

I/40352/2023



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भारत सरकार —रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ — 226011
Government of India - Ministry of Railways
Research Designs & Standards Organisation
Lucknow — 226011

No. MW/BOXNHL

24 March 2023

All PCMEs

Sub: Blocking of two doors and reduction of height of Remaining two doors in all BOXN wagons.

Ref: (i) This office letter of even no. dated 21.03.2023
(ii) Railway Board letter No. 2022/M(N)/951/Wagon door (E-3396746)
dated 28.02.23

Vide this office letter referred (i) above, instructions for blocking of door and retro-fitment of reduced height door along with respective drawings have been issued.

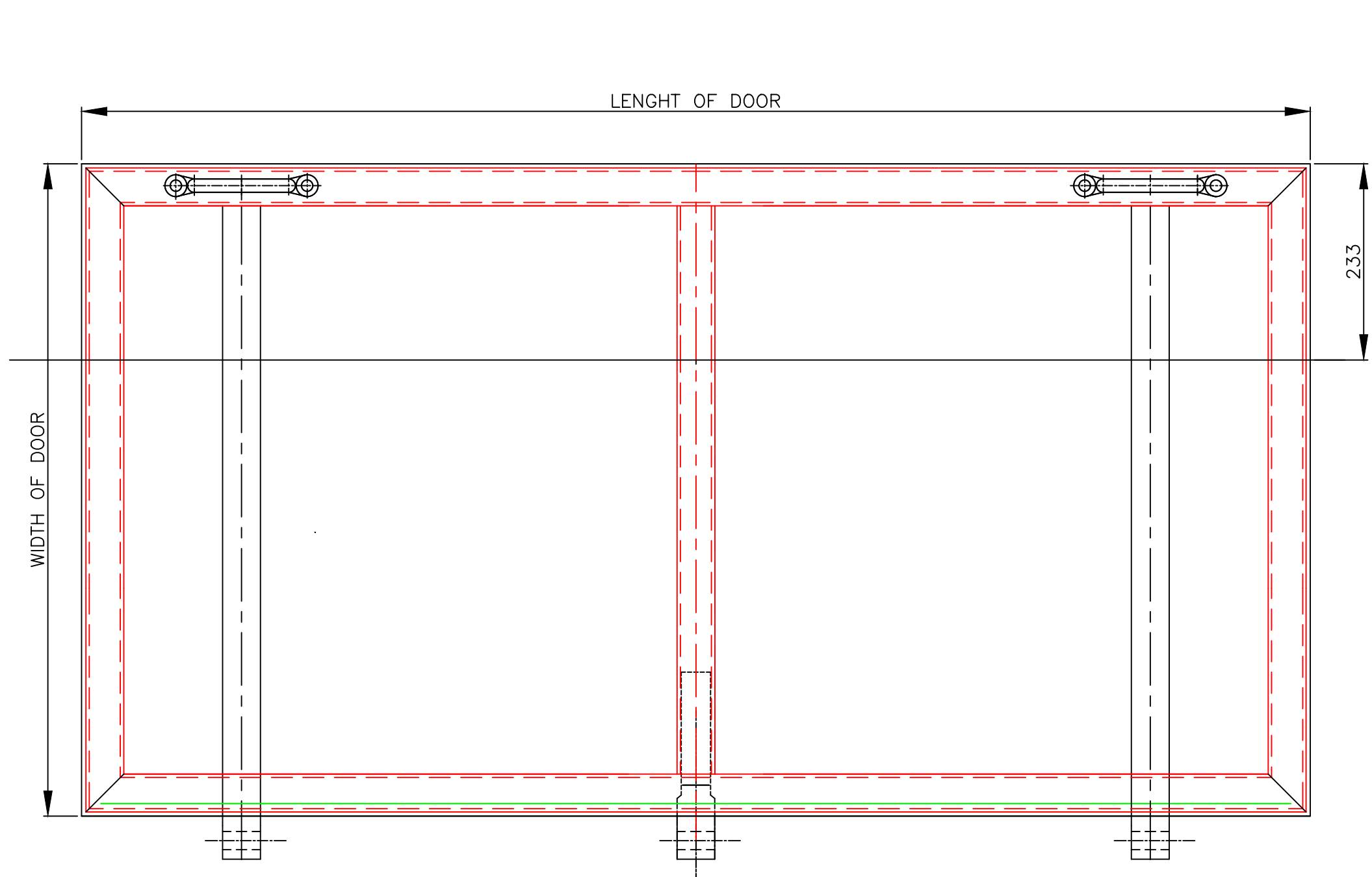
Further, the following has also been decided during the VC held on 24.03.2023 -

1. The blocking of door work can be carried out in ROH/POH only.
2. The door check springs shall also be removed from the sole bar at the blocked door locations.
3. In case, if the door removed from the wagons are found in the good condition, the same shall be modified to reduce the height by 233 mm for re-fitment in the wagon as per the sketch attached with this letter.

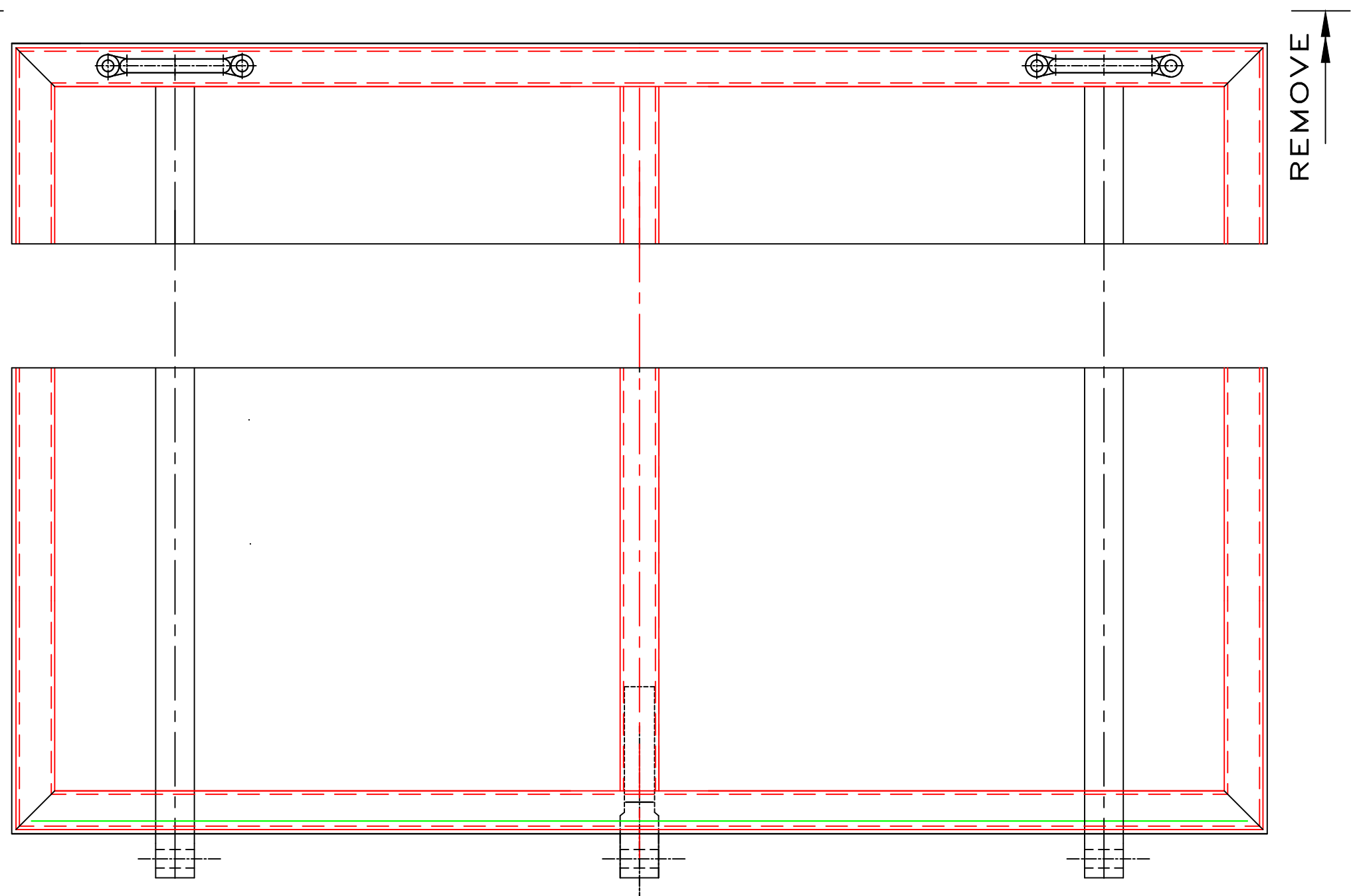
D. A. Sketch no. WD-2-0323

Digitally Signed by Manish
(Dr. Manish Thaplyal)
Exe. Director Stds./Wagon
Date: 24-03-2023 18:57:44
Reason: Approved

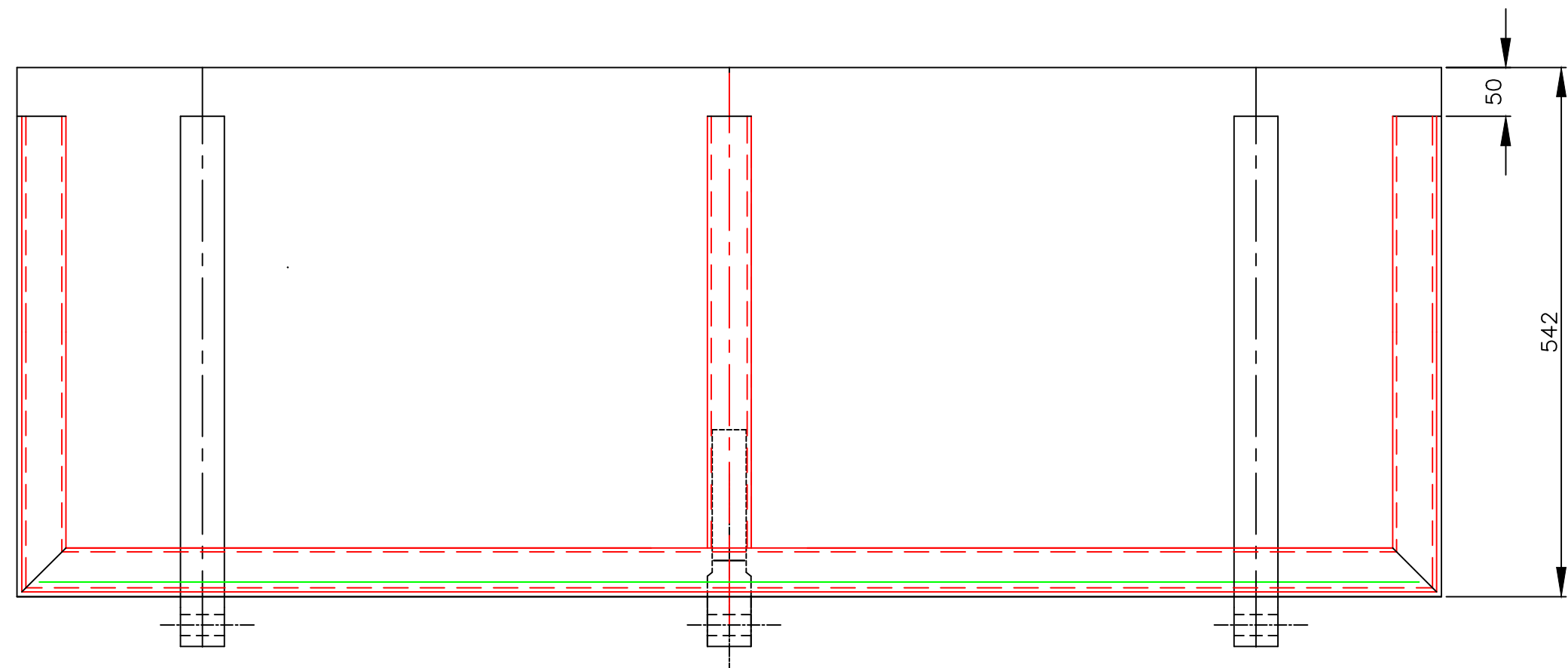
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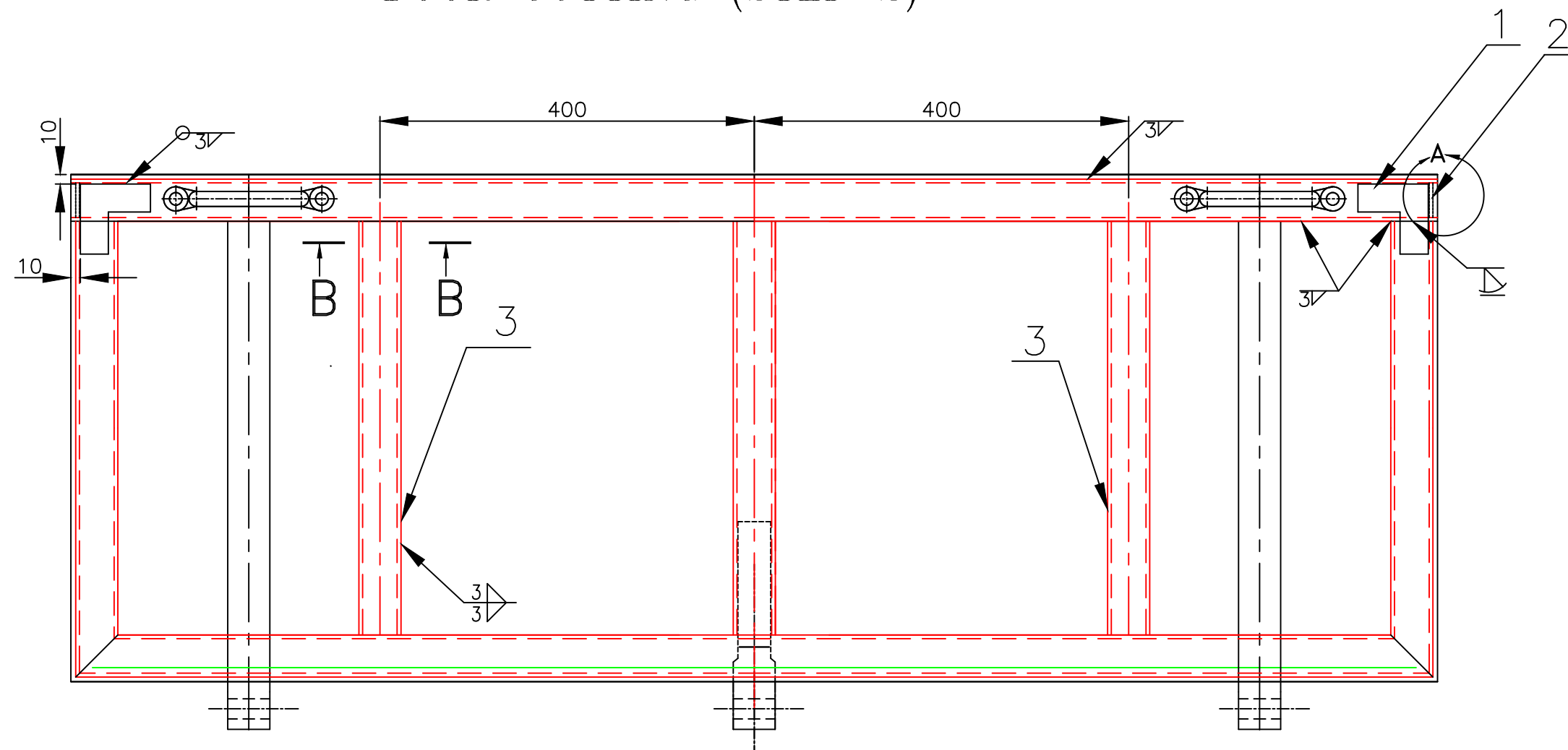
ORIGINAL DOOR (STEP 1)



DOOR CUTTING (STEP 2)



DOOR AFTER CUTTING (STEP 3)

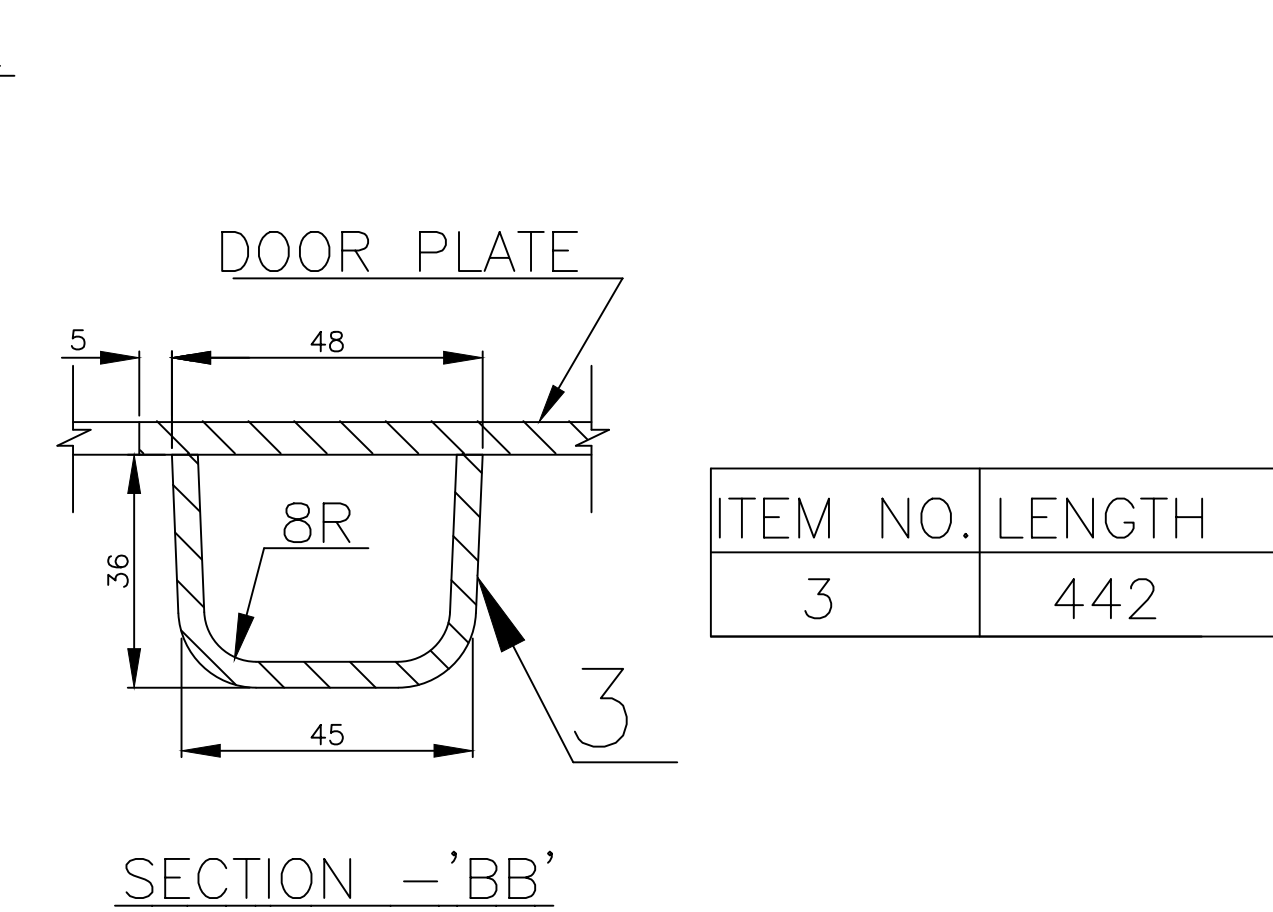


FINAL FITTED DOOR AFTER HEIGHT REDUCTION (STEP 4)

TABLE – 1

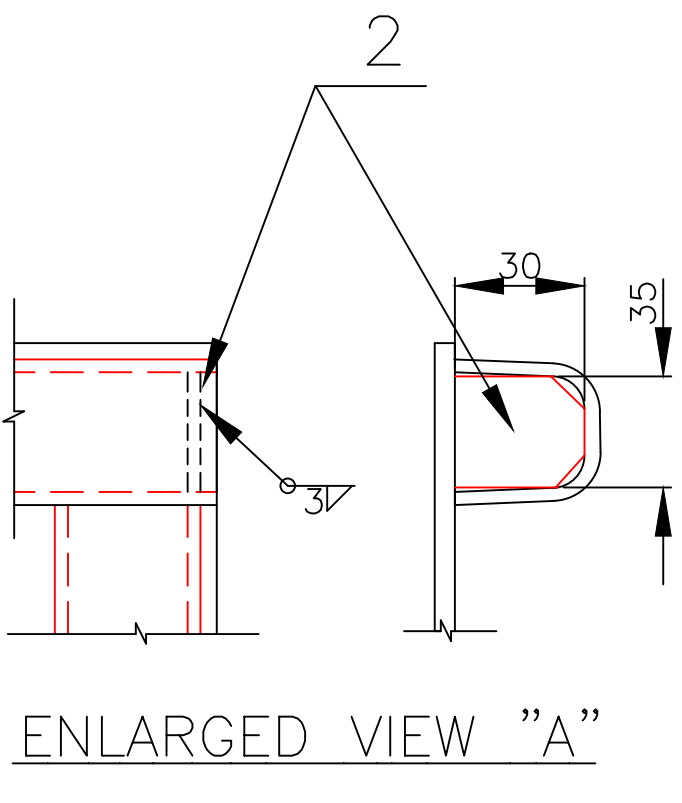
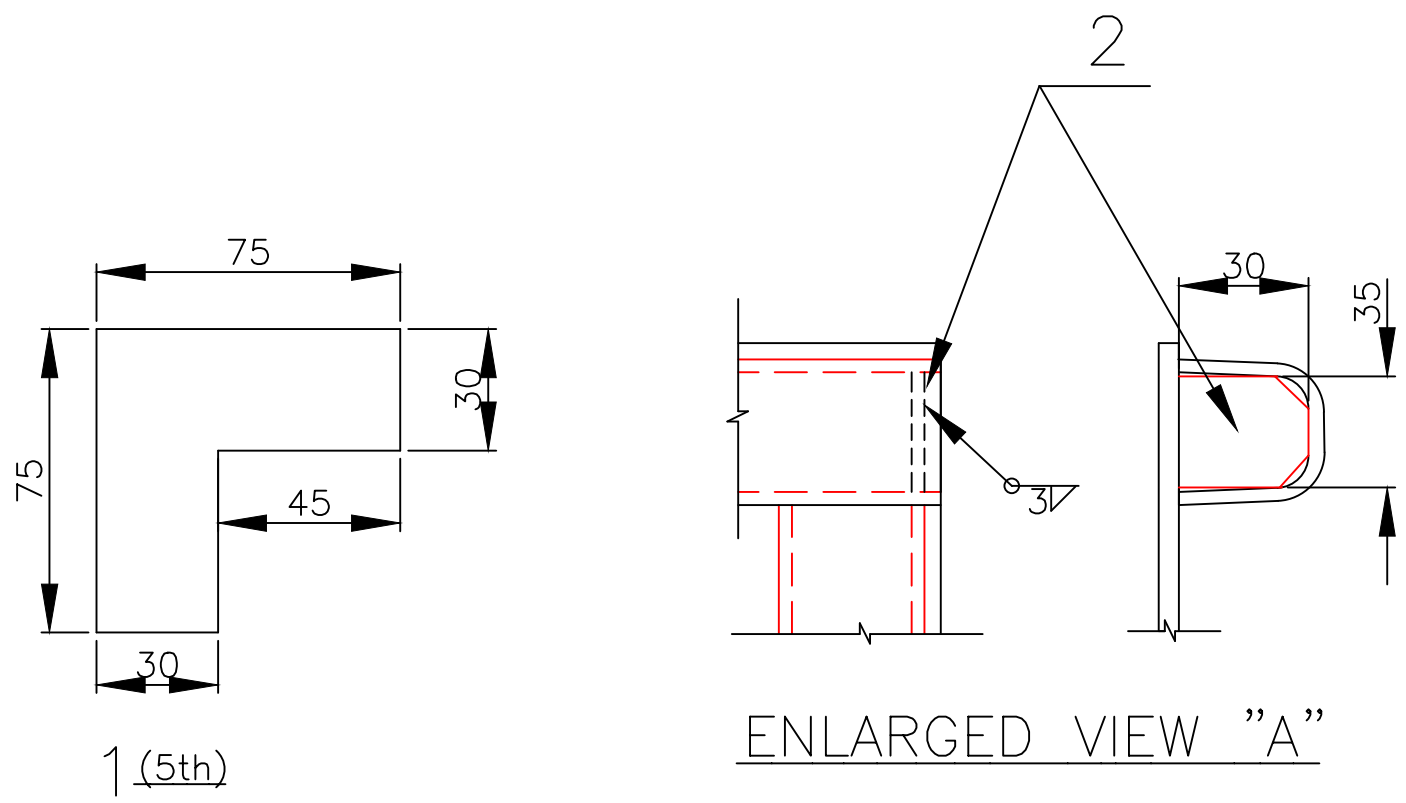
TYPE OF WAGON	REFERENCE DRG OF DOOR	DOOR SIZE	DOOR SIZE (REDUCED)
BOXN,BOXNHS,BOXNHSM2	WD-90007-S-01 (LATEST ALT)	777X1480	544X1480
BOXNM2,BOXNCR,BOXNHA		775X1480	542X1480
BOXNLW			
BOXNHL (A,&B)	WD-88088-S-07 (LATEST ALT)	775X1480	542X1480
BOXNR (OLD)*		775X1480	542X1480
BOXNHL (C)	WD-09034-S-07 (LATEST ALT)	775X1460	542X1460
BOXNHL (D)		775X1460	542X1460
BOXNR		775X1460	542X1460

* MANUFACTURED BEFORE 08.04.2016



STEPS FOR CUTTING OF EXISTING DOOR TO REDUCED HIEGHT:

- CUT DOOR FROM TOP BY 233 mm AS SHOWN IN STEP 1.
- REMOVE EXTRA PORTION OF DOOR AS SHOWN IN STEP 2.
- REDUCE HIEGHT OF VERTICAL DOOR PRESSING AND DOOR HINGE LONG BY 50 mm KEEPING DOOR PLATE INTACT.
- FITMENT OF HORIZONTAL DOOR FRAME PRESSING AS SHOWN IN STEP 4.
- FITMENT OF ITEM 1 AND 2 AS PER STEP 4.
- FITMENT OF DOOR WAY STIFFENING CROSS BAR AND OTHER DOOR MEMBERS TO BE AS PER WD-23018-S-01 & WD-23018-S-02.



3	ADDITIONAL DOOR FRAME PRESSING	2	-	IS:2062-E250 C/JHA	
2	DOOR PRESSING STIFFENER(30x35x4TH.)	2	-	IS:2062-E250 C/JHA	
1	TOP STIFFENING PLATE	2	-	IS:2062-E250 C/JHA	
ITEM	DESCRIPTION	NO. OF PER DOOR	REF. DRG.	WT. OF ONE(Kg.)	MTL. & SPEC REMARKS
PRELIMINARY SKETCH					
ONLY FOR PROTOTYPE APPLICATION UNDER GUIDANCE OF R.D.S.O. (WAGON)					
SUPERSEDED BY					
SCALE/PASSED					
CHECKED					
DRAWN					
TRACED					
COMPARED					
J.S.NO.					
B.G. R.D.S.O. [W]					
GROUP					
SKETCH-WD2-03/23					

I/40101/2023



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Government of India - Ministry of Railways
Research Designs & Standards Organisation
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No. MW/BOXNHL

Date: 21.03.2023

All PCME's

Sub: Blocking of two doors and reduction of height of Remaining two doors in all BOXN variant wagons.

Ref: Rly Board letter no 2022/M(N)/951/Wagon_door(E-3396746) dated 28.02.23.

- 1.0 A cross section of BOXNHL wagon with doors closed and open and superimposed on the IRSOD – 2022 is enclosed as Annexure-1. It can be seen that instances of doors hitting fixed structure can only occur if the door is incorrectly closed or if the door opens on run while crossing the fixed structure.
- 2.0 After due deliberations, Board has issued instructions as in reference above (copy enclosed). It has been decided, in consultation with Traffic Dte. of Railway Board, to block two doors (diagonally opposite) in 50% of all BOXN variant wagons. Further, it has been decided that height of all doors i.e. in 100% of the BOXN variant wagons shall be reduced to 542 mm from the existing height of 775 mm.
- 2.1 Accordingly, it is advised that two doors, diagonally opposite, of each BOXN type wagon shall be blocked as per Drg. no WD-23018-S-03. The blocking of doors shall be done in POH / ROH / Sickline upto December 2023, till further advice from Railway Board.
- 3.0 The remaining two doors of the BOXN type wagons have to be replaced by a lower height door to Drg. No. WD-23018-S-02 (for BOXNHL variants) and Drg. No. WD-23018-S-01 (for BOXN variants).
- 3.1 The material of the door shall be Mild Steel for all variants of BOXNHL & BOXN wagons.
- 3.2 For fitment of reduced height door, the door opening shall be reduced by 233 mm from the top by providing additional door way stiffening cross bar as shown in the drawings.
- 3.3 The design of gravity cotter (grip length and slot size) and location of cotter rivets have been modified and mentioned in the above drawings.
- 3.4 The above activity to be carried out during POH / ROH / Sickline attention to wagons. Till, doors to reduced height are procured, the activity of blocking of doors can be started.
- 4.0 Wagon having two doors blocked and two doors with reduced height shall be marked as "BLOCKED DOOR" at location of blocked door and "REDUCED HEIGHT" above the doorway stiffing crossbar.
- 5.0 The progress of modification of wagons to be entered in the Google Sheet link given below:
 - a) <https://docs.google.com/spreadsheets/d/1TArOXKEQFhh7wtKzTlKgD04YTmx0We9d5R3WygY3OgM/edit?usp=sharing>
 - b) https://docs.google.com/spreadsheets/d/1yK-YLR71X1xX4dM1Hcm9zCKz06YyIzY0ugwf-ai2_qc/edit?usp=sharing

DA : As above

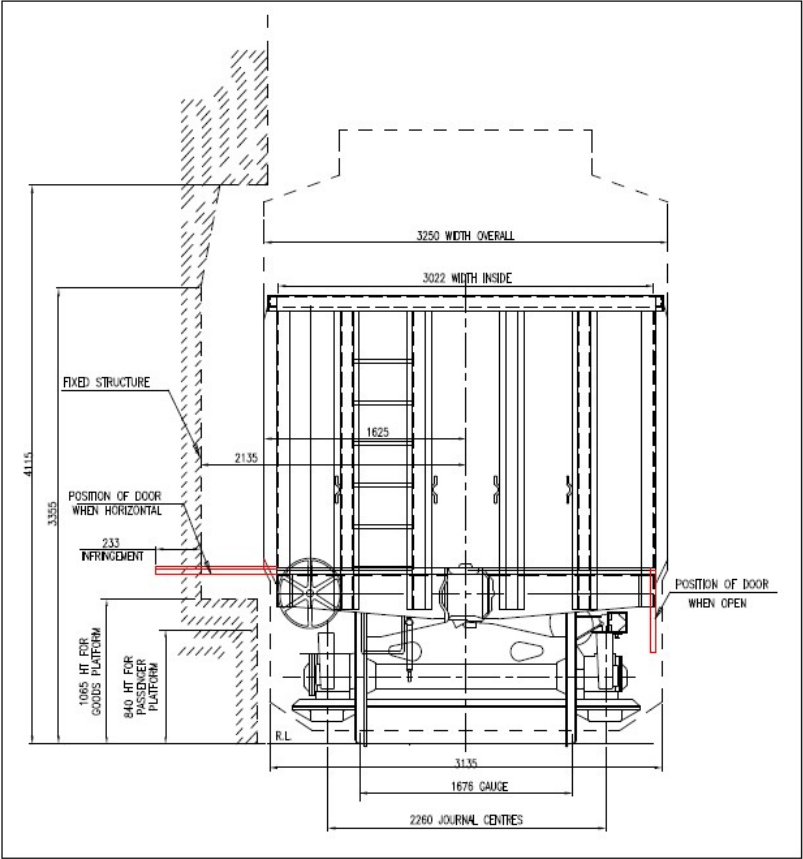
(Dr. Manish Thaplyal)
Digitally Signed by Manish Thaplyal
Executive Director/ Wagon

Copy: EDME/Frt./RB- for kind information please

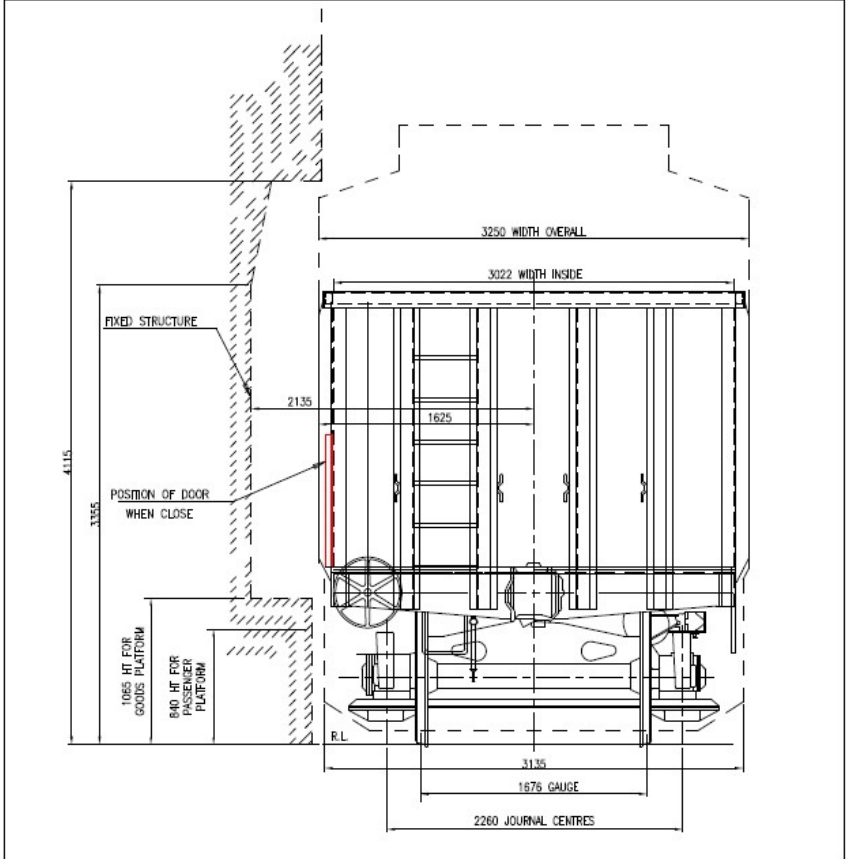
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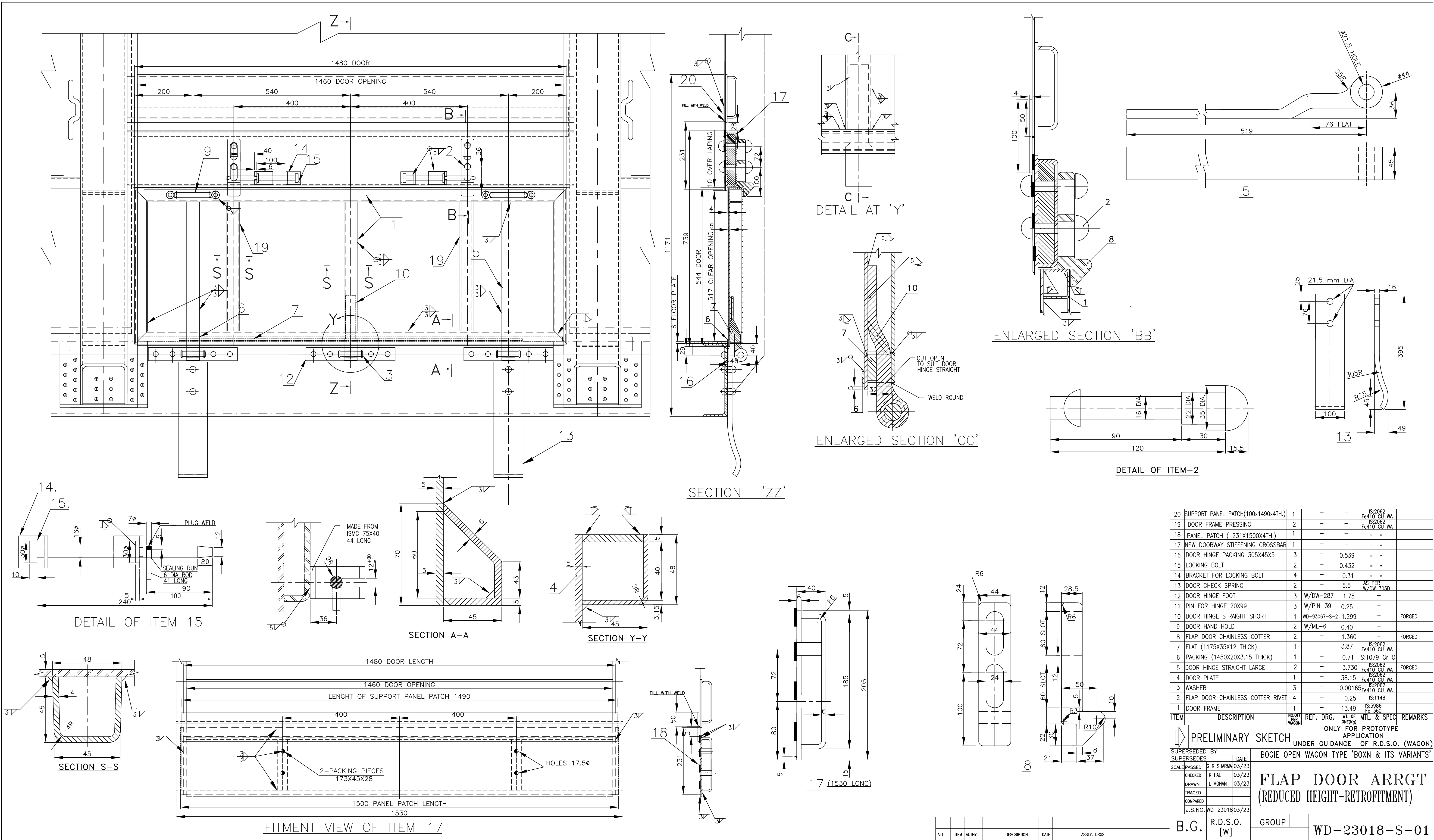
ANNEXURE-1




Cross-section of BOXNHL wagon when superimposed on IRSOD-2022 shows door interference with fixed structures when door in horizontal position in cases of door opening of run.



Cross-section of BOXNHL wagon when superimposed on the IRSOD-2022 and door is closed position.



20	SUPPORT PANEL PATCH(100x1490x4TH.)	1	-	-	IS-2082	
19	DOOR FRAME PRESSING	2	-	-	Fe410 CU WA	
18	PANEL PATCH (231X1500X4TH.)	1	-	-	Fe410 CU WA	
17	NEW DOORWAY STIFFENING CROSSBAR	1	-	-	" "	
16	DOOR HINGE PACKING 305X45X5	3	-	0.539	" "	
15	LOCKING BOLT	2	-	0.432	" "	
14	BRACKET FOR LOCKING BOLT	4	-	0.31	" "	
13	DOOR CHECK SPRING	2	-	5.5	AS PER W/DW 305D	
12	DOOR HINGE FOOT	3	W/DW-287	1.75	-	
11	PIN FOR HINGE 20X99	3	W/PIN-39	0.25	-	
10	DOOR HINGE STRAIGHT SHORT	1	WD-93067-S-2	1.299	-	FORGED
9	DOOR HAND HOLD	2	W/ML-6	0.40	-	
8	FLAP DOOR CHAINLESS COTTER	2	-	1.360	-	FORGED
7	FLAT (1175X35X12 THICK)	1	-	3.87	IS-2082 Fe410 CU WA	
6	PACKING (1450X20X3.15 THICK)	1	-	0.71	S:1079 Gr 0	
5	DOOR HINGE STRAIGHT LARGE	2	-	3.730	IS-2082 Fe410 CU WA	FORGED
4	DOOR PLATE	1	-	38.15	IS-2082 Fe410 CU WA	
3	WASHER	3	-	0.00165	IS-2082 Fe410 CU WA	
2	FLAP DOOR CHAINLESS COTTER RIVET	4	-	0.25	IS-1148	
1	DOOR FRAME	1	-	13.49	IS-5886 Fe 360	
ITEM	DESCRIPTION	QTY	REF. DRG.	MTL. & SPEC	REMARKS	
PRELIMINARY SKETCH UNDER GUIDANCE OF R.D.S.O. (WAGON)						
BOGIE OPEN WAGON TYPE 'BOXN & ITS VARIANTS'						
FLAP DOOR ARRGT (REDUCED HEIGHT-RETROFITMENT)						
B.G.	R.D.S.O. [w]	GROUP	WD-23018-S-01			
ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.	

	PRELIMINARY SKETCH		ONLY FOR PROTOTYPE TYPE APPLICATION		
	SUPERSEDED BY		UNDER GUIDANCE OF R.D.S.O. (WAGON)		
	SUPERSEDES	DATE	BOGIE OPEN WAGON TYPE 'BOXNHL'		
	SCALE	PASSED	FLAP DOOR ARRGT (REDUCED HEIGHT-RETROFITMENT)		
		G.R.SHARMA			03/23
	CHECKED	LALIT MOHAN			03/23
	DRAWN	K PAL			03/23
	TRACED				
COMPARED					
	J.S.NO.	WD-23018	03/23		
B.G.	R.D.S.O. [w]	GROUP	WD-23018-S-02		

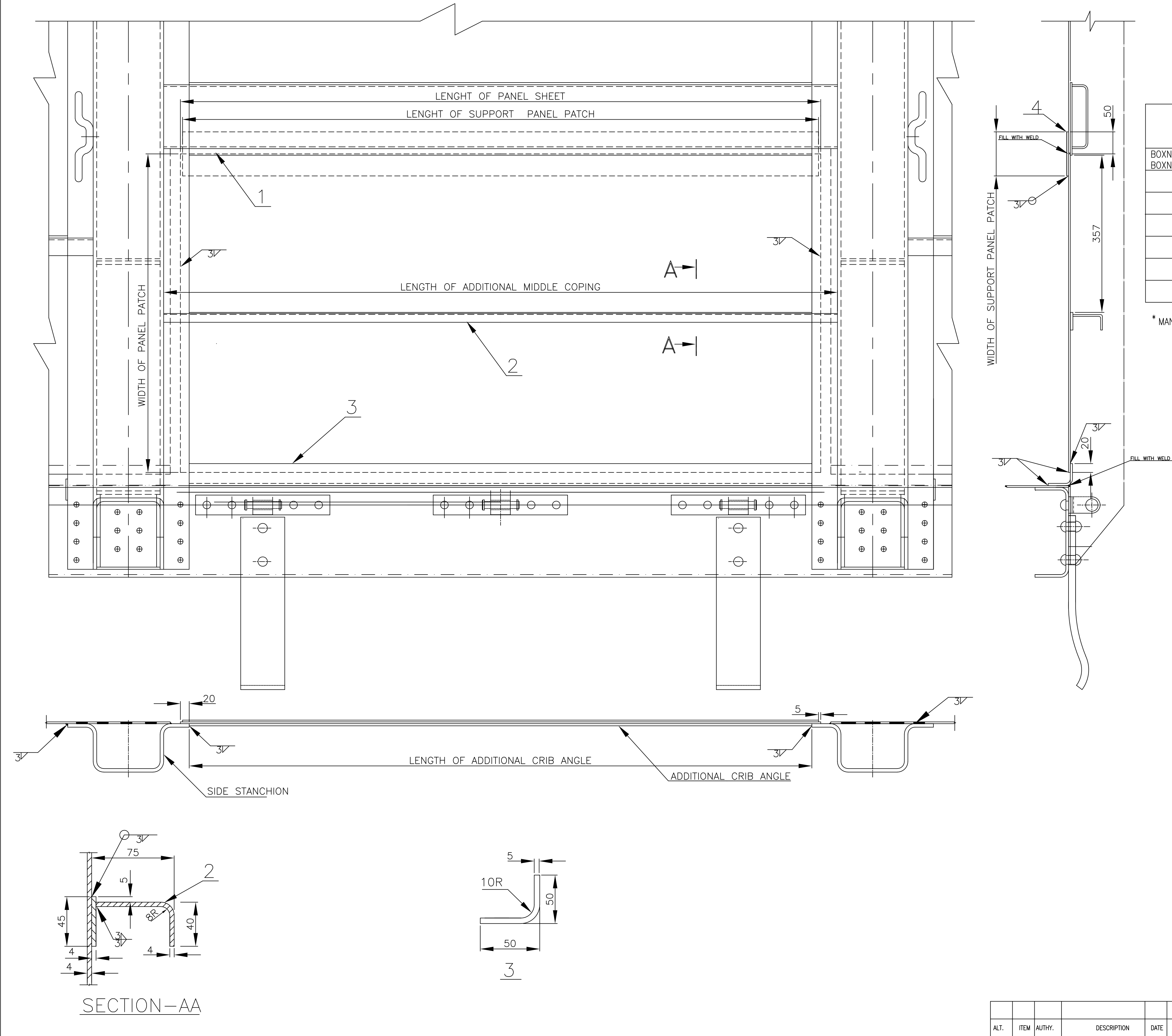


TABLE-1

TYPE OF WAGON	REFERENCE DRG OF DOOR	DOOR OPENING	PATCH SHEET		ADDITIONAL MIDDLE COPING		ADDITIONAL CRIB ANGLE		SUPPORT PANEL PATCH	
			SIZE	MATERIAL SPEC	LENGTH	MATERIAL SPEC	LENGTH	MATERIAL SPEC	SIZE	MATERIAL SPEC
BOXN,BOXNHS,BOXNHSM2 BOXNM2,BOXNCR,BOXNHA	WD-9007-S-01	750X1460	723X1500X5TH	IS:2062 E-250 Cu WA	1530 MM	IS:2062 E-250 Cu WA	1460 MM	IS:2062 E-250 Cu WA	100X1490X5TH	IS:2062 E-250 Cu WA
BOXNLW	(LATEST ALT)	750X1460	723X1500X4TH	IRS M:44	1530 MM	IRS M:44	1460 MM	IRS M:44	100X1490X4TH	IRS M:44
BOXNHL (A.&B)	WD-88088-S-07	750X1460	723X1500X4TH	IRS M:44	1530 MM	IRS M:44	1460 MM	IRS M:44	100X1490X4TH	IRS M:44
BOXNR (OLD)*	(LATEST ALT)	750X1460	723X1500X4TH	IRS M:44	1530 MM	IRS M:44	1460 MM	IRS M:44	100X1490X4TH	IRS M:44
BOXNHL (C)	WD-09034-S-07	750X1440	723X1480X4TH	IRS M:44	1530 MM	IRS M:44	1440 MM	IRS M:44	100X1470X4TH	IRS M:44
BOXNHL (D)	(LATEST ALT)	750X1414	723X1454X4TH	IRS M:44	1530 MM	IRS M:44	1414 MM	IRS M:44	100X1444X4TH	IRS M:44
BOXNR		752X1440	725X1480X4TH	IRS M:44	1530 MM	IRS M:44	1440 MM	IRS M:44	100X1470X4TH	IRS M:44

* MANUFACTURED BEFORE 08.04.2016

NOTE:

1. SECTIONAL VIEW OF ITEM NO.-2 AND ITEM-3 TO BE REFERRED AS PER ORIGINAL DRG.

PROCEDURE FOR FITMENT OF PATCH SHEET :

1. REMOVE DOOR FROM WAGON BODY BY REMOVING PIN FROM DOOR HINGE FOOT
2. GRAVITY COTTER, LOCKING BOLT TO BE REMOVED.
3. DOORWAY STIFFENING CROSS BAR, DOOR CHECK SPRINGS AND DOOR HINGE FOOT ARE NOT TO BE REMOVED.
4. FITMENT OF ADDITIONAL CRIB ANGLE WITH SIDE STANCHION AND SOLE BAR
5. WELD SUITABLE SIZE OF PANEL SHEET FROM INSIDE THE WAGON .
6. FITMENT OF ADDITIONAL MIDDLE COPING TO BE DONE.
7. FITMENT OF SUPPORT PANEL PATCH TO BE DONE FROM INSIDE THE WAGON..

4	SUPPORT PANEL PATCH	1	-	-	AS TABLE 1	
3	ADDITIONAL CRIB ANGLE	1	-	-	AS TABLE 1	
2	ADDITIONAL MIDDLE COPING	1	-	-	AS TABLE 1	
1	SHEET	1	-	-	AS TABLE 1	
ITEM	DESCRIPTION	NO.OFF PER DOOR	REF. DRG.	WT. OF ONE(Kg)	MTL. & SPEC	REMARKS
PRELIMINARY SKETCH			ONLY FOR PROTOTYPE APPLICATION UNDER GUIDANCE OF R.D.S.O. (WAGON)			
SUPERSEDED BY			BOGIE OPEN TYPE 'BOXN, BOXNHS,BOXNHSM2,BOXNM2,BOXNCR, BOXNHA,BOXNLW,BOXNHL (A,B,C&D),BOXNR'			
SUPERSEDES						
SCALE/PASSED			G R SHARMA 03/23			
CHECKED			LALIT MOHAN 03/23			
DRAWN			K PAL 03/23			
TRACED						
COMPARED						
J.S.NO.			WD-23018 03/23			
B.G.			R.D.S.O. [W]		GROUP	WD-23018-S-03

ALT.	ITEM	AUTHY.	DESCRIPTION	DATE	ASSLY. DRGS.
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