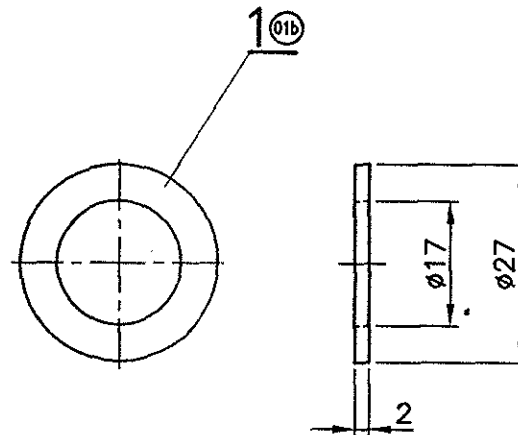




EMU/M-0-1-036

▽ ROUGH MACHINED	① ROUGH CLEANED	ALTERATIONS
▽▽ FINISH MACHINED	①⑧ CHAMFERED	
▽▽▽ FINE FINISH MACHINED	①⑨ BURRS REMOVED	
		(a) 02/2012 MATL. SPECN. FOR ITEM-1 CHANGED FROM "SYNTHETIC RUBBER" TO "NYLON-66". -sd-14-02-2012 SSE/D AME/D
		(b) 04/2015 TITLE OF DRAWING REVISED. FOR ITEM-1 MAT. SPEC ALTD. FROM 'NYLON-66' TO 'IS:3020 TYPE-1 FCTS', THICKNESS ALTD. FROM 3 TO 2 & TOLERANCE ±0.5 ON ID & OD DIM. AND IDENTIFICATION DETAIL DELETED. SSE/D SME/BD



ALL TYPES OF BG MAIN LINE, MEMU, DMU & EMU COACHES.

LGS-0-3-001	DMU/TC7-0-3-701
LWGSCWAC-0-3-035	T-0-3-804
LWGSCWAC-0-3-001	EMU-0-1-018
WTAC-0-3-402	AC/DC EMU/M2-0-1-201
WGSCWAC11-0-3-101	DHMu/DPC-0-1-001
GS7-0-3-701	EMU/M-0-1-033
ASSEMBLY DRAWINGS	

16	WASHER 2xØ27/Ø17	1		IS:3020 TYPE-1, FCTS					
QTY	DESCRIPTION & DIMENSION	ITEM	REF.DRGS	MAT.SPEC	WEIGHT/UNIT	REMARKS			
2	1	GROUP: 0-1				SUPERSEDED BY:			
PER COACH	LEATHER WASHER FOR AXLE BOX GUIDE ARRGT.					SUPERSEDES: EMU/M-0-1-036 ALT.a/NIL			
						SCALE	SSE/D		
						1:1	CHD		
							ALTD		R. Muralidar
									DRN
Alpha Alt:- b									
#	DATA CODE NO.	INDIAN RAILWAY STANDARDS				INTEGRAL COACH FACTORY CHENNAI-38			
	089					SHEET			
						1 OF 1			
					EMU/M-0-1-036				

0	Num. Alt.	23-04-2015	27-06-2008	AME/SME
	DATE OF LATEST ALT	DATE OF FIRST ISSUE		

DATA
CODE NO.
089

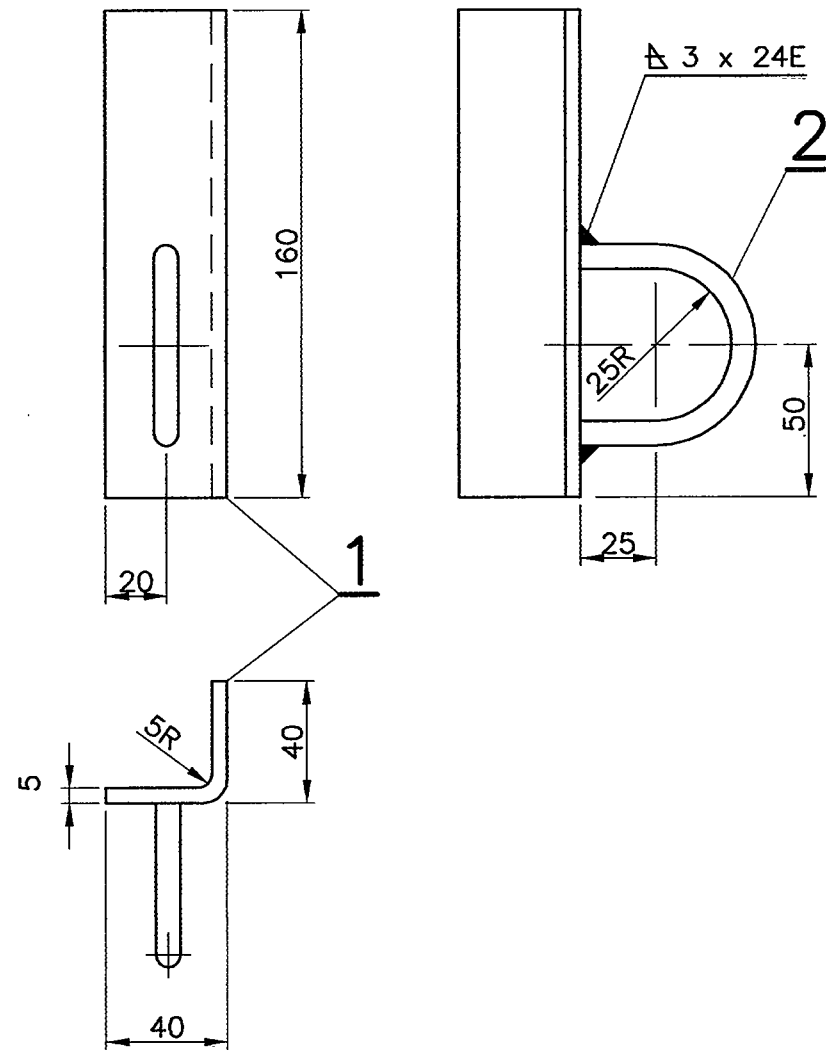
INDIAN RAILWAY
STANDARDS

SHEET
1 OF 1

AC/EMU/M/ASR-3-5-017

▽	ROUGH MACHINED	①	ROUGH CLEANED
▽▽	FINISH MACHINED	①B	CHAMFERED
▽▽▽	FINE FINISH MACHINED	①b	BURRS REMOVED

ALTERATIONS

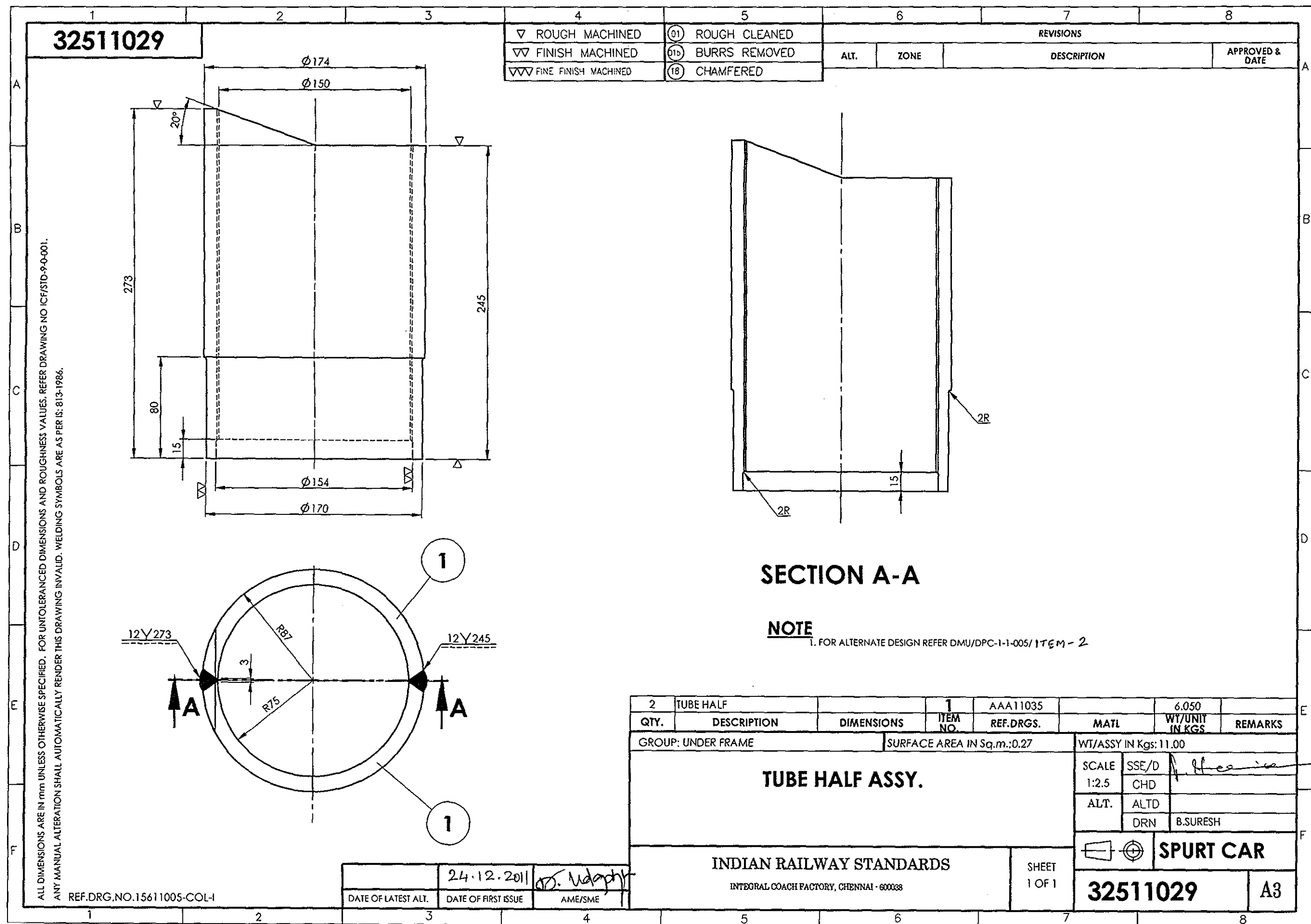


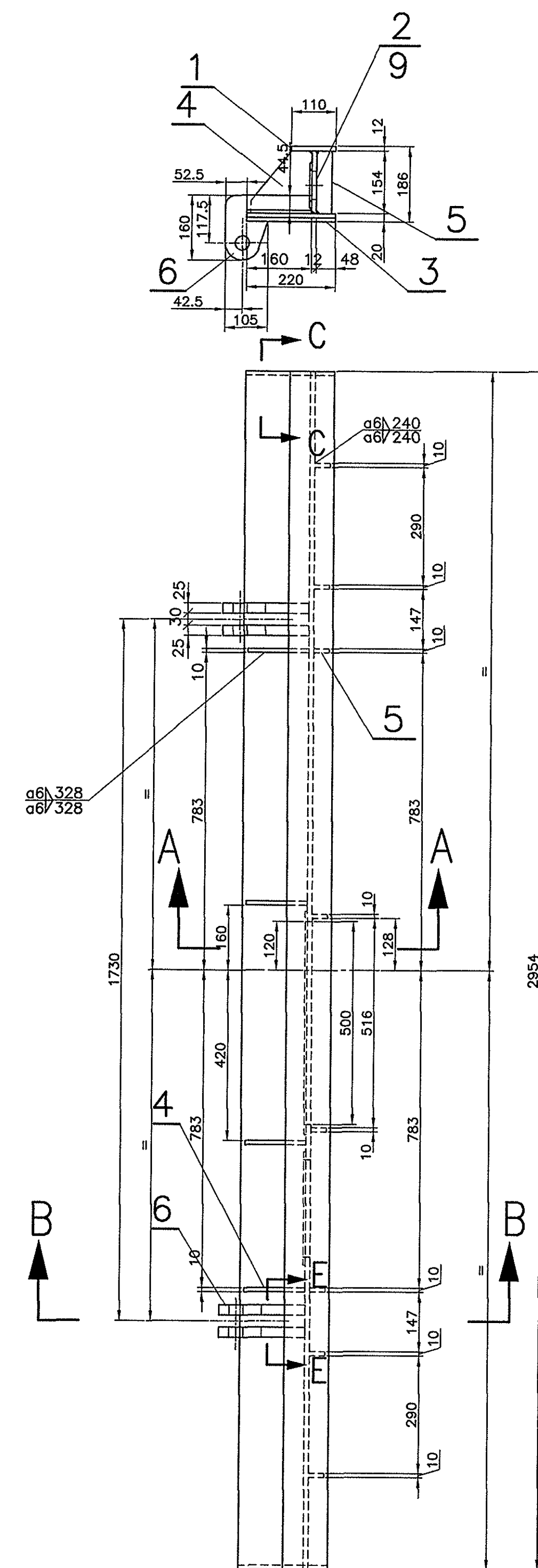
▲ ALL AC/EMU's AND AC/DC/EMU's



AC/DC/EMU/D3/HC-3-5-301
AC/DC/EMU/D3-3-5-301
EMU/2C/ASR-3-5-201
AC/EMU/M/ASR-3-5-005
ASSEMBLY DRAWINGS

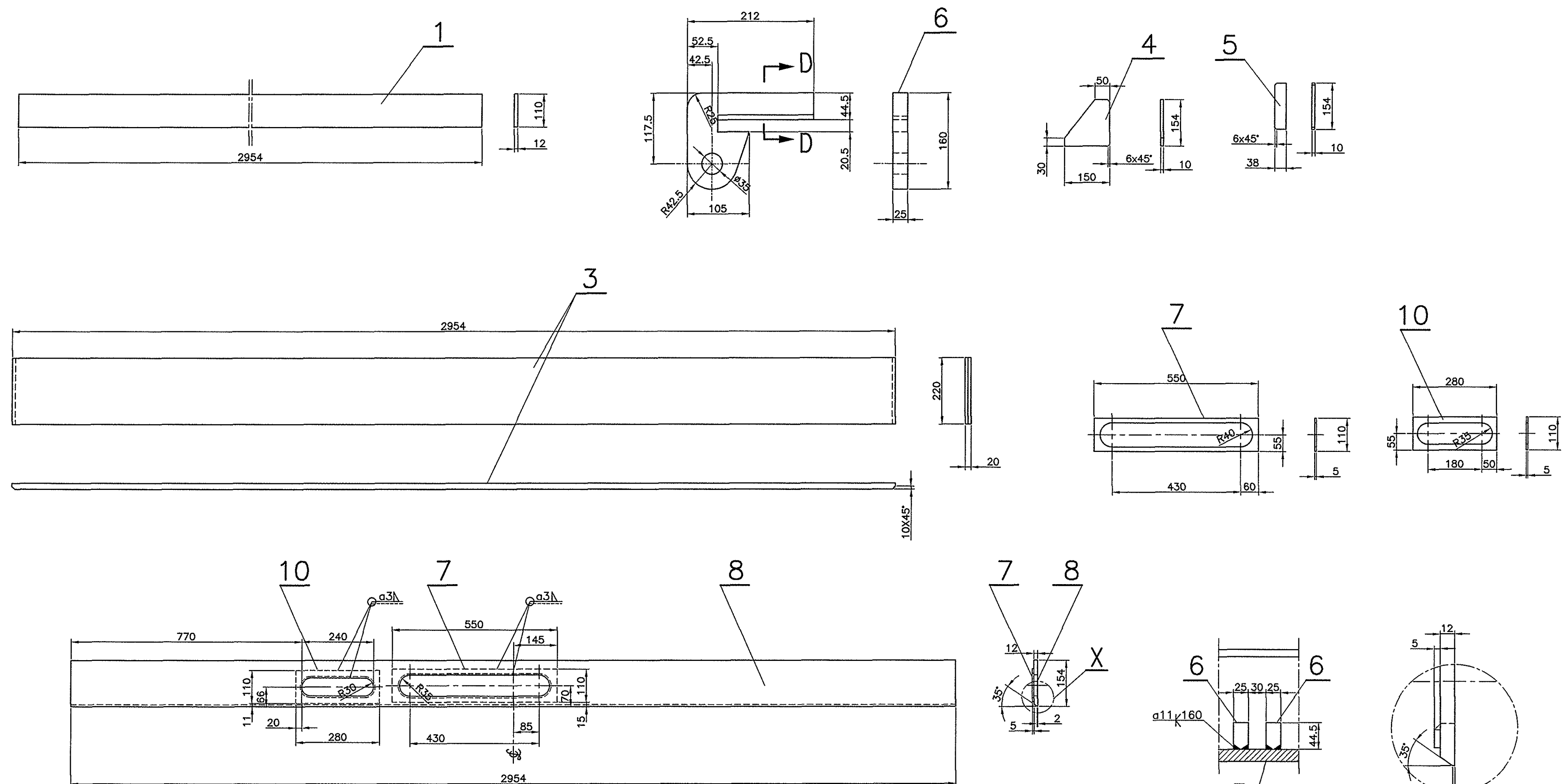
ALT	DATE OF LATEST ALTN	DATE OF FIRST ISSUE	Dy.CME/D	AME/D
		21.10.2005		

			1	CLAMP	ø8 x 141	2		IS:2062-99 Fe 410 WA					
			1	ANGLE	5 x 70 x 160	1		IRS M-41-97					
No. OFF				DESCRIPTION & DIMENSIONS			ITEM	REF. DRG	MATL. SPEC.	WEIGHT/UNIT	REMARKS		
IV	III	II	I	GROUP: BRAKE PIPING						SUPERSEDED BY:			
			PER ASSY.	<div>SUPPORT FOR WIRE ROPE</div>						SUPERSEDES:			
										SCALE 1:1	SSE/D	I. H. C	



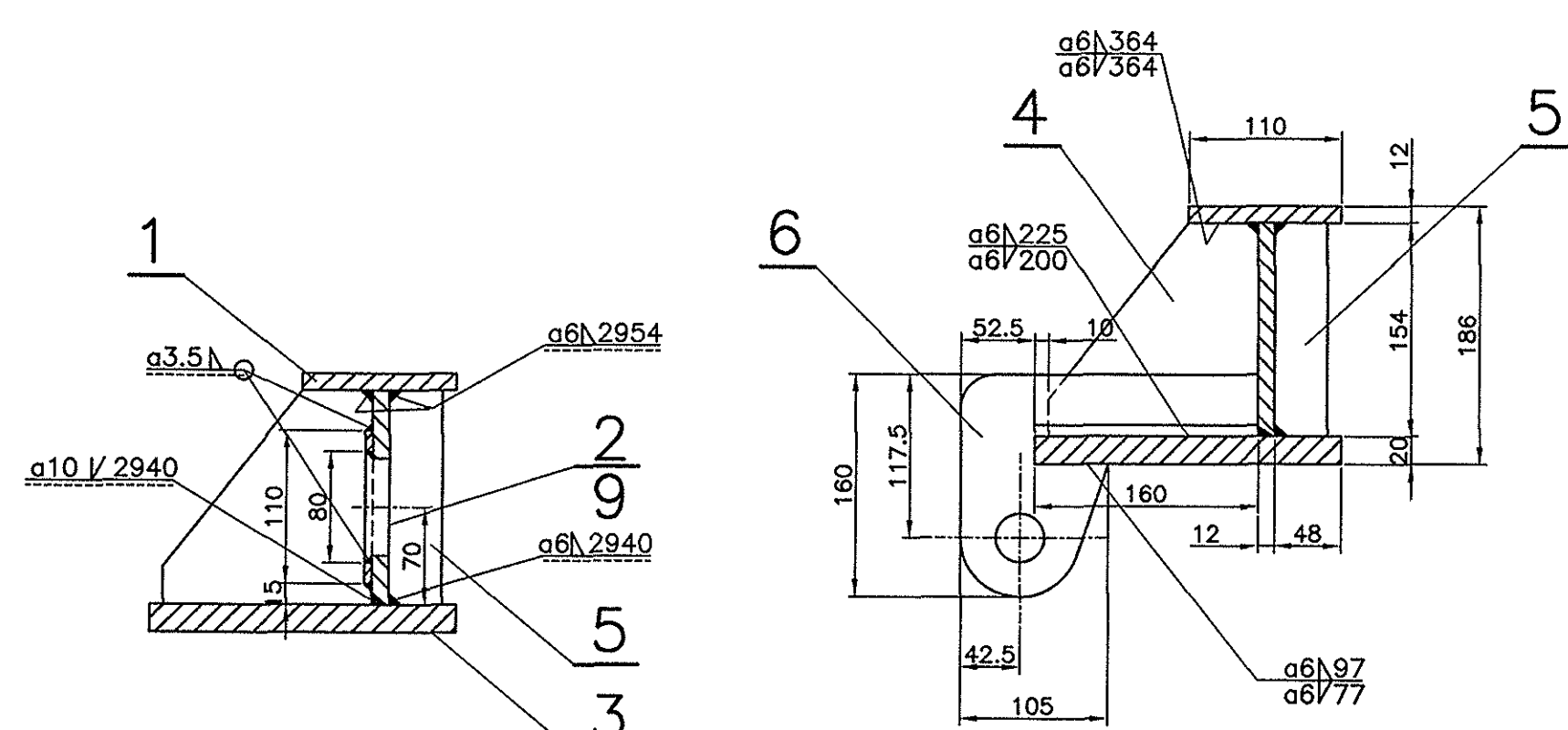


COL.I AS DRAWN	COL.II OPPOSITE
	

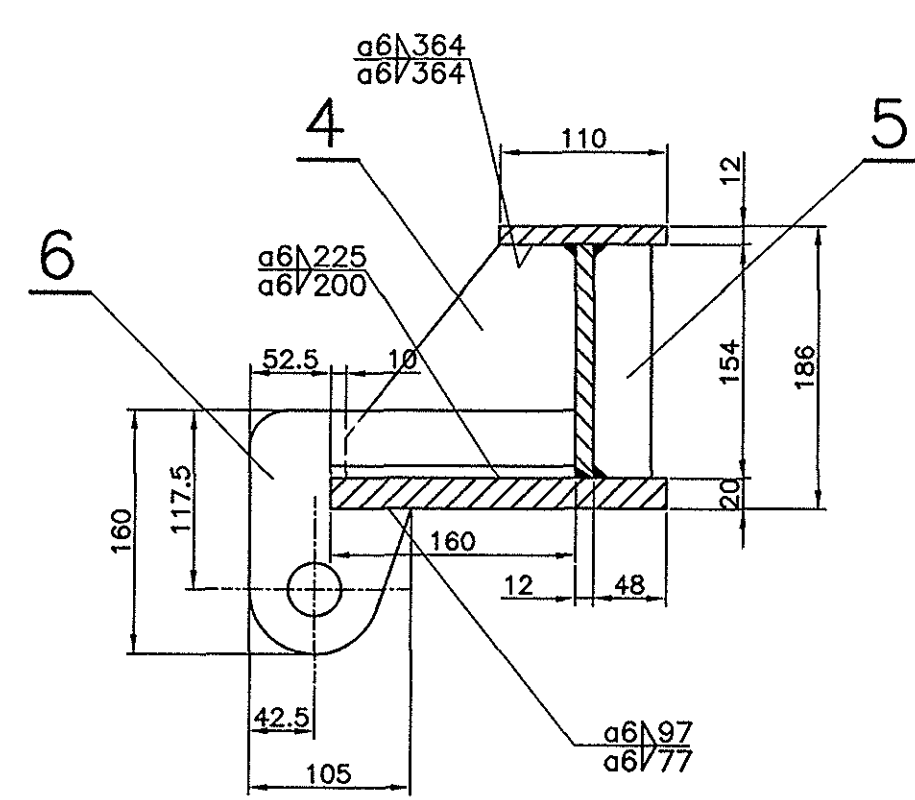


COL.III

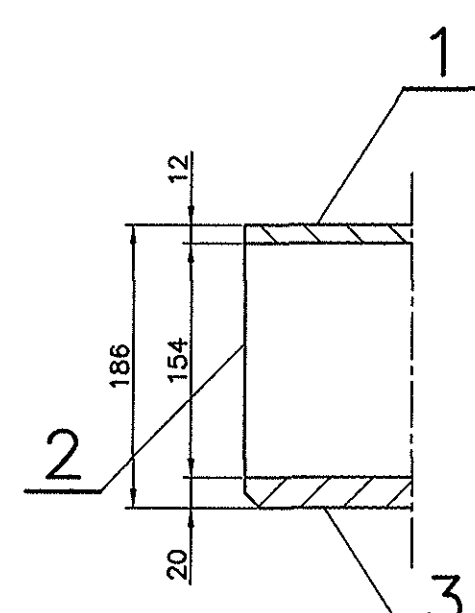
COL.IV



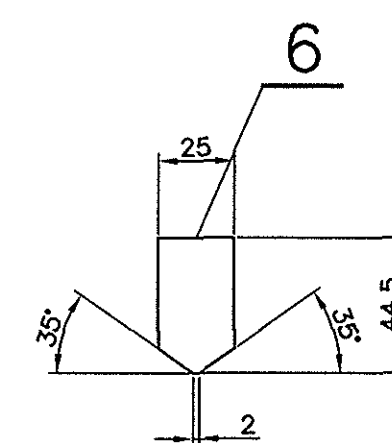
SECTION-AA



SECTION-BB



SECTION-CC



SECTION-DD

[illegible]

ICF/MRVC/M-7-1-014

▽▽ FINE FINISH MACHINED

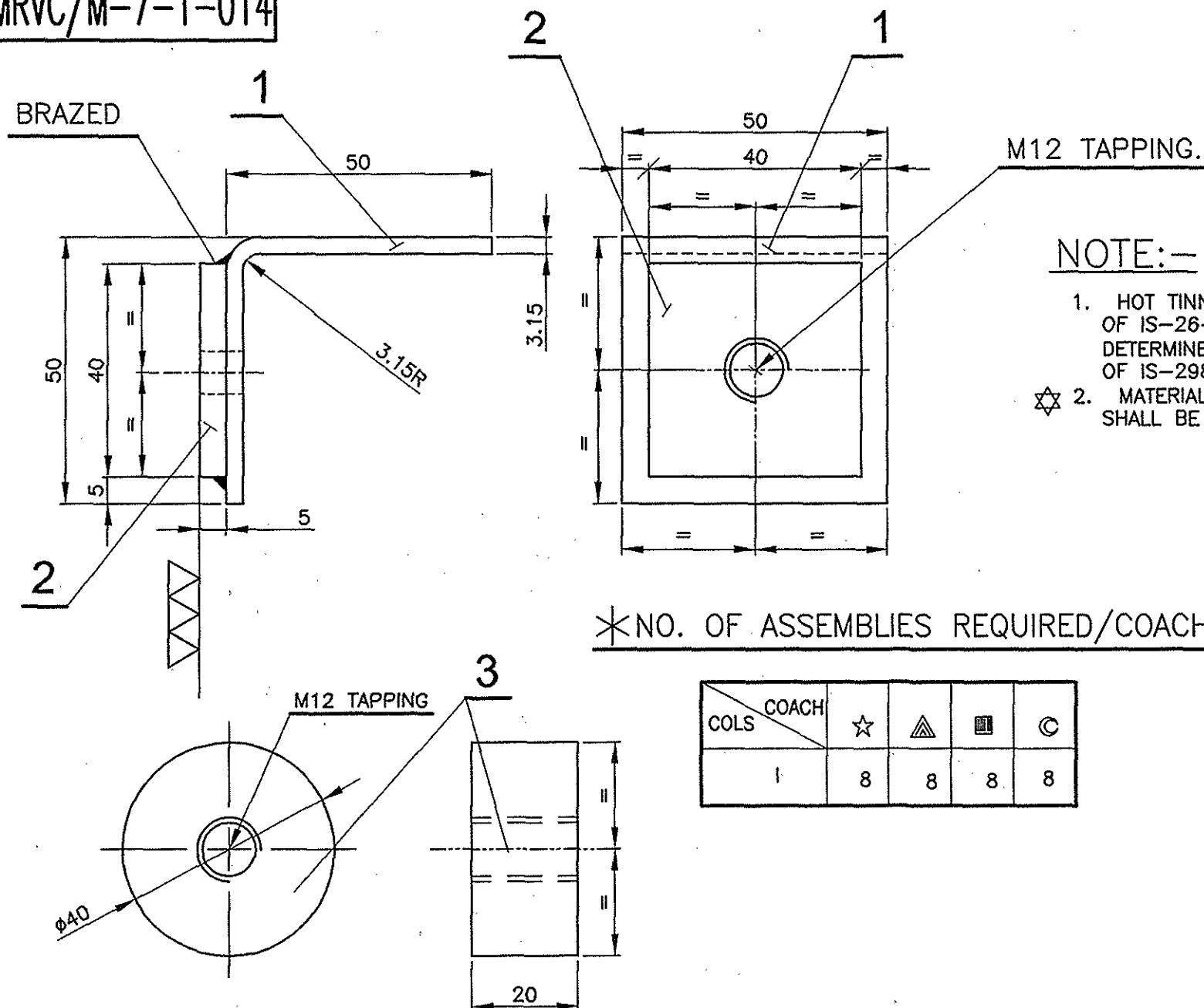
ALTERATIONS

① 05/2016

REMARKS COL ADDED FOR ITEM-3.

3/5/16
SSE/D

12/5/16
AEE/D



NOTE:-

1. HOT TAPPING OF ITEM-2. SHALL BE DONE WITH TIN OF GRADE Sn 99.0 OF IS-26-1956 AND THE MINIMUM THICKNESS OF TIN COATING WHEN DETERMINED IN ACCORDANCE WITH THE METHOD GIVEN IN APPENDIX 'A' OF IS-2983-64 SHALL BE 0.013mm.
2. MATERIAL TO SPEC. IS:5986-92 Fe 330/IRS M41-97,Gr-1, SHALL BE USED.

☆ MRVC/M,MRVC/M2

▲ MRVC/C-C6

■ MRVC/D,MRVC/D2

© MRVC/D/HC,MRVC/D2/HC

*NO. OF ASSEMBLIES REQUIRED/COACH

COLS	☆	▲	■	©
1	8	8	8	8

☆ MRVC/M,MRVC/M2

2

AC/DC EMU/M2-0-3-201		8	-	EARTHING BOSS $\phi 40 \times 20$	3	IS:6911-92	GRADE 304-S1/304-S2
ICF/MRVC/D/HC-1-1-001		-	1	LUG(BRASS) 5 x 40 X 40	2	IS:410-77 CuZn 30	TINNED (REFER NOTE-1)
ICF/MRVC/D2-1-1-201		-	1	ANGLE 3.15 x 50 x 94	1		☆
ICF/MRVC/D-1-1-001		NO. OFF		DESCRIPTION & DIMENSIONS	ITEM	REF.DRGS.	MAT. SPEC.
ICF/MRVC/C2-1-1-201		GROUP:- 7-1		WEIGHT/UNIT			
ICF/MRVC/C-1-1-001				REMARKS			
ICF/MRVC/M2-1-1-201							
ICF/MRVC/M-1-1-001							
ASSEMBLY DRAWINGS							
08-09-2008		☆ *		DATA CODE No.		INDIAN RAILWAY STANDARDS	
DATE OF FIRST ISSUE				374		SHEET 1 OF 1	
AEE/D						ICF/MRVC/M-7-1-014	

SUPERSEDED BY:

SUPERSEDES:

SCALE 1:1

SSE/D

CHD

ALT

DRN

ALT.

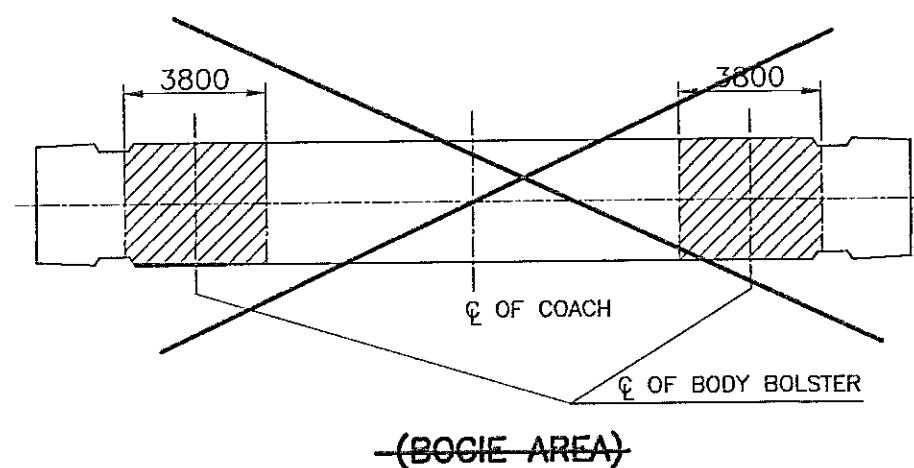
INTEGRAL COACH FACTORY CHENNAI-38

~~4.1 c. BEFORE MOUNTING THE CORRUGATED SHEET FLOOR THE AREA OF CONTACT SURFACE SHALL BE PAINTED WITH ALUMINIUM WELDING COAT TO RCF SPEC. MDT5 20272 LATEST REVISION.~~

PAINTING SYSTEM FOR UNDERFRAME COMPLETE (FOR BOTH OUTSOURCED & IN-HOUSE)

- SURFACE PREPARATION SHALL BE BY BLASTING (COPPER SLAG/GRIT/GARNET/STEEL WIRE CUTS/SHOT) TO Sa 2.5. MANUAL TOOL CLEANING TO S12 LEVEL TO INACCESSIBLE AREA WHERE BLASTING CANNOT BE DONE.
- FINISHED UNDERFRAME COMPLETE (INCLUDING THE CROSS MEMBERS, SOLEBAR, TROUGH FLOOR BOTTOM SIDE, FRONT PART AND WELDING PARTS) SHALL BE APPLIED WITH ADHESION PROMOTING PRIMER (APP) TO RCF SPEC. MDTs 48279 LATEST REVISION AS PER SPEC EXCEPT TOP SIDE OF TROUGH FLOOR AND WITH MASKING AS PER RCF. DRG. NO.M1007679. TOPSIDE OF TROUGH FLOOR & EARTHING LUGS SHALL NOT BE PAINTED.
- ALL SURFACES OF CBC HOUSING INSIDE AREA SHALL BE GRIT/GARNET/STEEL WIRE CUTS/SHOT BLASTED TO REQUIRED FINISH AND TO BE PAINTED WITH EPOXY METAL PRIMER AND HIGH BUILD PAINT ELASTIFIED AS PER RCF SPEC MDTs-094 LATEST REVISION AND NOTE-3 OF OF RCF DRG. NO. M1005396.
- AFTER APPLICATION OF APP, TOP COAT WITH HIGH BUILD PAINT ELASTIFIED TO RCF SPEC. MDTs094 LATEST REVISION SHALL BE APPLIED ONLY ON BOTTOM SIDE OF UNDERFRAME COMPLETE (INCLUDING THE CROSS MEMBERS, SOLEBAR, TROUGH FLOOR BOTTOM SIDE, FRONT PART AND WELDING PARTS). EARTHING LUGS SHALL NOT BE PAINTED.

- ~~a. FINISHED ASSEMBLY SHALL BE DEGREASED USING SOLVENT (ACETONE) AND SURFACE PREPARATION WITH METAL CONDITIONER.~~
- ~~b. UNDERFRAME INACCESSIBLE AREA LIKE BOCIE AREA SHALL BE APPLIED WITH HPAC TO RDSO SPEC. M&C/PCN/123/2018 TO A DFT OF 75 MICRONS BY BRUSHING AT CAR-BODY STAGE.~~
- ~~c. BALANCE AREA UNDERFRAME COMPLETE (TOP & BOTTOM SIDE INCLUDING CROSS MEMBERS) SHALL BE APPLIED WITH HIGH BUILD PAINT ELASTIFIED TO RCF SPEC. MDTS-94 (ALTERNATIVELY HPAC M&C/PCN/123/2018 TO A DFT OF 75 MICRONS) SHALL BE DONE SHOP54~~



- a. SURFACE PREPARATION SHALL BE BY BLASTING (COPPER SLAG/GRIT/GARNET/STEEL WIRE CUTS/SHOT) TO Sa 2.5. MANUAL TOOL CLEANING TO S12 LEVEL TO INACCESSIBLE AREA WHERE BLASTING CANNOT BE DONE.
- b. FINISHED FRONT PART (INCLUDING THE CROSS MEMBERS, SOLEBAR, TROUGH FLOOR BOTTOM SIDE, LOWER FLANGE, WEB, BUFFER PLATE AND WELDING PARTS) SHALL BE APPLIED WITH ADHESION PROMOTING PRIMER (APP) TO RCF SPEC. MDTS 48279 LATEST REVISION EXCEPT TOP SIDE OF TROUGH FLOOR AND WITH MASKING AS PER RCF. DRG. NO.MI005396.
- c. ALL SURFACES OF CBC HOUSING INSIDE AREA SHALL BE COPPER SLAG/GRIT/GARNET/STEEL WIRE CUTS/SHOT BLASTED TO REQUIRED FINISH AND TO BE PAINTED WITH EPOXY METAL PRIMER TO AND HIGH BUILD PAINT ELASTIFIED AS PER RCF SPEC MDTS-094 LATEST REVISION AS PER NOTE-3 OF RCF DRG. NO. MI005396.
- d. AFTER APPLICATION OF APP, TOP COAT WITH HIGH BUILD PAINT ELASTIFIED TO RCF SPEC. MDTS094 LATEST REVISION SHALL BE APPLIED ONLY ON BOTTOM SIDE OF FRONT PART (INCLUDING THE CROSS MEMBERS, SOLEBAR, TROUGH FLOOR BOTTOM SIDE LOWER FLANGE, WEB, BUFFER PLATE AND WELDING PARTS).

~~a. FINISHED ASSEMBLY SHALL BE DECREASED USING SOLVENT(ACETONE) AND SURFACE PREPARATION WITH METAL CONDITIONER.~~

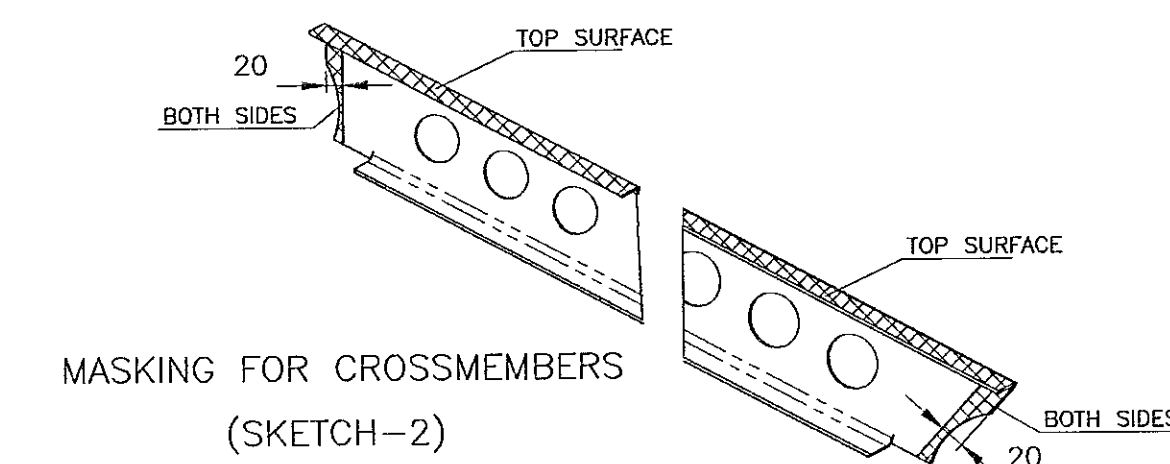
~~b. FRONTPART SHALL BE APPLIED WITH HPAC TO RDSO SPEC. M&C/PCN/123/2010 TO A DFT OF 75 MICRONS BY BRUSHING (INCLUDING THE CROSS MEMBERS, SOLIDAR, TROUGH FLOOR BOTTOM SIDE, LOWER FLANGE, W&B, BUFFER PLATE AND WELDING PARTS.)~~

PAINTING SYSTEM FOR HEADSTOCK

- SURFACE PREPARATION SHALL BE BY BLASTING (COPPER SLAG/GRIT/GARNET/STEEL WIRE CUTS/SHOT) TO Sa 2.5. MANUAL TOOL CLEANING TO S12 LEVEL TO INACCESSIBLE AREA WHERE BLASTING CANNOT BE DONE.
- FINISHED HEADSTOCK (INCLUDING THE MEMBERS, TOP FLANGE, SIDESILL, LOWER FLANGE, WEB, BUFFER PLATE) SHALL BE APPLIED WITH ADHESION PROMOTING PRIMER (APP) TO RCF SPEC. MDTS 48279 LATEST REVISION EXCEPT TOP SIDE OF TROUGH FLOOR AND WITH MASKING AS PER RCF. DRG. NO.MI005396.
- ALL SURFACES OF CBC HOUSING INSIDE AREA SHALL BE GRIT/GARNET/STEEL WIRE CUTS/SHOT BLASTED TO REQUIRED FINISH AND TO BE PAINTED WITH EPOXY METAL PRIMER AND HIGH BUILD PAINT ELASTIFIED AS PER RCF SPEC MDTS-094 LATEST REVISION AS PER NOTE-3 OF RCF DRG. NO. MI005396.
- AFTER APPLICATION OF APP, TOP COAT WITH HIGH BUILD PAINT ELASTIFIED TO RCF SPEC. MDTS094 LATEST REVISION TO A DFT OF 140-200 MICRONS SHALL BE APPLIED ONLY ON BOTTOM SIDE OF HEADSTOCK (INCLUDING THE MEMBERS, TOP FLANGE, SIDESILL, LOWER FLANGE, WEB, BUFFER PLATE).

~~a. FINISHED HEADSTOCK SHALL BE DEGRADED USING SOLVENT(ACETONE) AND SURFACE PREPARATION WITH METAL CONDITIONER.~~

- a. SURFACE PREPARATION SHALL BE BY BLASTING (COPPER SLAG/GRIT/GARNET/STEEL WIRE CUTS/SHOT) TO Sa 2.5.
- b. FINISHED MODULAR FRAME SHALL BE APPLIED WITH ADHESION PROMOTING PRIMER (APP) TO RCF SPEC. MDTs 48279 LATEST REVISION.
- c. CROSS MEMBERS HATCHED AREAS ARE TO BE MASKED PROPERLY WITH PAPER TAPE (GLUE SHOULD NOT STICK ON SURFACE AFTER REMOVAL) TO AVOID INTERMITTENT STAGE CORROSION POSSIBILITIES. (REFER SKETCH-2)



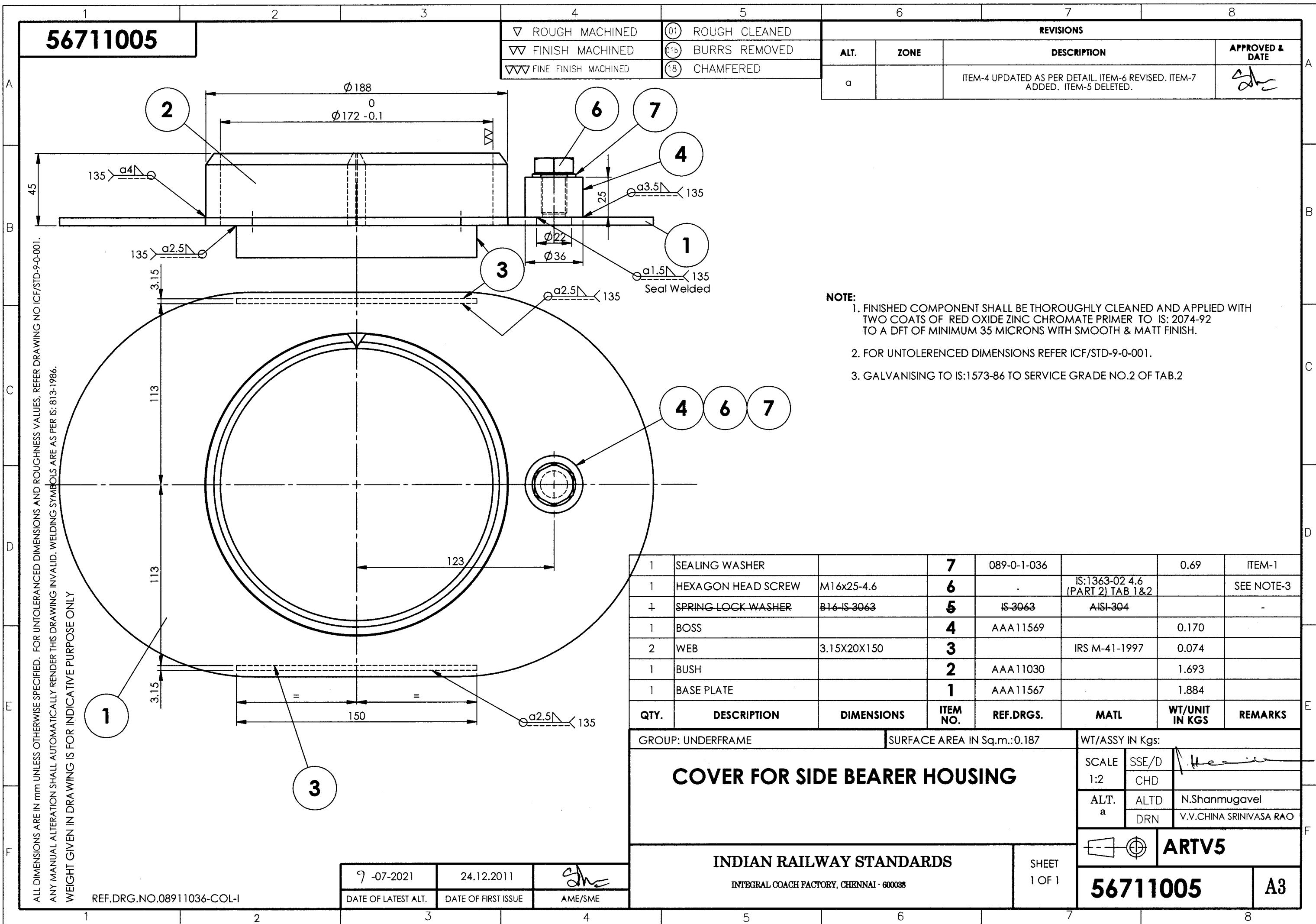
- ~~a. FINISHED MODULAR FRAME SHALL BE DECREASED USING SOLVENT(ACETONE) AND SURFACE PREPARATION WITH METAL CONDITIONER.~~
- ~~b. MODULAR FRAME SHALL BE APPLIED WITH HFAC TO RD50 SPEC. M&C/PCN/123/2018 TO A DFT OF 75 MICRONS BY BRUSHING.~~
- ~~c. MASKING AS IN SKECH. 2~~

APPLICABLE FOR ABOVE ITEMS PROCURED FROM TRADE OR MADE IN-HOUSE

- a. SURFACE PREPARATION SHALL BE BY BLASTING (COPPER SLAG/GRIT/GARNET/STEEL WIRE CUTS/SHOT) TO Sa 2.5.
- b. FINISHED SOLEBAR,WELDING PARTS & OTHER LOOSE ITEMS SHALL BE APPLIED WITH TWO COATS OF ANTI CORROSIVE PAINT TO ICF/MD SPEC.357 LATEST REVISION.

a. FOR IN-HOUSE MADE UNDERFRAME COMPLETE WITH OUTSOURCED SUB ASSEMBLIES & DETAILS PAINTING SHALL BE AS PER NOTE 1.2 (EXCLUDING 1.2a), ONLY ON WELDED JOINTS & UNPAINTED SURFACES. FOR ITEMS APPLIED WITH ANTI CORROSIVE PAINT, TOP COAT ADHESION PROMOTING PRIMER (MDT48279) & HIGH BUILD PAINT ELASTIFIED (MDTS094) SHALL NOT BE APPLIED.

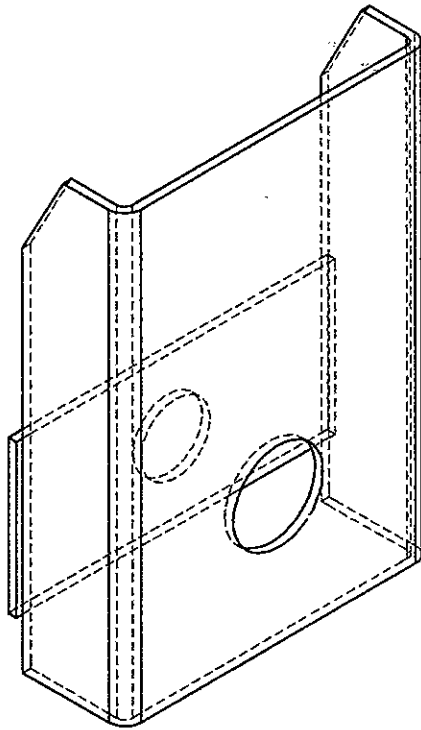
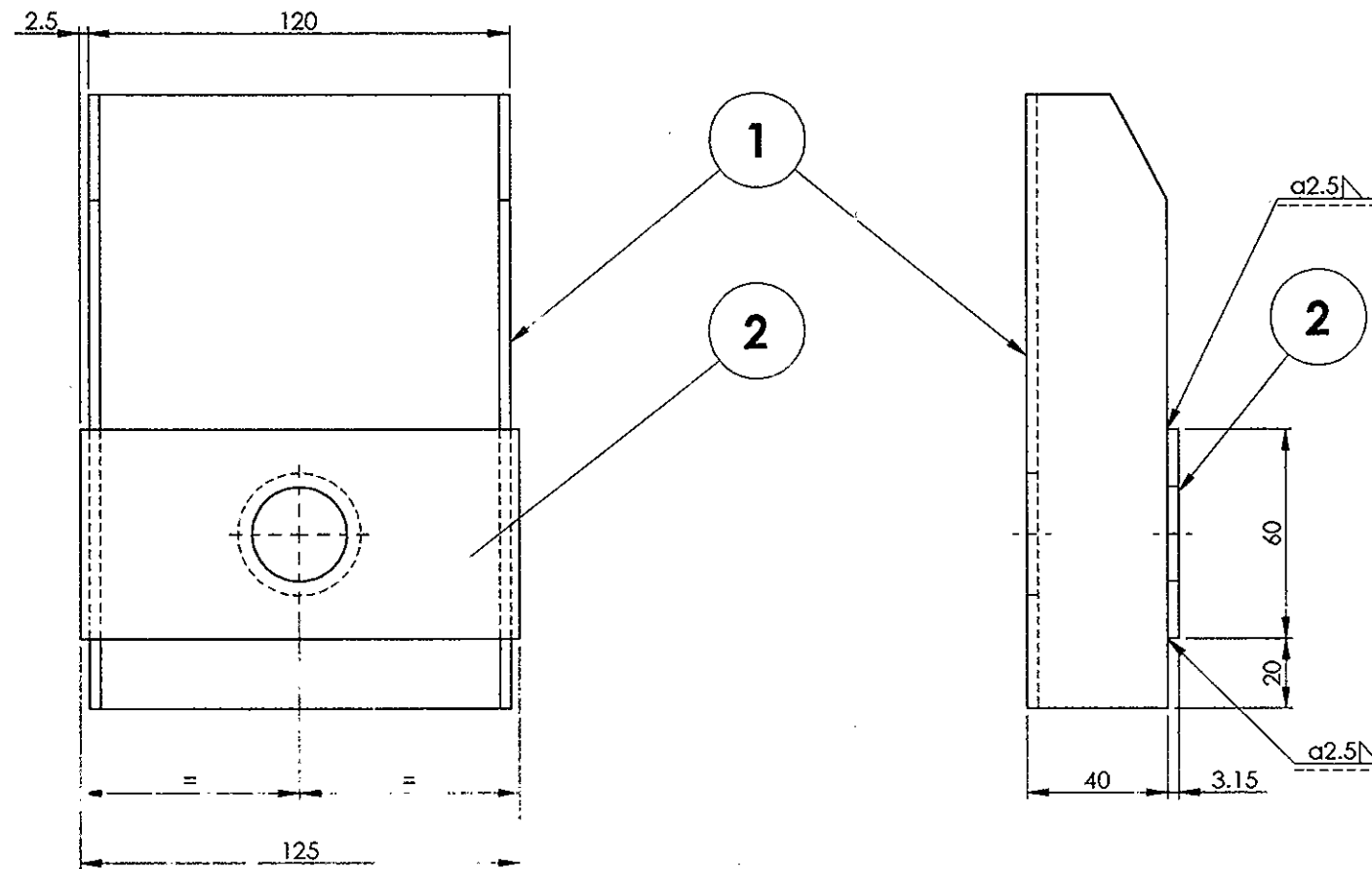
			QTY	DESCRIPTION & DIMENSION	ITEM	REF.DRGS	MAT.SPEC	WEIGHT/UNIT	REMARKS
				GROUP: 9-0				SUPERSEDED BY:	
				<p style="text-align: center;">UNDERFRAME PAINTING SYSTEM</p>				SUPERSEDES: LWLRRM-1-1-116 ALT d	
								SCALE	SSE/D
								1:50	CHD
									ALTD
									DRN
							Alpha Alt:-e		
			ASSEMBLY DRAWINGS						INTEGRAL COACH FACTORY CHENNAI-38
22.01.2026	03-06-2025		DATA CODE NO.	INDIAN RAILWAY STANDARDS			SHEET		
DATE OF LATEST ALT	DATE OF FIRST ISSUE	AME/SME	538				1 OF 1	LWLRRM-1-1-116	



56711011

▽ ROUGH MACHINED	⊖ ROUGH CLEANED
▽▽ FINISH MACHINED	⊖⊖ BURRS REMOVED
▽▽▽ FINE FINISH MACHINED	⊖⊖⊖ CHAMFERED

REVISIONS				APPROVED & DATE	
ALT.	ZONE	DESCRIPTION			



1	FLAT		2	AAA11601		0.171	
1	CHANNEL		1	AAA11600		0.785	
QTY.	DESCRIPTION	DIMENSIONS	ITEM NO.	REF.DRGS.	MATL	WT/UNIT IN KGS	REMARKS
GROUP: UNDERFRAME				SURFACE AREA IN Sq.m.:0.081		WT/ASSY IN Kgs:0.956	
HAND LAMP BRACKET					SCALE	SSE/D	V.V.China
					1:2	CHD	
					ALT.	ALTD	
						DRN	V.V.CHINA SRINIVASA RAO
INDIAN RAILWAY STANDARDS INTEGRAL COACH FACTORY, CHENNAI - 600038					ARTV5		
					SHEET 1 OF 1	56711011	A3

ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED. FOR UNTOLERANCED DIMENSIONS AND ROUGHNESS VALUES, REFER DRAWING NO ICF/STD-9-0-001.
ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID. WELDING SYMBOLS ARE AS PER IS: 813-1986.

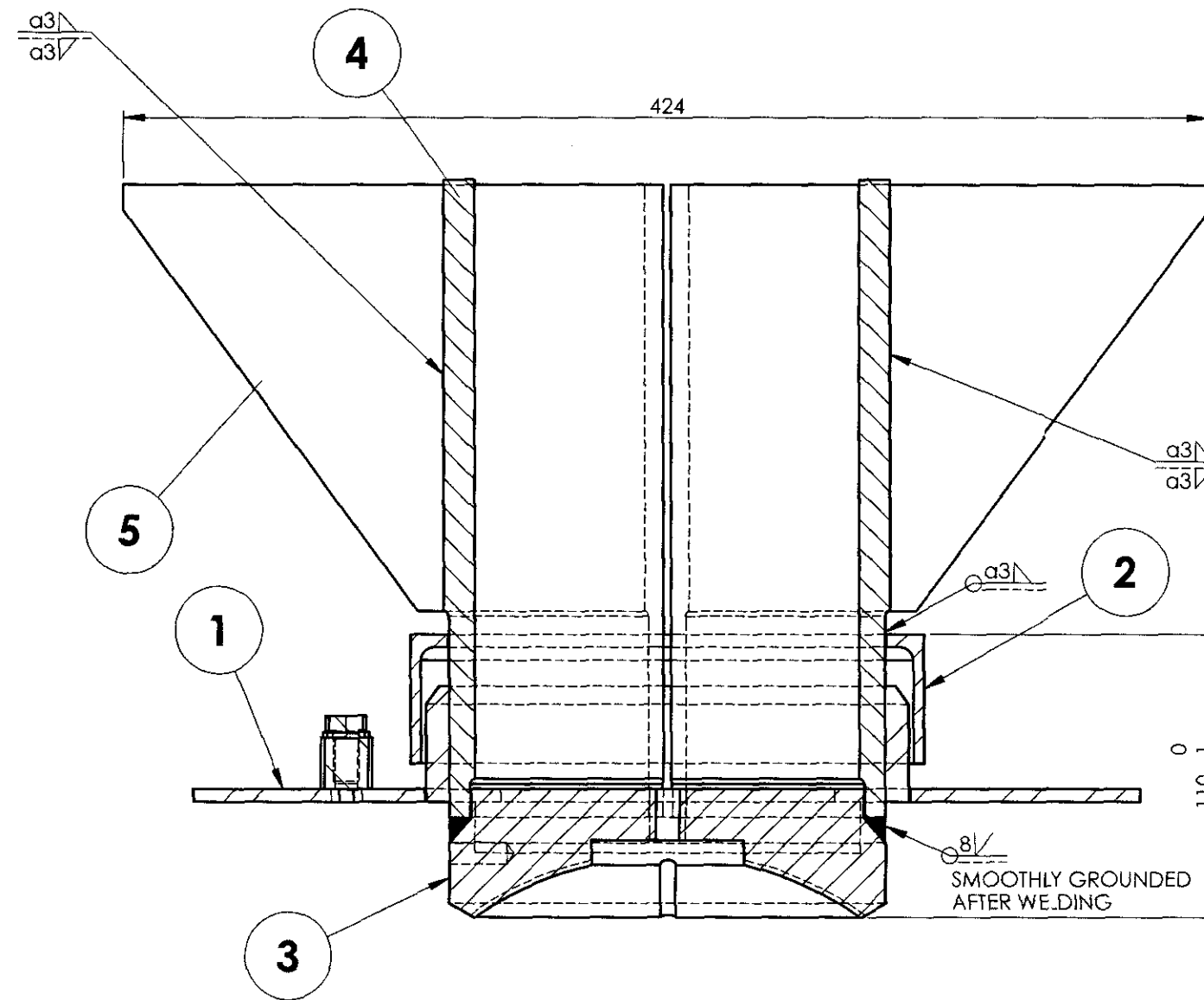
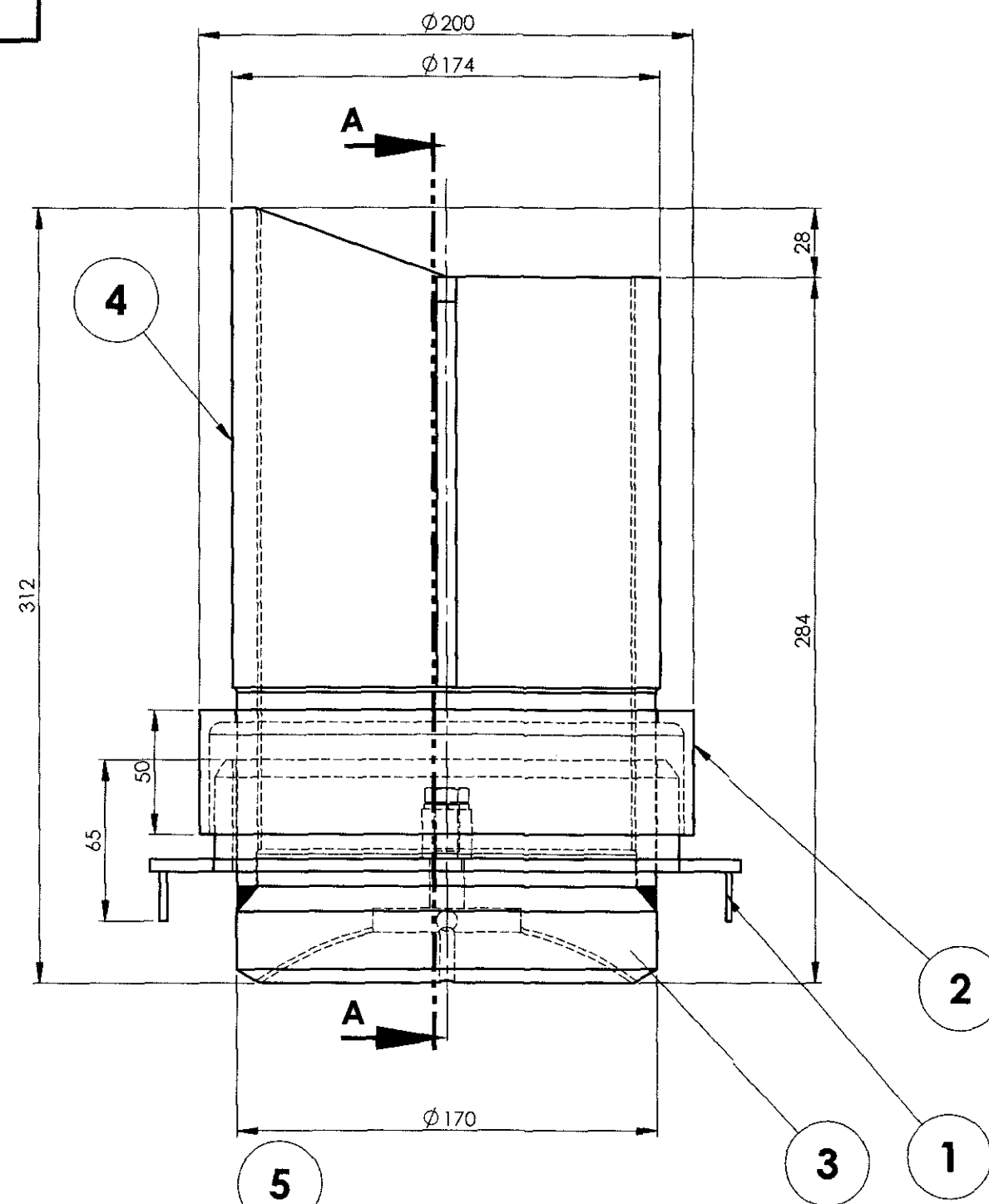
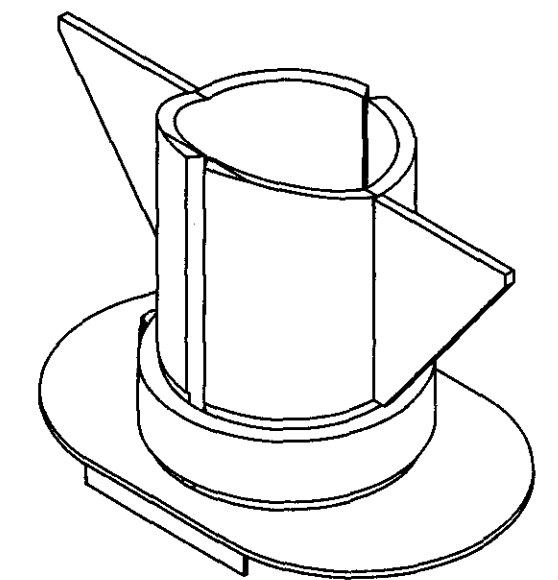
REF.DRG.NO.08811267-COL-IV

	3.1.12	
DATE OF LATEST ALT.	DATE OF FIRST ISSUE	AME/SME

56711031

▽ ROUGH MACHINED	① ROUGH CLEANED
▽▽ FINISH MACHINED	①b BURRS REMOVED
▽▽▽ FINE FINISH MACHINED	①8 CHAMFERED

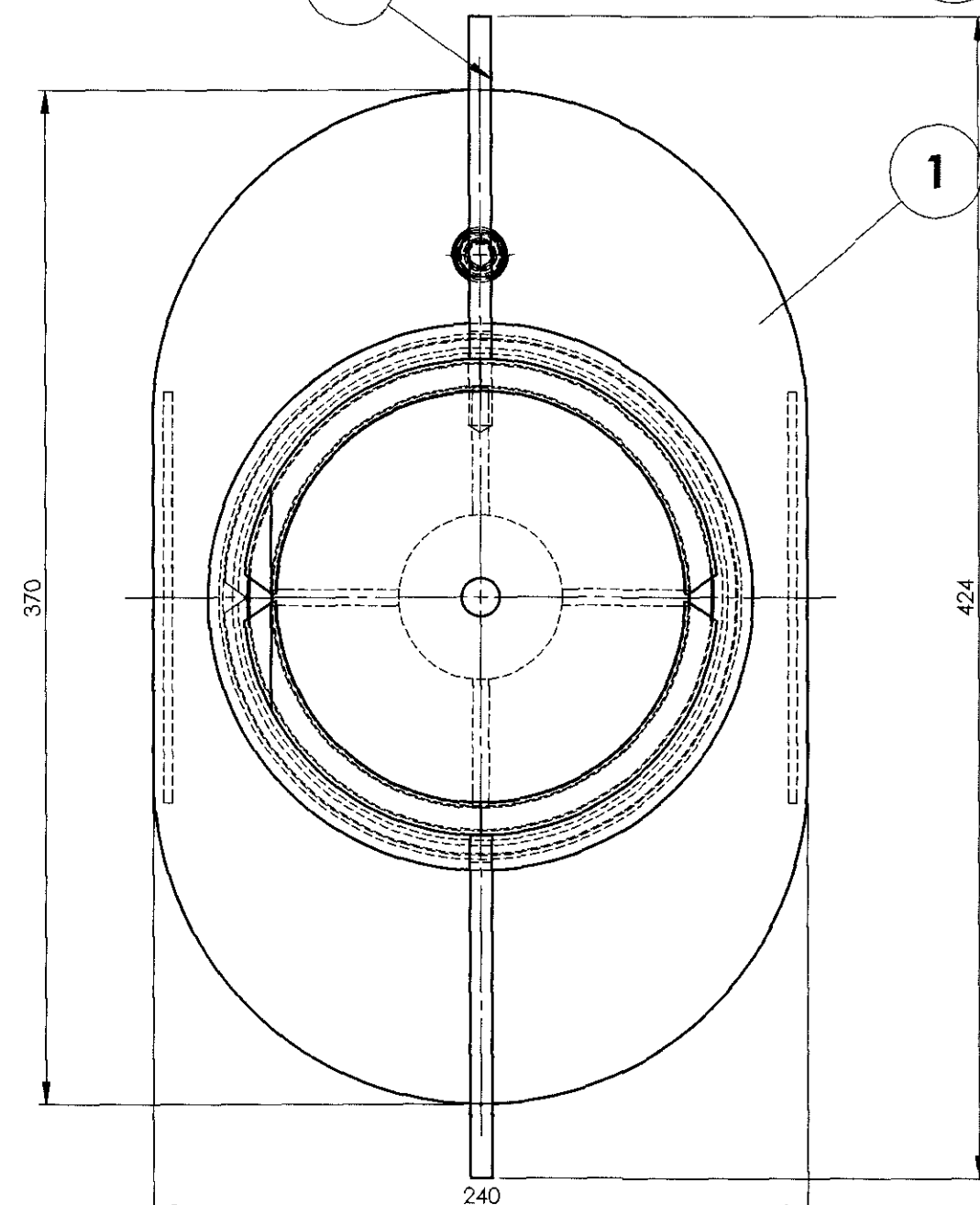
REVISIONS				APPROVED & DATE
ALT.	ZONE	DESCRIPTION		
a		DRG. UPDATED AS PER UPDATE OF ITEM-5 IN DETAIL		

SECTION A-A
SCALE 1 : 2.5

ISOMETRIC VIEW

NOTE

1. OPEN TOLERANCE TO DRG.NO.ICF/STD 9-0-001 SHALL GENERALLY BE FOLLOWED WHEREVER TOLERANCE IS NOT MENTIONED FOR DIMENSIONS.
2. FINISHED COMPONENTS SHALL BE THOROUGHLY CLEANED AND APPLIED WITH TWO COATS OF RED OXIDE ZINC CHROMATE PRIMER TO IS:2074/92 TO A DFT OF 35 MICRONS WITH SMOOTH & MATT FINISH.
3. ITEM-2(CAP) INSIDE UNIFORM CLEARANCE AND STRAIGHTNESS SHALL BE MAINTAINED.
4. ITEM-1(COVER) SHALL HAVE FLAT & EVEN SURFACE.
5. ITEM-1(COVER) SHALL HAVE FREE MOVEMENT INSIDE THE CAP(ITEM-2).
6. ITEM SHALL BE PROVIDED WITH SUITABLE WOODEN PACKING TO AVOID TRANSIT/HANDLING DAMAGE TO ITEM-1 AND PREVENT DUST ENTRY IN TO CAP(ITEM-2) POCKET.
7. FOR ALTERNATE DESIGN OF ITEM-2 WITH SEAMLESS TUBE REFER DRG.NO. EMU/M-1-1-037/ITEM-4.
8. FOR ALTERNATE DESIGN OF ITEM-4 REFER DRG.NO. DMU/DPC-1-1-005/ITEM-2.



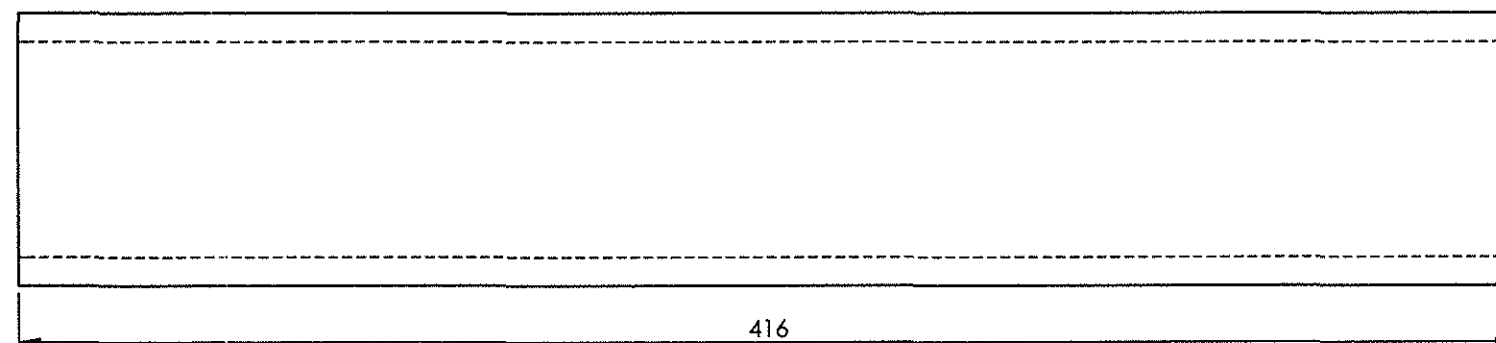
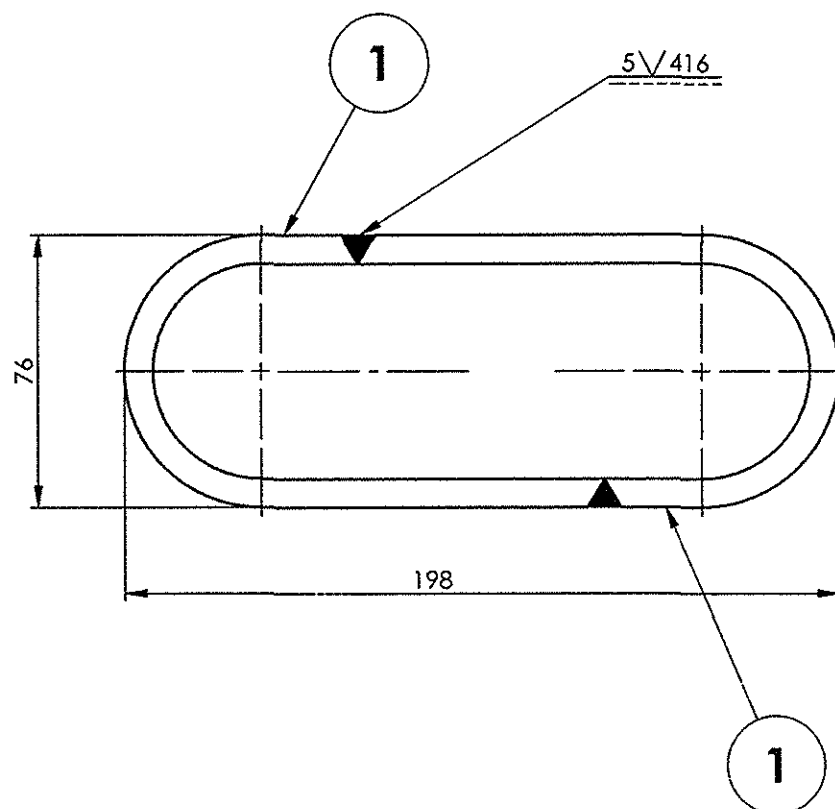
REF.DRG.NO.08911027-COL-III

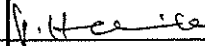
2	RIB		5	AAA11033		0.736	
1	TUBE ASSY.		4	32511029		11.00	\$
1	BEARING PIECE		3	AAA11034		6.324	
1	CAP FOR SIDE BEARER		2	AAA11321		1.227	@
1	COVER		1	56711005		3.798	

Default	DESCRIPTION	DIMENSIONS	ITEM NO.	REF.DRGS.	MATL	WT/UNIT IN KGS	REMARKS
GROUP: 1-1 Under Frame				SURFACE AREA IN Sq.m.: 0.658		WT/ASSY IN Kgs:	
SIDE BEARER COMPLETE				SCALE 1:5	SSE/D CHD	SURESH BABU.G V.V.CHINA SRINIVASA RAO	
				ALT a	ALTD DRN		
INDIAN RAILWAY STANDARDS				SHEET 1 OF 1		ARTV5	
INTEGRAL COACH FACTORY, CHENNAI - 600038				56711031		A2	


02-04-2021	24-12-2011	
DATE OF LATEST ALT.	DATE OF FIRST ISSUE	AME/SME

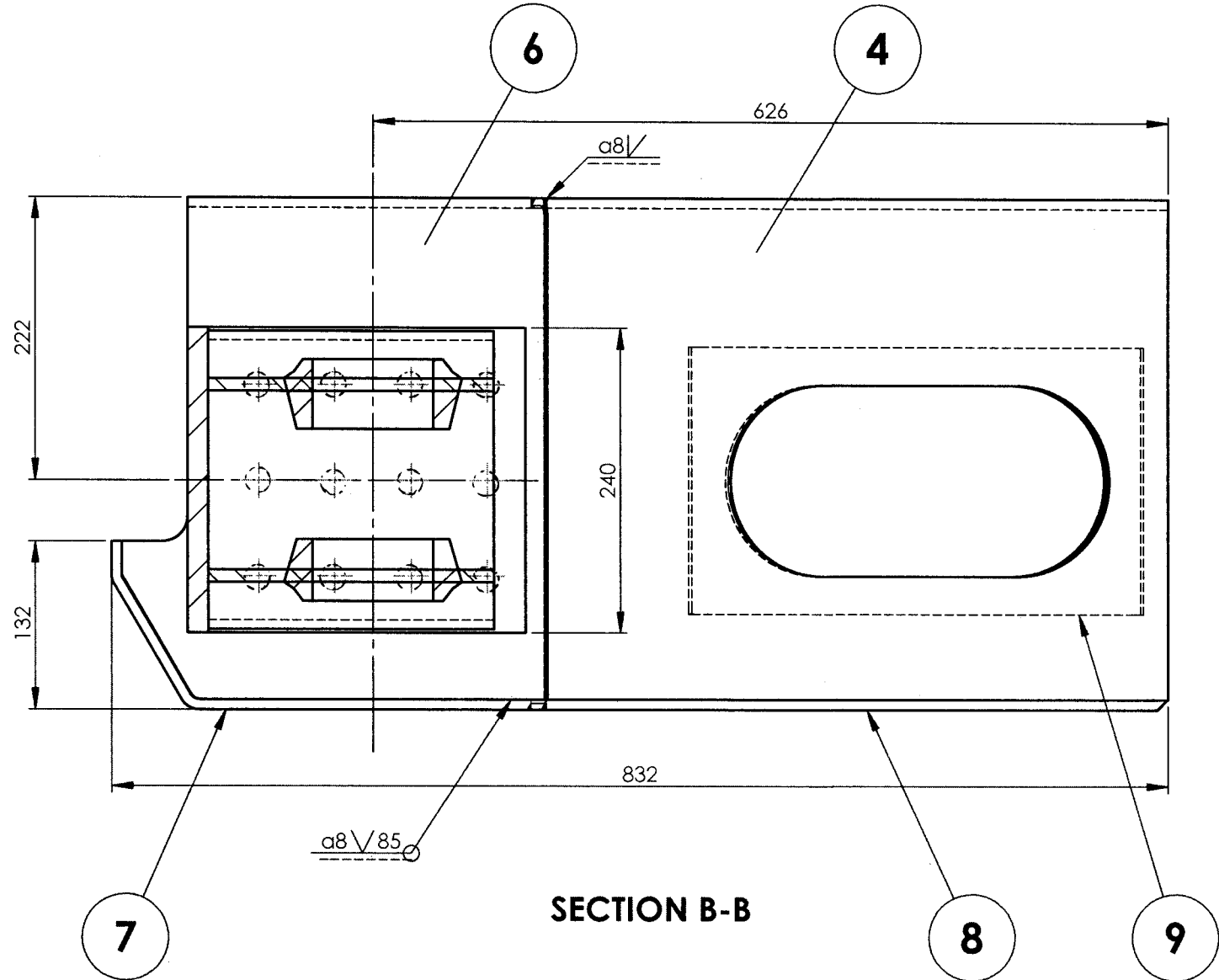
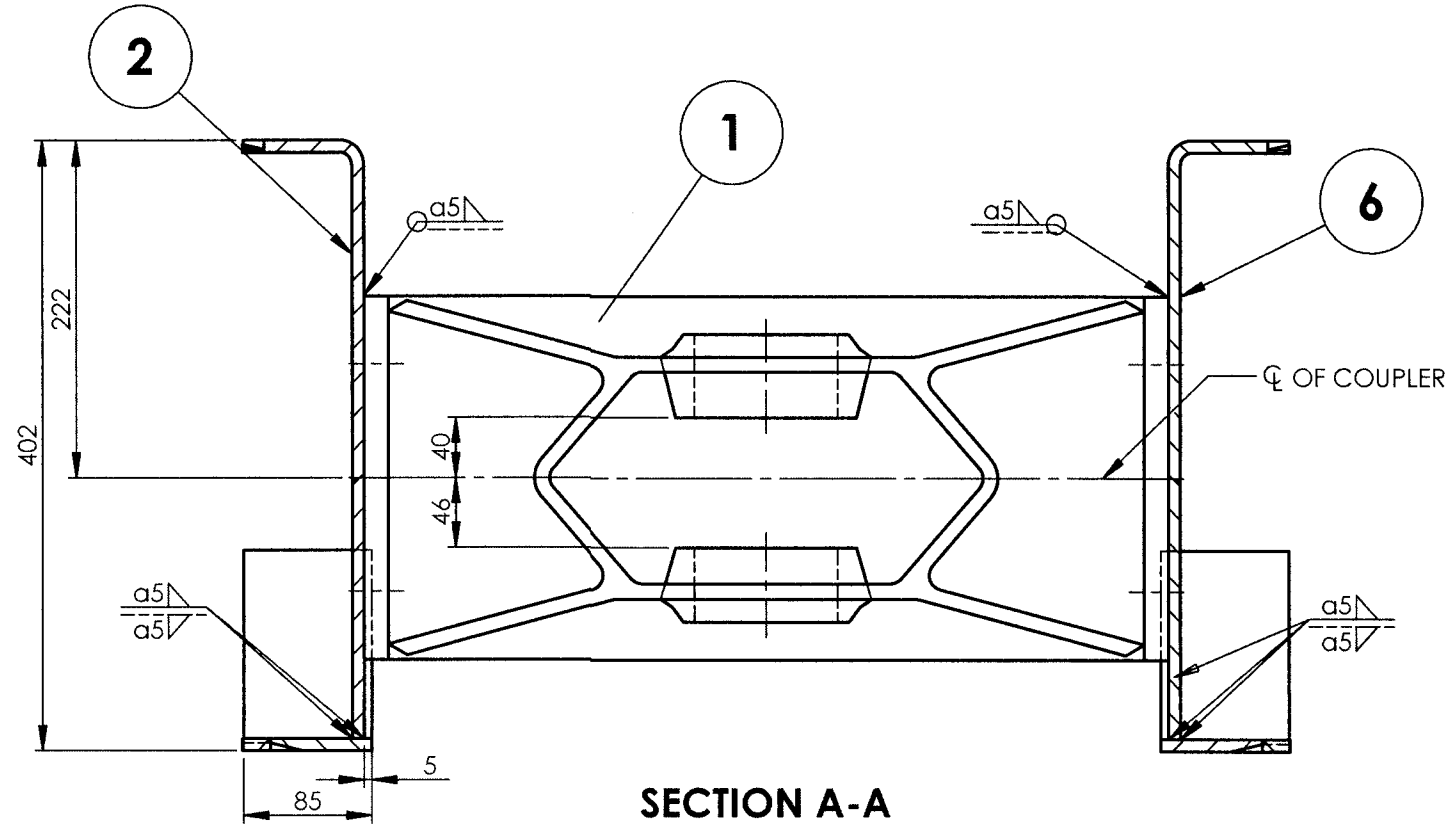
4	5	6	7	8
▽ ROUGH MACHINED	(9) ROUGH CLEANED	REVISIONS		
▽▽ FINISH MACHINED	(10) BURRS REMOVED	ALT.	ZONE	DESCRIPTION
▽▽▽ FINE FINISH MACHINED	(11) CHAMFERED	APPROVED & DATE		



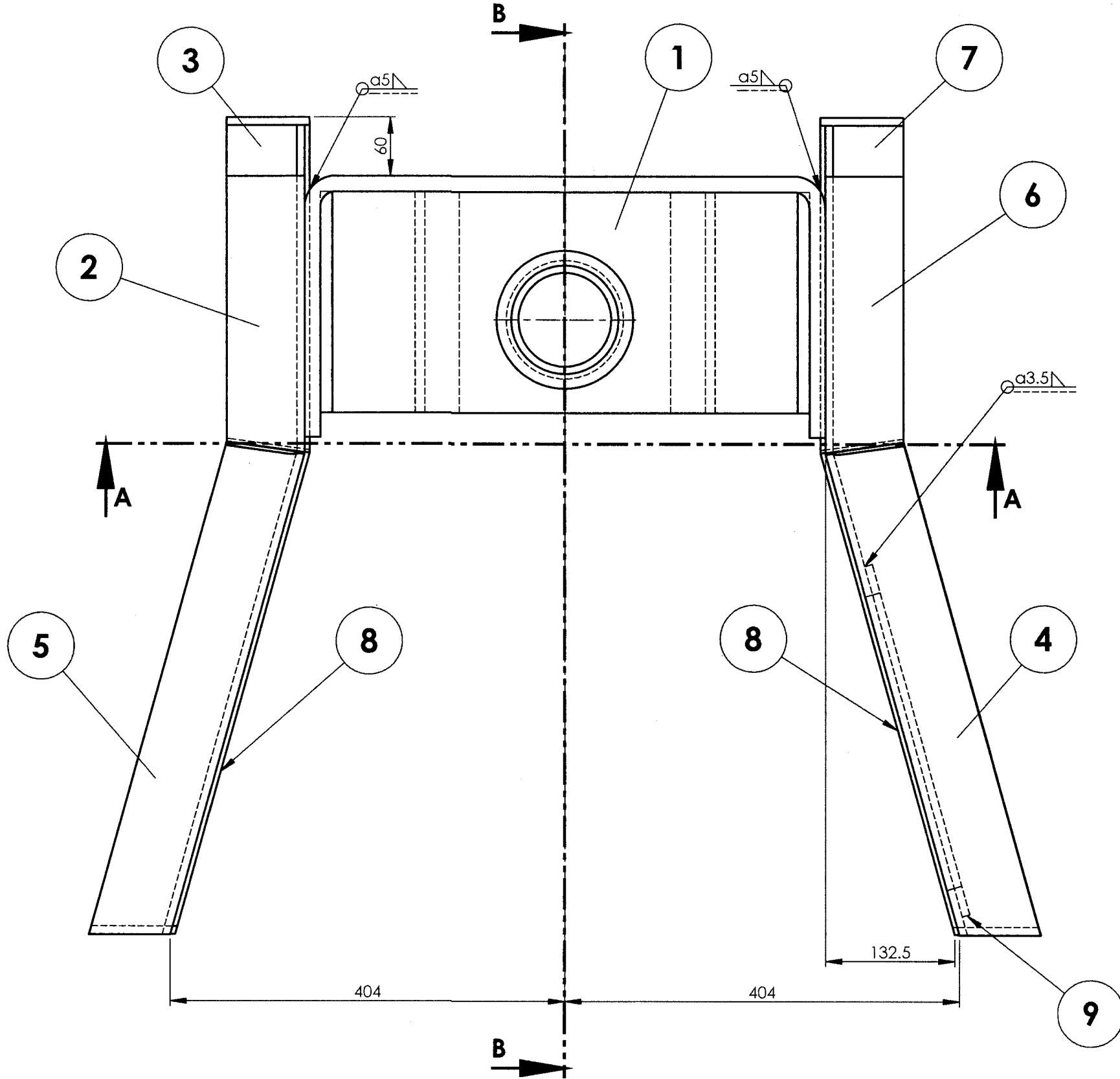
2	TUBE HALF		1	AAA12172		5.857	
QTY.	DESCRIPTION	DIMENSIONS	ITEM NO.	REF.DRGS.	MATL	WT/UNIT IN KGS	REMARKS
GROUP: HEADSTOCK		SURFACE AREA IN Sq.m.:0.396			WT/ASSY IN Kgs:11.714		
TUBE					SCALE	SSE/D	
					1:2	CHD	
					ALT.	ALTD	V.V.CHINA SRINIVASA RAO
						DRN	
INDIAN RAILWAY STANDARDS INTEGRAL COACH FACTORY, CHENNAI - 600038					SHEET 1 OF 1	ARTV5	
						56712003	

56712004


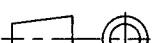
▽ ROUGH MACHINED	01 ROUGH CLEANED	REVISIONS			
▽▽ FINISH MACHINED	01b BURRS REMOVED	ALT.	ZONE	DESCRIPTION	APPROVED & DATE
▽▽▽ FINE FINISH MACHINED	018 CHAMFERED	a		NOTES-1 TO 4 AND REMARKS FOR ITEM-1 ADDED.	 30/08/21



- NOTE**
- * 1. ITEM-1 IS TO BE PROCURED FROM RDSO APPROVED VENDOR FOR SCHARFENBERG COUPLERS TO SPEC. ICF/MD/SPEC-207 WITH LATEST AMENDMENT AND REVISION.
 - 2. ALL WELD PERFORMANCE CLASS SHALL BE CP C2 UNLESS OTHERWISE SPECIFIED.
 - 3. FOR WELD TESTING PREFERANCES REFER DRG. No. ICF/STD-9-0-998.
 - 4. FOR WELD PROCEDURE SPECIFICATION REFER DRG. No. ICF/STD-9-0-999.



1	REINFORCEMENT		9	AAA12043		2.263	
2	BOTTOM SHEET		8	AAA12040		2.727	
1	BOTTOM SHEET		7	AAA12164		2.217	
1	BENT ANGLE		6	AAA12162		8.355	
1	BENT ANGLE L.H		5	AAA12037		14.769	
1	BENT ANGLE R.H		4	AAA12036		12.151	
1	BOTTOM SHEET		3	AAA12163		2.217	
1	BENT ANGLE		2	AAA12161		8.355	
1	BEARING BLOCK BRACKET		1	SCHAKU 40-588-07(2)		57.439	ITEMS-3,4 & 32
Default	DESCRIPTION	DIMENSIONS	ITEM NO.	REF.DRGS.	MATL	WT/UNIT IN KGS	REMARKS

GROUP: HEADSTOCK		SURFACE AREA IN Sq.m.: 3.114		WT/ASSY IN Kgs:		
COUPLING BEAM COMPLETE				SCALE 1:5	SSE/D	
					CHD	
				ALT a	ALTD	V.V.CHINA SRINIVASA R
					DRN	V.V.CHINA SRINIVASA R
INDIAN RAILWAY STANDARDS INTEGRAL COACH FACTORY, CHENNAI - 600038					ARTV5	
					56712004	
				SHEET 1 OF 1		

30-08-2021	24-11-2011	
DATE OF LATEST ALT.	DATE OF FIRST ISSUE	AME/SME

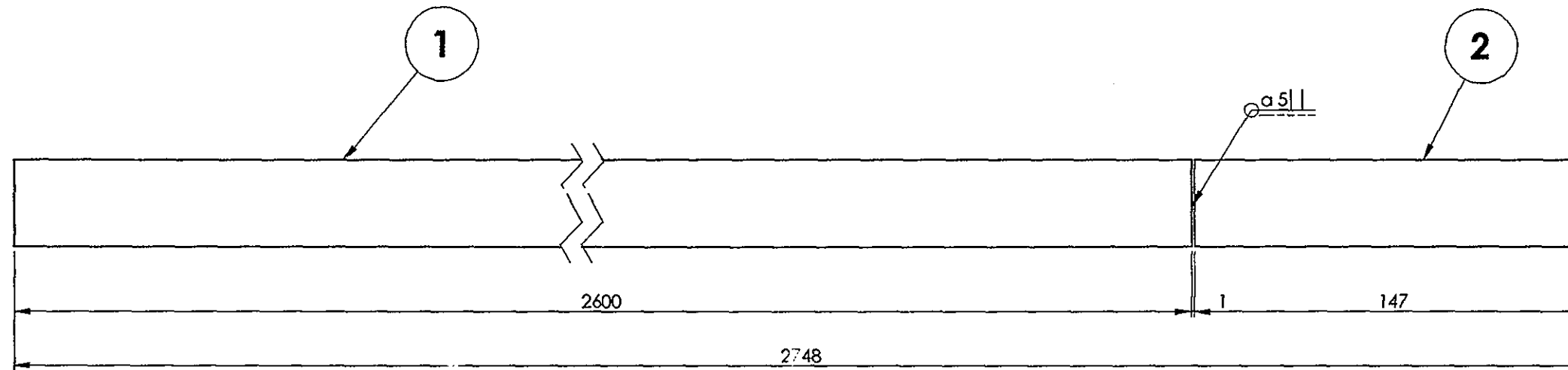
REF.DRG.NO.15612202-COL-I

ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED. FOR UNTOLERANCED DIMENSIONS AND ROUGHNESS VALUES, REFER DRAWING NO. ICF/STD-9-0-001. ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID. WELDING SYMBOLS ARE AS PER IS:813-1986. WEIGHT GIVEN IN DRAWING IS FOR INDICATIVE PURPOSE ONLY.

56713016

▽ ROUGH MACHINED	① ROUGH CLEANED
▽▽ FINISH MACHINED	② BURRS REMOVED
▽▽▽ FINE FINISH MACHINED	③ CHAMFERED

REVISIONS			
ALT.	ZONE	DESCRIPTION	APPROVED & DATE



1	CONNECTING WEB	5x32x147	2		RDSO/SPEC CK-201 X2 Cr Ni N 18.7 (301)	0.188	2D FINISH
1	CONNECTING WEB	5x32x2600	1		RDSO/SPEC CK-201 X2 Cr Ni N 18.7 (301)	3.328	2D FINISH
QTY.	DESCRIPTION	DIMENSIONS	ITEM NO.	REF. DRGS	MATL.SPEC.	WT/UNIT IN KGS	REMARKS
GROUP: TROUGH FLOOR		SURFACE AREA IN Sq.m.:0.204			WT/ASSY IN Kgs:3.516		
CONNECTING WEB					SCALE	SSE/D	<i>P. H. ...</i>
					1:5	CHD	
					ALT.	ALTD	
					DRN	A.V.V.Srinivas	
INDIAN RAILWAY STANDARDS				SHEET 1 OF 1	ARTV5		A3
INTEGRAL COACH FACTORY, CHENNAI - 600038					56713016		

ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED. FOR UNTOLERANCED DIMENSIONS AND ROUGHNESS VALUES, REFER DRAWING NO ICF/STD-9-0-001. ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID. WELDING SYMBOLS ARE AS PER IS: 813-1986.

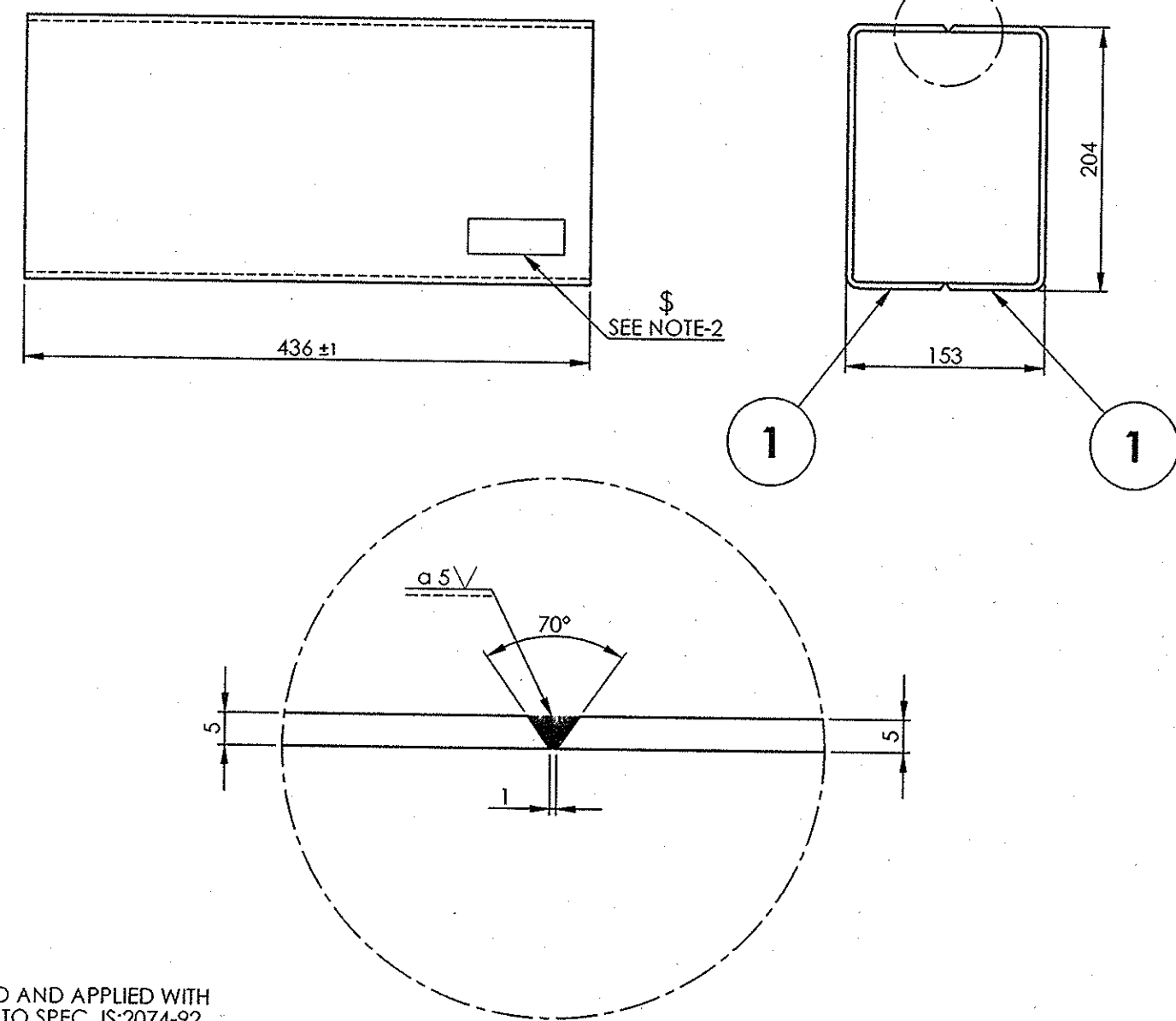
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	24.12.2011	08.12.2011
DATE OF LATEST ALT.	DATE OF FIRST ISSUE	AME/SME

66311018

ROUGH MACHINED	ROUGH CLEANED
FINISH MACHINED	BURRS REMOVED
FINE FINISH MACHINED	CHAMFERED

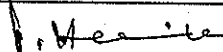
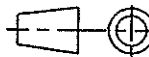
REVISIONS			
ALT.	ZONE	DESCRIPTION	APPROVED & DATE



NOTE:

1. FINISHED COMPONENT SHALL BE THOROUGHLY CLEANED AND APPLIED WITH TWO COATS OF RED OXIDE ZINC CHROMATE PRIMER TO SPEC. IS:2074-92 TO A DFT OF MINIMUM 35 MICRONS WITH SMOOTH AND MATT FINISH.
2. MANUFACTURER'S NAME, RUNNING SERIAL NO., MONTH & YEAR OF MANUFACTURE SHALL BE PUNCHED IN 6MM HEIGHT 1MM DEEP ON THE SPACE PROVIDED.

DETAIL A
SCALE 1 : 1

2	CHANNEL		1	AAB11835		5.75	
QTY.	DESCRIPTION	DIMENSIONS	ITEM NO.	REF.DRGS.	MATL	WT/UNIT IN KGS	REMARKS
GROUP: UNDER FRAME		SURFACE AREA IN Sq.m.:0.603			WT/ASSY IN Kgs:		
CROSS BEARER					SCALE	SSE/D	
					1:5	CHD	
					ALT.	ALTD	
						DRN	S.GANESH KUMAR
INDIAN RAILWAY STANDARDS				SHEET 1 OF 1			DMU/DPC/SS/JK
INTEGRAL COACH FACTORY, CHENNAI - 600038							
					66311018		A3

	22-04-2016	
DATE OF LATEST ALT.	DATE OF FIRST ISSUE	AME/SME

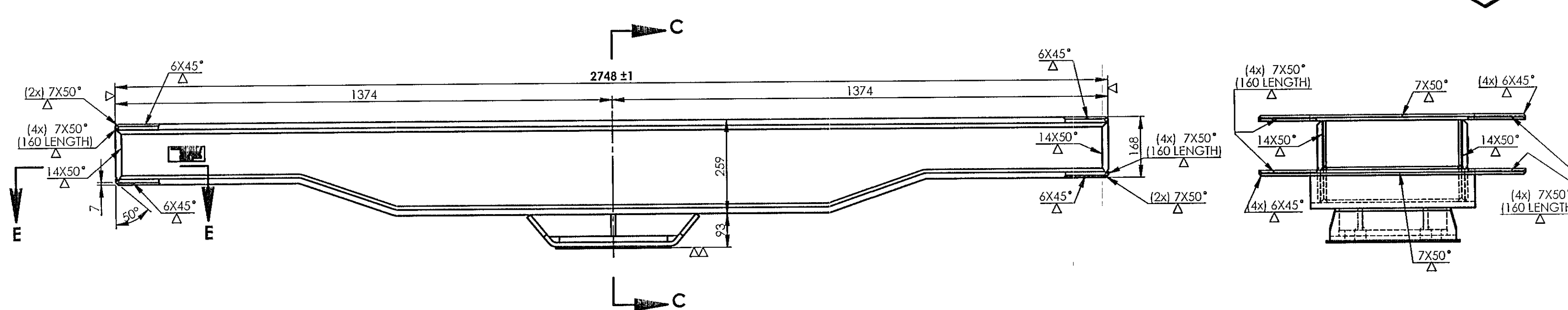
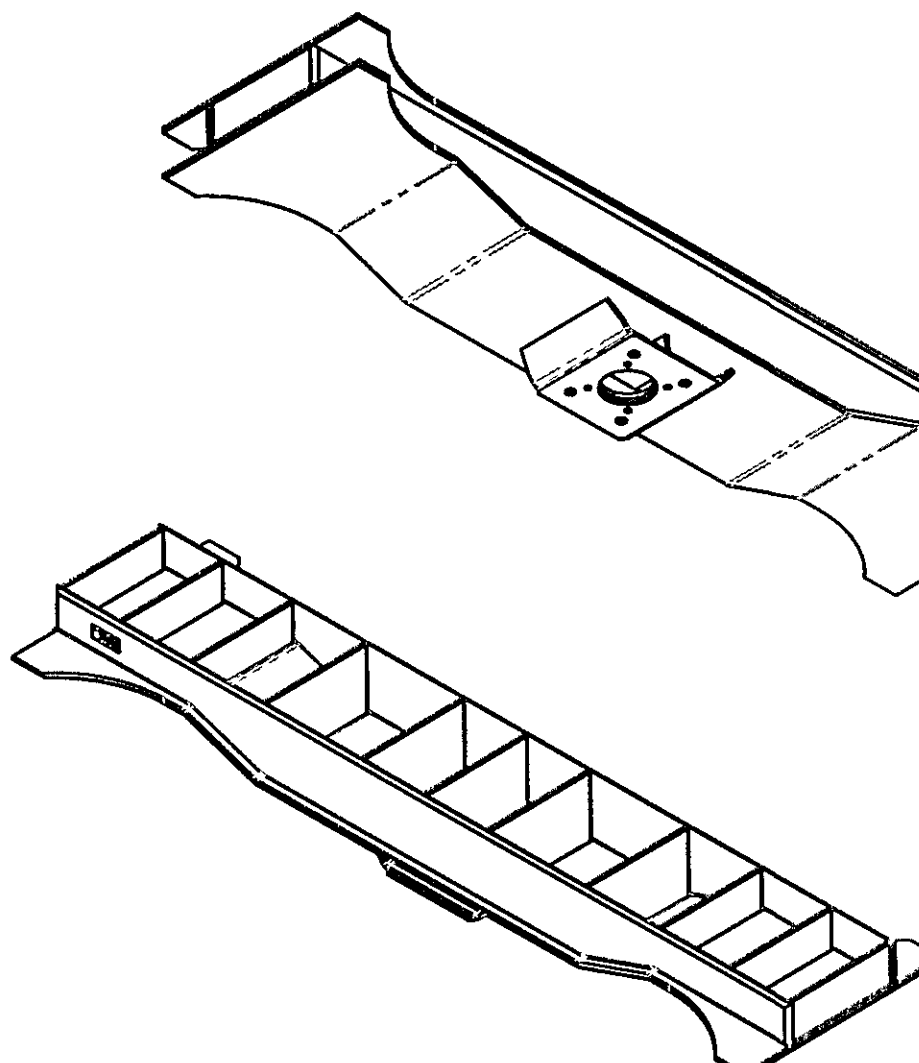
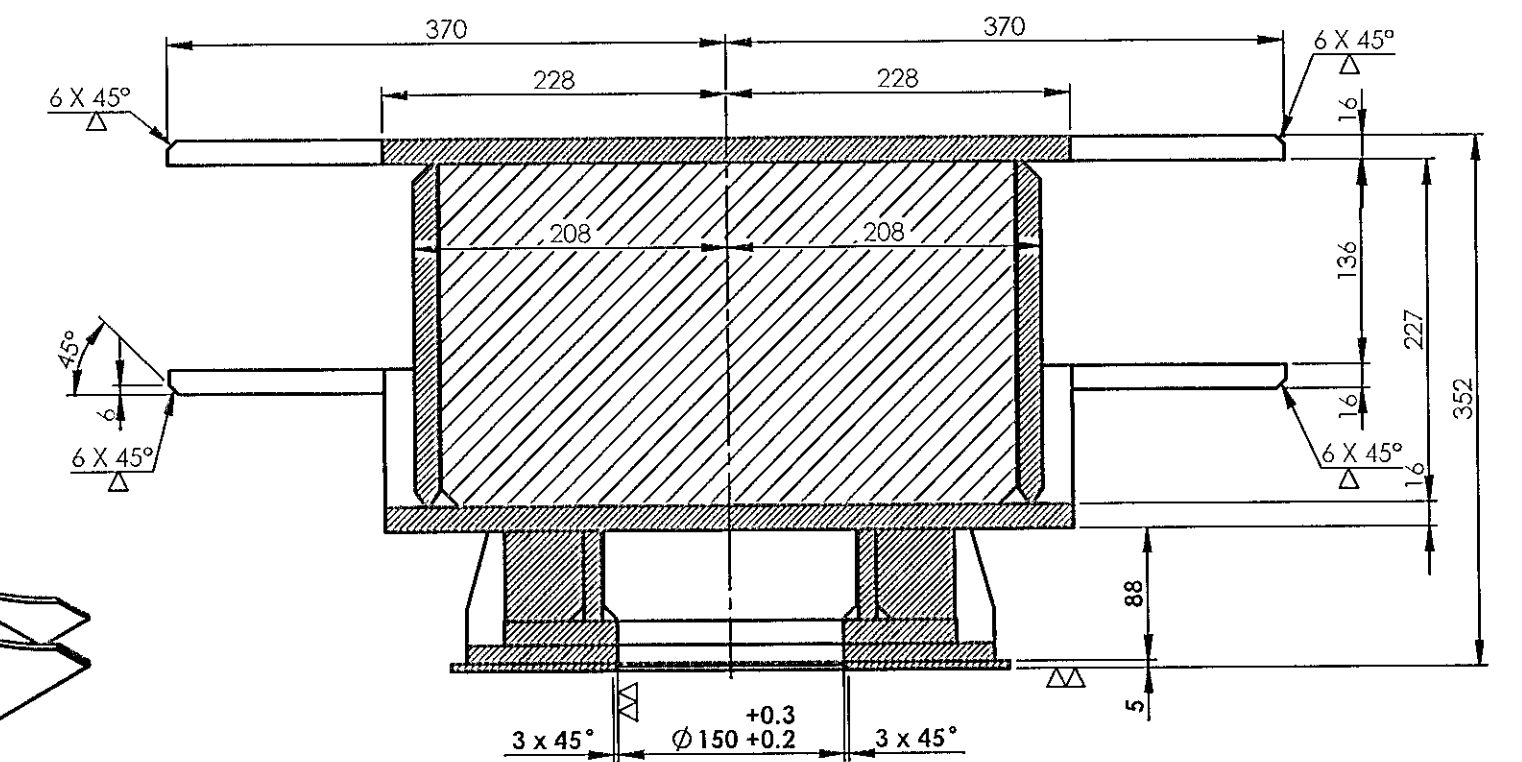
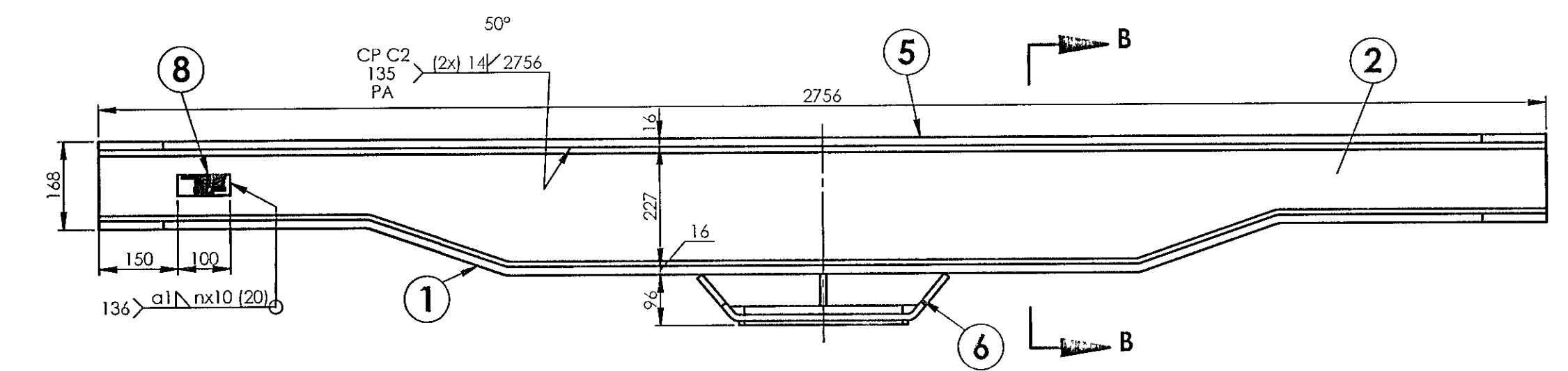
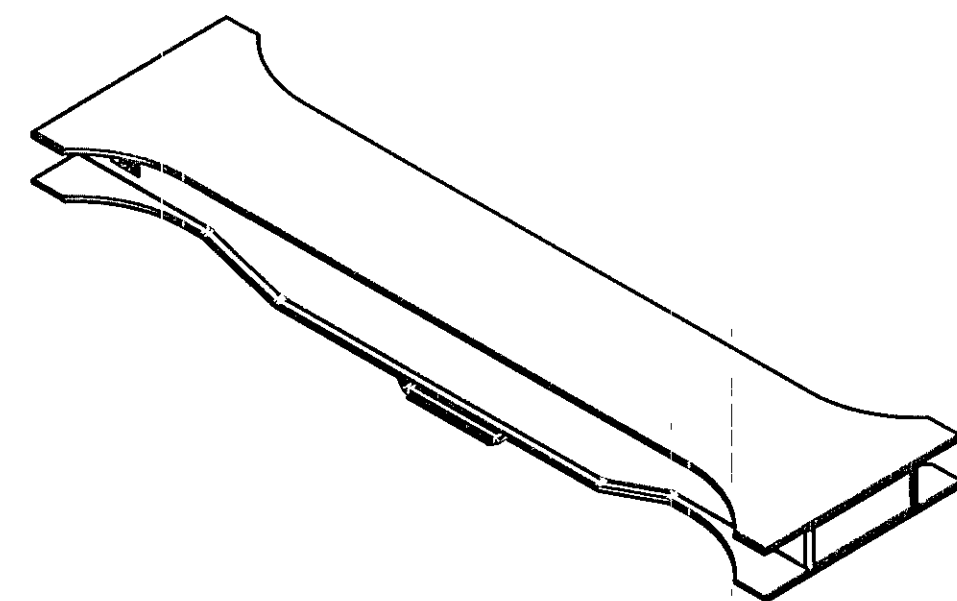
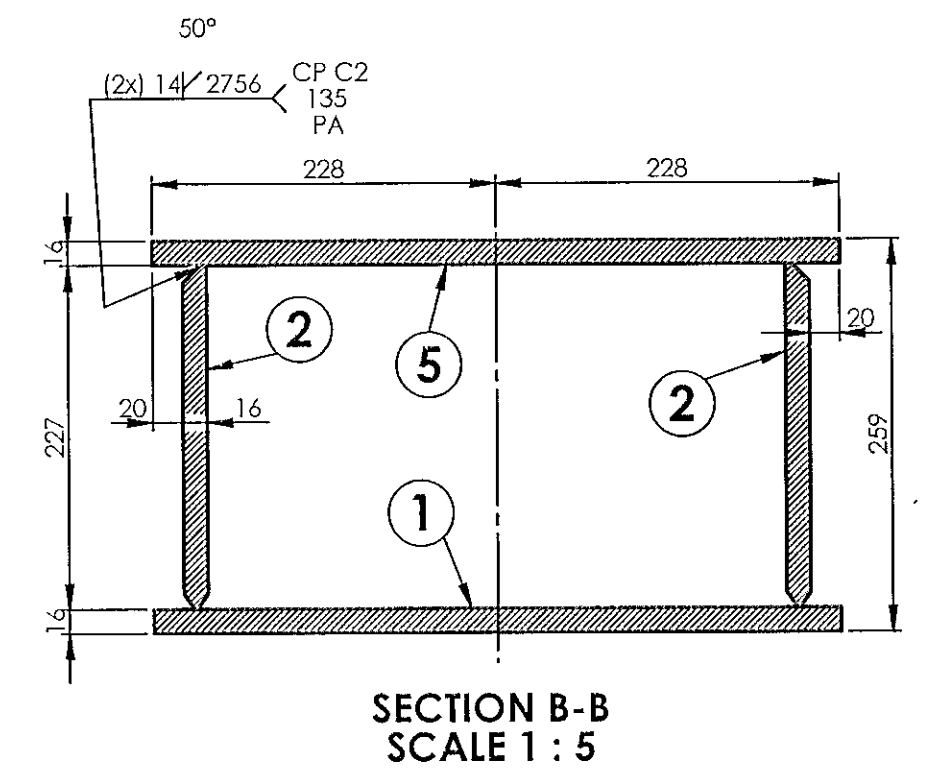
REF.DRG.NO.53111008 / COL-6

ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED. FOR UNTOLERANCED DIMENSIONS AND ROUGHNESS VALUES, REFER DRAWING NO ICF/STD-9-0-001. ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID. WELDING SYMBOLS ARE AS PER IS: 813-1986. WEIGHT GIVEN IN DRAWING IS FOR INDICATIVE PURPOSE ONLY

ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED. FOR UNTOLERANCED DIMENSIONS AND ROUGHNESS VALUES, REFER DRAWING NO ICF/STD-9-0-001.
ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID. WELDING SYMBOLS ARE AS PER EN ISO 2553. WEIGHT GIVEN IN DRAWING IS FOR INDICATIVE PURPOSE ONLY.

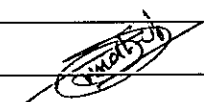


-
- Technical drawing of a mechanical part, likely a mold or die, showing dimensions and material specifications. The part is a rectangular block with a central cavity. Dimensions include overall width 740, overall height 243, and cavity width 185. Material specifications include CP C2 135 PA and 55° angles. Callouts 1, 2, 4, and 6 indicate specific features or sections.



REF.DRG.NO.329-1-1-133 / COL-

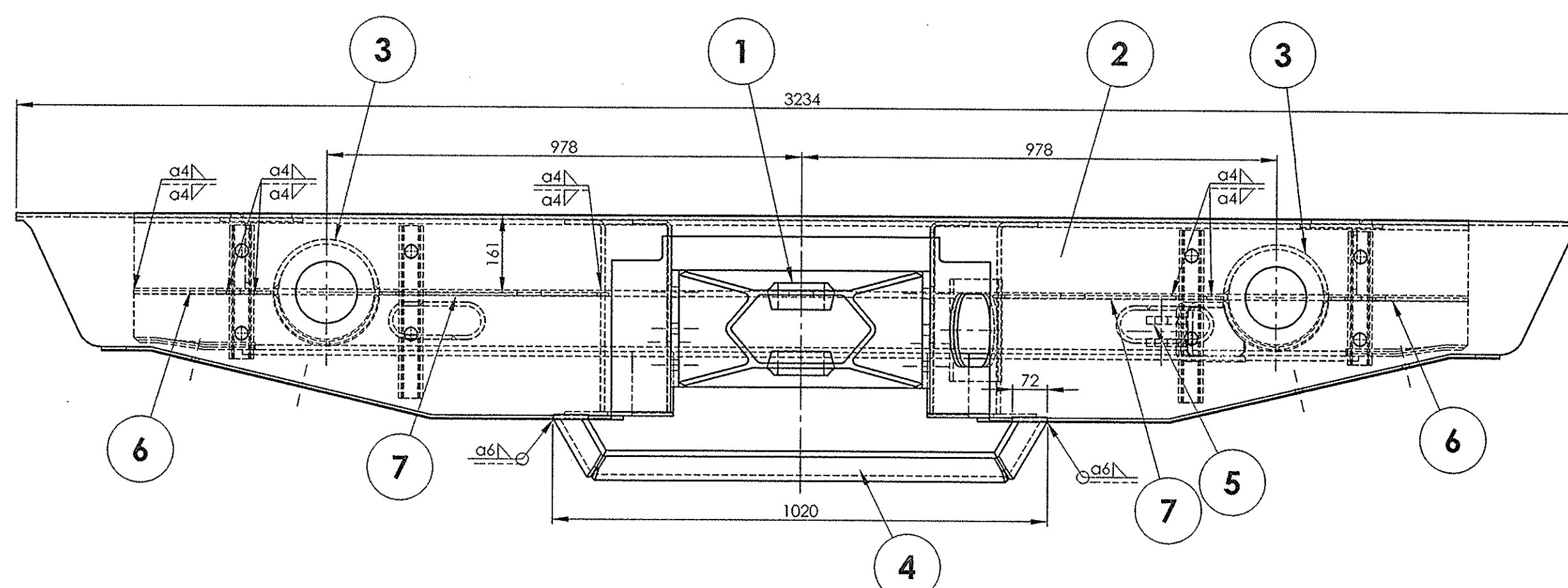
25-02-2026	29-04-2016	<i>[Signature]</i>
DATE OF LATEST ALT.	DATE OF FIRST ISSUE	AME/SME

1	NAME PLATE FOR SUPPLIER IDENTIFICATION		8	AAA51072		0.063	
+	NAME PLATE		7	AAA11274		0.113	
1	BASE PLATE COMPLETE		6	SSA11033		38.36	
1	TOP FLANGE		5	AA811787		173.445	
6	RIB		4	AAA11022		4.708	
5	RIB		3	AAA11021		7.931	
2	WEB		2	AAC11108		60.733	
1	BOTTOM FLANGE		1	AA811802		175.16	
QTY.	DESCRIPTION	DIMENSIONS	ITEM NO.	REF.DRGS.	MATL	WT/UNIT IN KGS	REMARKS
GROUP: UNDER FRAME			SURFACE AREA IN Sq.m.: 10.370			WT/ASSY IN Kgs:	
<div>BODY BOLSTER ASSEMBLY (DRIVING END)</div>						SCALE 1:10	
						SSE/D CHD	
						ALTD ALTD	A.V.V.Srinivas
						DRN	S.GANESH KUMAR
						INDIAN RAILWAY STANDARDS	
INTEGRAL COACH FACTORY, CHENNAI - 600038		66311053					
				A1			

ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID. WELDING SYMBOLS ARE AS PER IS 813-1986. WEIGHT GIVEN IN DRAWING IS FOR INDICATIVE PURPOSE ONLY.

NOTE:-

1. SUITABLE PLATE TREATMENT (OR) GRIT BLASTING (OR) SAND BLASTING (OR) PICKLING TO BE DONE AND EPOXY TO RDSO/SPEC. M&C/PCN/123/06 TO BE APPLIED TO A DFT OF MINIMUM 75 MICRONS.
2. DIMENSIONS MARKED THUS ☐ ARE TO BE MAINTAINED BY MEANS OF JIG.
3. FOR ALTERNATE DESIGN OF ITEM-3 REFER DMU/DPC-1-2-202/COL-V.

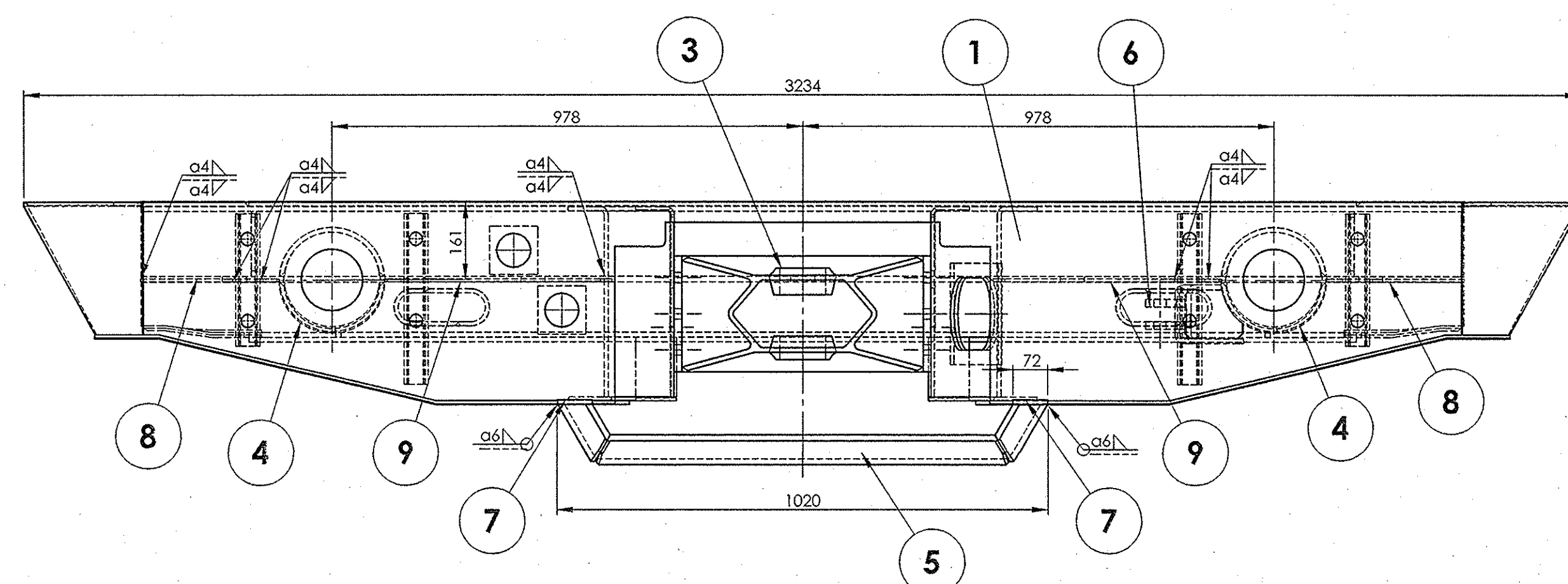
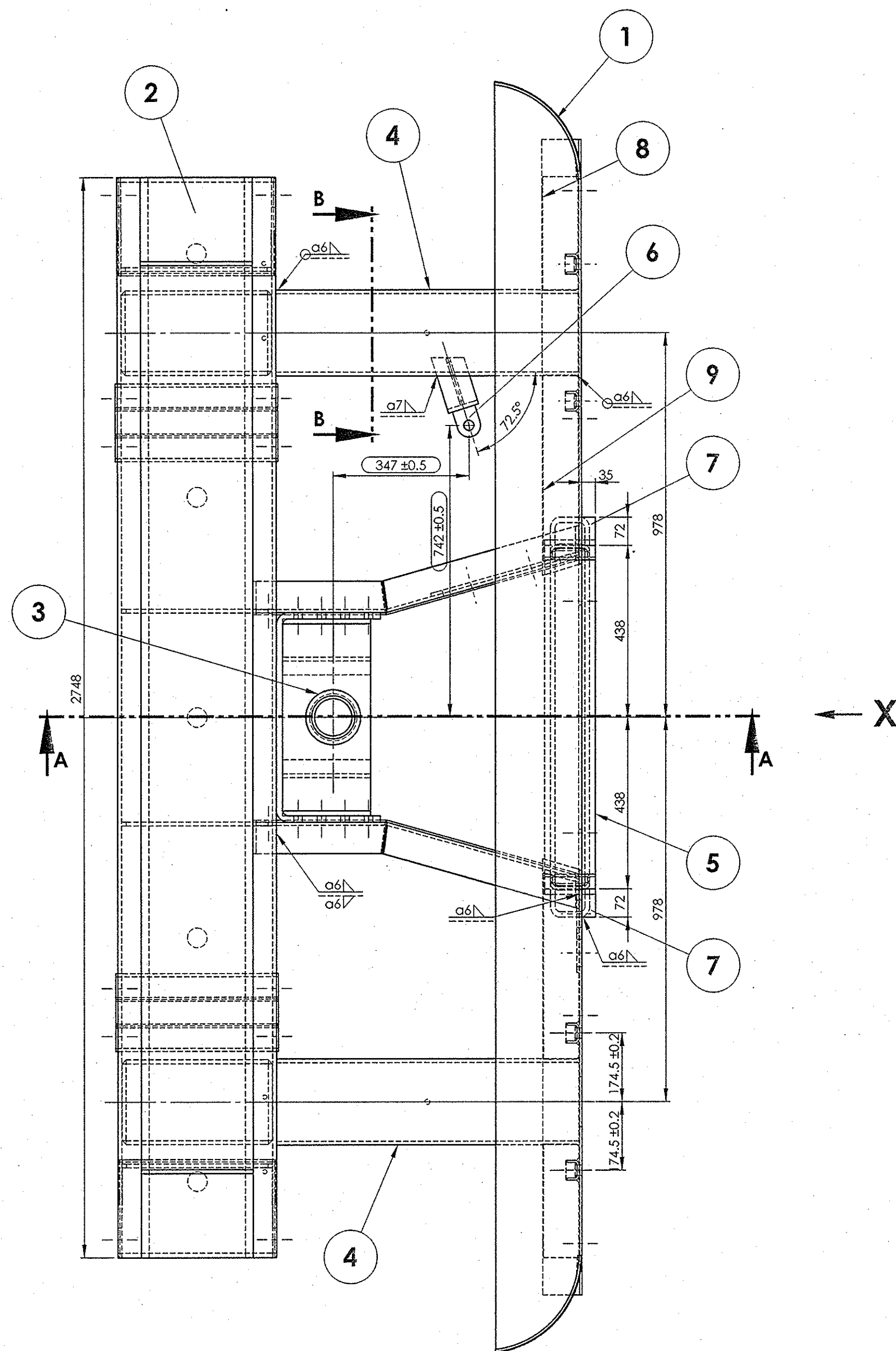


SECTION A-A

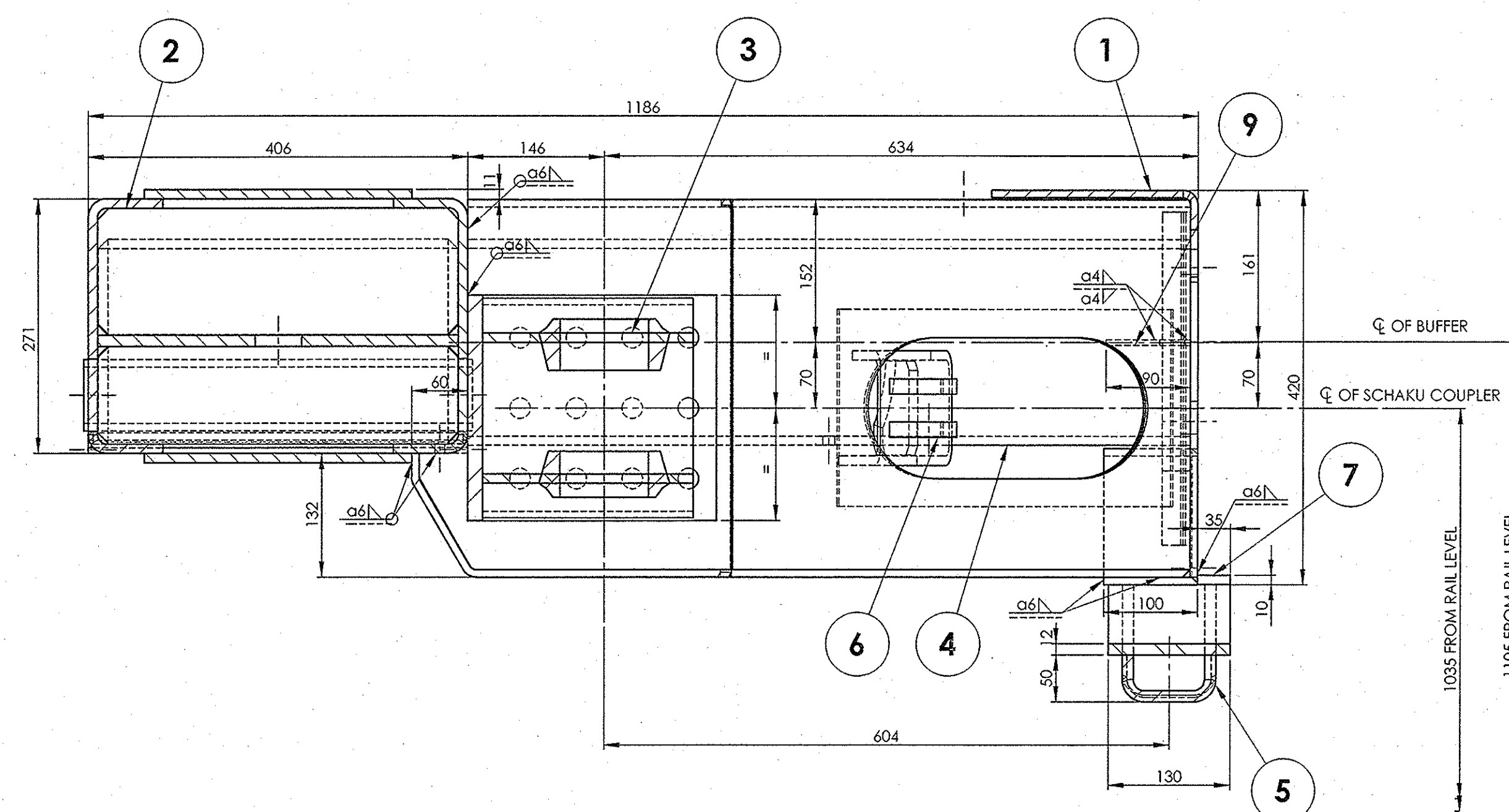
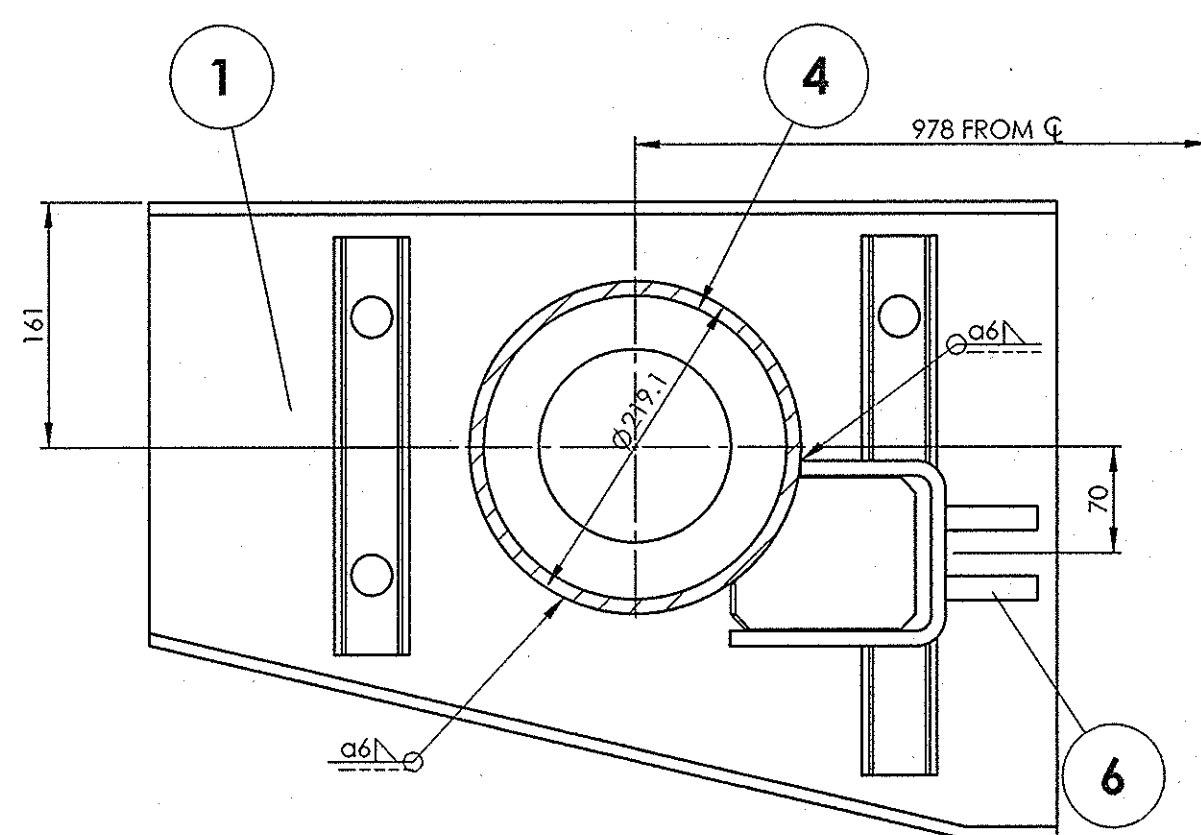
4	SCREWING PIECE		10	AAA12280		0.11	
2	PLATE		9	AAA12032		0.20	
1	INNER HEADSTOCK ASSY.		8	66312004		470.926	
2	RIB		7	AAA12044		1.877	
2	RIB		6	AAA12165		1.143	
1	BRACKET		5	SSA12006		3.683	
1	SUPPORTING BEAM		4	SSA12005		28.252	
2	TUBE		3	AAA12031		38.01	\$
1	OUTER HEADSTOCK COMPLETE		2	66312003		112.219	
1	COUPLING BEAM COMPLETE		1	56712004		112.096	
QTY.	DESCRIPTION	DIMENSIONS	ITEM NO	REF.DRGS.	MATL	WT/UNIT IN KGS	REMARKS
GROUP: HEADSTOCK			SURFACE AREA IN Sq.m: 22.393		WT/ASSY IN Kgs:		
HEADSTOCK ARRGT (NON DRIVING END)					SCALE	SSE/D	
					1:10	CHD	
					ALT.	ALTD	A.V.V.Srinivas
					b	DRN	A.V.V.Srinivas
INDIAN RAILWAY STANDARDS INTEGRAL COACH FACTORY, CHENNAI - 600038					DMU/DPC/SS/JK		
				SHEET 1 OF 1	66312001		
					A1		


66312002

▽ ROUGH MACHINED		① ROUGH CLEANED	REVISIONS					
▽▽ FINISH MACHINED		② BURRS REMOVED	ALT.	ZONE	DESCRIPTION	APPROVED & DATE		
▽▽▽ FINE FINISH MACHINED		③ CHAMFERED						



VIEW FROM - X

SECTION A-A
SCALE 1 : 5SECTION B-B
SCALE 1 : 5**NOTE:-**

- SUITABLE PALTE TREATMENT (OR) GRIT BLASTING (OR) SAND BLASTING (OR) PICKLING TO BE DONE AND EPOXY TO RDSO/SPEC.NO. M&C/PCN/123/06 TO BE APPLIED TO A DFT OF MINIMUM 75 MICRONS.
- DIMENSIONS MARKED THIS  ARE TO BE MAINTAINED BY MEANS OF JIG.
- FOR ALTERNATE DESIGN OF ITEM-4 REFER DMU/DPC-1-2-202/COL.V.

2	RIB		9	AAA12044		1.877	
2	RIB		8	AAA12165		1.143	
2	PLATE		7	AAA12032		0.20	
1	BRACKET		6	SSA12006		3.683	
1	SUPPORTING BEAM		5	SSA12005		28.252	
2	TUBE		4	AAA12031		38.01	\$
1	COUPLING BEAM COMPLETE		3	56712004		112.096	
1	INNER HEADSTOCK ASSY.		2	66312004		470.898	
1	OUTER HEADSTOCK COMPLETE (DRIVING END)		1	66312005		112.974	
QTY.	DESCRIPTION	DIMENSIONS	ITEM NO.	REF.DRGS.	MATL	WT/UNIT IN KGS	REMARKS

GROUP: HEADSTOCK		SURFACE AREA IN Sq.m.: 22.435		WT/ASSY IN Kgs:	
SCALE 1:10		SSE/D		CHD	
ALT.		ALTD		DRN	
INDIAN RAILWAY STANDARDS		SHEET 1 OF 1		DMU/DPC/SS/JK	

HEADSTOCK ARRG (DRIVING END)

INDIAN RAILWAY STANDARDS
INTEGRAL COACH FACTORY, CHENNAI - 60003866312002
A1


REF.DRG.NO.

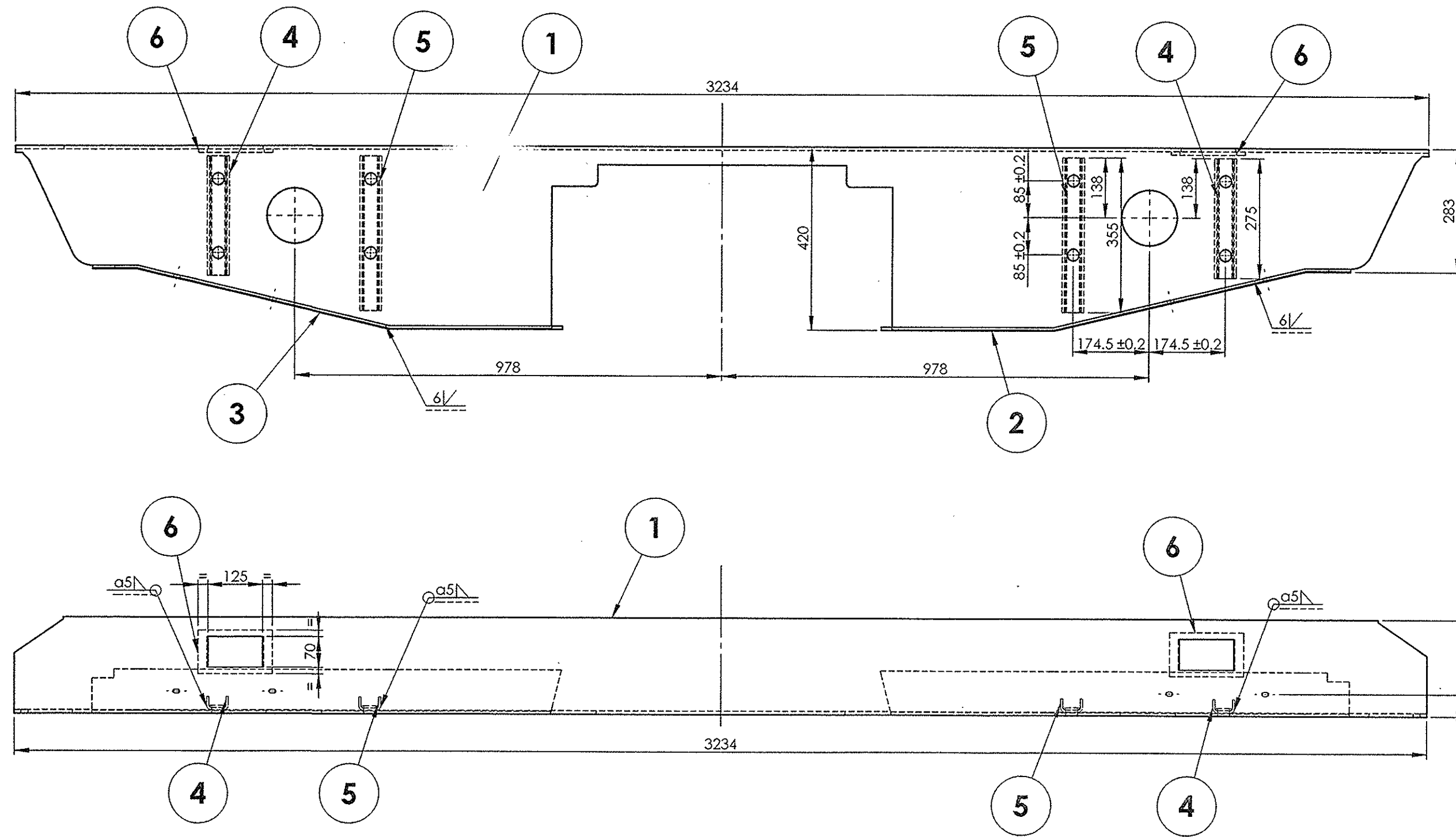
DATE OF LATEST ALT.	29-04-2016	DATE OF FIRST ISSUE	AME/SMB
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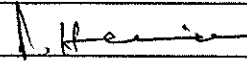

66312003

▽ ROUGH MACHINED
▽▽ FINISH MACHINED
▽▽▽ FINE FINISH MACHINED


01 ROUGH CLEANED
01b BURRS REMOVED
18 CHAMFERED

REVISIONS			
ALT.	ZONE	DESCRIPTION	APPROVED & DATE
a		VIEWS UPDATED AS PER DETAIL.	



2	STIFFENER		6	AAA12068		0.50	
2	STIFFENER		5	SSA12008		1.684	
2	STIFFENER		4	SSA12007		1.329	
1	BOTTOM FLANGE		3	AAA12269		6.545	
1	BOTTOM FLANGE		2	AAA12268		6.545	
1	OUTER HEADSTOCK		1	AAA12267		92.111	
QTY.	DESCRIPTION	DIMENSIONS	ITEM NO.	REF.DRGS.	MATL	WT/UNIT IN KGS	REMARKS
GROUP: HEADSTOCK				SURFACE AREA IN Sq.m.: 3.861		WT/ASSY IN Kgs:	
OUTER HEADSTOCK COMPLETE				SCALE 1:10	SSE/D		
				ALT a	CHD		
				ALT a	ALTD	A.V.V.Srinivas	
				DRN	DRN	A.V.V.Srinivas	
						DMU/DPC/SS/JK	
				INDIAN RAILWAY STANDARDS		SHEET 1 OF 1	
				INTBGRAL COACH FACTORY, CHENNAI - 600038		66312003	
						A2	

REF.DRG.NO.

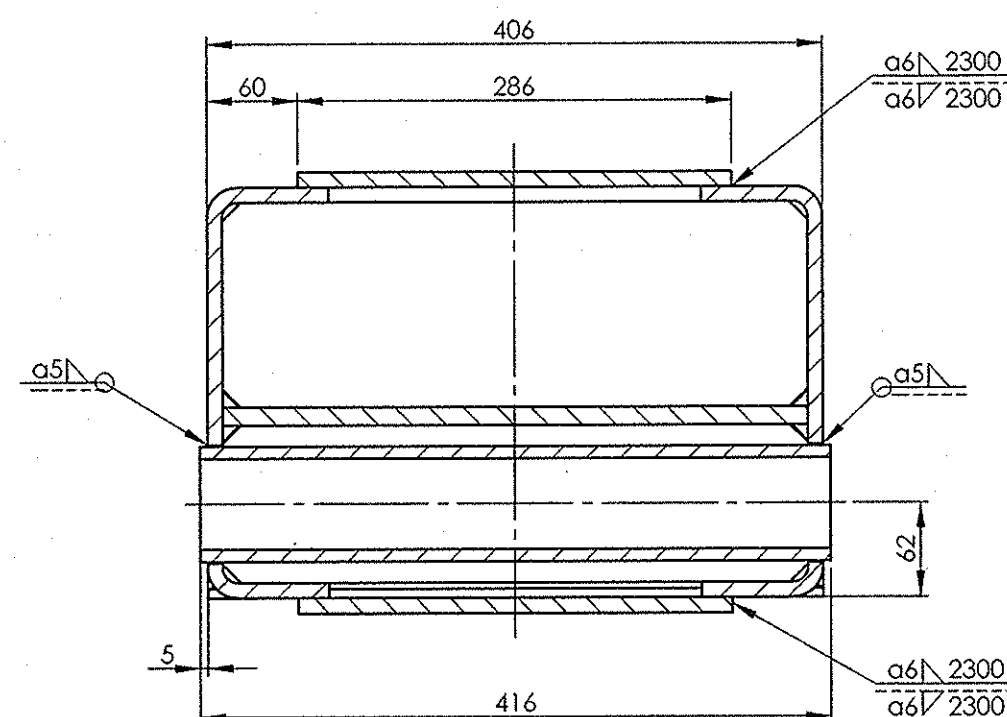
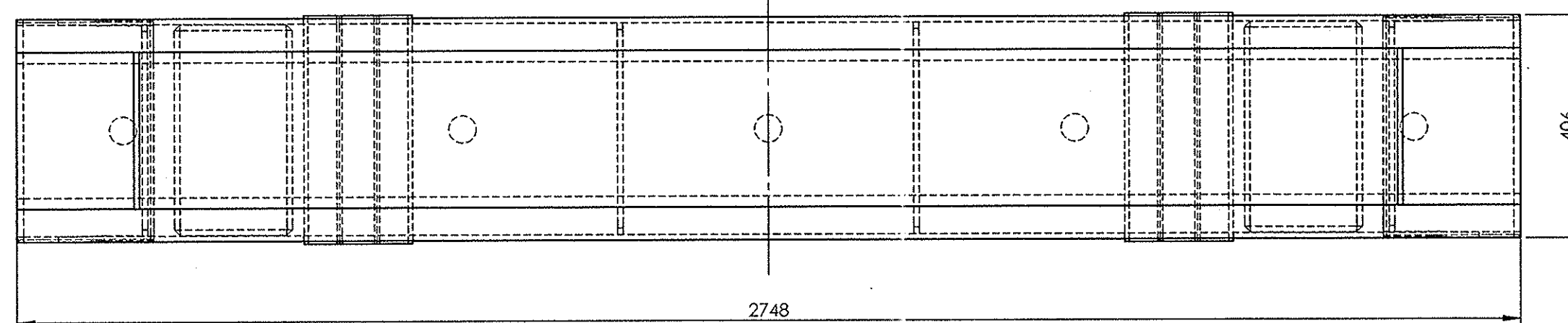
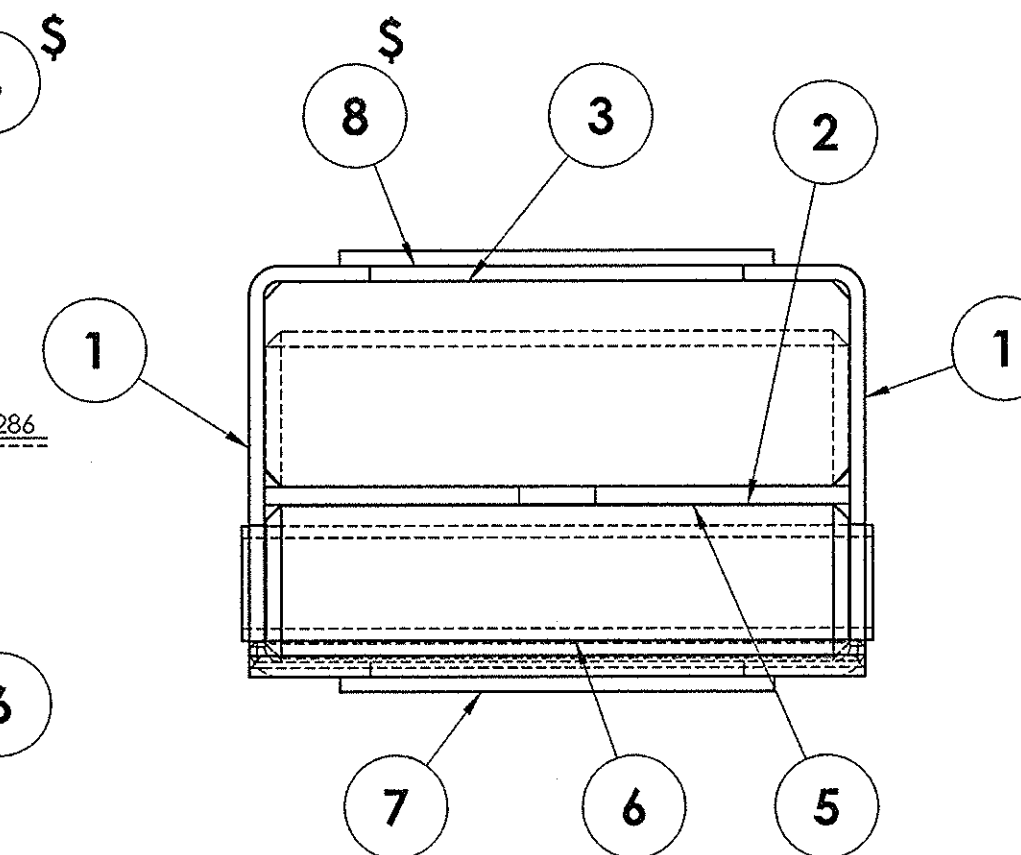
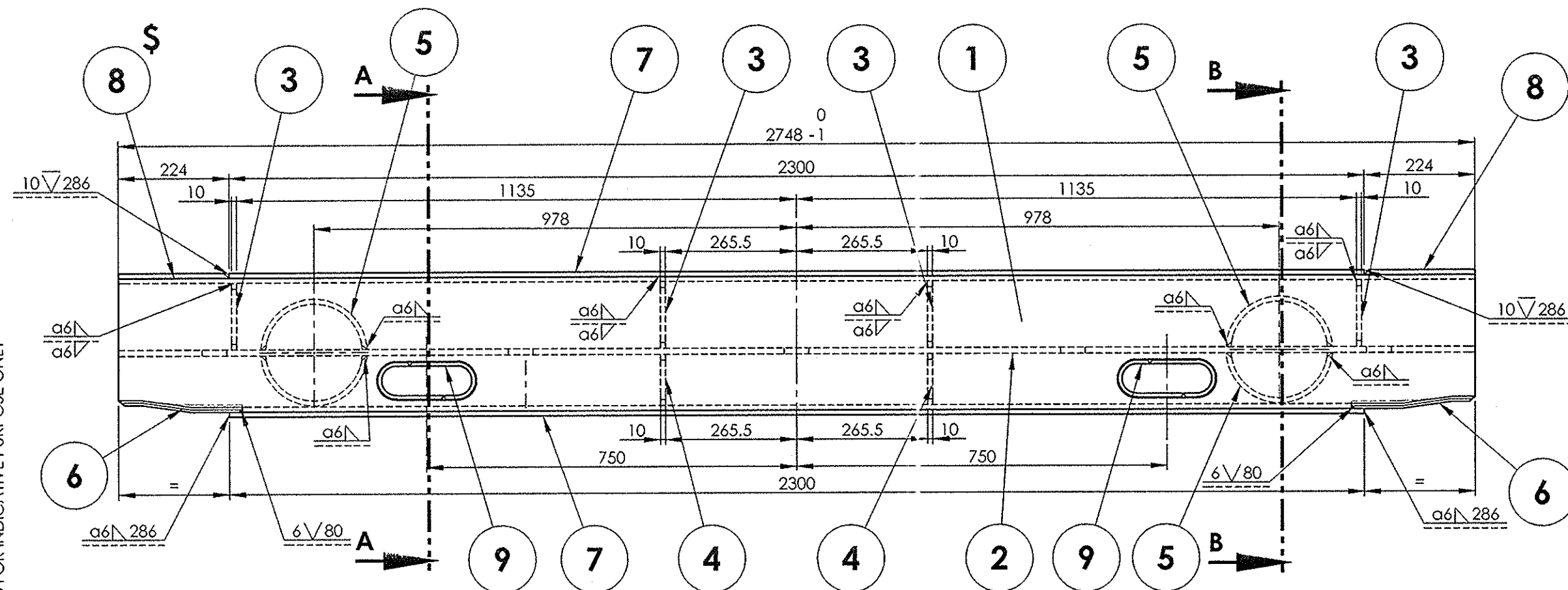
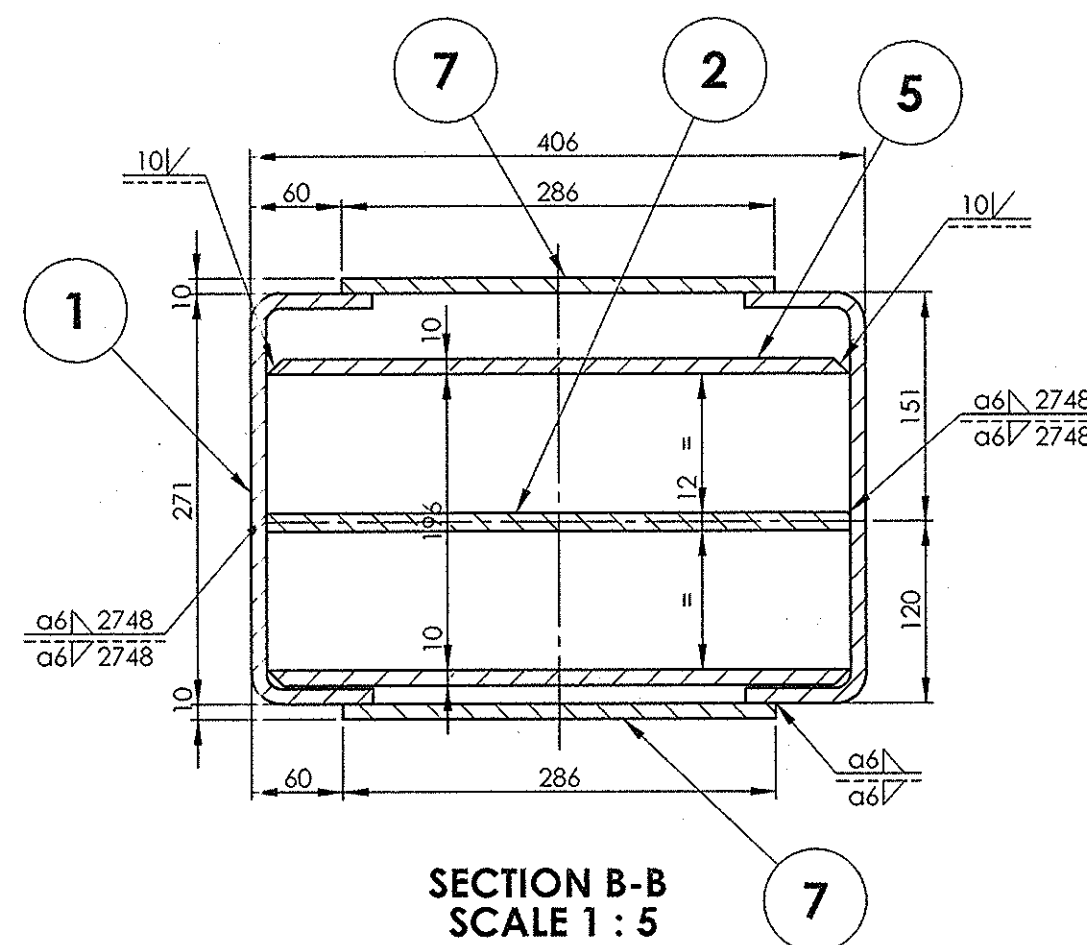
12-2017	29-04-2016	
DATE OF LATEST ALT.	DATE OF FIRST ISSUE	AME/SME

66312004

▽ ROUGH MACHINED	01 ROUGH CLEANED
▽▽ FINISH MACHINED	01b BURRS REMOVED
▽▽▽ FINE FINISH MACHINED	018 CHAMFERED

REVISIONS

ALT.	ZONE	DESCRIPTION	APPROVED & DATE
a		Ø 10.5 HOLES-4 NoS & SECTION-CC DELETED.	

SECTION A-A
SCALE 1 : 5SECTION B-B
SCALE 1 : 5

NOTE:

§ 1. ITEM-8, TOP COVER PLATE, TO BE SUPPLIED LOOSE AND WELDED AFTER WELDING THE INNER HEADSTOCK WITH L-BEAM.

2	TUBE		9	56712003		11.714	
2	TOP COVER PLATE		8	AAA12174		4.917	
2	COVER PLATE		7	AAA12173		51.637	
2	COVER PLATE		6	AAA12171		7.701	
4	CENTRE STIFFENER HALF		5	AAA12170		9.120	
2	WEB		4	AAA12168		3.129	
4	WEB		3	AAA12167		4.068	
1	CENTRE PLATE		2	AAA12166		98.996	
2	INNER HEADSTOCK BEAM		1	AAA12270		80.490	
QTY.	DESCRIPTION	DIMENSIONS	ITEM NO.	REF.DRGS.	MATL	WT/UNIT IN KGS	REMARKS

GROUP: HEADSTOCK SURFACE AREA IN Sq.m.: 12.280 WT/ASSY IN Kgs:

INNER HEADSTOCK ASSY.

SCALE 1:10	SSE/D	
	CHD	
ALT a	ALTD	A.V.V.Srinivas
	DRN	A.V.V.Srinivas

DMU/DPC/SS/JK

INDIAN RAILWAY STANDARDS
INTEGRAL COACH FACTORY, CHENNAI - 600038SHEET
1 OF 1

66312004

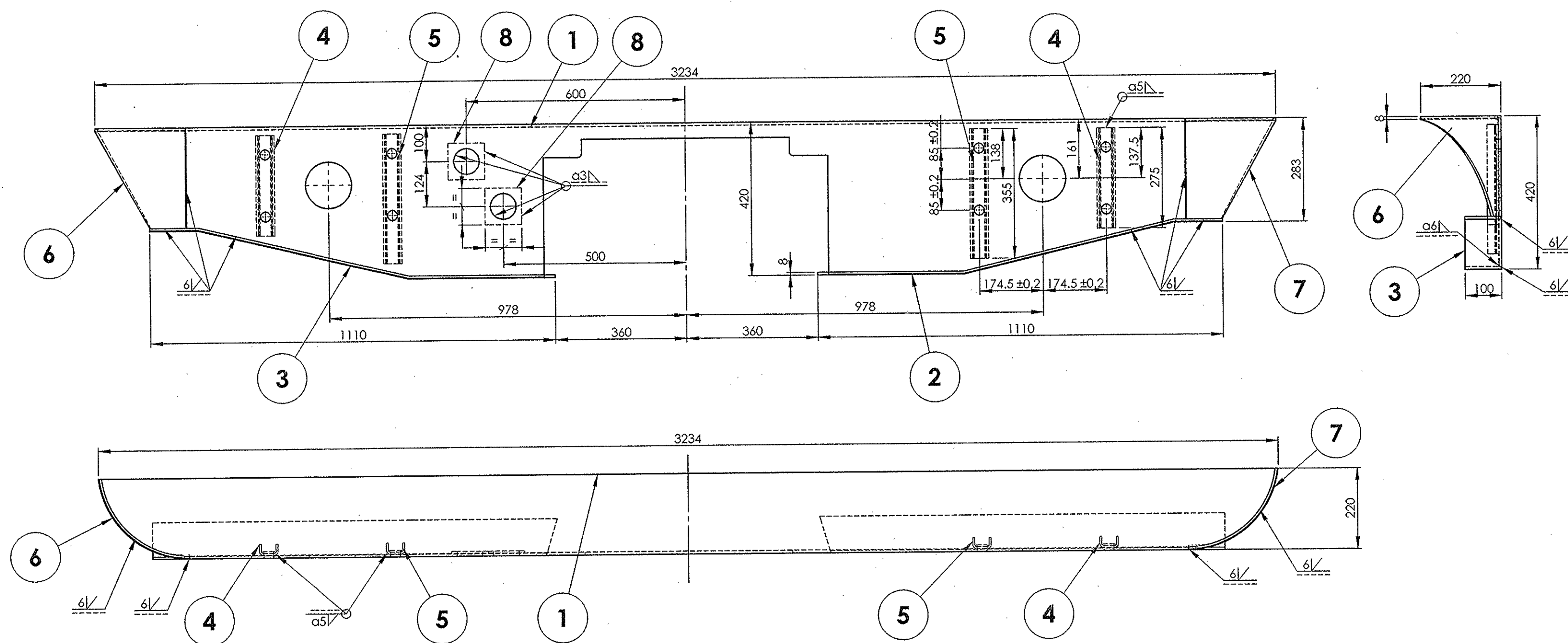
A2

ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED. FOR UNTOLERANCED DIMENSIONS AND ROUGHNESS VALUES, REFER DRAWING NO. ICF/STD-9-0-001. ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID. WELDING SYMBOLS ARE AS PER IS:813-1986. WEIGHT GIVEN IN DRAWING IS FOR INDICATIVE PURPOSE ONLY.

REF.DRG.NO.

15-07-2016	29-04-2016	
DATE OF LATEST ALT.	DATE OF FIRST ISSUE	AME/SME

REVISIONS			
ALT.	ZONE	DESCRIPTION	APPROVED & DATE



2	STIFFENER		8	AAA12276		0.241	
1	END COVER SHEET (R.H.)		7	AAA12275		3.450	
1	END COVER SHEET (L.H.)		6	AAA12274		3.451	
2	STIFFENER		5	SSA12008		1.684	
2	STIFFENER		4	SSA12007		1.329	
1	BOTTOM FLANGE		3	AAA12272		6.822	
1	BOTTOM FLANGE		2	AAA12273		6.822	
1	OUTER HEADSTOCK (DRIVING END)		1	AAA12271		85.918	
QTY.	DESCRIPTION	DIMENSIONS	ITEM	REF.DRGS.	MATL	WT/UNIT IN KGS	REMARKS

GROUP: HEADSTOCK		SURFACE AREA IN Sq.m.: 3.902		WT/ASSY IN Kgs:	
<h1 style="text-align: center;">OUTER HEADSTOCK COMPLETE (DRIVING END)</h1>				SCALE 1:10	SSE/D <i>H. Menon</i>
					CHD
				ALT	ALTD
					DRN A.V.V.Srinivas
INDIAN RAILWAY STANDARDS INTEGRAL COACH FACTORY, CHENNAI - 600038					DMU/DPC/SS/JK
					<div>66312005</div> <div>A2</div>
				SHEET 1 OF 1	

ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED. FOR UNTOLERANCED DIMENSIONS AND ROUGHNESS VALUES, REFER DRAWING NO. ICFSTD-9-001. ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID. WELDING SYMBOLS ARE AS PER E.8:13-1986. WEIGHT GIVEN IN DRAWING IS FOR INDICATIVE PURPOSE ONLY

REF.DRG.NO.

29-04-2016

DATE OF LATEST ALT.

DATE OF FIRST ISSUE

AME/SME

INDIAN RAILWAY STANDARDS
INTEGRAL COACH FACTORY, CHENNAI - 600038

INTEGRAL COACH FACTORY, CHENNAI - 600038

SHEET
1 OF 1

66312005

A2

66313002

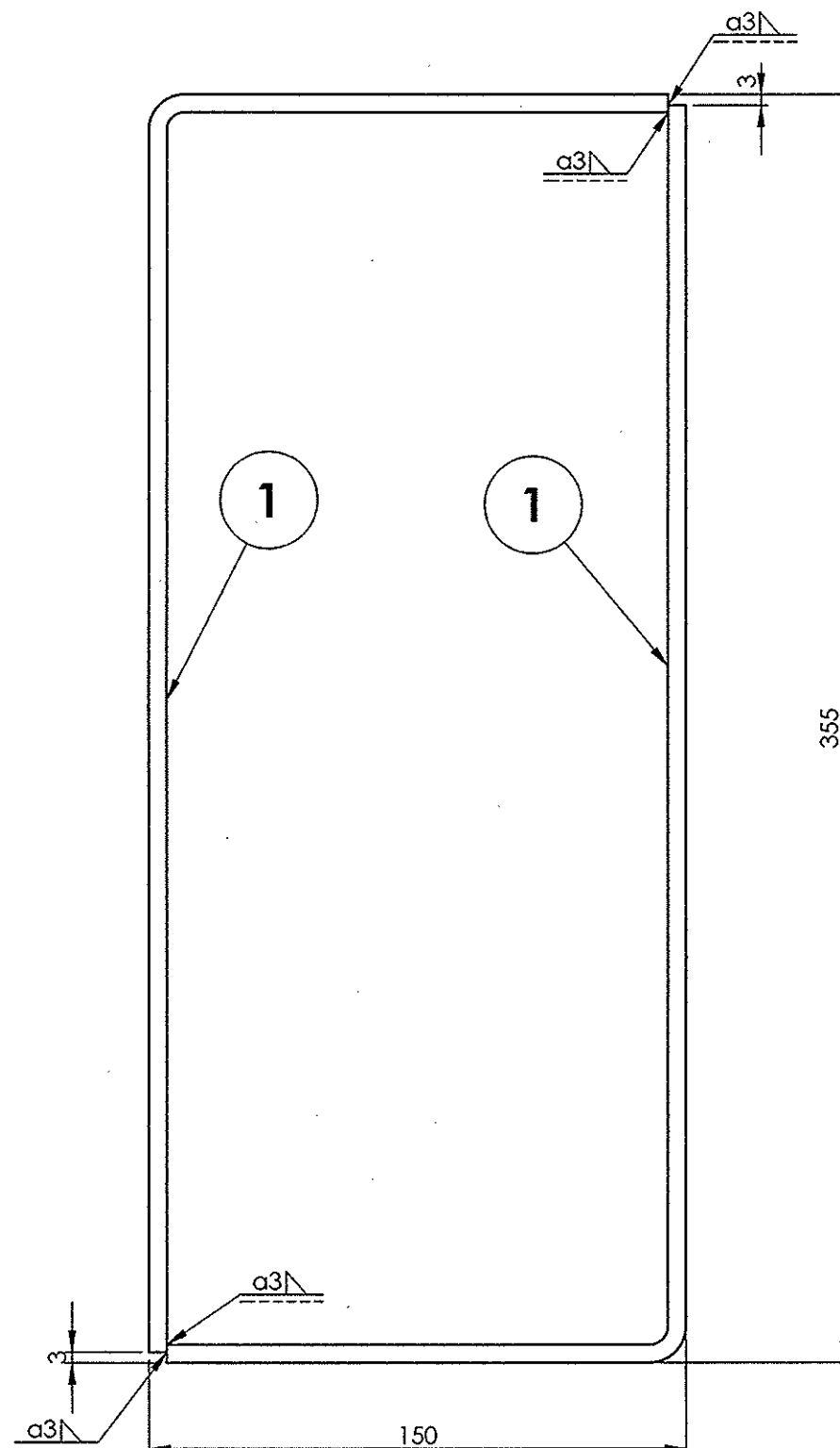
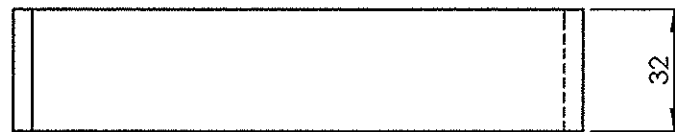
▽ ROUGH MACHINED	① ROUGH CLEANED
▽▽ FINISH MACHINED	①b BURRS REMOVED
▽▽▽ FINE FINISH MACHINED	⑱ CHAMFERED

REVISIONS

ALT.

ZONE

DESCRIPTION

APPROVED &
DATE

2	ANGLE FOR HOUSING		1	AAA13176	RDSO/SPEC C- K201 X2 Cr Ni N 187	0.626	
QTY.	DESCRIPTION	DIMENSIONS	ITEM NO.	REF.DRGS	MATL. SPEC	WT/UNIT IN KGS	REMARKS
GROUP: TROUGHFLOOR				SURFACE AREA IN Sq.m.:0.073		WT/ASSY IN Kgs:	
HOUSING					SCALE	SSE/D	
					1:2	CHD	
					ALT.	ALTD	
						DRN	A.V.V.Srinivas
INDIAN RAILWAY STANDARDS INTEGRAL COACH FACTORY, CHENNAI - 600038					DMU/DPC/SS/JK		
					66313002		
					SHEET 1 OF 1	A3	

REF.DRG.NO.20113601 COL-29

DATE OF LATEST ALT.

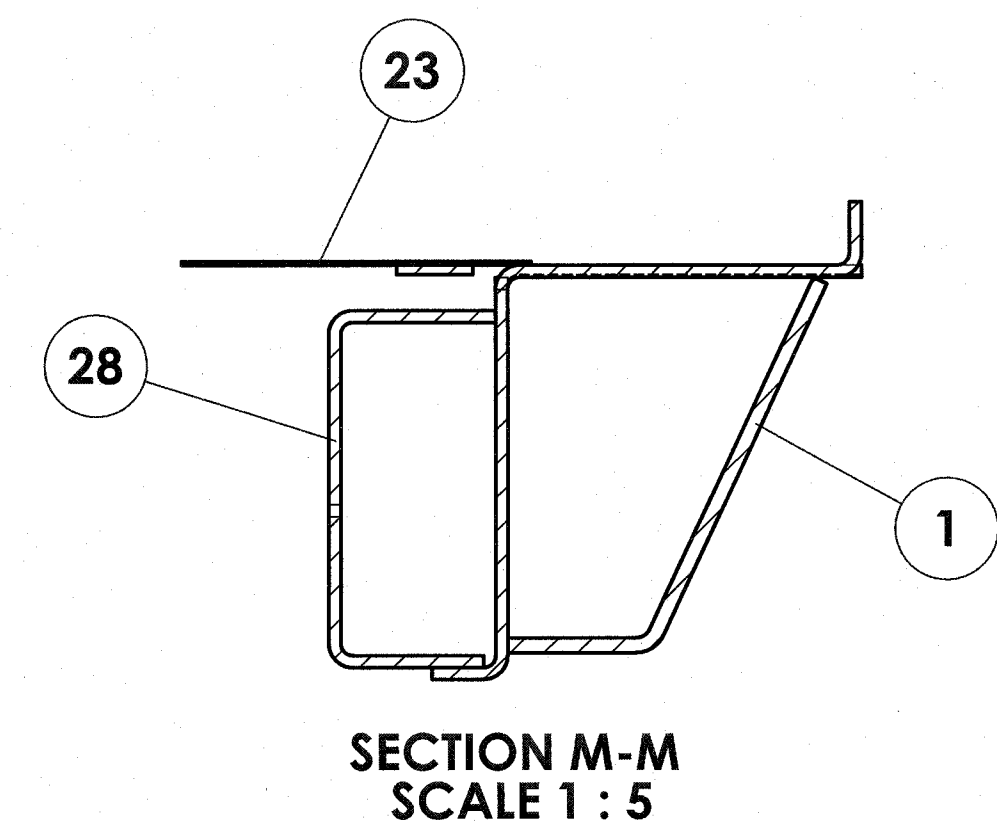
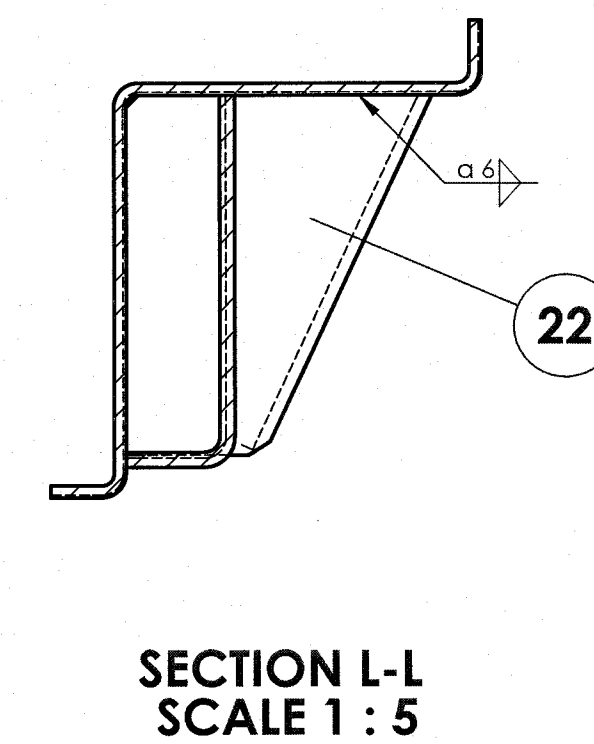
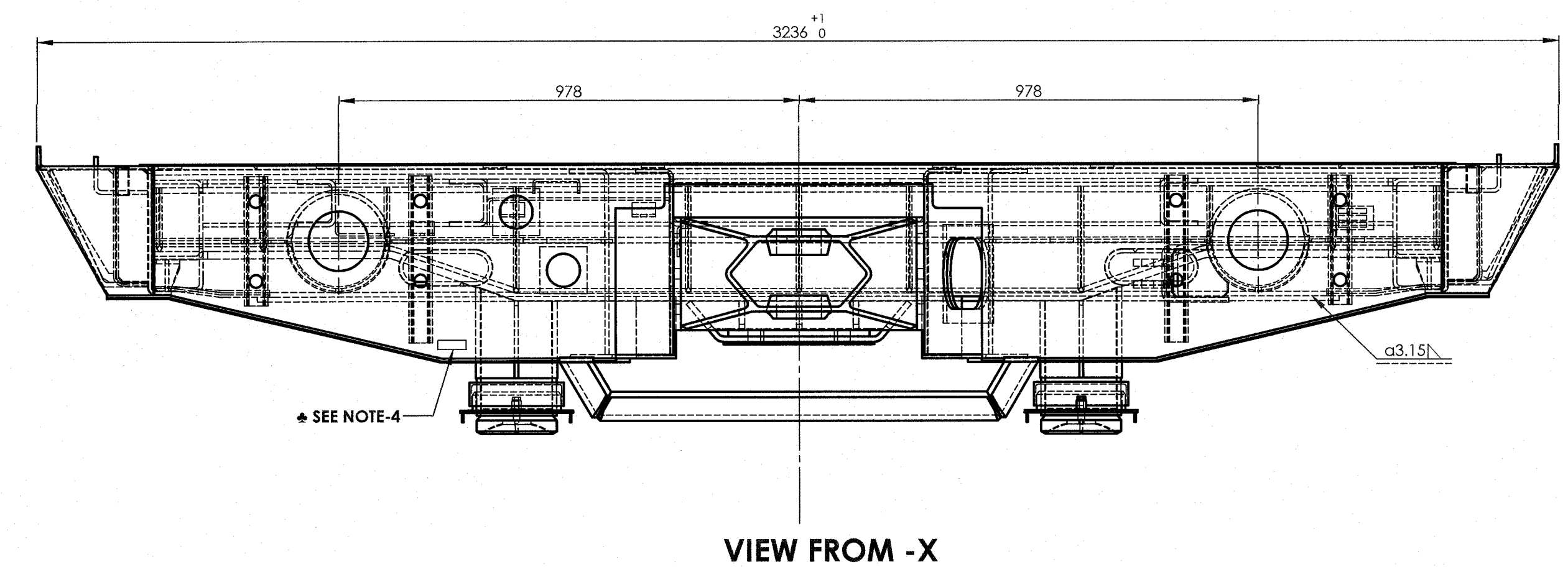
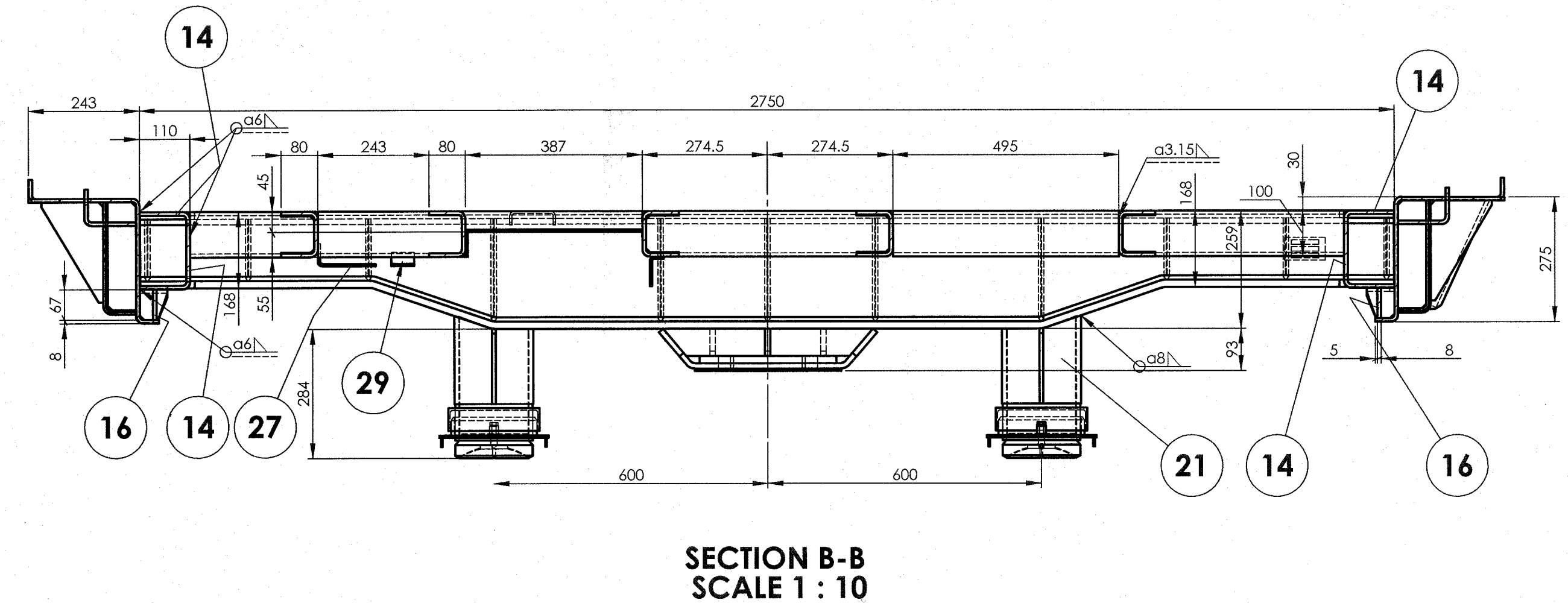
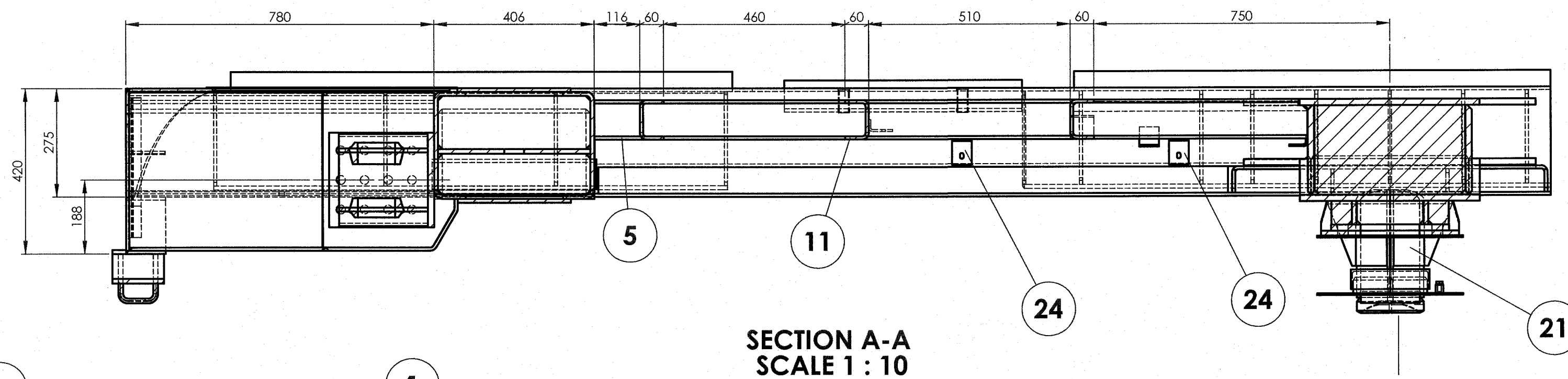
14-05-2016

DATE OF FIRST ISSUE

AME/SME

ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED. FOR UNTOLERANCED DIMENSIONS AND ROUGHNESS VALUES, REFER DRAWING NO ICF/STD-9-0-001.
ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID. WELDING SYMBOLS ARE AS PER IS: 813-1986.
WEIGHT GIVEN IN DRAWING IS FOR INDICATIVE PURPOSE ONLY

▽ ROUGH MACHINED	① ROUGH CLEANED
▽▽ FINISH MACHINED	② BURRS REMOVED
▽▽▽ FINE FINISH MACHINED	③ CHAMFERED

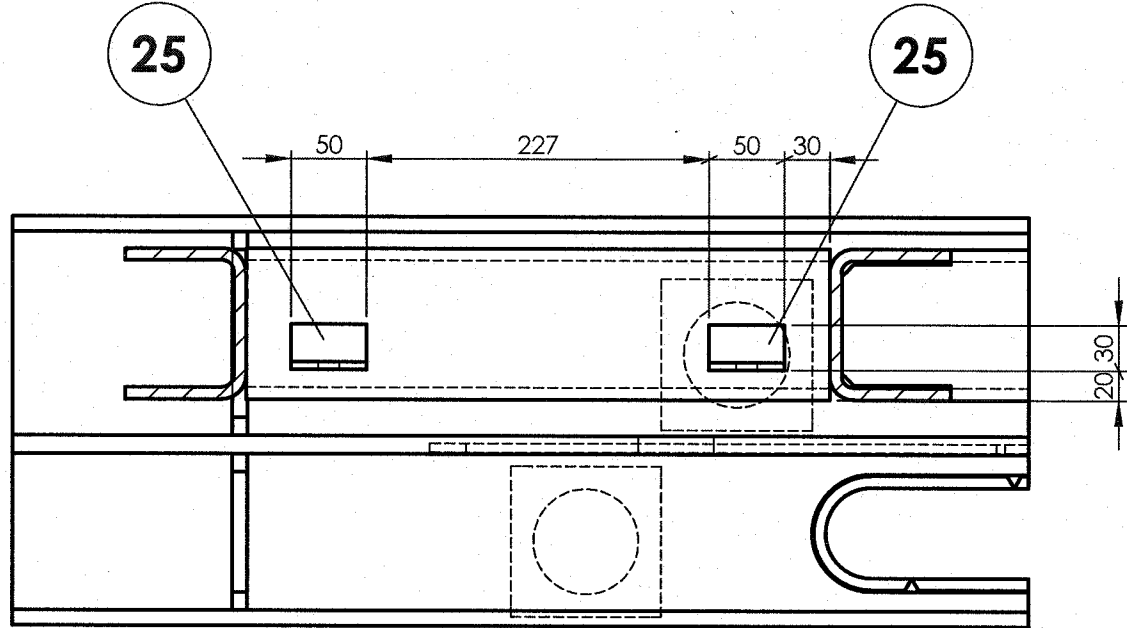


ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED. FOR UNTOLERANCED DIMENSIONS AND ROUGHNESS VALUES, REFER DRAWING NO IC/STD-9-0-001.
ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID. WELDING SYMBOLS ARE AS PER IS:813:1986. WEIGHT GIVEN IN DRAWING IS FOR INDICATIVE PURPOSE ONLY.

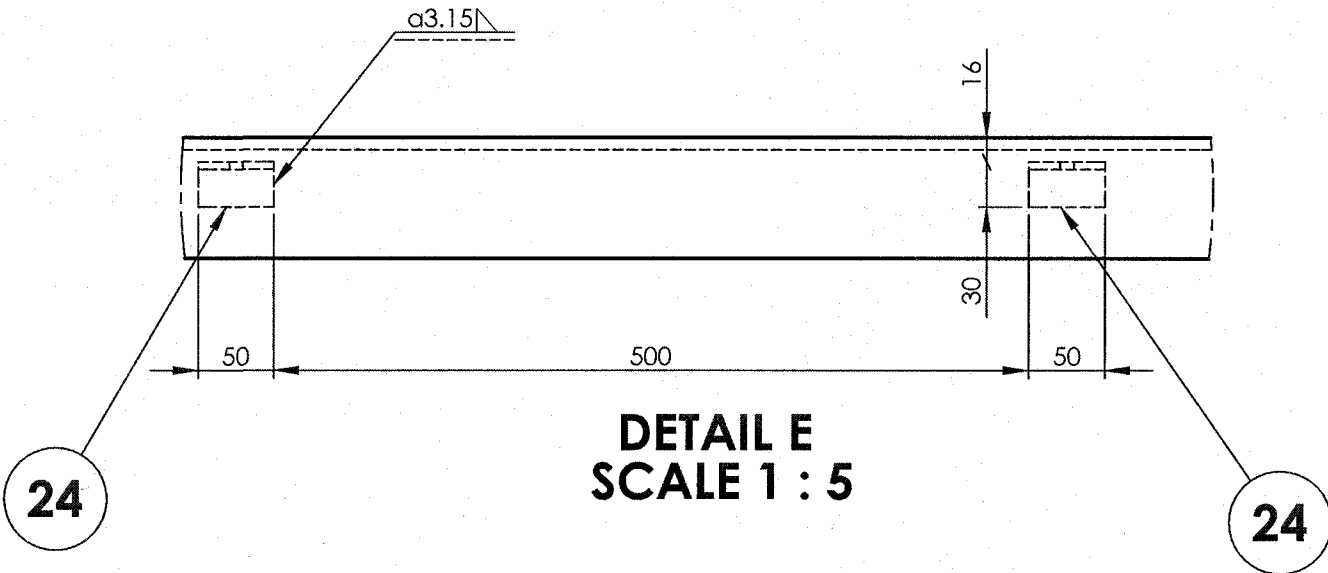
▽	ROUGH MACHINED
▽▽	FINISH MACHINED
▽▽▽	FINE FINISH MACHINED

⑪	ROUGH CLEANED
⑪①	BURRS REMOVED
⑮	CHAMFERED

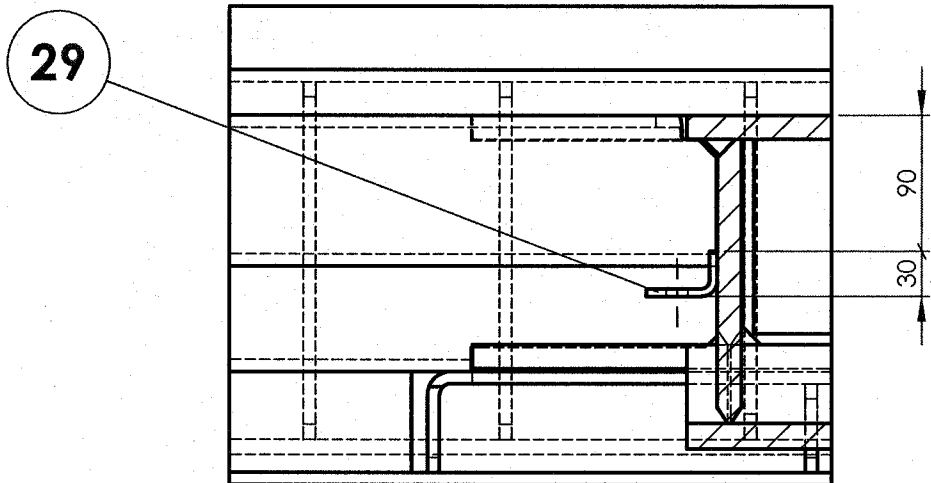
REVISIONS			APPROVED & DATE
ALT.	ZONE	DESCRIPTION	
a		DESIGN OF ITEM-23 REVISED.VIEWS UPDATED ACCORDINGLY.	-Sd-
b		ITEM-29 ADDED AND ITEM-26 DELETED.	-Sd-
c		CUTAWAY INTRODUCED IN ITEM-23 AND VIEWS UPDATED AS PER DETAIL. SECTION-MM ADDED.	



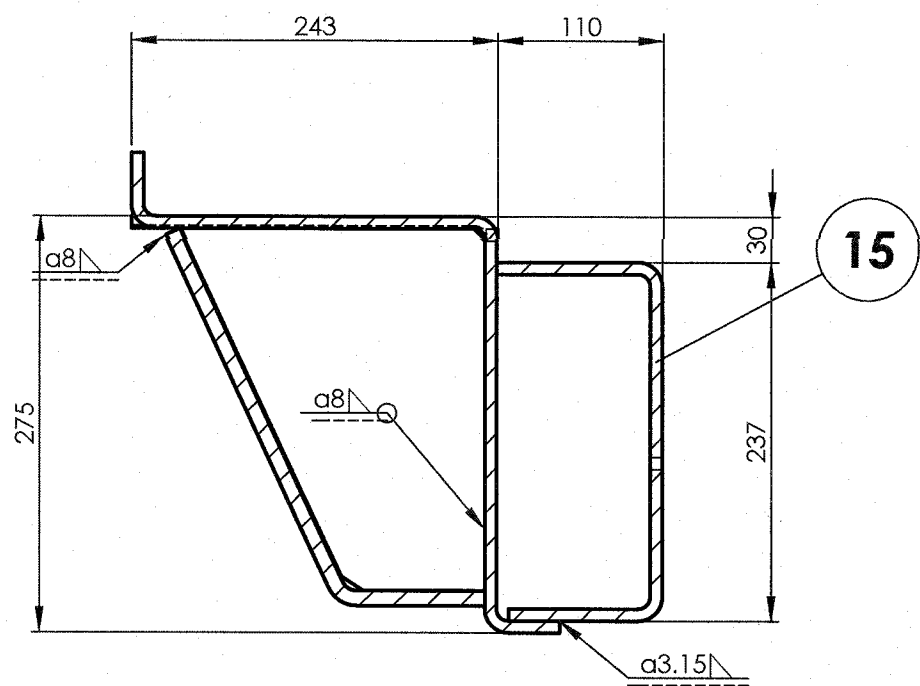
SECTION D-D
SCALE 1 : 5



DETAIL E
SCALE 1 : 5



SECTION F-F
SCALE 1 : 5

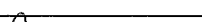


SECTION C-C
SCALE 1 : 5

NOTE:

1. TOLERANCES ON DIMENSIONS SHALL BE AS PER DRG.NO.ICF/STD-9-0-001 WHEREVER NOT MENTIONED.
2. FINISHED COMPONENT SHALL BE THOROUGHLY CLEANED AND APPLIED WITH TWO COATS OF RED OXIDE ZINC CHROMATE PRIMER TO IS:2074/92 TO A DPT OF MINIMUM 35 MICRONS WITH SMOOTH & MATT FINISH EXCEPT FOR ITEM-3 FOR WHICH EPOXY COATING HAS BEEN SPECIFIED IN THE RESPECTIVE DRAWING.
3. ITEM SHALL BE OFFERED FOR PROTOTYPE INSPECTION BY ICF BEFORE TAKING UP BULK MANUFACTURE. MINOR DESIGN CHANGES LIKE CHANGE OF LOCATION OF MEMBERS, SIZE AND WELDING REQUIREMENTS HAVE TO BE ACCOMMODATED. THESE CHANGES SHALL BE IMPLEMENTED IN CONSULTATION WITH DESIGN DEPARTMENT OF ICF.
4. MANUFACTURER'S NAME, RUNNING SERIAL No. & MONTH & YEAR OF MANUFACTURE SHALL BE PUNCHED IN 6mm HEIGHT & 1mm DEEP ON THE SPACE PROVIDED.

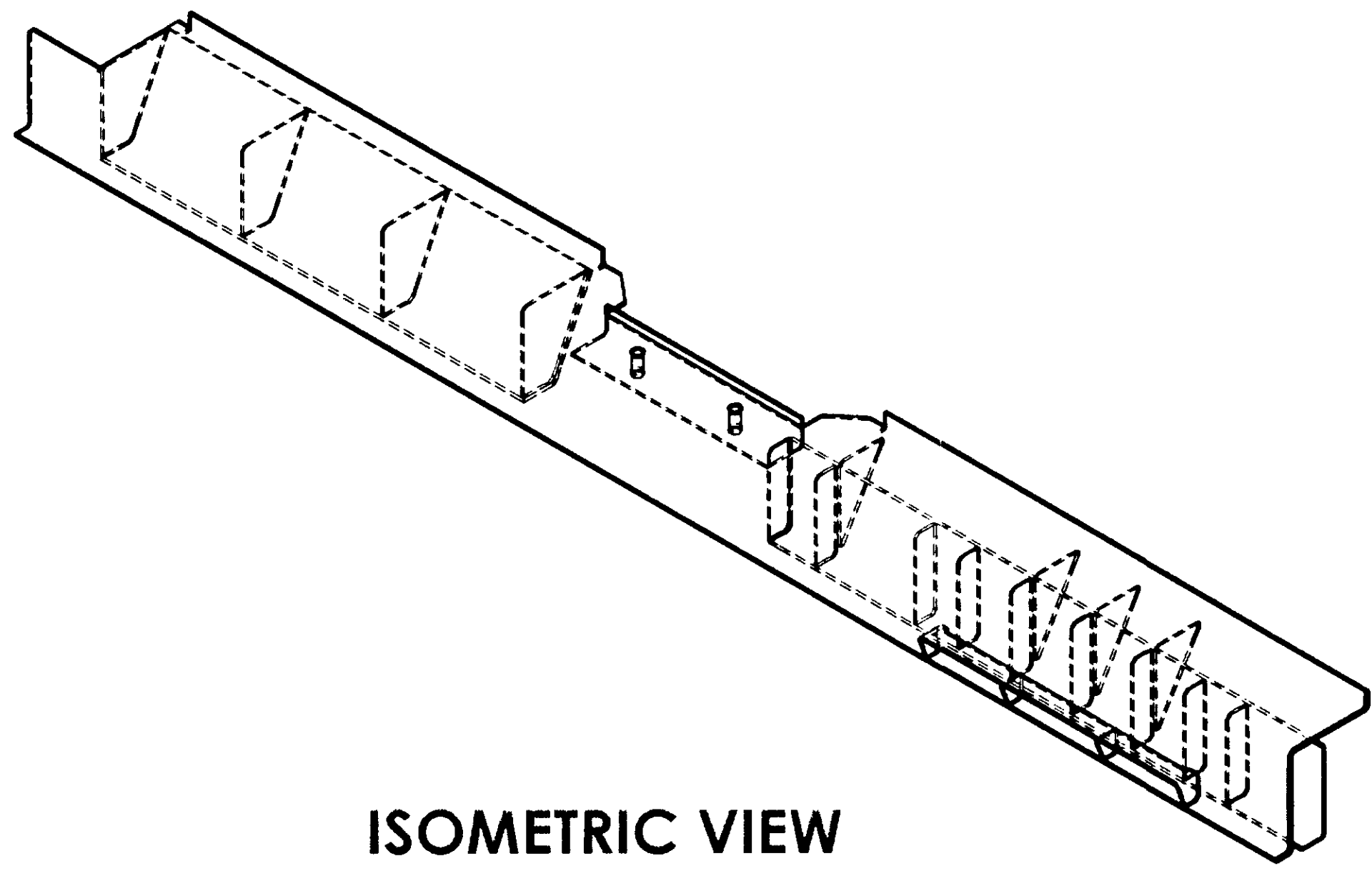
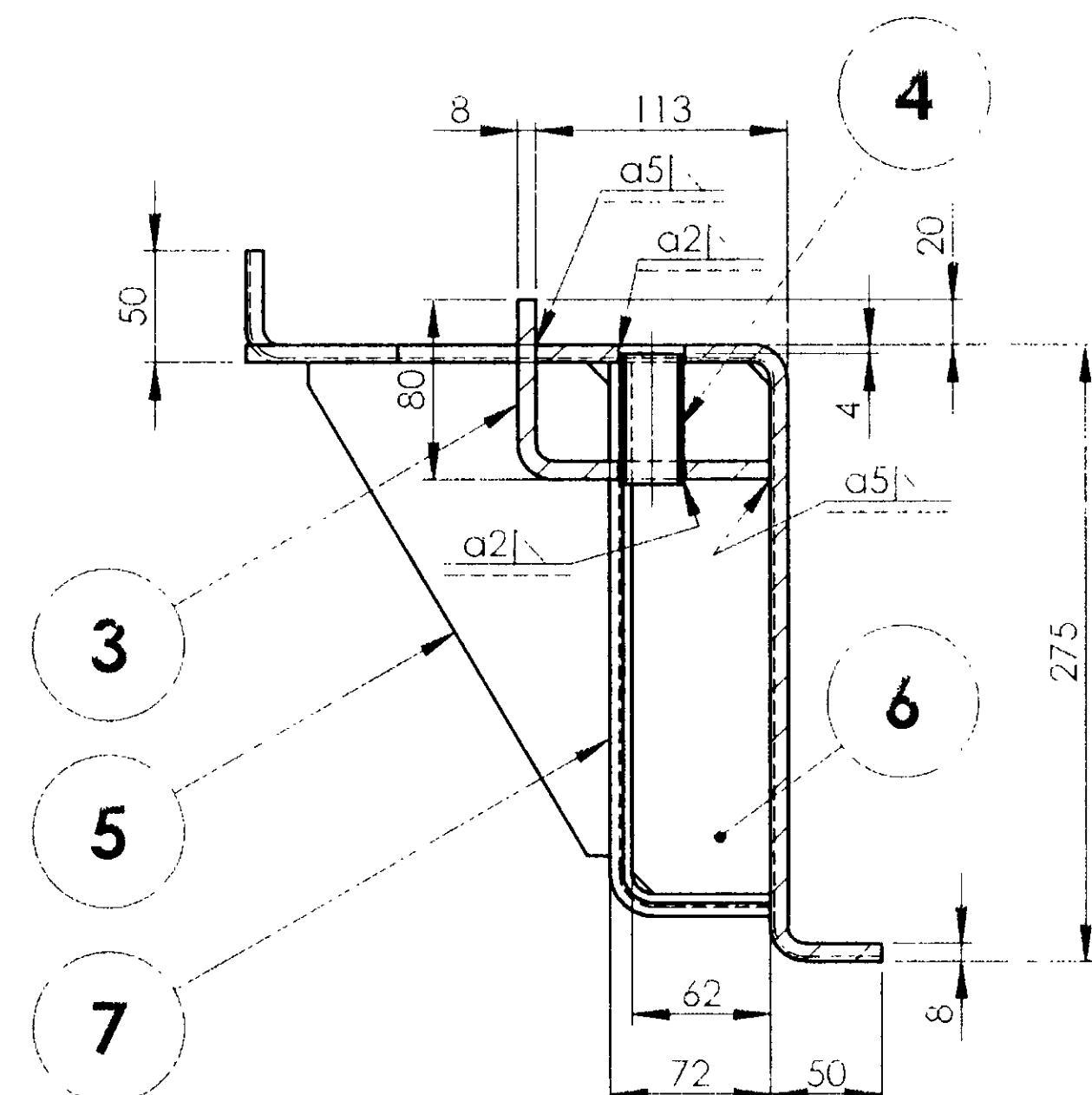
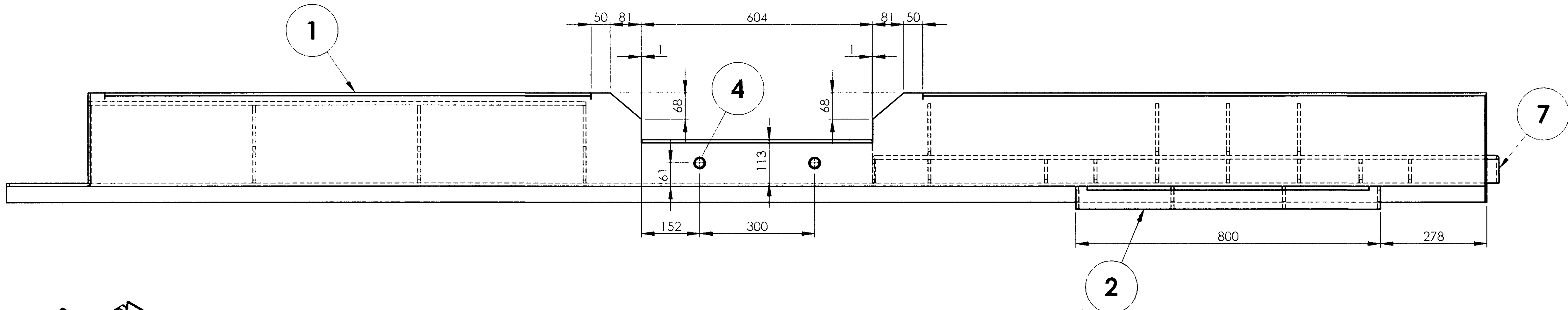
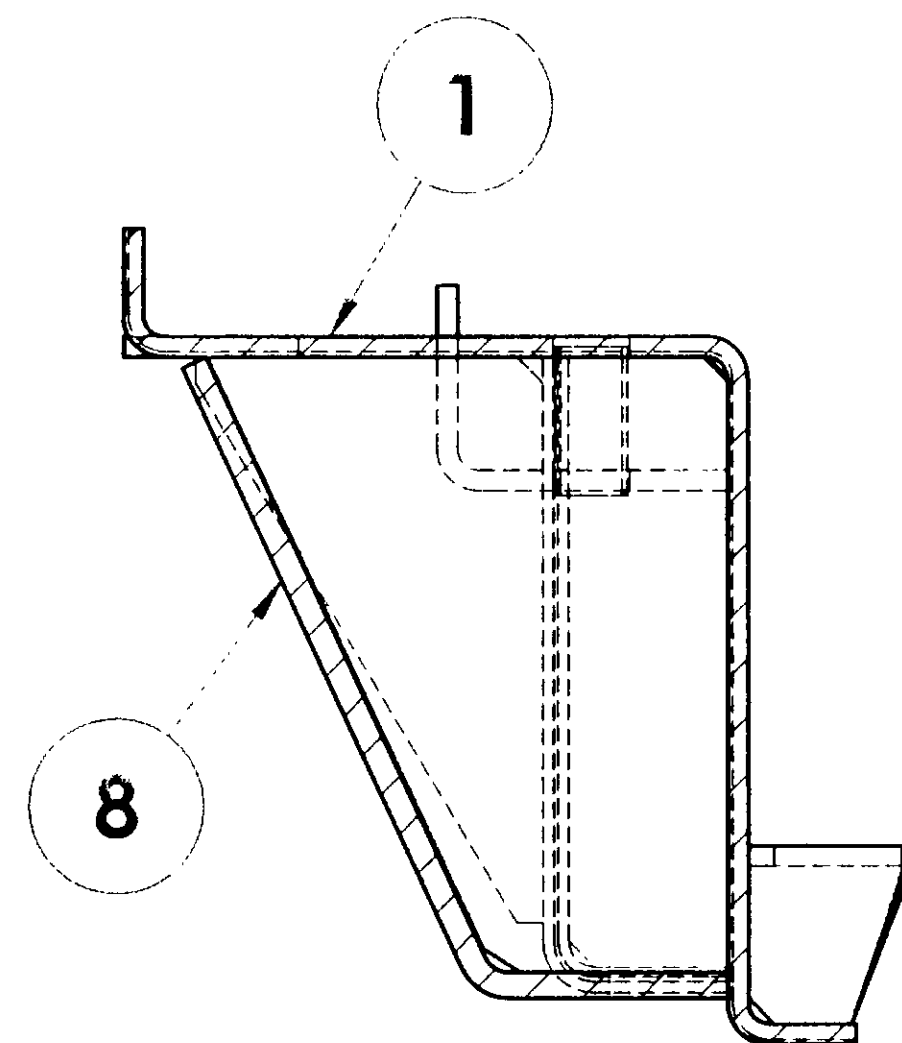
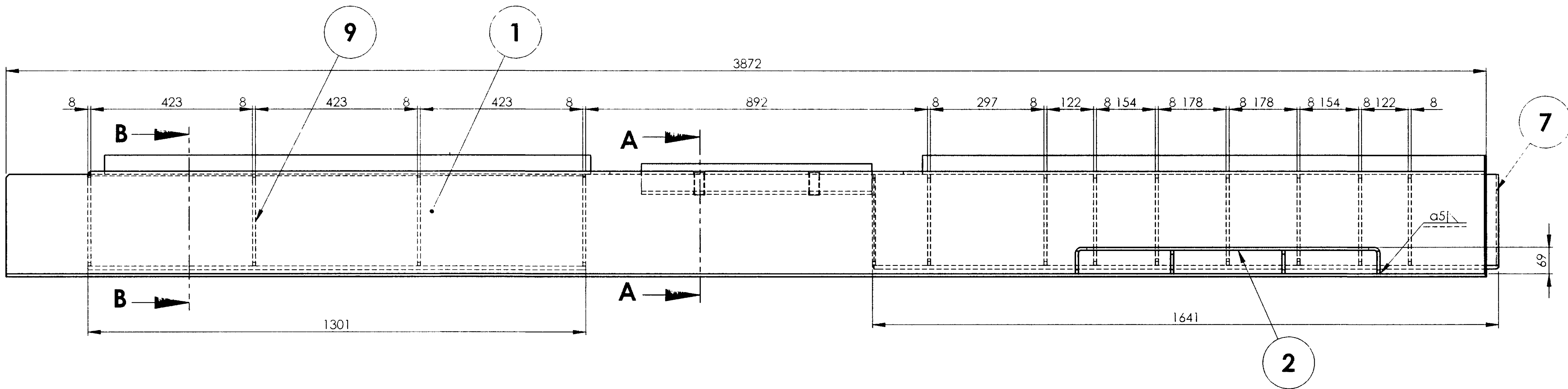
1	FIXING ANGLE		29	AAE11372		0.13	
1	CHANNEL		28	AAD11131		20.39	
1	FIXING ANGLE		27	AAD11281		0.32	
1	FIXING ANGLE		26	AAA90089		0.13	
2	FIXING ANGLE		25	AAC11063		0.16	
2	FIXING ANGLE		24	AAC11064		0.17	
1	COVER PLATE FOR HEADSTOCK(DRIVING END)		23	74511036		44.522	
1	ANGLE		22	AAD11553		2.632	
2	SIDE BEARER COMPLETE		21	56711031		23.212	
1	CHANNEL ASSEMBLY		20	74511031		7.071	
2	CHANNEL		19	AAD11207		3.32	
1	CHANNEL		18	AAD11204		3.05	
1	CHANNEL		17	AAD11635		17.70	
2	SUPPORT PLATE		16	AAD11215		6.71	
1	CHANNEL		15	AAD11129		20.42	
2	DOORWAY STIFFENER		14	AAD11130		38.95	
3	CHANNEL		13	AAD11638		2.79	
3	CHANNEL		12	AAD11105		5.41	
3	CHANNEL		11	AAD11106		5.45	
2	CHANNEL		10	AAD11104		4.71	
3	CHANNEL		9	AAD11637		6.02	
1	CHANNEL		8	AAD11102		26.36	
1	CHANNEL		7	AAD11103		26.41	
1	CHANNEL		6	AAD11639		26.41	
1	CHANNEL		5	AAD11101		26.41	
1	BODY BOLSTER ASSY. HEADSTOCK ARRGT (DRIVING END)		4	66311053		569.618	
1	HEADSTOCK ARRGT (DRIVING END)		3	66312002		810.304	
1	LONGITUDINAL BEAM		2	74511005		247.985	
1	LONGITUDINAL BEAM ASSEMBLY		1	74511004		236.383	
QTY.	DESCRIPTION	DIMENSIONS	ITEM NO.	REF.DRG.	MATL	WT/UNIT IN KGS	REMARKS

GROUP: 1-1		SURFACE AREA IN Sq.m.: 64.656		WT/ASSY IN Kgs:		
END PART DRIVING END (MEMU/DMC/3PH)				SCALE	SSE/D	
				1:20	CHD	
				ALT.	ALTD	V.S.SRIDHARAN
				c	DRN	P.MURUGAN
				INDIAN RAILWAY STANDARDS		SHEET
INTEGRAL COACH FACTORY, CHENNAI - 600038		2 OF 2		74511003		A1

74511004

▽ ROUGH MACHINED	⑪ ROUGH CLEANED
▽▽ FINISH MACHINED	⑫ BURRS REMOVED
▽▽▽ FINE FINISH MACHINED	⑬ CHAMFERED




REVISIONS			
ALT.	ZONE	DESCRIPTION	APPROVED & DATE
a		NOTE-1 ADDED.	-sd-
b		NOTE-2 ADDED.	-sd-
c		REFERENCE DRAWING FOR ITEM-2 ALTERED FROM 56711004 TO 74511054.	<i>[Signature]</i>



NOTE:-

- * 1. DWG.NO:ICF/SK3-1-1-225/COL-3 TO BE REFERRED FOR IN HOUSE MANUFACTURING OF ITEM-1.
- 2. ITEMS- 5,6,7,8 & 9 TO BE SUPPLIED LOOSE AND WELDED AT UNDER FRAME TRESTLE STAGE AS SHOWN.

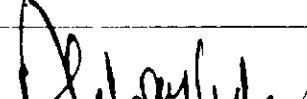
4	RIB		9	AAD11555		2.197	
1	ANGLE		8	AAD11237		36.74	
1	ANGLE		7	AAD11234		38.91	
9	RIB		6	AAD11228		0.92	
4	RIB		5	AAD11208		1.04	
2	STEEL TUBE		4	AAD11109		0.07	
1	DOORWAY ANGLE		3	AAD11108		6.71	
1	SUPPORT		2	74511054		3.280	
1	LONGITUDINAL BEAM		1	AAD11127		129.42	*
QTY.	DESCRIPTION	DIMENSIONS	ITEM NO.	REF.DRGS.	MATL	WT/UNIT IN KGS	REMARKS

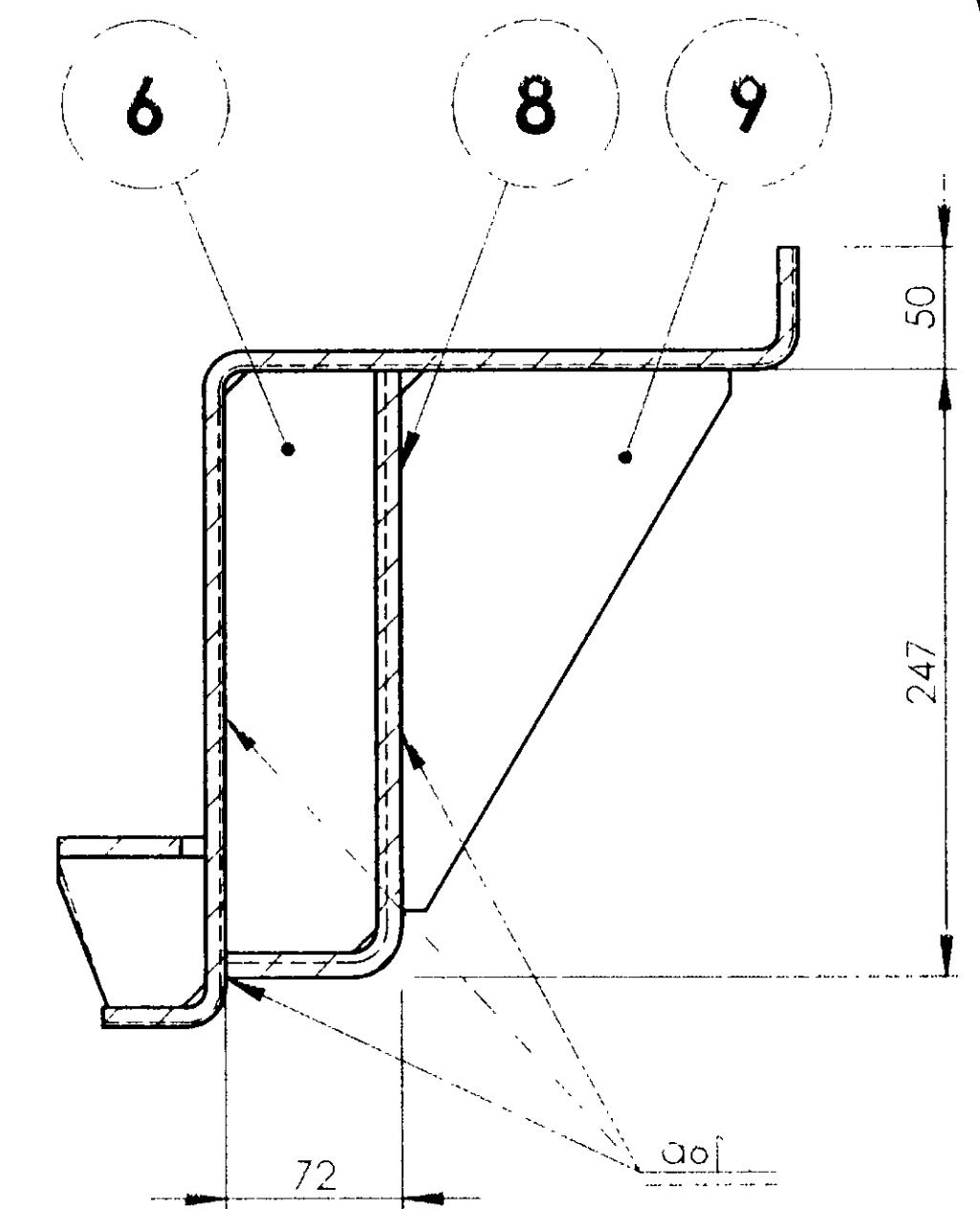
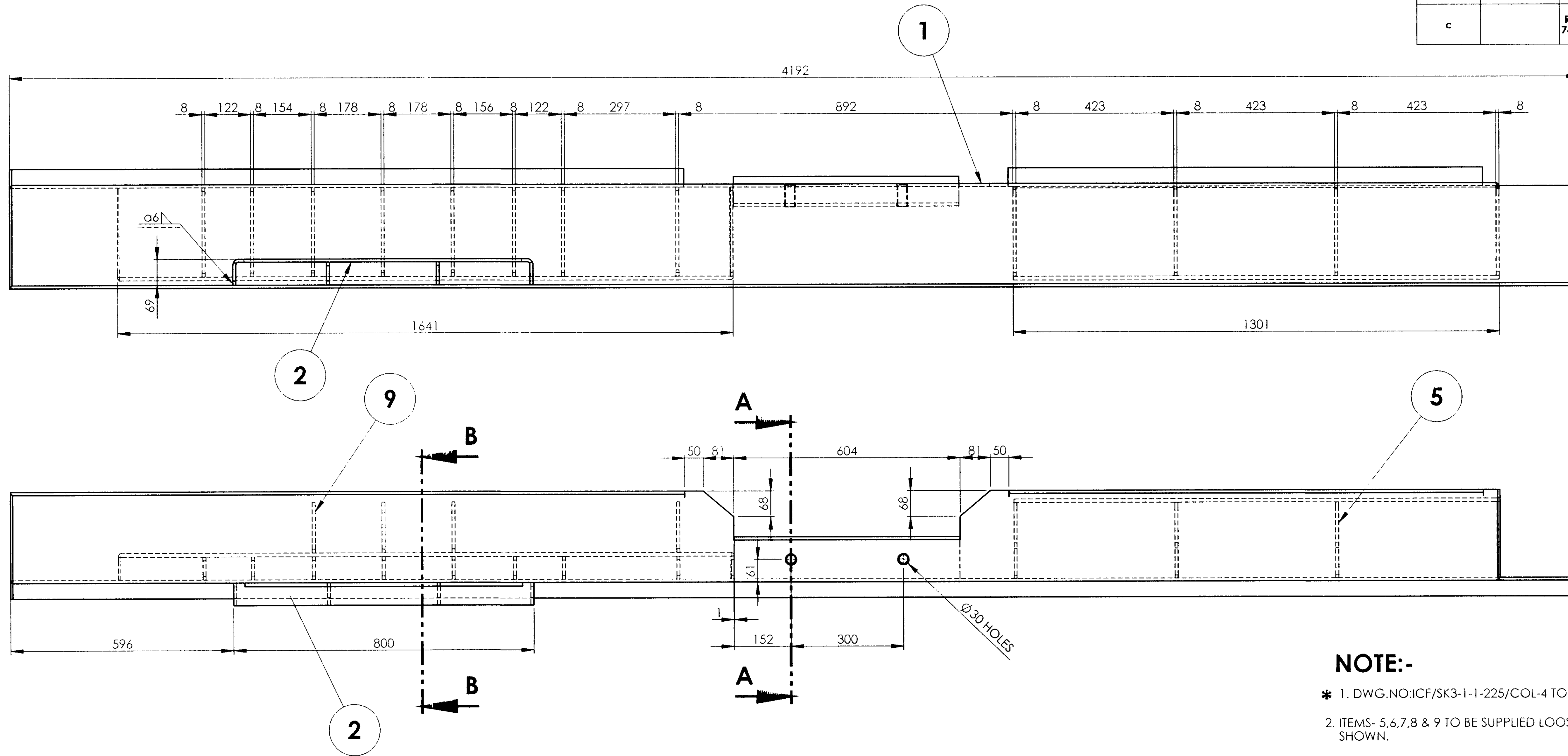
GROUP: 1-1 Under Frame		SURFACE AREA IN Sq.m.: 7.329		WT/ASSY IN Kgs:		
LONGITUDINAL BEAM ASSEMBLY				SCALE 1:10	SSE/D	
					CHD	
				ALT c	ALTD	K.SETHURAMAN
					DRN	P.MURUGAN
INDIAN RAILWAY STANDARDS INTEGRAL COACH FACTORY, CHENNAI - 600038						MEMU/DMC/3PH
						74511004
				SHEET 1 OF 1		

1	01-2025	03-10-2017	<i>[Signature]</i>
DATE OF LATEST ALT.	DATE OF FIRST ISSUE	AME/SM	

74511005

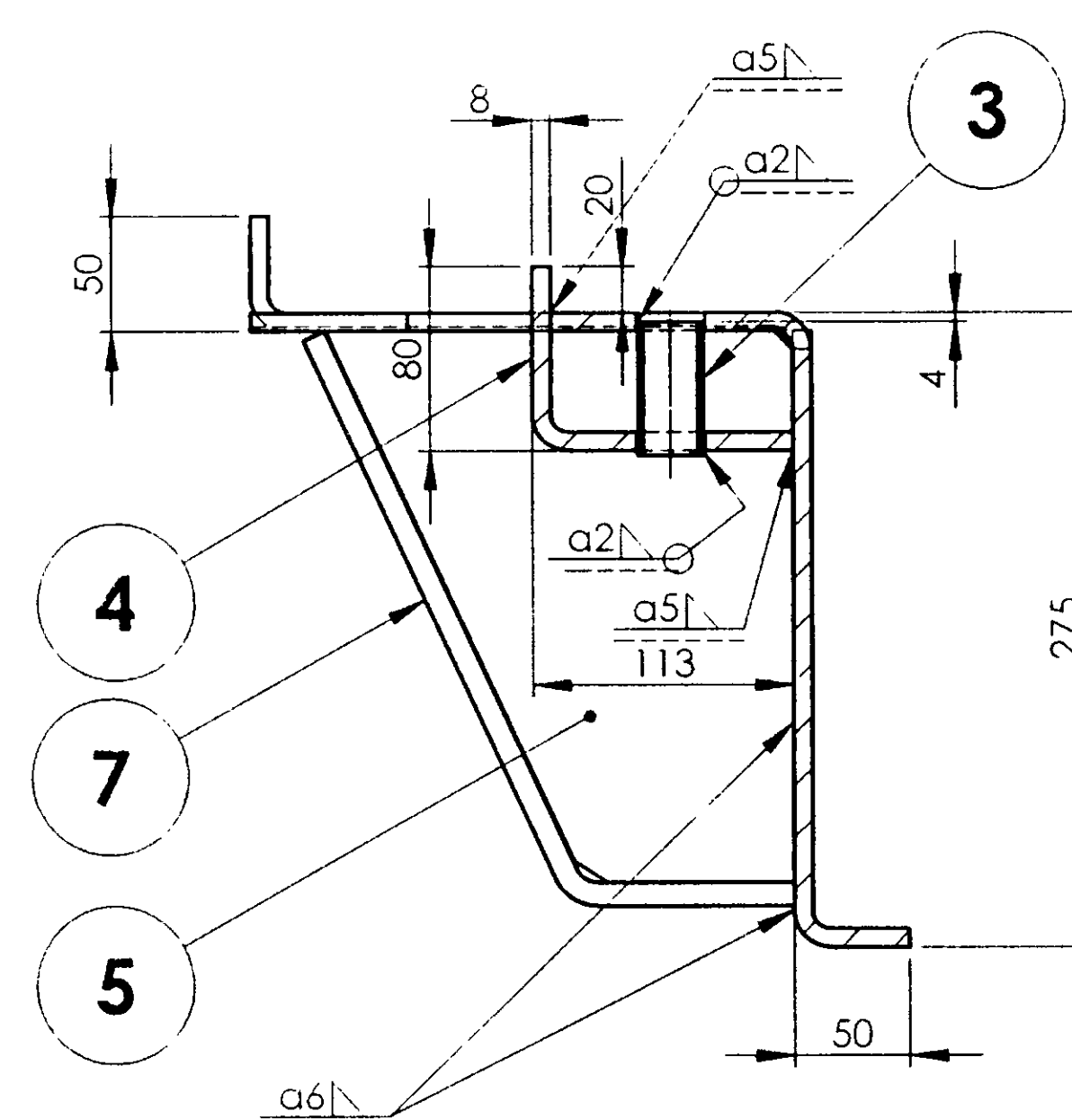
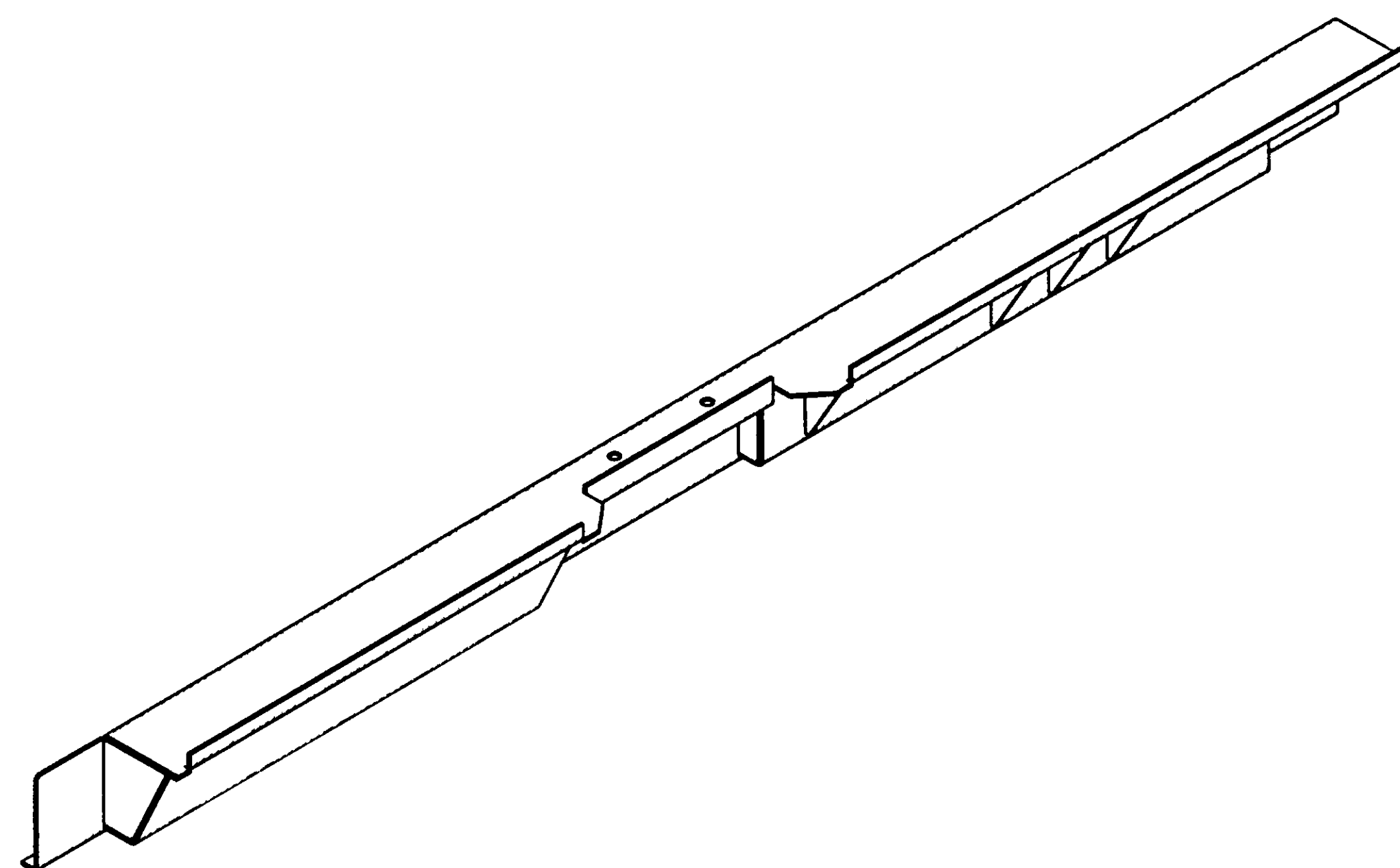
▽ ROUGH MACHINED	⊖ ROUGH CLEANED
▽▽ FINISH MACHINED	⊖⊖ BURRS REMOVED
▽▽▽ FINE FINISH MACHINED	⊖⊖⊖ CHAMFERED

REVISIONS				
ALT.	ZONE	DESCRIPTION		APPROVED & DATE
a		NOTE-1 ADDED.		-sd-
b		NOTE-2 ADDED.		-sd-
c		REFERENCE DRAWING FOR ITEM-2 ALTERED FROM 56711004 TO 74511054.		

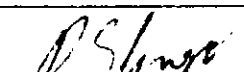



NOTE:-

- * 1. DWG.NO:ICF/SK3-1-1-225/COL-4 TO BE REFERRED FOR IN HOUSE MANUFACTURING OF ITEM-1.
- 2. ITEMS- 5,6,7,8 & 9 TO BE SUPPLIED LOOSE AND WELDED AT UNDER FRAME TRESTLE STAGE AS SHOWN.



4	RIB		9	AAD11208		1.04	
1	ANGLE		8	AAD11234		38.91	
1	ANGLE		7	AAD11237		36.74	
9	RIB		6	AAD11228		0.92	
4	RIB		5	AAD11555		2.197	
1	DOORWAY ANGLE		4	AAD11108		6.71	
2	STEEL TUBE		3	AAD11109		0.07	
1	SUPPORT		2	74511054		3.280	
1	LONGITUDINAL BEAM		1	AAD11128		141.03	*
QTY.	DESCRIPTION	DIMENSIONS	ITEM NO.	REF.DRGS.	MATL	WT/UNIT IN KGS	REMARKS

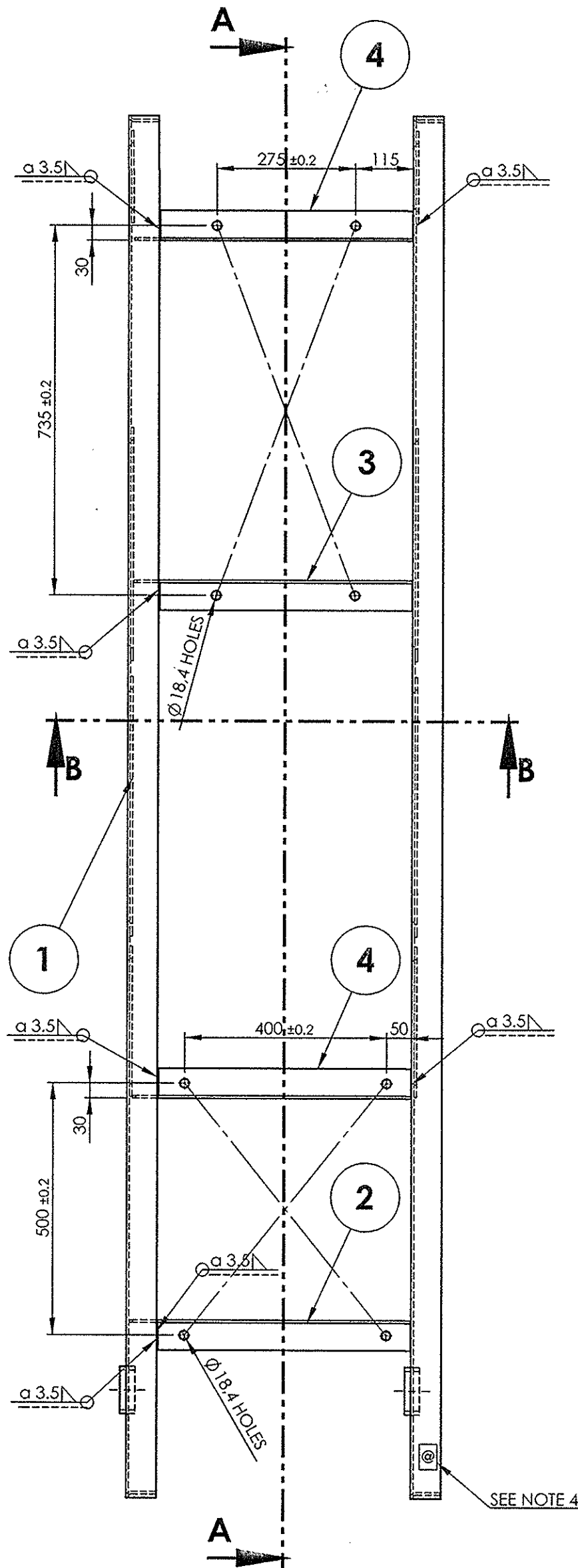
GROUP: 1-1 Under Frame		SURFACE AREA IN Sq.m.: 7.704		WT/ASSY IN Kgs:		
LONGITUDINAL BEAM ASSEMBLY				SCALE 1:10	SSE/D	
					CHD	
				ALT c	ALTD	K.SETHURAMAN
					DRN	P.MURUGAN
INDIAN RAILWAY STANDARDS INTEGRAL COACH FACTORY, CHENNAI - 600038					MEMU/DMC/3PH	
					74511005	
				SHEET 1 OF 1		A2

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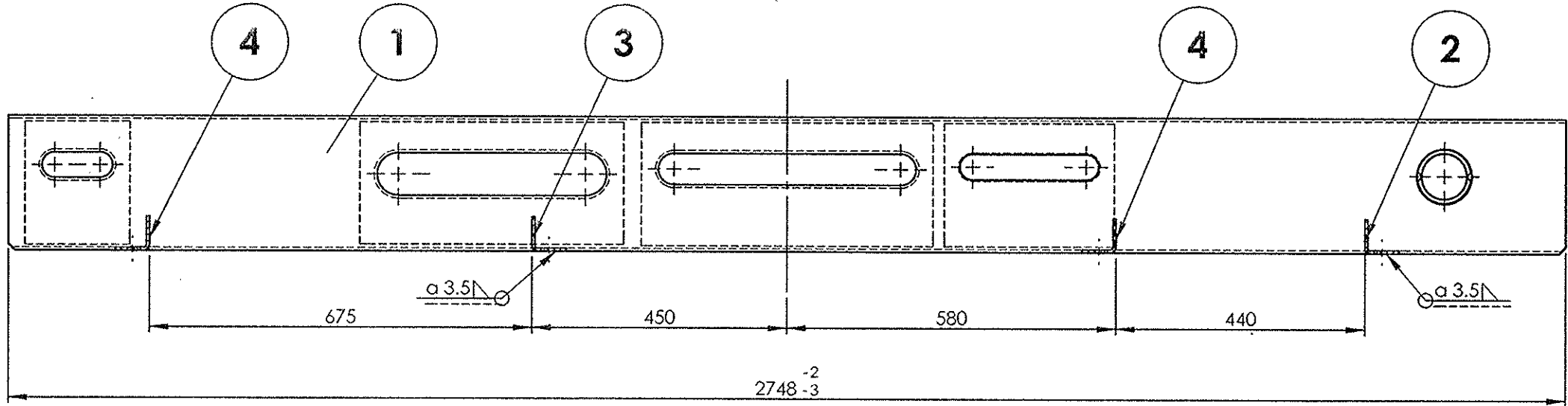
74511006

▽ ROUGH MACHINED	① ROUGH CLEANED
▽▽ FINISH MACHINED	② BURRS REMOVED
▽▽▽ FINE FINISH MACHINED	③ CHAMFERED

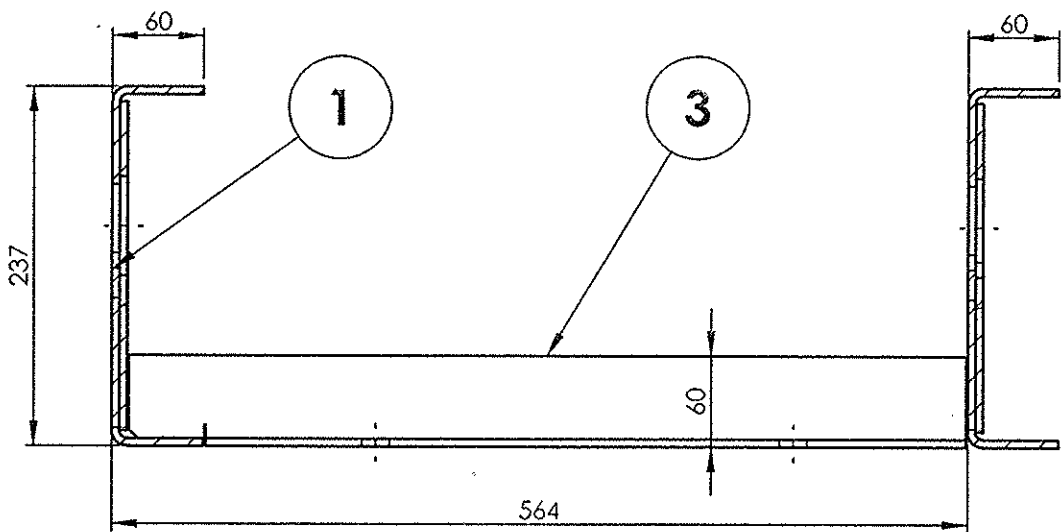
REVISIONS			
ALT.	ZONE	DESCRIPTION	APPROVED & DATE



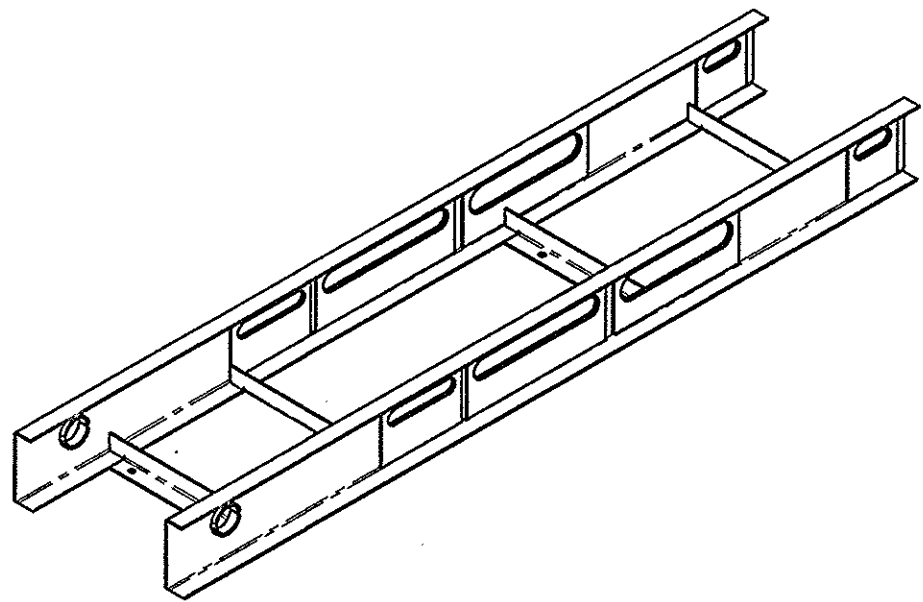
SEE NOTE 4



SECTION A-A



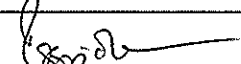
SECTION B-B
SCALE 1 : 5



ISOMETRIC VIEW

NOTE:-

1. ALL THE HOLES TO BE JIG DRILLED.
2. FINISHED COMPONENT SHALL BE THOROUGHLY CLEANED AND APPLIED WITH TWO COATS OF RED OXIDE ZINC CHROMATE PRIMER TO IS:2074/92 TO DFT OF MINIMUM 35 MICRONS WITH SMOOTH AND MAT FINISH.
3. MANUFACTURE'S NAME, RUNNING SERIAL NO. & MONTH & YEAR OF MANUFACTURE SHALL BE PUNCHED 1mm HEIGHT & 1mm DEEP ON THE SPACE PROVIDED.

2	ANGLE		4	AAD11162		2.31	
1	ANGLE		3	AAD11161		2.31	
1	ANGLE		2	AAD11160		2.32	
2	CROSS BEARER		1	74511007		43.397	
QTY.	DESCRIPTION	DIMENSIONS	ITEM NO.	REF.DRGS.	MATL	WT/UNIT IN KGS	REMARKS
GROUP: 1-1		SURFACE AREA IN Sq.m.: 5.078			WT/ASSY IN Kgs:		
MODULE FOR A.S & PANTOGRAPH RESERVOIR					SCALE 1:10	SSE/D	
						CHD	
					ALT	ALTD	
					DRN	K.SETHURAMAN	
					INDIAN RAILWAY STANDARDS		
INTEGRAL COACH FACTORY, CHENNAI - 600038			74511006				
						A2	

ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED. FOR UNTOLERANCED DIMENSIONS AND ROUGHNESS VALUES, REFER DRAWING NO. ICF/STD-9-0-001. ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID. WELDING SYMBOLS ARE AS PER IS:813-1986. WEIGHT GIVEN IN DRAWING IS FOR INDICATIVE PURPOSE ONLY.

REF.DRG.NO.

DATE OF LATEST ALT.	28-09-2017	AME/SME
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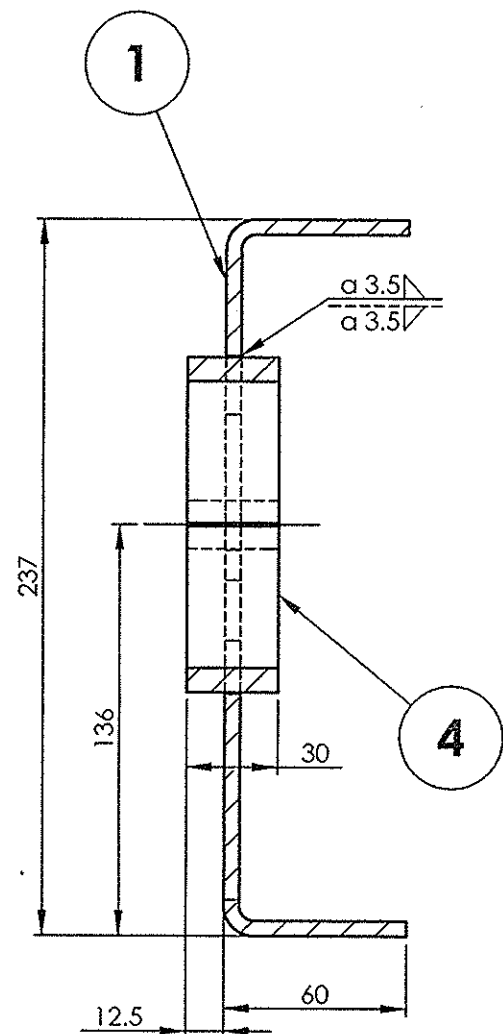
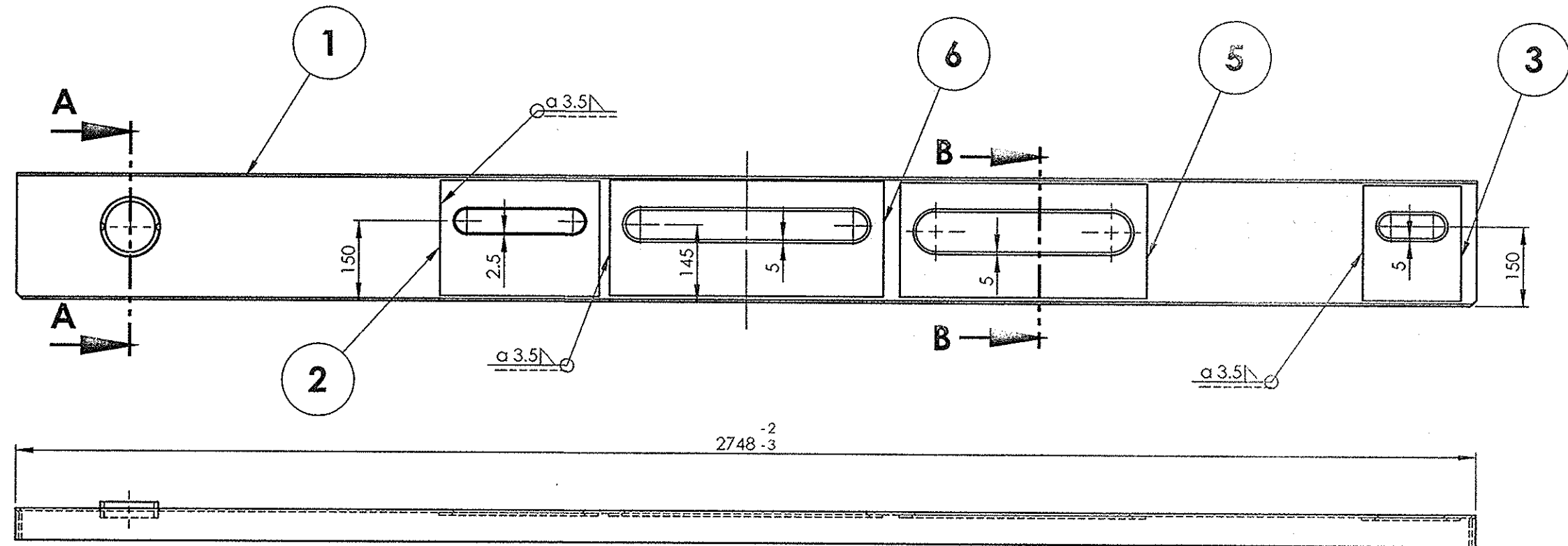
74511007

▽ ROUGH MACHINED
▽▽ FINISH MACHINED
▽▽▽ FINE FINISH MACHINED

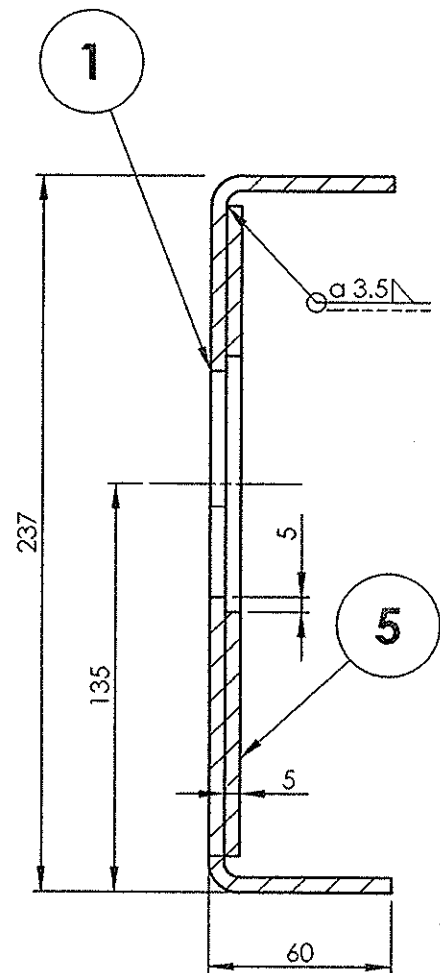
① ROUGH CLEANED
⑥b BURRS REMOVED
⑱ CHAMFERED

REVISIONS

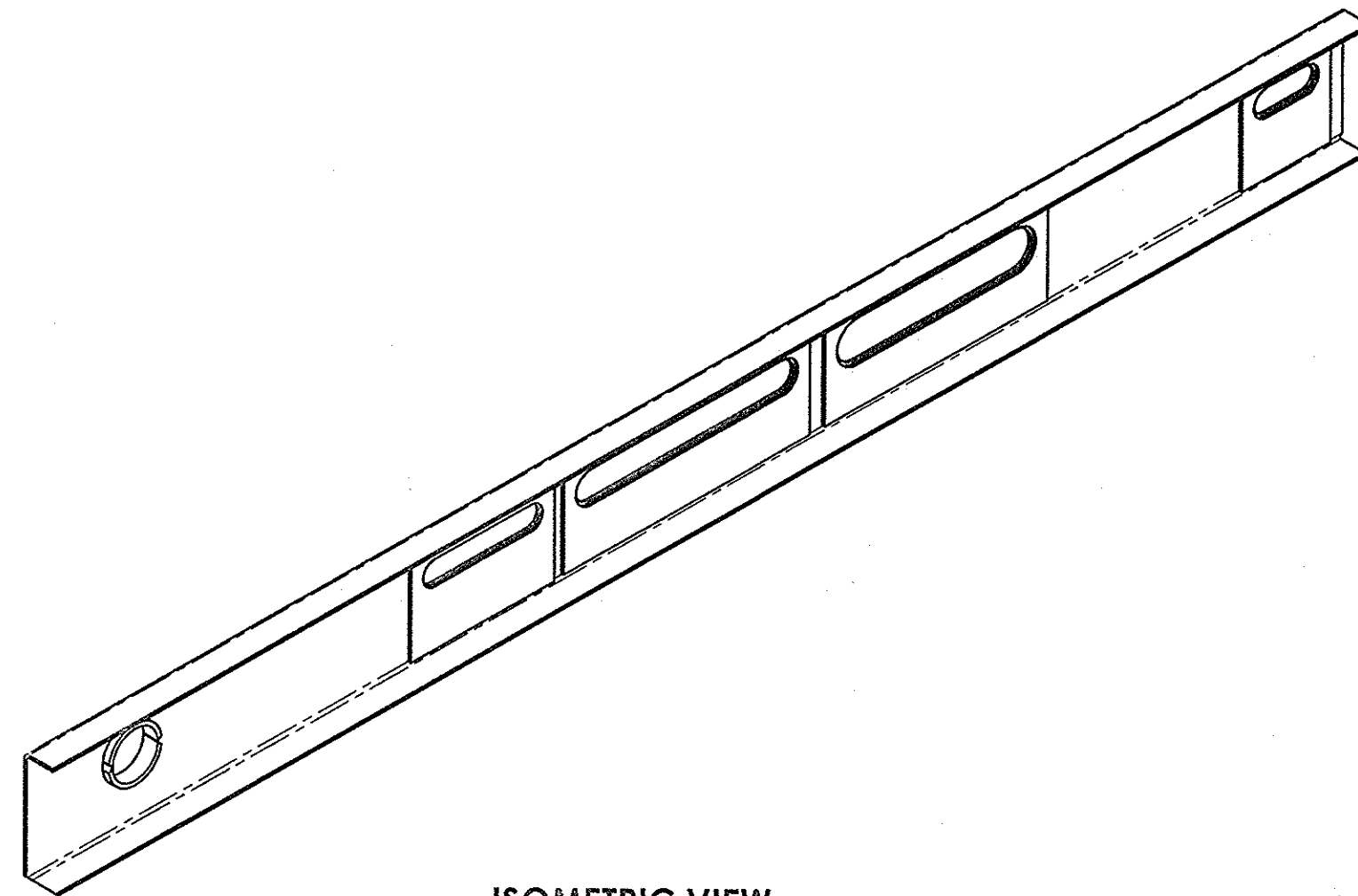
ALT.	ZONE	DESCRIPTION	APPROVED & DATE
a		VIEWS UPDATED AS PER DETAIL ITEM-4.	



SECTION A-A
SCALE 1 : 2.5

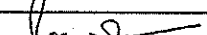
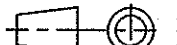


SECTION B-B
SCALE 1 : 2.5



ISOMETRIC VIEW

QTY.	DESCRIPTION	DIMENSIONS	ITEM NO.	REF.DRGS.	MATL	WT/UNIT IN KGS	REMARKS
1	PLATE		6	AAD11158		3.24	
1	PLATE		5	AAD11157		2.60	
1	STIFFENING TUBE		4	74511008		0.575	
1	PLATE		3	AAD11287		1.31	
1	PLATE		2	AAD11181		2.09	
1	CROSS MEMBER		1	AAD11154		33.58	

GROUP: UNDER FRAME		SURFACE AREA IN Sq.m.: 2.290		WT/ASSY IN Kgs:			
CROSS BEARER				SCALE 1:10	SSE/D		
					CHD		
				ALT a	ALTD	3D.V.S.SRIDHARAN, 2D.SATISH KUMAR	
					DRN	K.SETHURAMAN	
INDIAN RAILWAY STANDARDS INTEGRAL COACH FACTORY, CHENNAI - 600038					MEMU/DMC/3PH		
					74511007		
				SHEET 1 OF 1	A2		


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ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID. WELDING SYMBOLS ARE AS PER IS:813-1986. WEIGHT GIVEN IN DRAWING IS FOR INDICATIVE PURPOSE ONLY

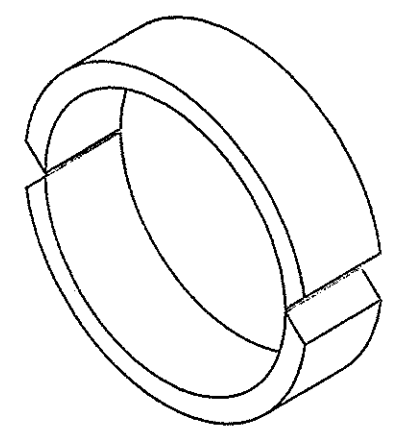
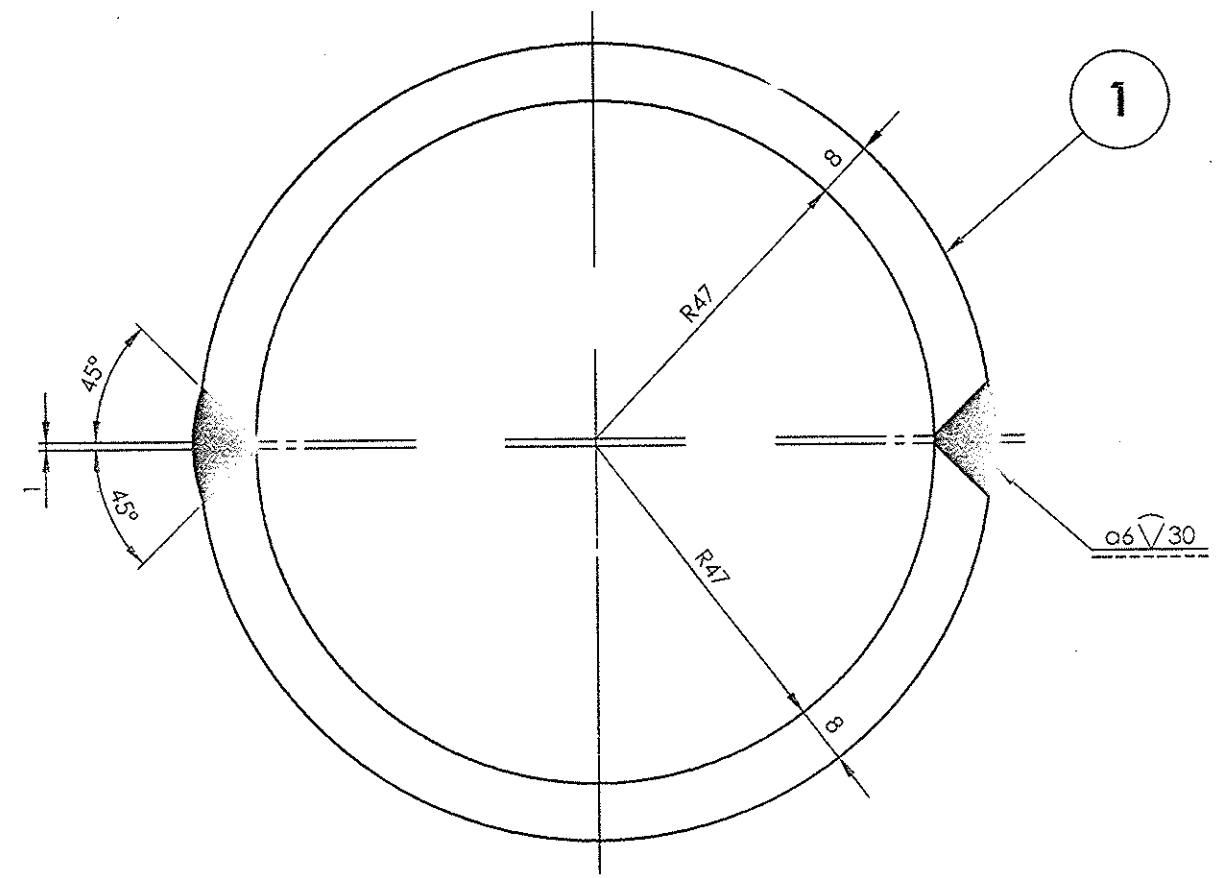
REF.DRG.NO.

16-03-2018	23-10-2017	
DATE OF LATEST ALT.	DATE OF FIRST ISSUE	AME/SME

74511008

▽ ROUGH MACHINED	① ROUGH CLEANED
▽▽ FINISH MACHINED	② BURRS REMOVED
▽▽▽ FINE FINISH MACHINED	③ CHAMFERED

REVISIONS			
ALT.	ZONE	DESCRIPTION	APPROVED & DATE
a		DESIGN OF ITEM-1 REVISED.	

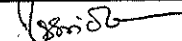
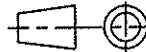


ISOMETRIC VIEW

ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED. FOR UNTOLERANCED DIMENSIONS AND NOTATIONS REFER DRAWING NO. ICI STD 9.0.001.
ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID. WELDING SYMBOLS ARE AS PER IS 10.3.1986
WEIGHT GIVEN IN DRAWING IS FOR INDICATIVE PURPOSE ONLY

REF.DRG.NO.

16-03-2018	23-10-2017	AME/SME
DATE OF LATEST ALT.	DATE OF FIRST ISSUE	

2	TUBE HALF	8x30x160	1		IRS M-41-1997	0.29		
QTY.	DESCRIPTION	DIMENSION	ITEM NO.	REF. DRGS	MATL.SPEC.	WT/UNIT IN KGS	REMARKS	
GROUP: 1-1		SURFACE AREA IN Sq.m.:0.024			WT/ASSY IN Kgs:			
STIFFENING TUBE					SCALE	SSE/D		
					1:1	CHD		
					ALT. a	ALTD	3D:V.S.SRIDHARAN, 2D:SATISH KUMAR	
						DRN	K.SETHURAMAN	
INDIAN RAILWAY STANDARDS INTEGRAL COACH FACTORY, CHENNAI - 600038				SHEET 1 OF 1			MEMU/DMC/3PH	
					74511008		A3	