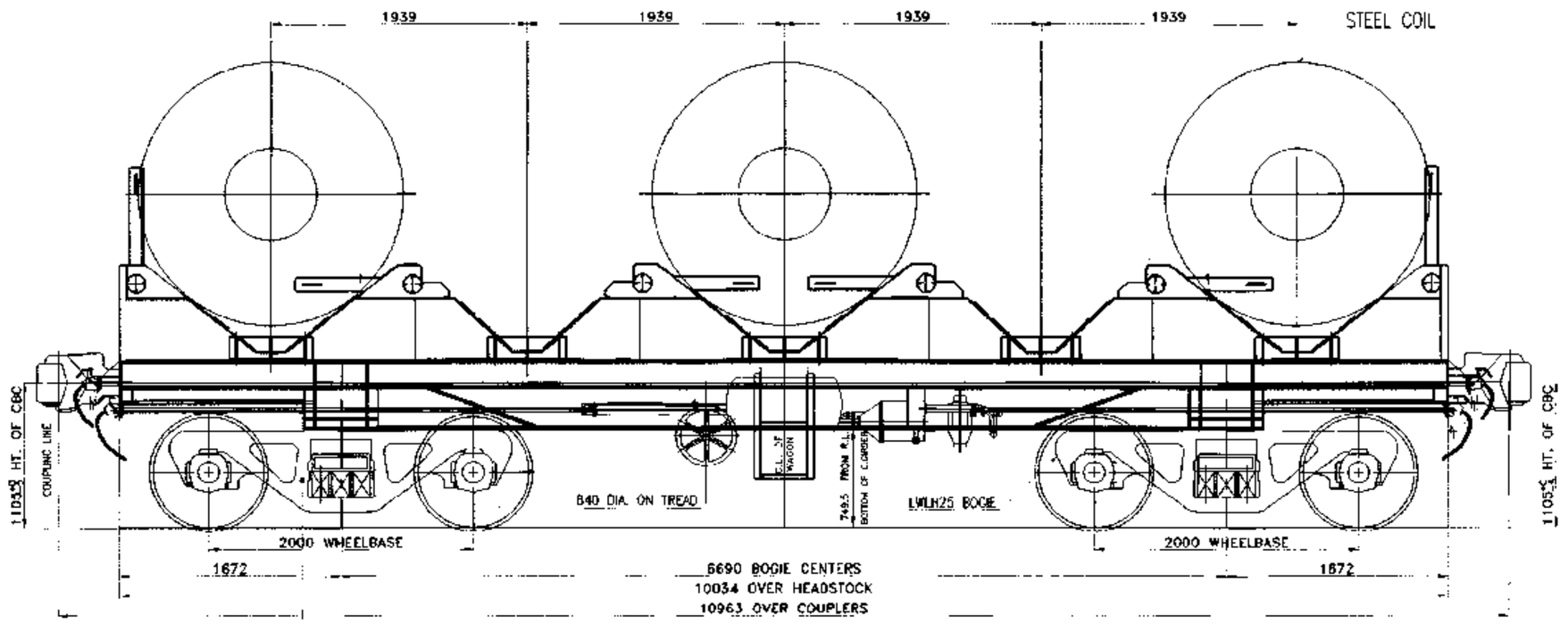
B.G. R.D.S.O.

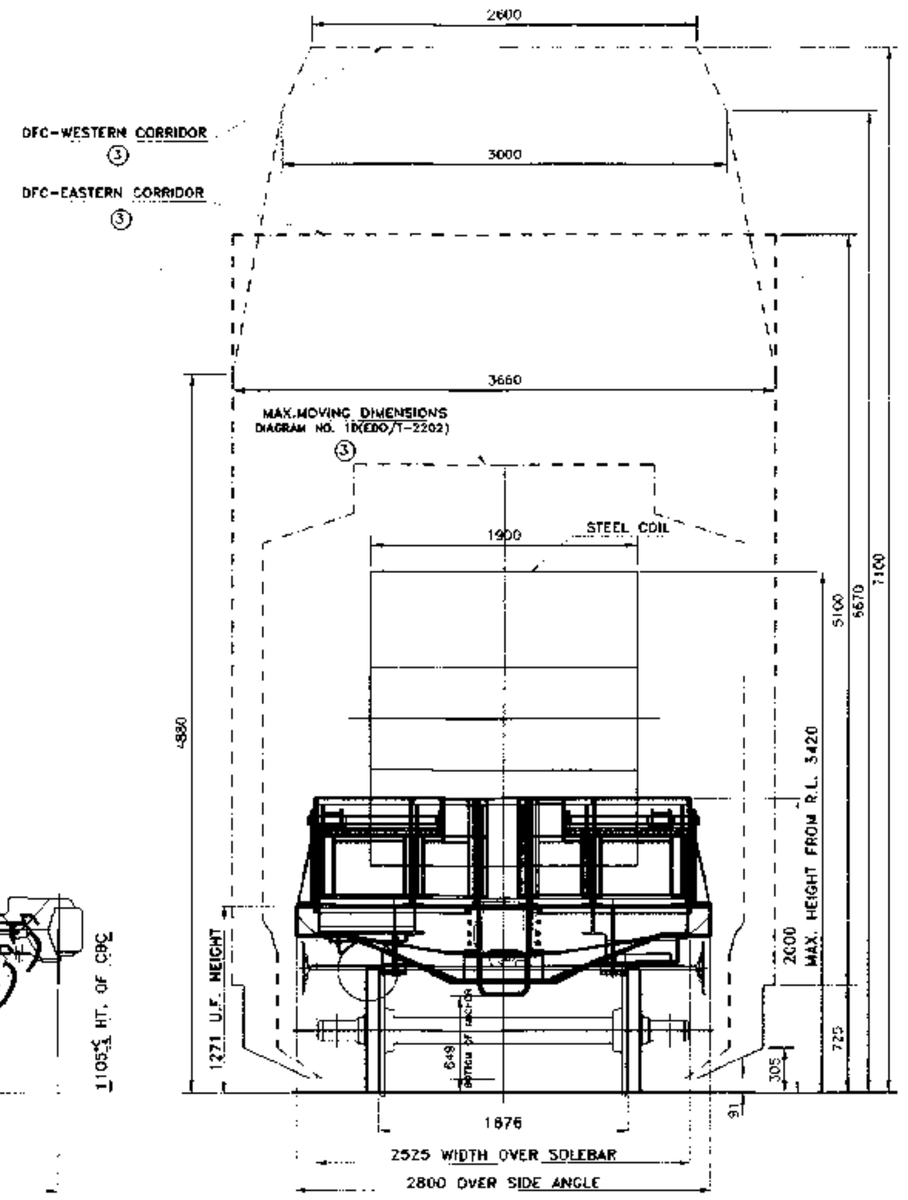
BOGIE FLAT STEEL WAGON TYPE 'BFNS22.9'

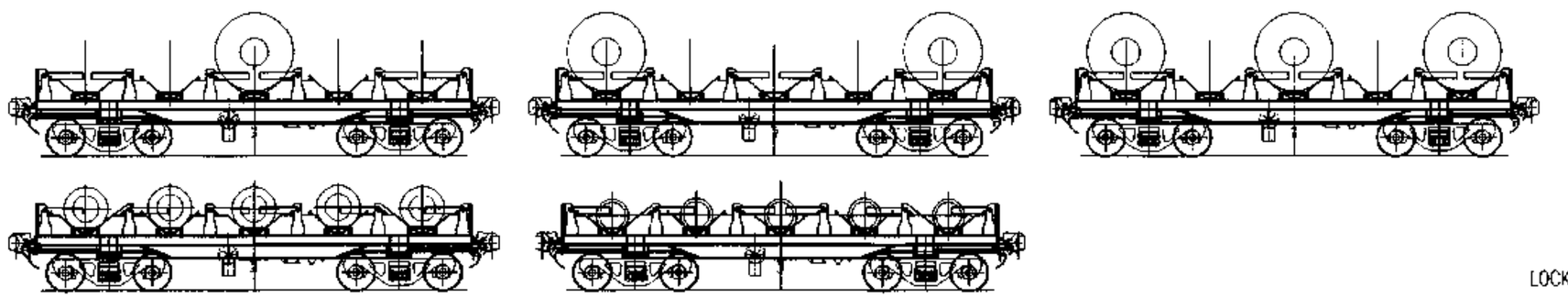
LOADING DIAGRAM FOR 08 MM TO 40 MM TMT BARS IN BFNS22.9 WAGON

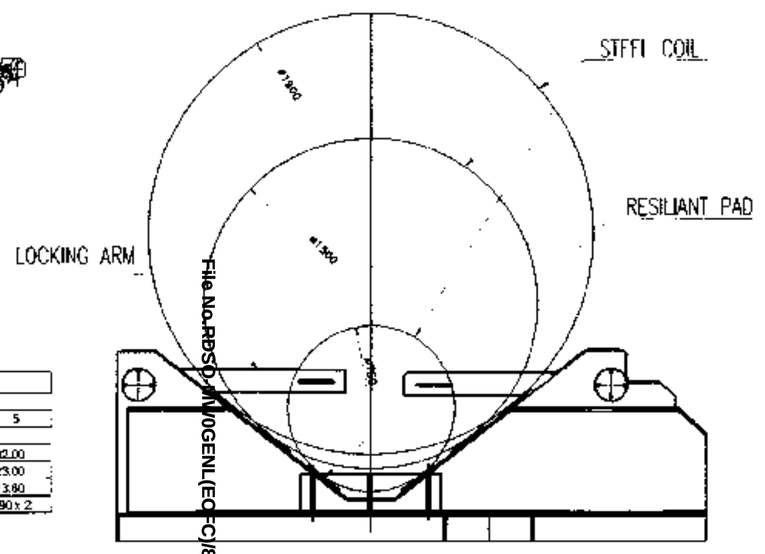
GROUP [W] — WD-24088-S-08

1074
1969









SUMMARY OF WEIGHTS (ESTIMATED)	
DESCRIPTION	MEASURES
WEIGHT OF UNDERFRAME	16.13 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... AT CENTRE	149
2.	DISTANCE FROM R.L. TO TOP PIVOT	854.5
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 PLATFORM 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	08/2021	
5		WD-21067	LOADING OF SINGLE COIL IN WAGON CENTRAL UNBALL ADDED	08/2021	
4		WD-20044	NOTE DELETED & FOR SPEED CERTIFICATE BY RITES BLOCK DELETED	02/2021	
3		WD-20046	SIDE OF DFC ADDED AND MAD 10-2004 REVISED	10/2020	
2		WD-20011	MAX. HT. OF CBC GROUP FROM R.L. & MAX CBC HT. FROM R.L. ADDED AND C.G. HT. CHANGE	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	DRAWN	CHECKED	REVISED
	S.KUMAR	AMIT	DINESH	
	04/19	04/19	04/19	

J.S.NO. WD 19024 04/19

BOGIE FLAT STEEL WAGON TYPE 'BFNV'

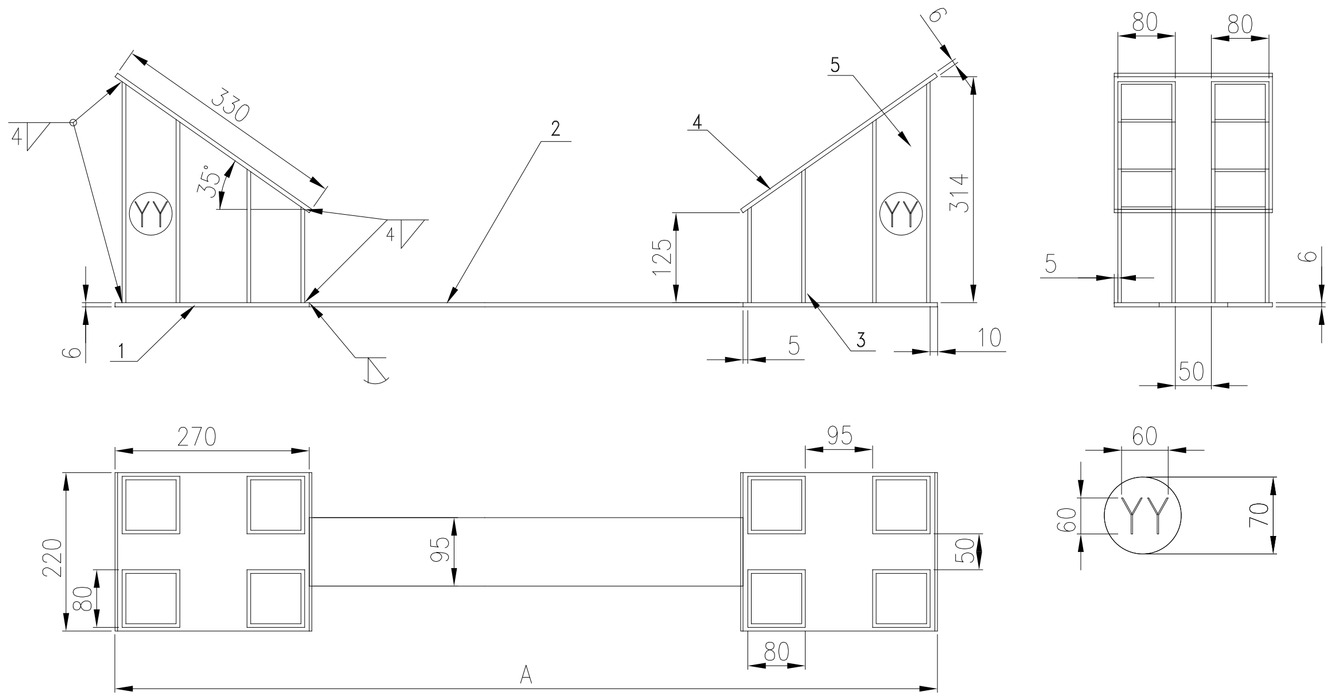
DIAGRAM

B.G. — R.D.S.O. GROUP [W] — WD-19024-S-02

File No.RDSO/WOGEN(ECC)/8/2023-O/o PED/SWRDSO

A1

1695
1/69



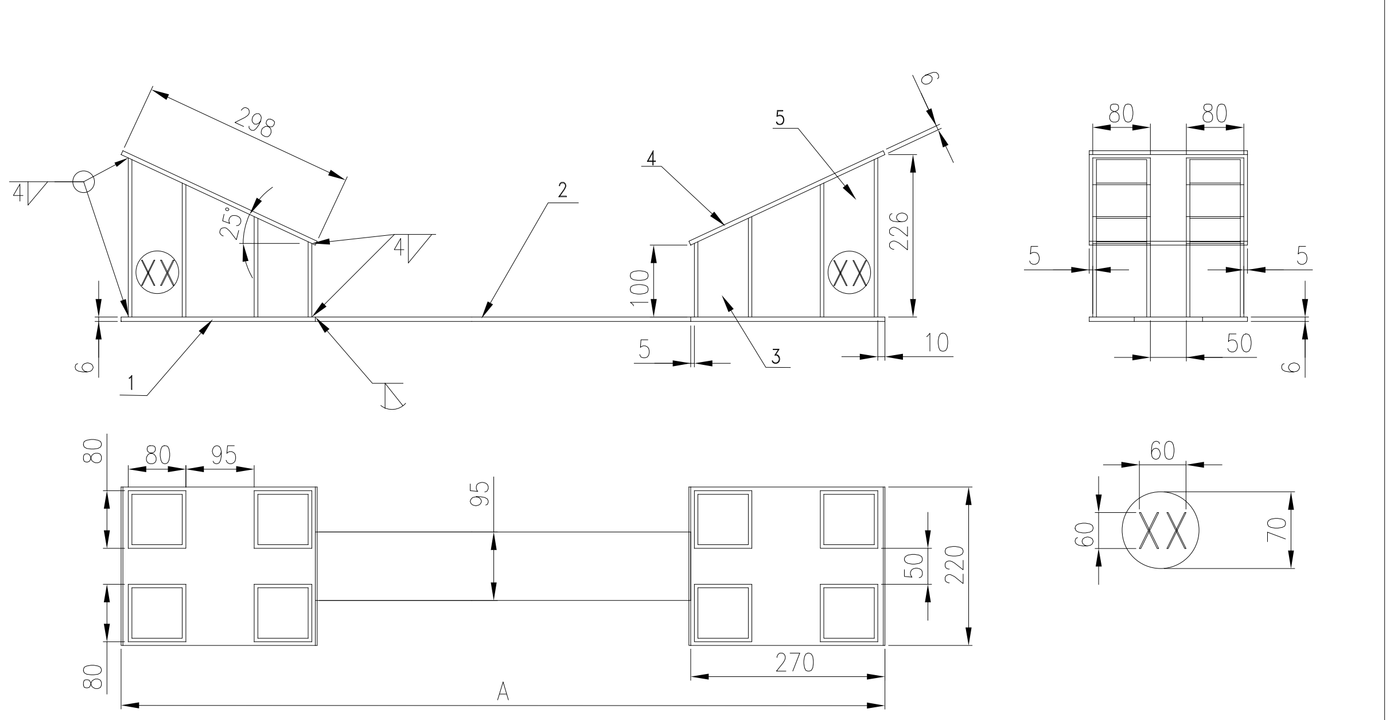
5	VERTICAL BOX LONG 80X80X5TH	04	IS:2062 E250
4	INCLINED PLATE	02	IS:2062 E250
3	VERTICAL BOX SHORT 80X80X5TH	04	IS:2062 E250
2	CONNECTING PLATE BETWEEN SADDLE	01	IS:2062 E250
1	BOTTOM PLATE	02	IS:2062 E250
ITEM	DESCRIPTION	NO.OFF	MTL&SPEC.

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



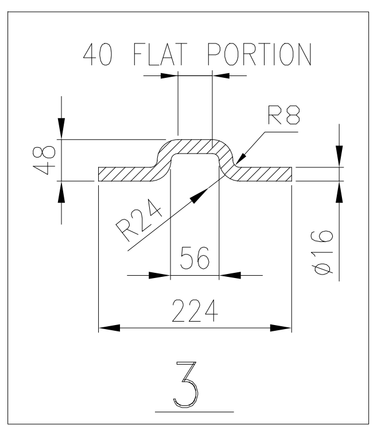
5	VERTICAL BOX LONG 80X80X5TH	04	IS:2062 E250
4	INCLINED PLATE	02	IS:2062 E250
3	VERTICAL BOX SHORT 80X80X5TH	04	IS:2062 E250
2	CONNECTING PLATE BETWEEN SADDLE	01	IS:2062 E250
1	BOTTOM PLATE	02	IS:2062 E250
ITEM	DESCRIPTION	NO.OFF	MTL&SPEC.

PARTS DESCRIPTION OF METAL SADDLE

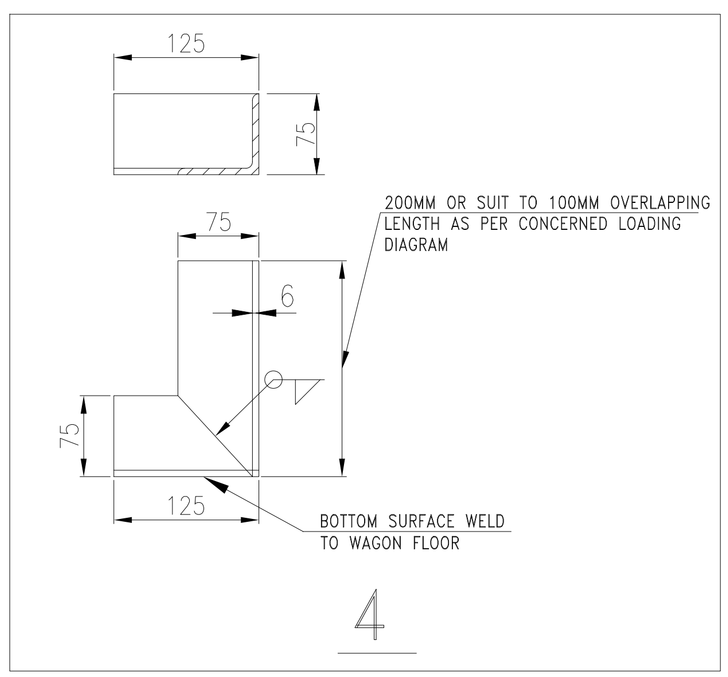
S.NO.	COIL DIA RANGE	LENGTH OF 'A'	PAINT ON METAL SADDLE BY 'XX'
1	1300–1700	1100	1A
2	1700–2200	1295	1B
3	2200–2400	1390	1C

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

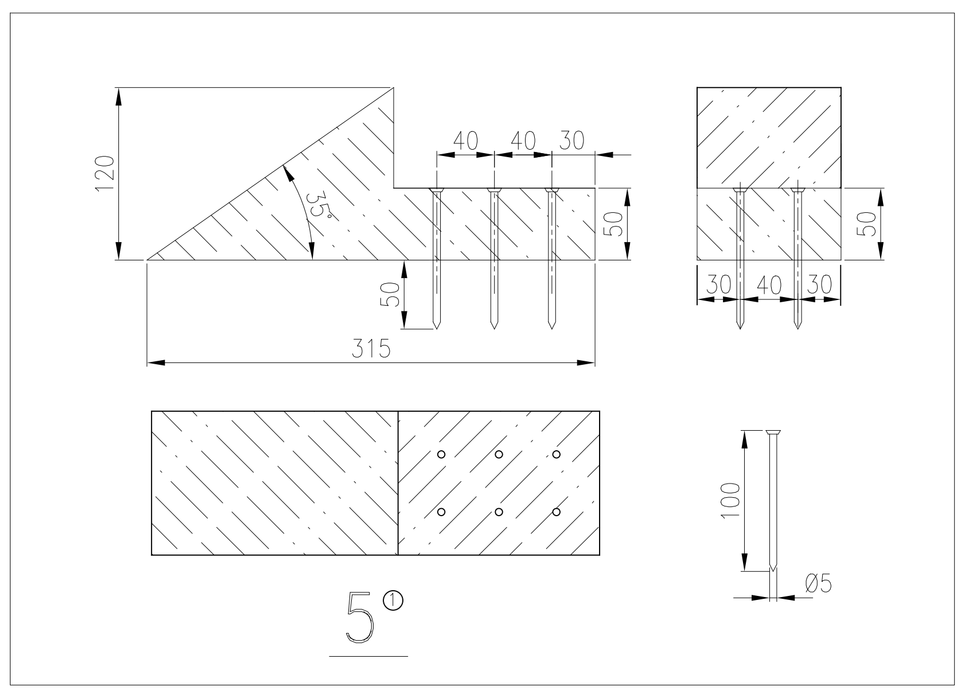
1



3



4



5①

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.

ALL DIMENSIONS ARE IN MM.

①	5	WOODEN WEDGE & NAIL	--	WOOD & STEEL	--
	4	ANGLE STOPPER (ISA 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
	ITEM	DESCRIPTION	NO. OF PCS PER COIL	MTL&SPEC	REMARKS

PRELIMINARY SKETCH

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

SUPERSEDED BY,
SUPERSEDES

SCALE		PASSED	
	PASSED	sd/R.V.Singh	05/24
	CHECKED	sd/A.K.Kushwaha	05/24
	DRAWN	ASHISH KUMAR SINGH	05/24
	COMPARED		05/24
	J.S.NO.	WD-24036	04/24

COMPONENT'S USED FOR LOADING & SECURING ARRANGEMENT

①	–	WD-24088	ITEM NO.–5 WOODEN WEDGE & NAIL ADDED	09/24	–
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRG.

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

I/69413/2024
File No.RDSO-MWOGENL(EOFC)/8/2023-O/o PED/SW/RDSO
1076

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

1077
I/69

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:	

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