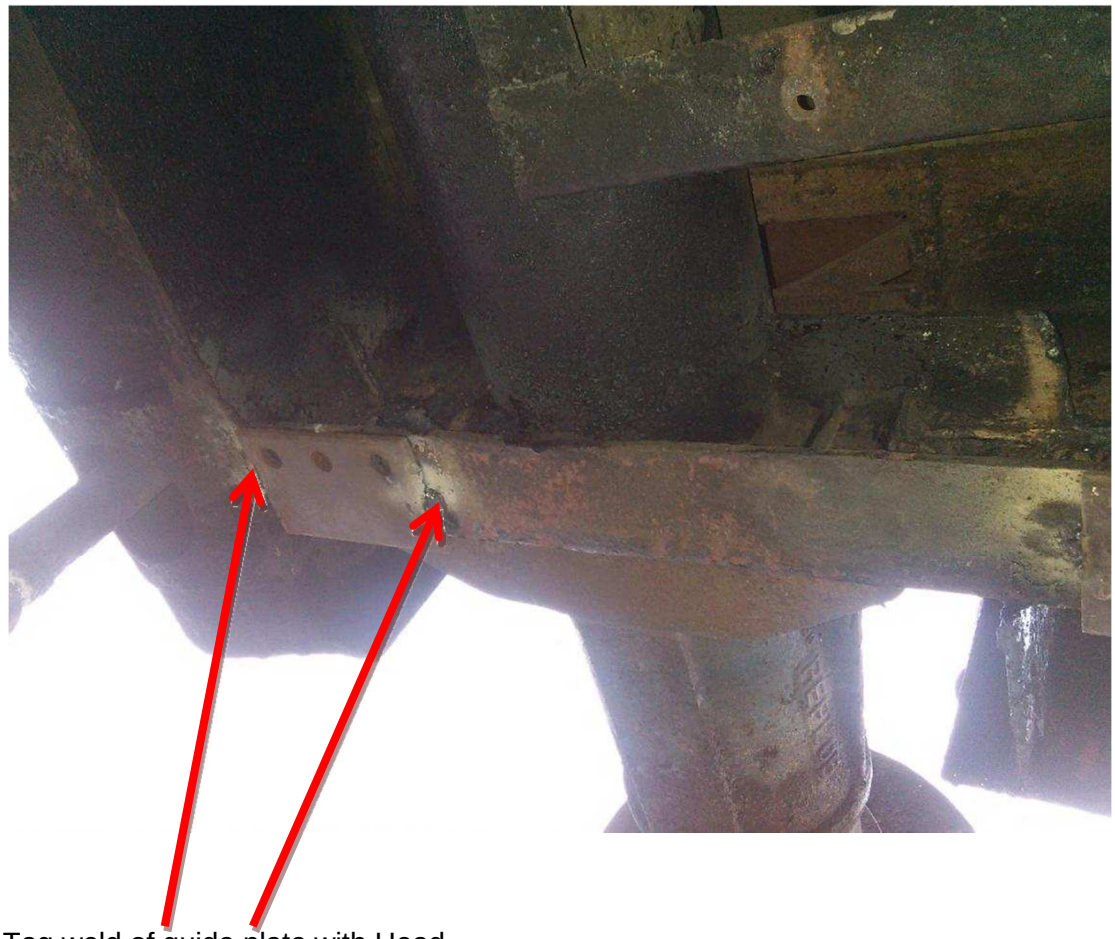
Procedure in detail for Retro-fitment of DRDE Bio-toilet Tank on ICF/ RCF Design BG Coaches. (Being followed in JUWS) .

(a) CUTTING PROCESS

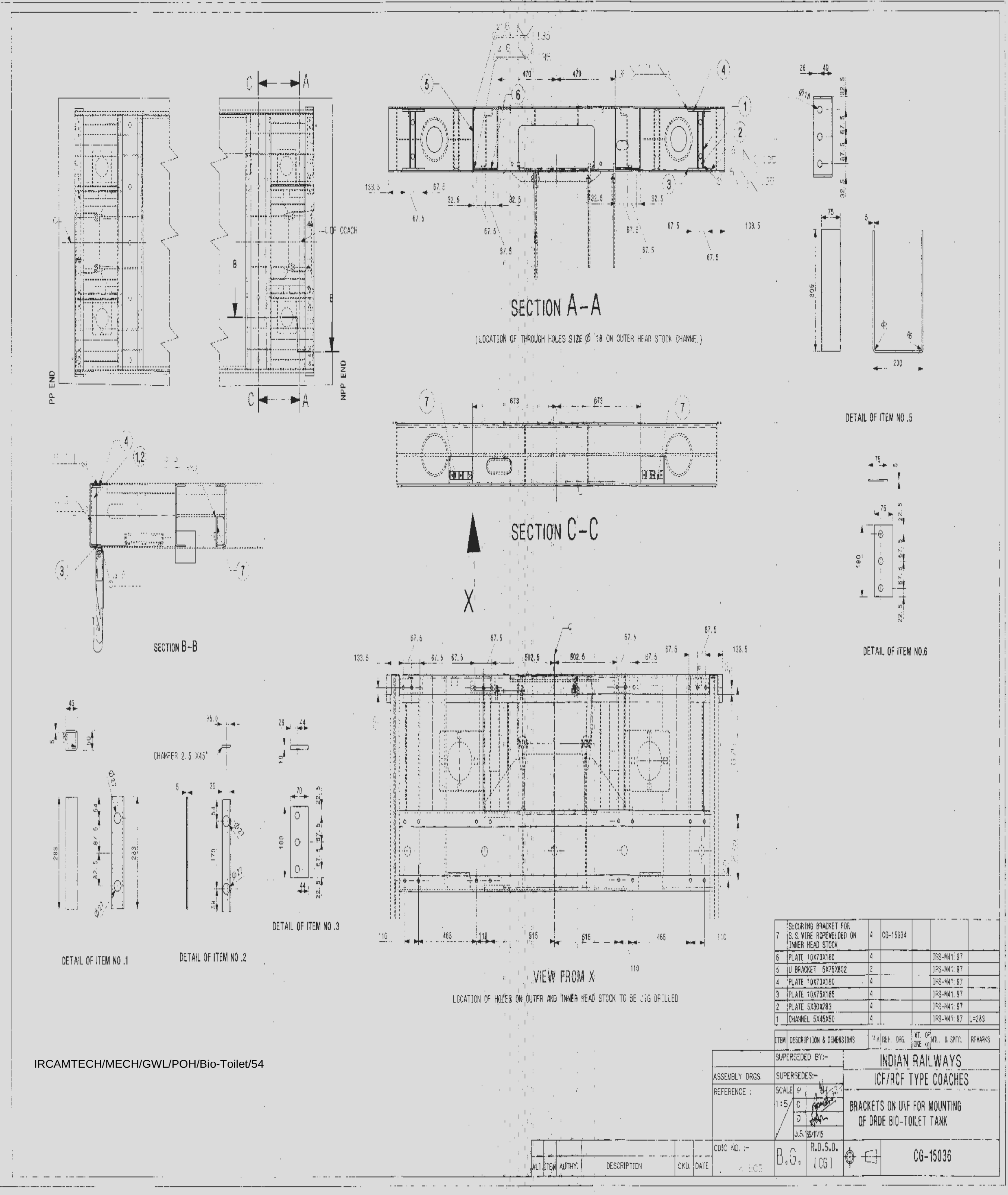
- Cut all four lavoratory commode chute platse by gas cutting.
- Cutting for vertical supporting support strip welding.
- Cutting of both hose pipe lever if required.
- Partial cutting of floor striffner.

(b) DRILL POSITION IN HEAD STOCK & GUIDE PLATE WELDING

- After marking over outer head stock and inner headstock as per RDSO Drg No. CG-15036, tag weld drilled guide plate after drilling over head stock according to marking as shown in figure .



Tag weld of guide plate with Head stock for drilling in headstock

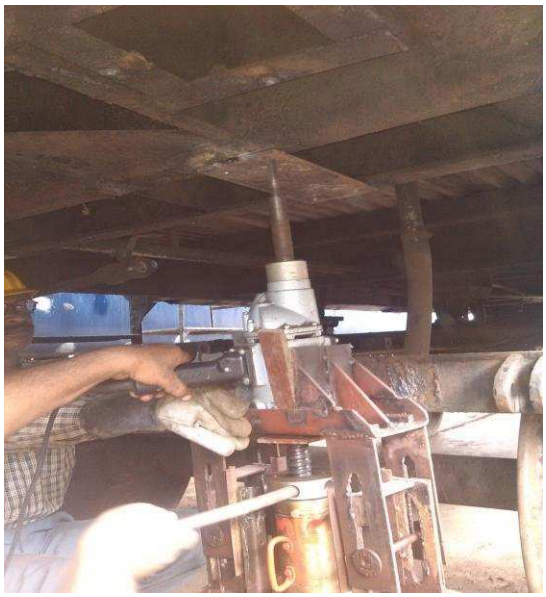


ITEM	DESCRIPTION & DIMENSIONS	[illegible]	REF. DRG.	WT. OF ONE (kg)	MTL. & SPEC.	REMARKS
7	SECURING BRACKET FOR S.S. WIRE ROPEWELDED ON INNER HEAD STOCK	4	CG-15034			
6	PLATE 10X70X180	4			IRS-M41: 97	
5	U BRACKET 5X75X802	2			IRS-M41: 97	
4	PLATE 10X70X180	4			IRS-M41: 97	
3	PLATE 10X75X185	4			IRS-M41. 97	
2	PLATE 5X30X283	4			IRS-M41: 97	
1	CHANNEL 5X45X50	4			IRS-M41: 97	L=283

IRCAMTECH/MECH/GWL/POH/Bio-Toilet/54

(c) DRILLING OPERATION

- Drilling should be done in outer and inner headstock by vertical drilling machine for making holes of spacified size on inner and outer head stock C- Channels as per RDSO drawing No. CG-15036.
- Mark, cut, tack weld or weld to formulate the foundation provision of clutch wire opening/closing mechanism as per CAI issued for this purpose.



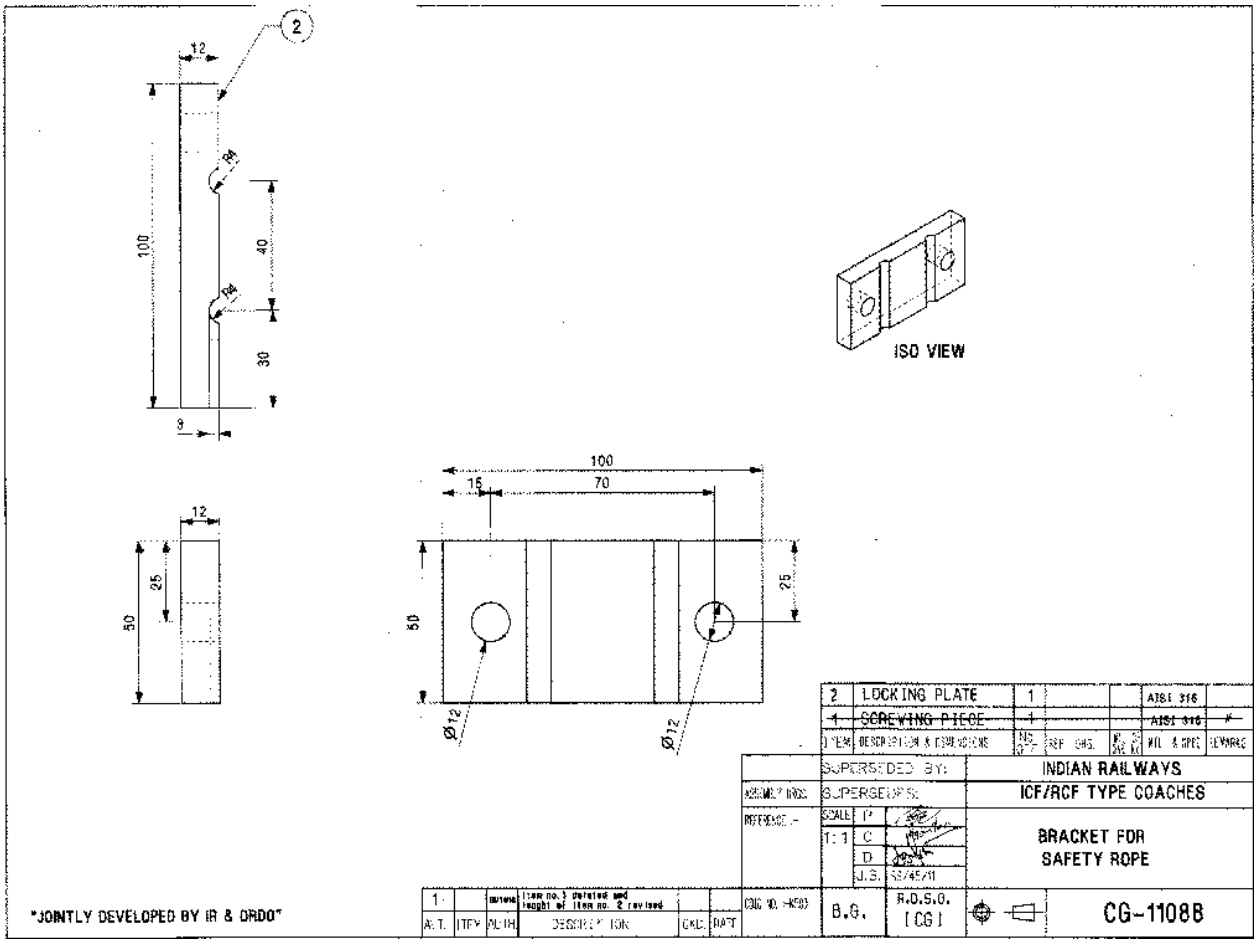
(d) BIO- TANK MOUNTING

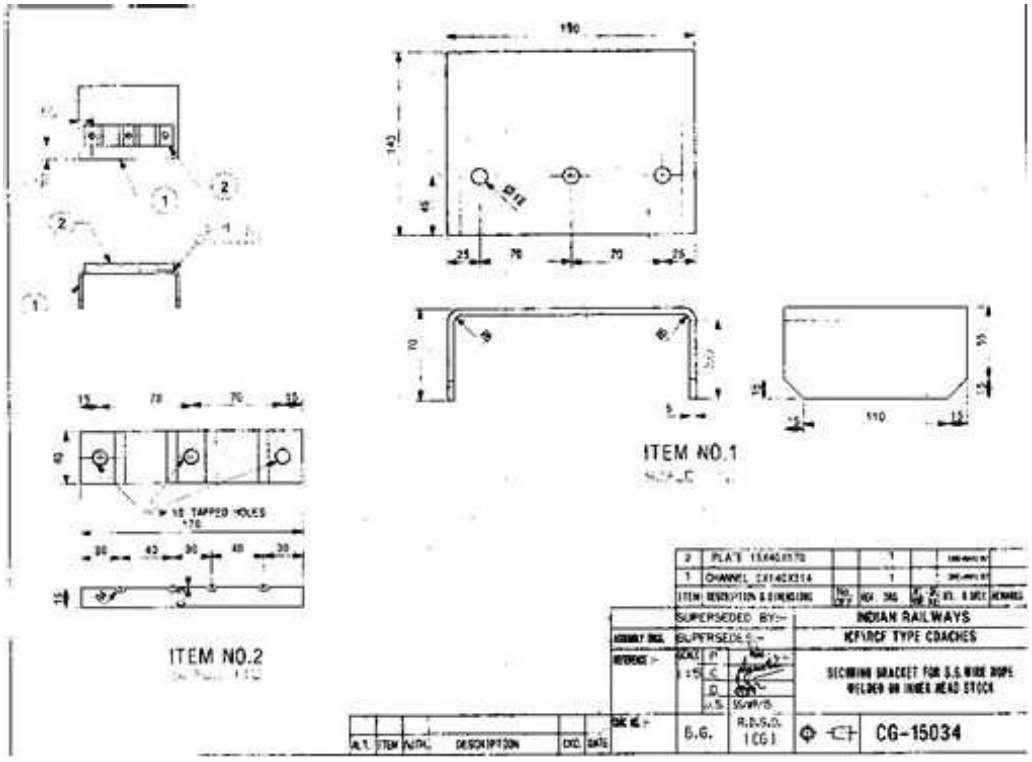
- Mount all bolted design J-Brackets at the location marked in the drawing No. CG-15028. All the brackets should be properly fastened with spacified size, material, grade fastener only and properly tightened.

- Mounting of Bio-Tank with the help of Hydraulic lifting trolley and adjusting the tank P-Trap of Bio-Tank with aligning commode chute. Fit the tank with J-bracket with nut and bolts.

(e) INNER PLATE WELDING FOR WIRE ROPE

- Fix one end of safety ropes on inner head stock with spacified size, material, grade fastener only and properly tighten it.



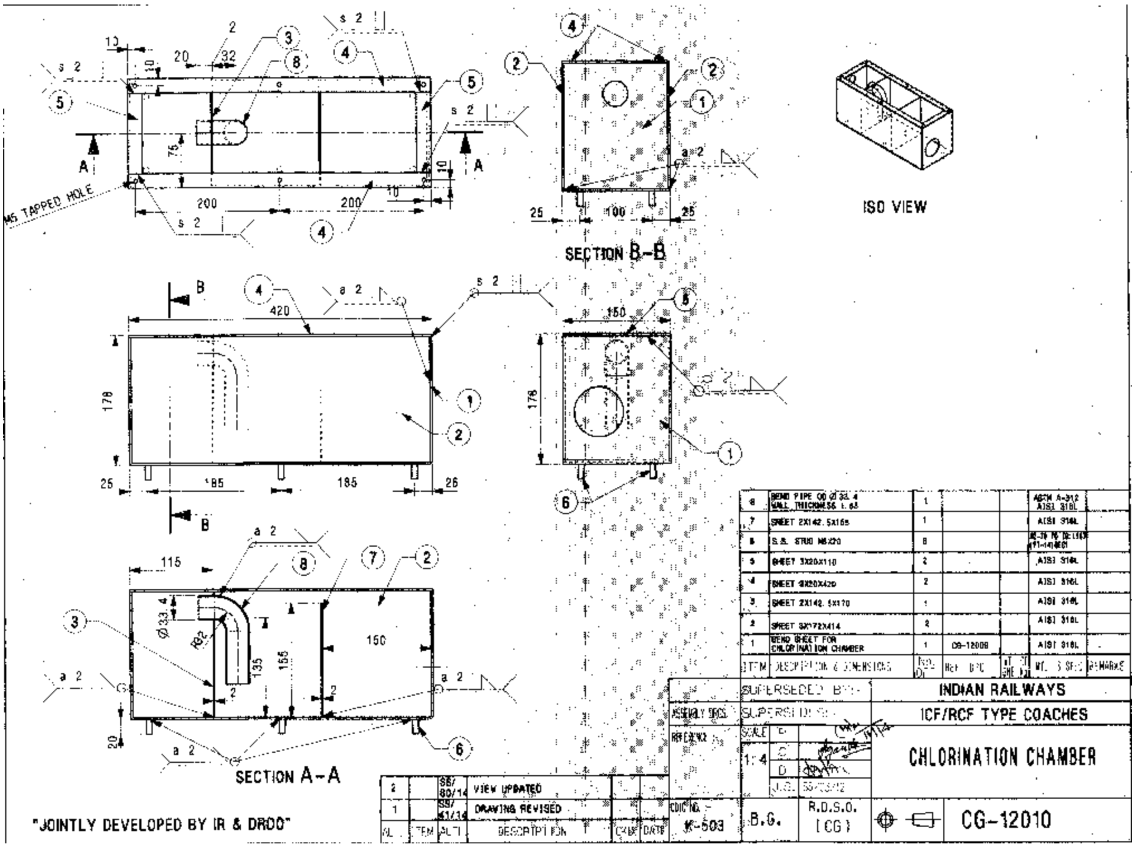


(f) CLUTCH WIRE TYPE OPENING MECHANISM FOR BALL VALVE.

Operating mechanism of Ball valve should be as per RCF Specification No. MDTS-41493.

(g) CHLORINATOR UNIT FITMENT

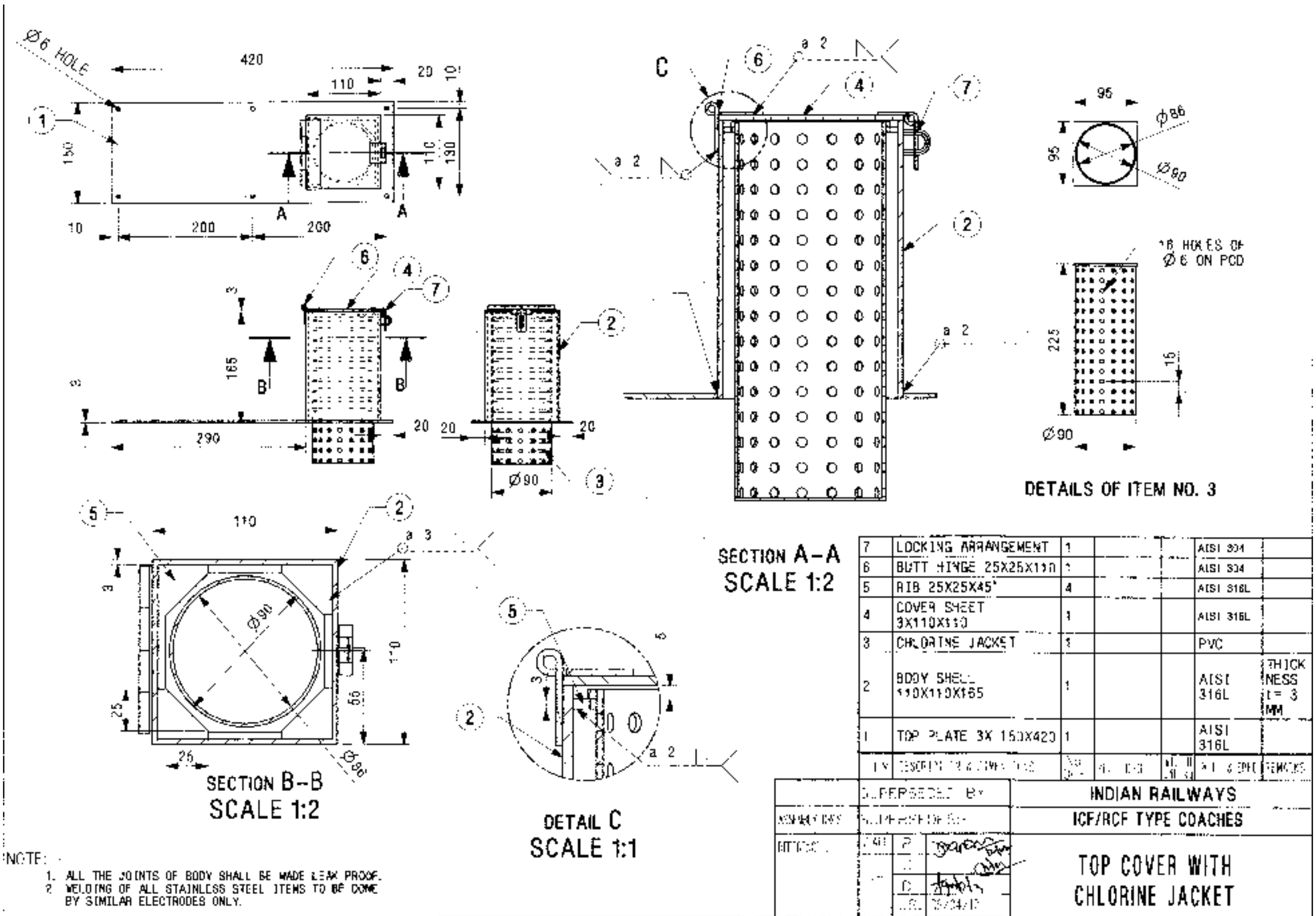
Chlorinator unit should be fitted with Bio-Toilet tank as per RDSO drawing No. CG-12012. Other parameters are given in Drg. No. CG-12010 & CG-12011.



8	BEND PIPE OD Ø 33.4 WALL THICKNESS t.65	1			ASTM A-312 AISI 316L	
7	SHEET 2X142.5X165	1			AISI 316L	
6	S.S. STUD M6X20	6				
5	SHEET 3X20X110	2			AISI 316L	
4	SHEET 3X20X420	2			AISI 316L	
3	SHEET 2X142.5X170	1			AISI 316L	
2	SHEET 3X172X414	2			AISI 316L	
1	BEND SHEET FOR CHLORINATION CHAMBER	1	CG-12009		AISI 316L	
ITEM	DESCRIPTION & DIMENSIONS	NO. OF	REF. DRG	WT. ...	MTL. & SPEC	REMARKS

2		55/80/14	VIEW UPDATED			
1		55/41/14	DRAWING REVISED			
AL.	ITEM	ALT.	DESCRIPTION		CKD.	DATE

SUPERSEDED BY:-		INDIAN RAILWAYS
SUPERSEDES:-		ICF/RCF TYPE COACHES
SCALE 1:4		CHLORINATION CHAMBER
CODE NO. K-503	B.G.	R.D.S.O. (CG)	CG-12010



7	LOCKING ARRANGEMENT	1			AISI 304	
6	BUTT HINGE 25X25X110	1			AISI 304	
5	RIB 25X25X45°	4			AISI 316L	
4	COVER SHEET 3X110X110	1			AISI 316L	
3	CHLORINE JACKET	1			PVC	
2	BODY SHELL 110X110X165	1			AISI 316L	THICKNESS t = 3 MM
1	TOP PLATE 3X 150X420	1			AISI 316L	
ITEM	DESCRIPTION & DIMENSIONS	NO. OF	REF. DRG	WT.	MTL. & SPEC	REMARKS

SUPERSEDED BY		INDIAN RAILWAYS
SUPERSEDES		ICF/RCF TYPE COACHES
		TOP COVER WITH CHLORINE JACKET
B.G.	R.D.S.O. (CG)	CG-12011

NOTE:
1. ALL THE JOINTS OF BODY SHALL BE MADE LEAK PROOF.
2. WELDING OF ALL STAINLESS STEEL ITEMS TO BE DONE BY SIMILAR ELECTRODES ONLY.

1		55/42/14	DRAWING REVISED			
AL.	ITEM	ALT.	DESCRIPTION		CKD.	DATE

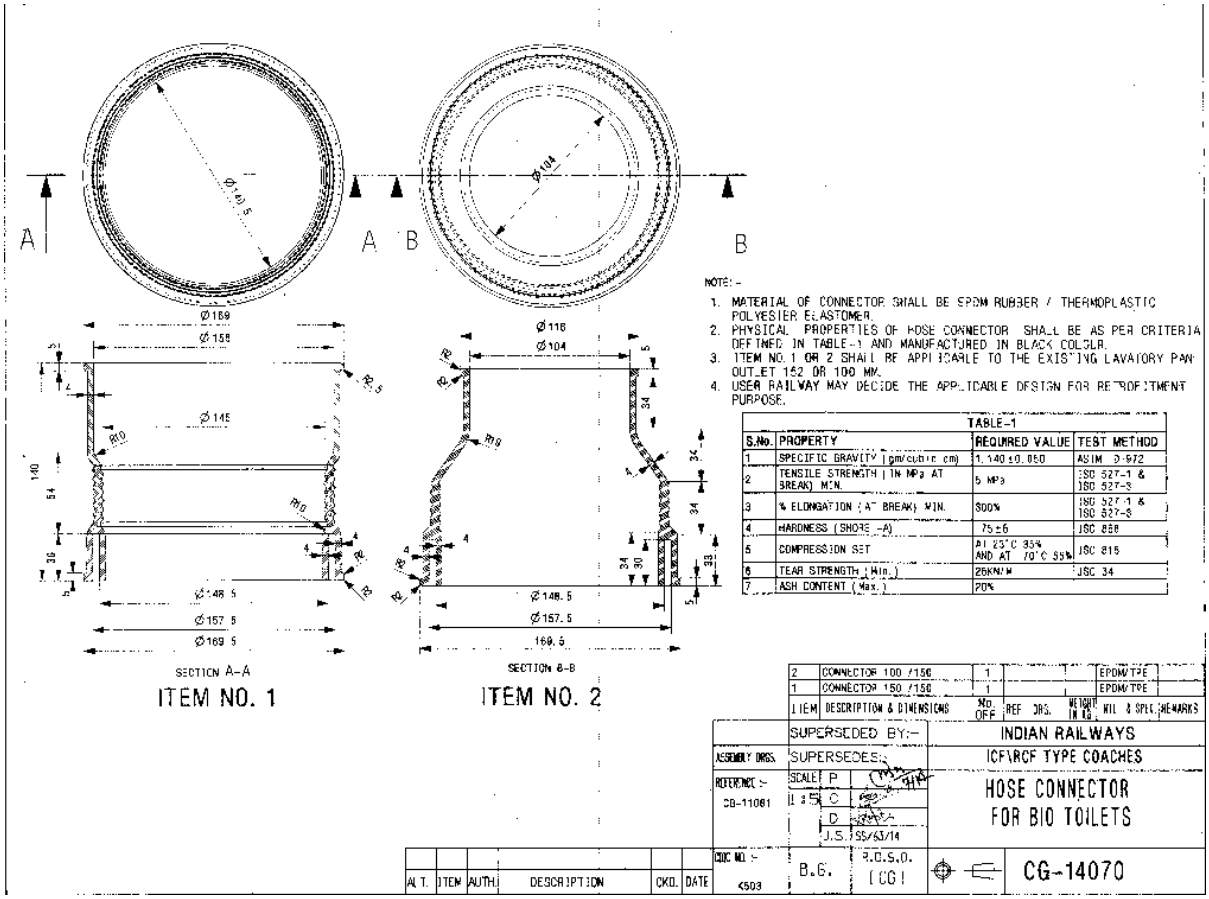
"JOINTLY DEVELOPED BY IR & DRDO"

(e) WIRE ROPE FITMENT

- Wire rope should be kept slightly loose at the time of fitment to avoid strand cutting due to oscillation during train running.

(h) RUBBER CONNECTOR FITTING

- One end of Rubber connector should be fitted with Lavoratory chute and clamped.
- Other side of rubber connector should be clamped with Bio-Tank and secure leak proof joint to avoid leakage of effluent.
- Size and material of Hose Connector should be as per RDSO drawing No. 14070 or latest.



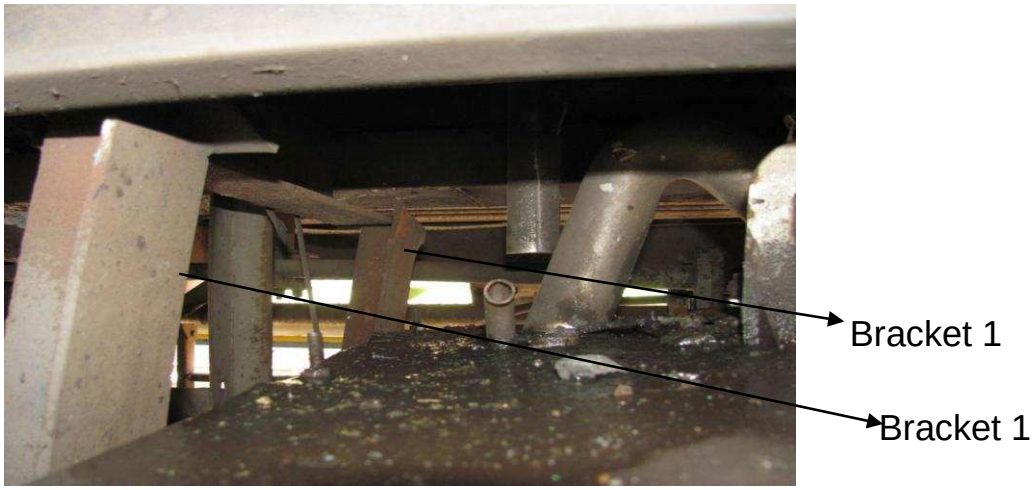
(i) PROBLEMS BEING FACED IN BIO TANK FITMENT

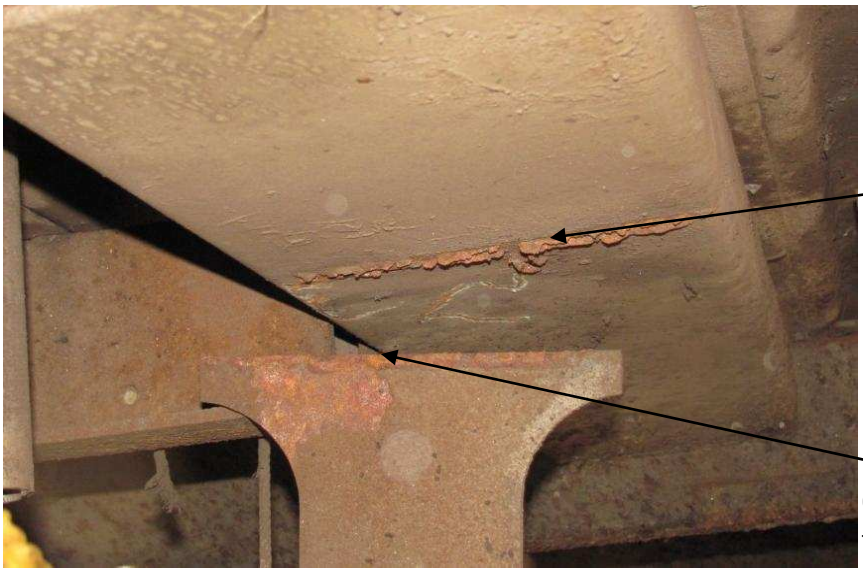
- Rib height must be adjusted according to the head stock.
- Turn under cutting to be done with gas cutting upto suitable space to pedal rod.
- Ensure alignment of Bio-Tank inlet and lavoratory outlet at the time of final mounting.
- Wire rope should be kept slightly loose at the time of fitment to avoid strand cutting at the time of oscillation during running.
- Joint of rubber connector should be leak proof for water.
- Distance of Inside plate for wire rope fitting shoud not be less than 20 mm from head stock level.
- Ensure easy operation of operating mechanism of ball valve.

Welding Failure in J-Bracket mounting

During Maintenance of the Rake, on duty rake maintenance supervisor should personally inspect the mounting brackets for any weld failure or crack in the supporting members.

Following are the critical vulnerable locations for weld failures-




Weld location of Bracket
Bracket came out due to weld failure


Weld location of bracket
Bracket came out due to weld failure


Weld location of bracket
Bracket came out due to weld failure