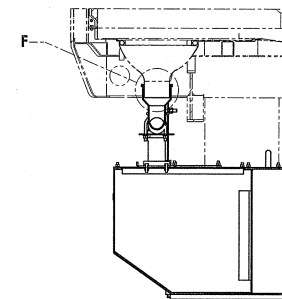
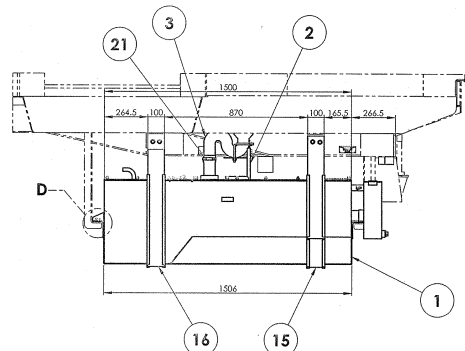
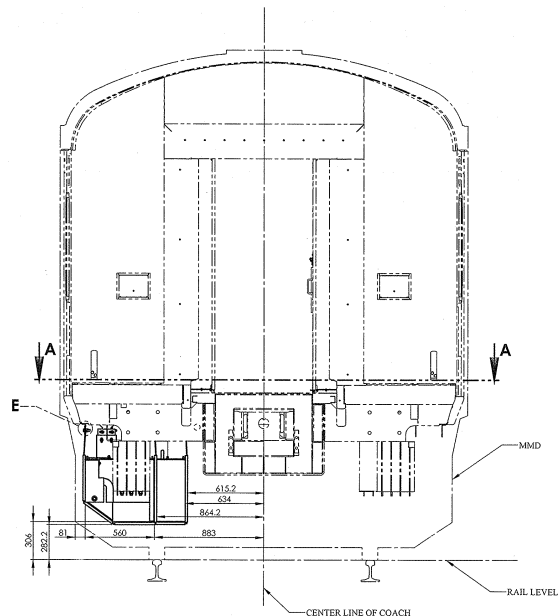
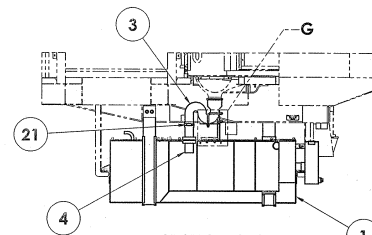
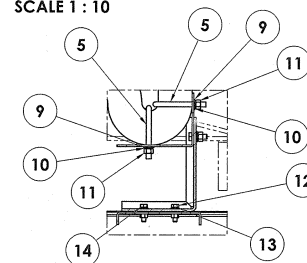
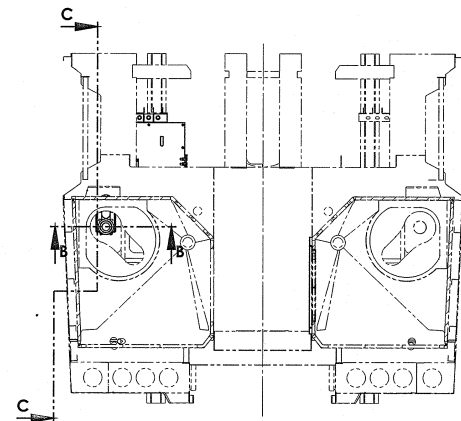
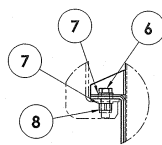
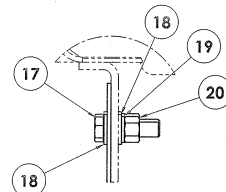
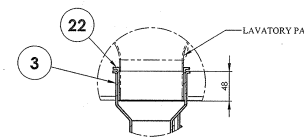


32963203

REVISIONS				APPROVED & DATE
ALT.	ZONE	DESCRIPTION		
a		1) DISC. & MATERIAL SPEC. OF ITEM-4 ALTD. FROM PVC SUCTON 10% ROLL GRAM. IS 1325-2002 TO RUBBER 2) ROLL GRAM. DIA 63MM. IS 1402-2001, TYPE-B. 3) NOTE-1 ADDED. 4) REF. SPEC. OF ITEM-22 UPDATED AS PER RDSC/CC-16094, ALT-2. VIEWS UPDATED ACCORDINGLY.		-SD-
b		DIMENSION OF ITEM-4 ALTD. FROM NOMINAL DIA 63MM TO NOMINAL DIA 70MM		

SECTION B-B  
SCALE 1 : 10SECTION C-C  
SCALE 1 : 20DETAIL G  
SCALE 1 : 5

NOTE:  
1. FIRMING OF ITEM-4 SHALL BE DONE AS PER PROCEDURE DEFINED IN CLAUSE NO-7 OF ISH 6265-2003.  
2. MANUFACTURE OF ITEMS 6, 7 & 8 SHALL BE UNBRATO OR TVS OR LPS ONLY.

SECTION A-A  
SCALE 1 : 20DETAIL D  
SCALE 1 : 5DETAIL E  
SCALE 1 : 2DETAIL F  
SCALE 1 : 4

1	RUBBER SEAL FOR 100MM LAVATORY PAN	80MM	22	RDSC/CC-12014	ASI-304			
1	SS HOSE CLAMP		21	IS 4742-84	ASI-304			
8	STAINLESS STEEL HEX NUT	M12	20	IS 1344 (PART 3) 2002, TAB-1	ISI 1344 (PART 3) 2002, A2-70, TAB-2			
8	SPRING LOCK WASHER	B12	19	IS 3003-1992, TAB-1, TYPE-B	ASI-304			
16	PLAIN WASHER	14	18	IS 3003-1992, TAB-2, TYPE-A	ASI-304			
8	STAINLESS STEEL HEX HEAD SCREW	M12 x 45	17	IS 1344 (PART 3) 2002, TAB-1	ISI 1344 (PART 3) 2002, A2-70, TAB-2			
1	SAFETY STRAP		16	AAA-63668				
1	SAFETY STRAP		15	AAA-63669				
4	SPRING LOCK WASHER	B8	14	IS 3003-1992, TAB-1, TYPE-B	ASI-304			
4	PLAIN WASHER	9	13	IS 3003-1992, TAB-2, TYPE-A	ASI-304			
4	STAINLESS STEEL HEX HEAD SCREW	M8x30	12	IS 1344 (PART 3) 2002, TAB-1	ISI 1344 (PART 3) 2002, A2-70, TAB-2			
4	STAINLESS STEEL HEX NUT	M10	11	IS 1344 (PART 3) 2002, TAB-1	ISI 1344 (PART 3) 2002, A2-70, TAB-2			
4	SPRING LOCK WASHER	B10	10	IS 3003-1992, TAB-1, TYPE-B	ASI-304			
4	PLAIN WASHER	11	9	IS 3003-1992, TAB-2, TYPE-A	ASI-304			
6	PREVAILING TORQUE TYPE NUT	M16	8	IS 7002-2005-8	ASI-304			
12	PLAIN WASHER	18	7	IS 2012-1992, TAB-2, TYPE-A	ASI-304			
6	STAINLESS STEEL HEX HEAD SCREW	M16 x 50	6	IS 1344 (PART 3) 2002, TAB-1	ISI 1344 (PART 3) 2002, A2-70, TAB-2			
2	U-BRACKET		5	RDSC/CC-12014				
1	RUBBER HOSE	NOMINAL DIA 100MM	4	IS 14933-2001, TYPE-B				L=250
1	S-TRAP	100MM	3	RDSC/CC-10009				
1	BRACKET ASSEMBLY		2	AAA-63681				
1	IR-DRDO BIO-DIGESTER SYSTEM FOR LHB COACHES (LH)		1	32963202				
QTY.	DESCRIPTION	DIMENSIONS	ITEM NO.	REF. DESG.	MATL.	WT/UNIT IN KGS	REMARKS	

GROUP - 43 SURFACE AREA IN Sq.m.: 270.509

MOUNTING OF IR-DRDO  
BIO-DIGESTER SYSTEM ON LHB  
COACHES (LH)INDIAN RAILWAY STANDARDS  
INTEGRAL COACH FACTORY, CHENNAI - 600038

SCALE: 1:50 S.S.E./D. CHD

ALT. b

ALTD. DRN

LAMP/COCH/AN

SHEET 1 OF 1

32963203

A1

"JOINTLY DEVELOPED BY IR &amp; DRDO"

REF. DRG. NO. M005710

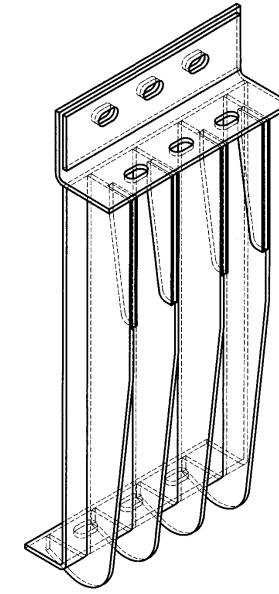
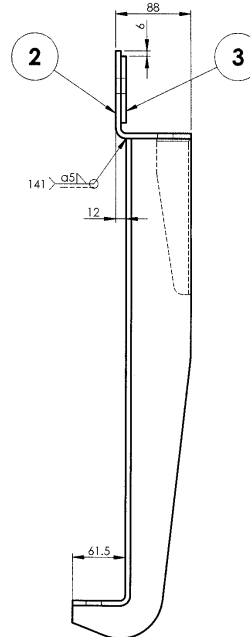
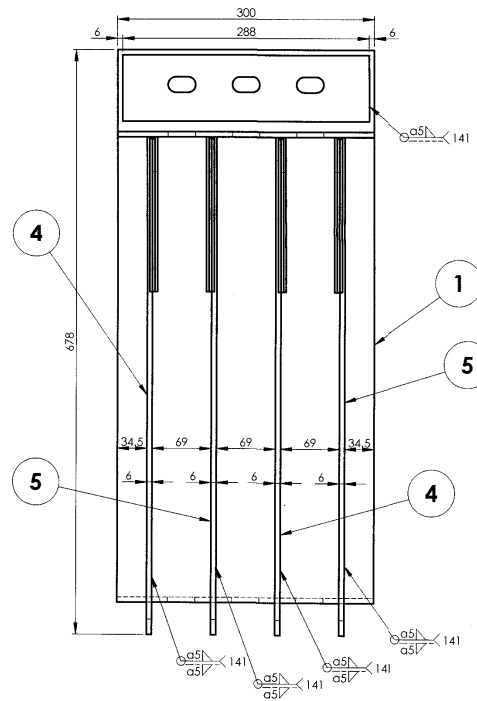
09-03-2018 07-04-2017  
DATE OF LATEST ALT. DATE OF FIRST ISSUE  
NAME/DATE

ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED. FOR UNDIMENSIONED DIMENSIONS AND FINISHES, REFER DRAWING NO. C/STD-9-0001.  
ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THE DRAWING INVALID. WELDING SYMBOLS ARE AS PER IS 813-1986. WEIGHT GIVEN IN DRAWING IS FOR INDICATIVE PURPOSE ONLY.



32963250

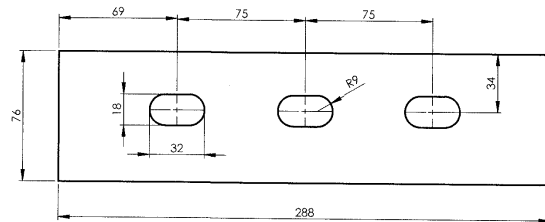
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NO.	DESCRIPTION				
1	ROUGH MACHINED				
2	ROUGH CLEANED				
3	FINISH MACHINED				
4	BURRS REMOVED				
5	FINE FINISH MACHINED				
6	CHAMFERED				



ISOMETRIC VIEW

NOTE:

- ALL SHARP EDGES SHALL BE ROUNDED OFF.
- OPEN TOLERANCE TO DRG NO. ICF/STD-9-0-001 SHALL GENERALLY BE FOLLOWED. WHEREVER TOLERANCE IS NOT MENTIONED FOR DIMENSIONS.



2	RIB		5	AA863287		1.99	
2	RIB		4	AA863286		1.99	
1	PLATE	6 x 76 x 288	3		AISI-316L	0.98	
1	ANGLE		2	AA863288		2.42	
1	L-PLATE		1	AA863289		8.53	
QTY.	DESCRIPTION	DIMENSIONS	ITEM NO.	REF.DRGS.	MATL	WT/UNIT IN KGS	REMARKS
GROUP: 6-3 Lavatory and Fittings				SURFACE AREA IN Sq.m.: 897824.63		WT/ASSY IN Kgs:	
INNER BRACKET					SCALE 1:5	SSE/D	Suresh Ravi P.M
					ALT	CHD	
					DRN	ALTD	KILAMPOZHILAN
INDIAN RAILWAY STANDARDS					ICF/SK3		
INTEGRAL COACH FACTORY, CHENNAI - 600038					32963250		
SHEET 1 OF 1					A2		

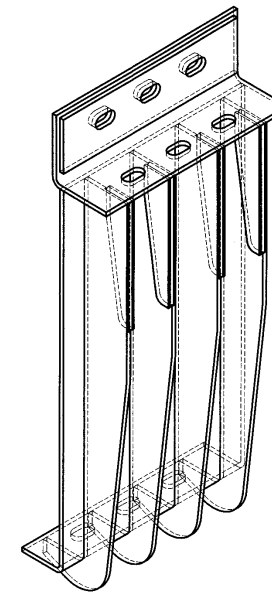
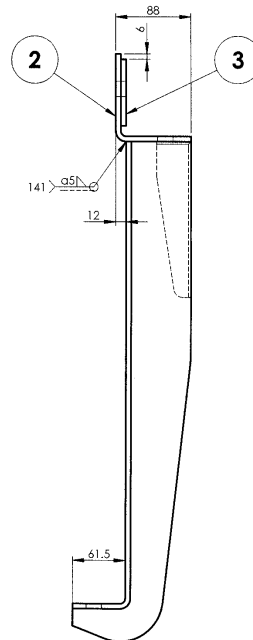
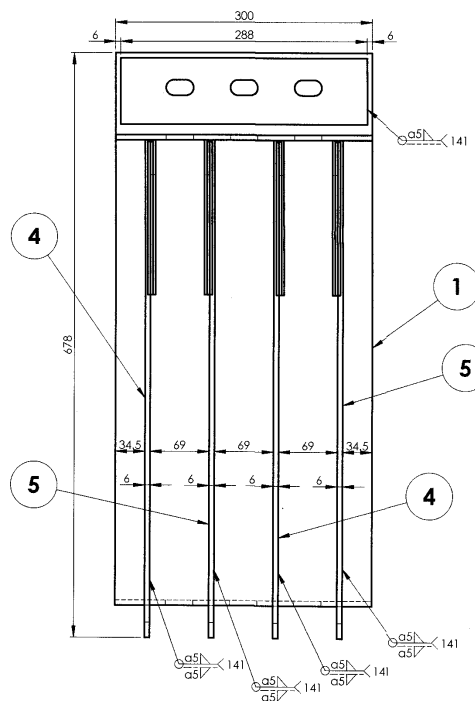
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SHAKTI SINGH BAGH

REF.DRG.NO.:-

DATE OF LATEST ALT.	29-02-2020	NAME/SME
DATE OF FIRST ISSUE		

32963250

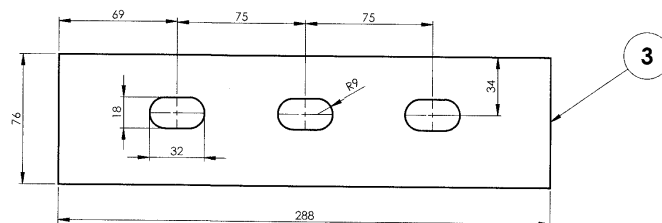
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NO.	DESCRIPTION				
1	ROUGH MACHINED				
2	ROUGH CLEANED				
3	FINISH MACHINED				
4	BURRS REMOVED				
5	FINE FINISH MACHINED				
6	CHAMFERED				



ISOMETRIC VIEW

NOTE:

- ALL SHARP EDGES SHALL BE ROUNDED OFF.
- OPEN TOLERANCE TO DRG NO. ICF/STD-9-0-001 SHALL GENERALLY BE FOLLOWED. WHEREVER TOLERANCE IS NOT MENTIONED FOR DIMENSIONS.



2	RIB		5	AA863287		1.99	
2	RIB		4	AA863286		1.99	
1	PLATE	6 x 76 x 288	3		AISI-316L	0.98	
1	ANGLE		2	AA863288		2.42	
1	L-PLATE		1	AA863289		8.53	
QTY.	DESCRIPTION	DIMENSIONS	ITEM NO.	REF.DRGS.	MATL	WT/UNIT IN KGS	REMARKS
GROUP: 6-3 Lavatory and Fittings				SURFACE AREA IN Sq.m.: 897824.63		WT/ASSY IN Kgs:	
INNER BRACKET					SCALE 1:5	SSE/D	Suresh Ravi P.M
					ALT	CHD	
					DRN	ALTD	KILAMPOZHILAN
INDIAN RAILWAY STANDARDS					ICF/SK3		
INTEGRAL COACH FACTORY, CHENNAI - 600038					32963250		
SHEET 1 OF 1					A2		

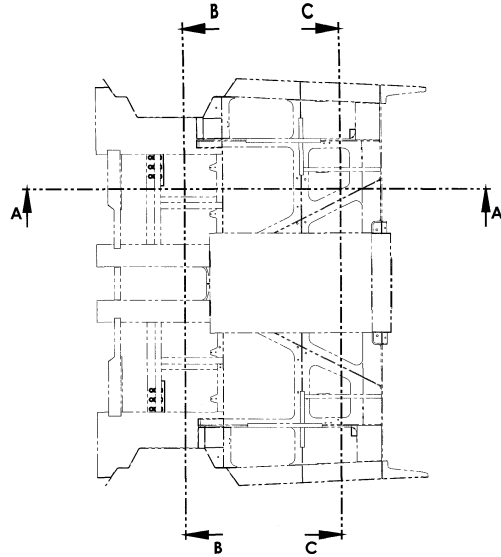
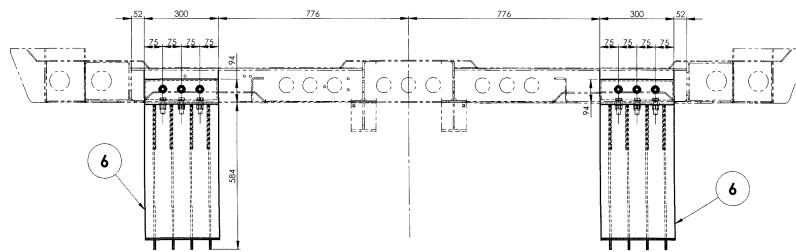
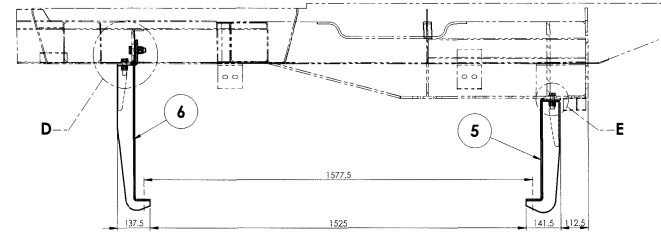
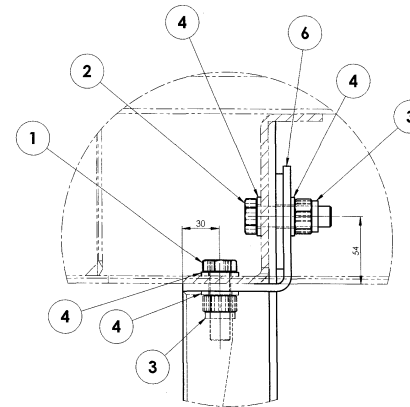
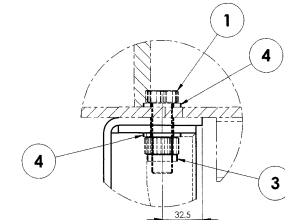
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SHAKTI SINGH BAGH

REF.DRG.NO.:-

DATE OF LATEST ALT.	29-02-2020	NAME/SME
DATE OF FIRST ISSUE		

32963251

▽ ROUGH MACHINED	(01) ROUGH CLEANED	REVISIONS			
▽▽ FINISH MACHINED	(02) BURRS REMOVED	ALT.	ZONE	DESCRIPTION	APPROVED & DATE
▽▽▽ FINE FINISH MACHINED	(03) CHAMFERED				

SECTION B-B  
SCALE 1 : 10SECTION C-C  
SCALE 1 : 10SECTION A-A  
SCALE 1 : 10DETAIL D  
SCALE 1 : 2DETAIL E  
SCALE 1 : 2

NOTE:

1. MANUFACTURER OF ITEMS 1, 2 & 3 SHALL BE UNBRAKO OR TVS OR LPS ONLY.
2. THIS DESIGN APPLICABLE FOR RETROFITMENT OF SAME BIO RETENTION TANK IN COACHES WITH CORRODED J-BRACKETS.

1	OUTER BRACKET (LH)	7	32963252						
2	INNER BRACKET	6	32963250						
1	OUTER BRACKET (RH)	5	32963249						
34	PLAIN WASHER	18	4	IS 2014-1947 TAB-2, TYPE-A					GALVD
18	PREVAILING TORQUE TYPE NUT	M16-8	3	IS 7002_2018					GALVD
4	HEX HEAD SCREW	M16x60-9.8	2	IS 1344 (PART-2) 2018, TAB-1&3					GALVD
12	HEX HEAD SCREW	M16 x 55-9.8	1	IS 1354 (PART-2) 2018, TAB-1&3					GALVD
QTY.	DESCRIPTION	DIMENSIONS	ITEM NO.	REF.DRGS.	MATL.	WT/UNIT IN KGS	REMARKS		
GROUP: 4-3 Laboratory and Fittings				SURFACE AREA IN Sq.m: 286.732		WT/SSY IN Kgs:			
				SCALE: 1:20		SSC/D: <i>Chun R. Rao P.M.</i>			
						ALT: ALT.D			
						DRN: K.LAMPOLHEAN			
						ICF/SK3			
						SHEET 1 OF 1			
						32963251			
						A1			

DATE OF LATEST ALT.	2/7-02-2020	DATE OF FIRST ISSU	AMU/SAFE
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REF.DRG.NO.

ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED. FOR UNFOLDED DIMENSIONS AND TOLERANCES VALUES, REFER DRAWING NO. C1 STD-9-0001.  
ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THE DRAWING INVALID. WELDING SYMBOLS ARE AS PER IS 813:1986. WEIGHT GIVEN IN DRAWING IS FOR INDICATIVE PURPOSE ONLY.

6

ANNEXURE-I

Procedure for repair/replacement of corroded J-Brackets on under frame of LHB coaches for Bio retention tank fitment

1. Uninstall the Bio tank from the under frame brackets after dismantling the safety straps and connectivity between pan/commode & Bio tank.
2. Keep the Bio tank in safe custody under a shelter by closing the top inlet opening temporarily to avoid ingress of any foreign particles.
3. If any corrosion is evident on the structural members, it should be repaired as per extant practice and procedures & guidelines issued for dealing such corrosion by RDSO.
4. Worst corroded outer J-bracket shall be cut and removed from the outer headstock of the end part. Ground the removed bracket area at the bottom of head stock to ensure full surface contact area for the butting of J-bracket to drg. Nos. 32963249 & 32963252. Special care shall be taken to avoid any damage of head stock while cutting of corroded J-brackets.
5. If found necessary, then inner J-bracket shall be cut and removed from the end part member up to the bottom of member. Ground the removed bracket area at the bottom of the end part member to ensure full surface contact area for the butting of J-bracket to drg. No. 32963250. Special care shall be taken to avoid damage of end part member while cutting of corroded J-brackets.
6. Two templates or jig & fixtures shall be prepared for marking & drilling of bolting holes Ø18mm for bolted design J-brackets with the help of recommended drilling tools for in-position drilling.
7. The processed area of head stock & cross member of end part and corrosion repaired parts should be duly painted with two packs of high performance anti corrosion epoxy coating of dry film thickness for 75 to 125 microns as per RDSO specification No. M&C/PCN/123/2012.
8. Assemble the outer J-bracket with outer head stock by using fasteners as shown in the drg. No. 32963251.
9. Assemble the inner J-bracket with end part member by using fasteners as shown in the drg. No. 32963251.
10. Reinstall the bio tank arrangement as per the drg. No. 32963203 & 32963204 for LH side & RH side. Reassemble the safety straps and connectivity between pan/commode & Bio tank.

N. K. Singh  
dt 06/12/20  
SSE/DESIGN

Signature Not  
Verified  
Stamp  
Date: 2025-09-22  
Reason: RDSO-CRIS  
Location: Noida  
SSE/DESIGN  
06/12/2020



सर्वारी दिव्या कारखाना / INTEGRAL COACH FACTORY

चेन्ने / CHENNAI - 600 038.

Telefax: 044-26261872 / Railway : 46804

Email: dycodeicf@gmail.com

महा प्र./यां.(अभिकल्प) का कार्यालय

O/o. General Manager/Mech. Design

दिनांक / Date: 13.07.2020.

सं/No. MD/FUR/LAV. FIT/101

Dy. CME/HQ,  
Headquarters Office,  
Mechanical Branch,  
Southern Railway,  
Chennai - 600 003.

विषय/Sub:

Corrosion of J-brackets on under frame for mounting of Bio retention tank in LHB coaches.

संदर्भ/Ref:

Your Lt. No. MWS/87/AV/Bio Toilet Vol.XII  
dated 23.01.2020.

With respect to above subject, a retro fitment Bolted design J-Bracket in SS-316L material is developed and issued the drawings for retro fitment & reuse of existing dismounted Bio retention tanks to drg. Nos. 32963203 & 32963204 from the corroded brackets.

A procedure for repair/replacement of corroded J-brackets on under frame of LHB coaches for Bio retention tank fitment is also enclosed herewith as Annexure-I.

In view of above, it is suggested that SR may do fitment trial in at least one coach, before regular adoption of the design and please communicate feedback information to this office.

संलग्न/Encl: Drgs. & Annexure-I

(संजय अंगोतु / SANJAY ANGOTHU)

उप. प्र./यां.इ./अभिकल्प-II / Dy. CME/Design-II

कृते महा प्र./यां.(अभिकल्प)/for GM/Mech.Design

प्रतिनिधि / Copy to:

CDE/Mech. for kind information  
CME/QA for kind information  
ED/Carriage/RDSO for kind information  
CWE/SR, CRSE/SR for kind information  
CWM/CW/PER for kind information  
CA/M/MIS/CC for kind information

Signature Not  
Verified  
Stamp/Signature  
Date: 20/07/2020  
Reason: RE-SCRS  
Location: New Delhi

page 7 of 7