

TEM NO.
 BT DRW. REV_A

GROUP 10.1

FOR UNTOLERANCED DIMENSIONS SEE ISO 2768-1:
 FOR GENERAL TOLERANCE ON WELDED CONSTRUCTIONS SEE ISO 13920: CLASS

DESIGNATION

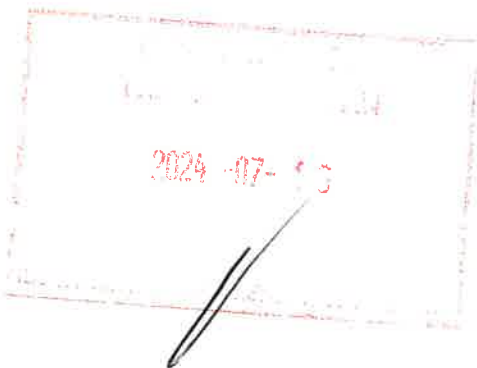
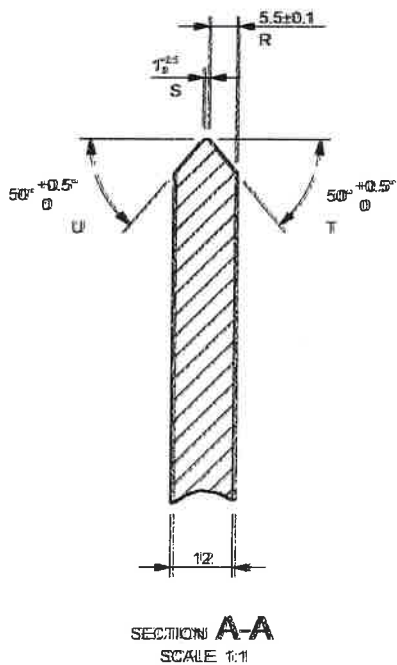
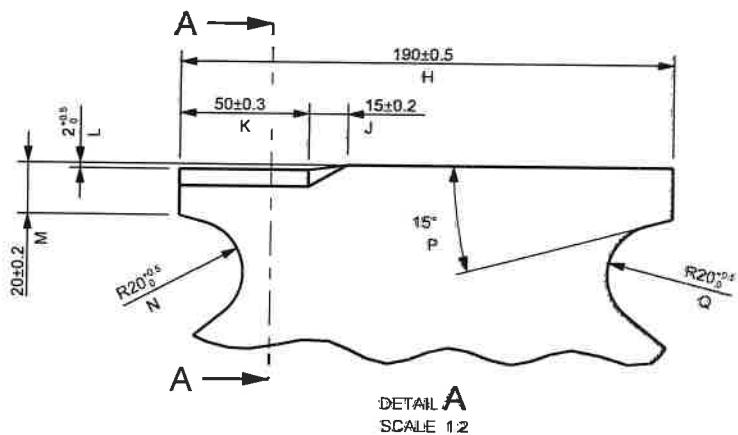
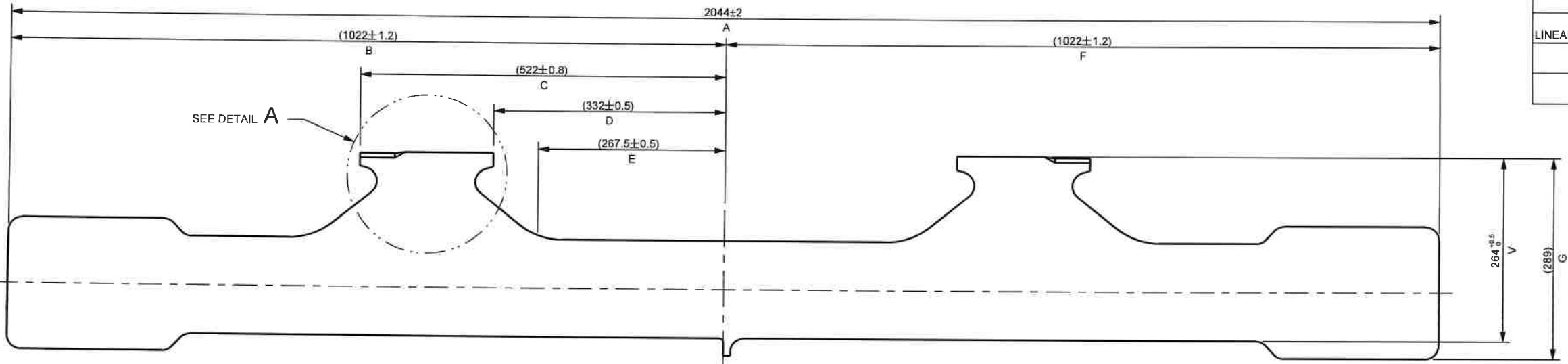
M
 A E

2D STATUS

IN WORK

GENERAL TOLERANCES

ISO 14405-1 DIMENSIONAL TOLERANCING	ISO 13920-B F WELDMENTS
ISO 8015 TOLERANCING	EN 10243-F FORGING
ISO 2768-mK-E LINEAR DIMENSIONS, SYMMETRY	DIN 6935 COLD BENDING
ISO 9013-422 THERMAL CUTTING	DIN 6930-m STAMPING
ISO 8062 CASTING	



12.5 3.2



PART EDGES ISO 13715

REV_5 DIMENSIONS ALTERED PD_PEL_KLP_DRW_23E 2016-07-11 S.W.S.
REV_4 BT DRW UPDATED PD_PEL_KLP_DRW_23E 2016-07-11 S.W.S.
REV_3 TOLERANCES ALTERED PD_PEL_KLP_DRW_23E 2016-11-11 M.J.M.
REV_2 LETTERS ADDED FOR SOP. PD_PEL_KLP_DRW_23E 2016-08-13 M.J.M.
REV_1 MARGINS CHANGED PD_PEL_KLP_DRW_23E 27-07-2015 M.J.M.
AMENDMENTS
MASS 33.95 Kg

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		CHECKED	M.J.M.
	CLASS 23E	APPROVED	B.E.D.
	TYPE ELECTRIC LOCOMOTIVE	DATE	-
		SCALE	1:5
A-2	PROJECTION	DOCUMENT REFERENCE No.	PD_PEL_KLP_DRW_23E

KOLINER PARK
 LOCOMOTIVES
 UPPER FLANGE
 DERAILMENT PROTECTION BAR

MATERIAL
 STEEL
 SANS 50025 GRADE S355 J2+N
 PLATE 12
 2044 x 289

TRANSNET ENGINEERING

No.

MAC_66A0201

REV_5

Group 10

ITEM NO.
 BT DRW, REV_A

GROUP 10.1

FOR UNTOLERANCED DIMENSIONS SEE ISO 2768-1:
 FOR GENERAL TOLERANCE ON WELDED CONSTRUCTIONS SEE ISO 13920: CLASS

DESIGNATION

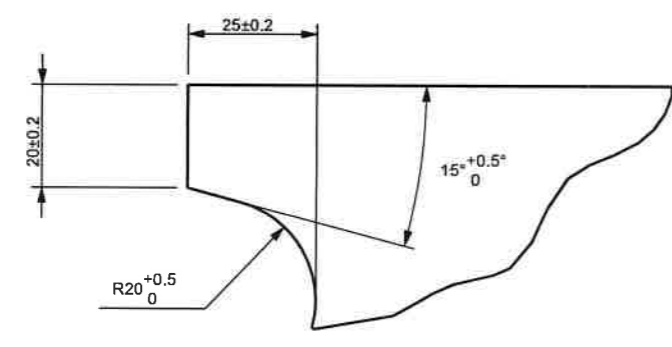
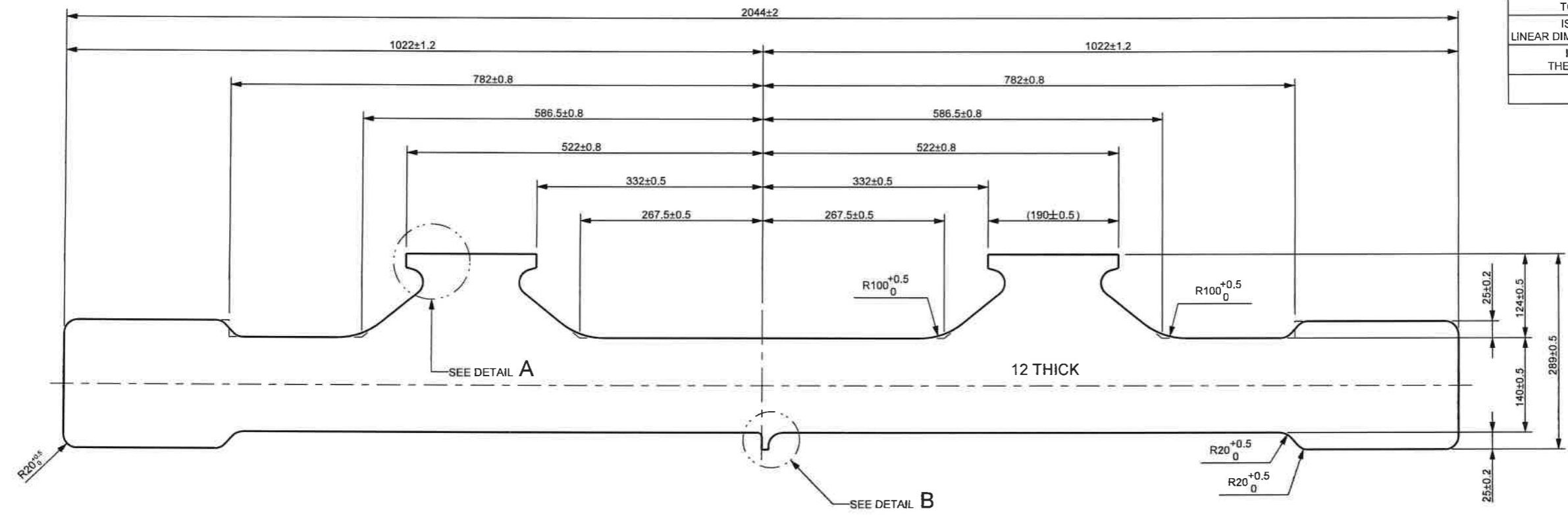
M
 A E

2D STATUS

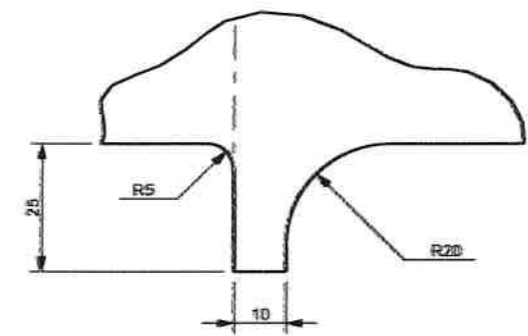
IN WORK

GENERAL TOLERANCES

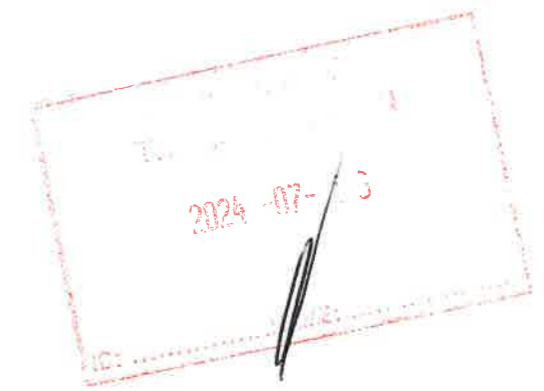
ISO 14405-1 DIMENSIONAL TOLERANCING	ISO 13920-B F WELDMENTS
ISO 8015 TOLERANCING	EN 10243-F FORGING
ISO 2768-mK-E LINEAR DIMENSIONS, SYMMETRY	DIN 6935 COLD BENDING
ISO 9013-422 THERMAL CUTTING	DIN 6930-m STAMPING
ISO 8062 CASTING	



DETAIL A
SCALE 1:1



DETAIL B
SCALE 1:1



PART EDGES ISO 13715

REV 3 BT DRW UPDATED PD_PEL_KLP_DRW_23E 2015-07-04 S.W.S.
REV 2 TOLERANCES ALTERED PD_PEL_KLP_DRW_23E 2015-11-11 M.J.M.
REV 1 MARGINS CHANGED PD_PEL_KLP_DRW_23E 27-07-2015 M.J.M.
AMENDMENTS
MASS 34.01 Kg

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TRANSNET ENGINEERING

ASSEMBLY DRG No. -	DRAWN M.J.M.	KILNER PARK LOCOMOTIVES
	CHECKED M.N.N.	
CLASS Z3E	APPROVED B.E.D.	
TYPE ELECTRIC LOCOMOTIVE	DATE -	
	SCALE 1:5	
DOCUMENT REFERENCE No.	PD_PEL_KLP_DRW_23E	

UPPER FLANGE
DERAILMENT PROTECTION BAR

MATERIAL

STEEL
SANS 50025 GRADE S355 J2+N
PLATE 12
2044 x 289

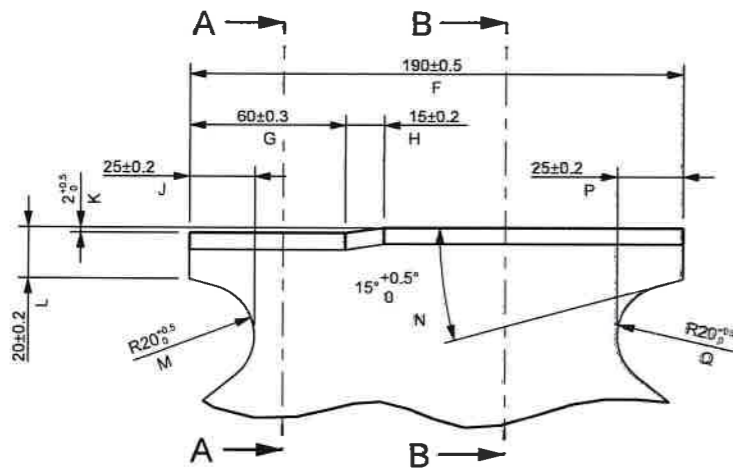
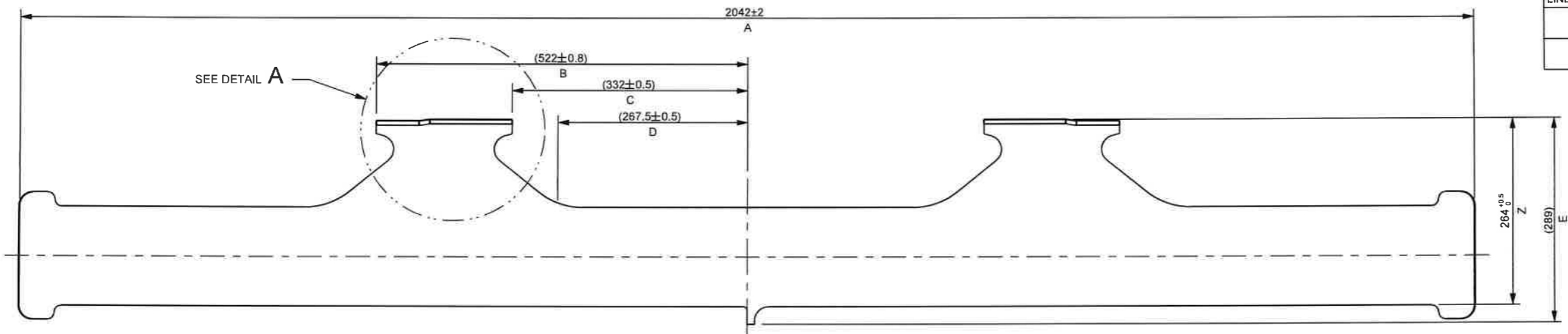
A-2 PROJECTION

TRANSNET ENGINEERING

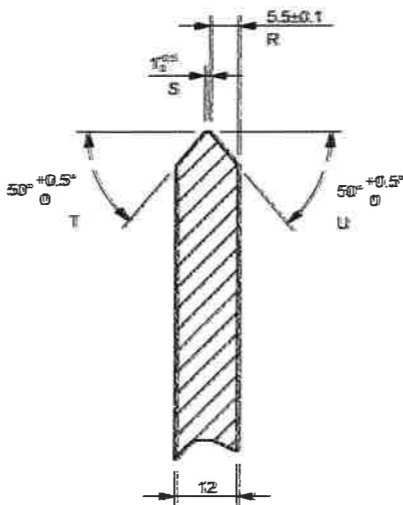
No.

CUT 66A0201 REV. -3

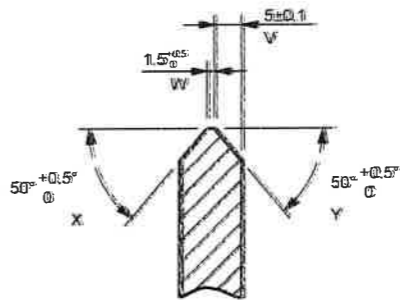
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ISO 14405-1 DIMENSIONAL TOLERANCING	ISO 13920-B F WELDMENTS
ISO 8015 TOLERANCING	EN 10243-F FORGING
ISO 2768-mK-E LINEAR DIMENSIONS, SYMMETRY	DIN 6935 COLD BENDING
ISO 9013-422 THERMAL CUTTING	DIN 6930-m STAMPING
ISO 8062 CASTING	



DETAIL A
SCALE 1:2



SECTION A-A
SCALE 1:1




SECTION B-B
SCALE 1:1

12.5
 3.2

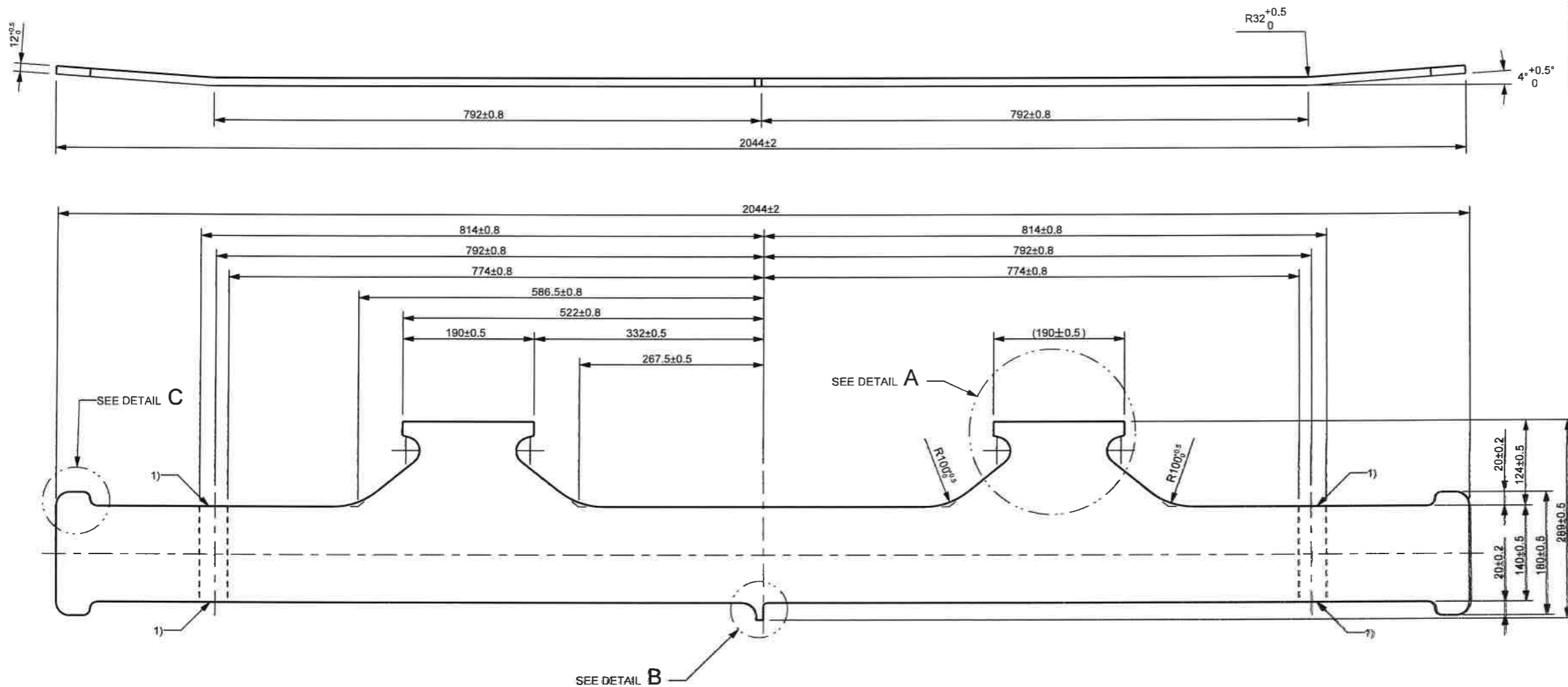


PART EDGES ISO 13715

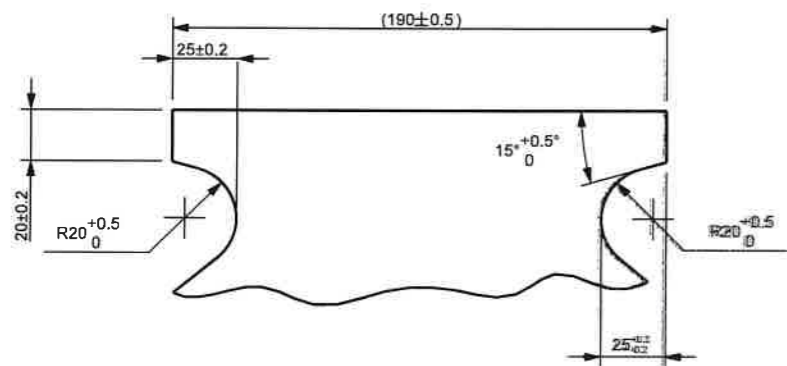
REV 5 TOLERANCE REMOVED FROM PLATE THICKNESS PD_PEL_KLP_DRW_23E 2016-07-21 S.W.S
REV 4 MATERIAL GRADE AMENDED PD_PEL_KLP_DRW_23E 2016-04-06 M.P.T.
REV 3 TOLERANCES ALTERED PD_PEL_KLP_DRW_23E 2015-11-11 M.J.M.
REV 2 LETTERS ADDED FOR SDP. PD_PEL_KLP_DRW_23E 2015-08-13 M.J.M.
REV 1 MARGINS CHANGED PD_PEL_KLP_DRW_23E 27-07-2015 M.J.M.
AMENDMENTS
MASS 31.99 Kg

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				CHECKED M.N.N.		<div>LOWER FLANGE</div> <div>DERAILMENT PROTECTION BAR</div>		<div>STEEL</div> <div>SANS 50025 GRADE S355 J2C+N</div> <div>PLATE 12</div> <div>2044 x 289</div>	
		CLASS 23E		APPROVED B.E.O.					
		TYPE ELECTRIC LOCOMOTIVE		DATE -					
				SCALE 1:5					
A-2 PROJECTION 		DOCUMENT REFERENCE No. PD_PEL_KLP_DRW_23E		TRANSNET ENGINEERING		No. MAC 66A0202		REV. -5	

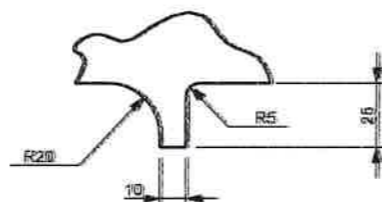
GENERAL TOLERANCES	
ISO 14405-1 DIMENSIONAL TOLERANCING	ISO 13920-B F WELDMENTS
ISO 8015 TOLERANCING	EN 10243-F FORGING
ISO 2768-mK-E LINEAR DIMENSIONS, SYMMETRY	DIN 6935 COLD BENDING
ISO 9013-422 THERMAL CUTTING	DIN 6930-m STAMPING
ISO 8062 CASTING	



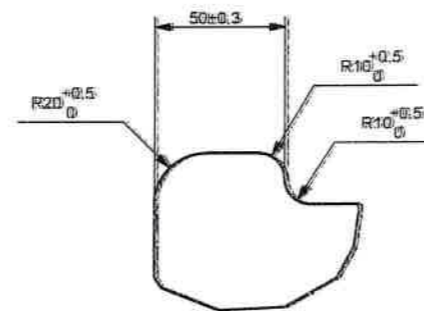
DEVELOPED VIEW
SCALE 1:5



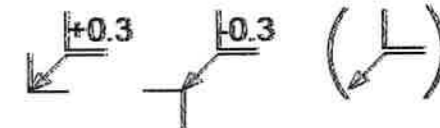
DETAIL A
SCALE 1:2



DETAIL B
SCALE 1:2



DETAIL C
SCALE 1:2



PART EDGES ISO 13715

NOTE:
1) THE HEAT AFFECTED ZONES IN THE BENDING AREAS
HAVE TO BE REMOVED BY GRINDING RESPECTIVELY
MACHINING BEFORE BEMDING.

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CLASS Z3E		CHECKED M.J.M.	APPROVED B.E.D.	LOWER FLANGE DERAILMENT PROTECTION BAR		STEEL SANS 50025 GRADE S355 J2C+N PLATE 12 2050 x 289	
TYPE ELECTRIC LOCOMOTIVE		DATE	SCALE 1:5	TRANSNET ENGINEERING		SHEET 1 OF 1	
A-2 PROJECTION		DOCUMENT REFERENCE No.	PD_PEL_KLP_DRW_23E	No.		CUT 66A0202	
						REV. -4	

ITEM NO.
 BT DRW. REV_0

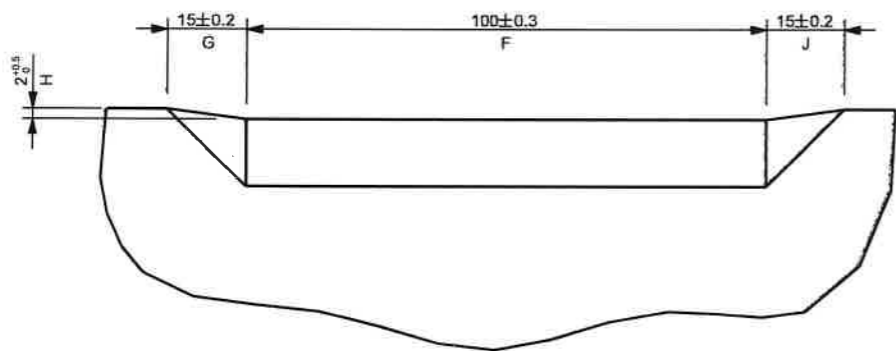
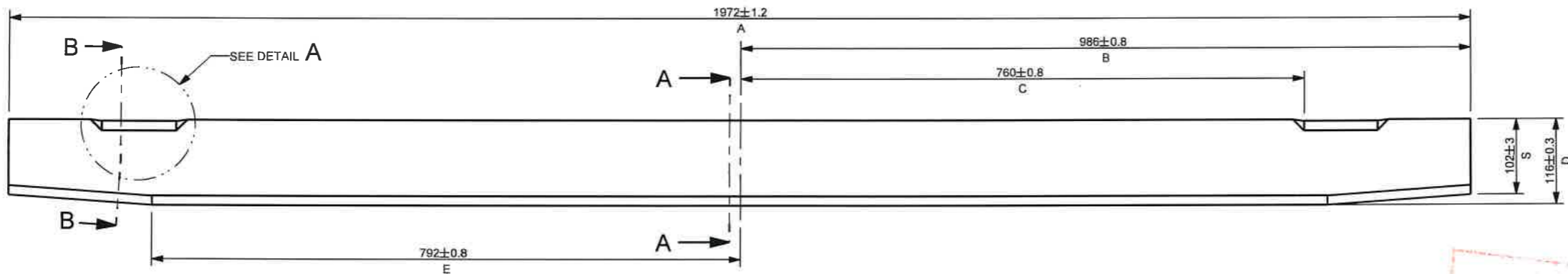
FOR UNTOLERANCED DIMENSIONS SEE ISO 2768-1: DESIGNATION
FOR GENERAL TOLERANCE ON WELDED CONSTRUCTIONS SEE ISO 13920: CLASS

M
A E

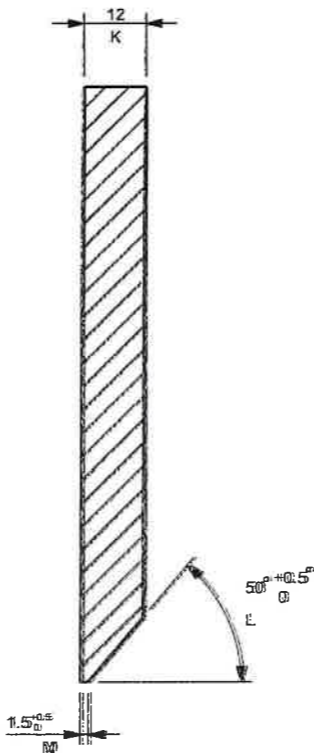
2D STATUS IN WORK

GROUP 10.3

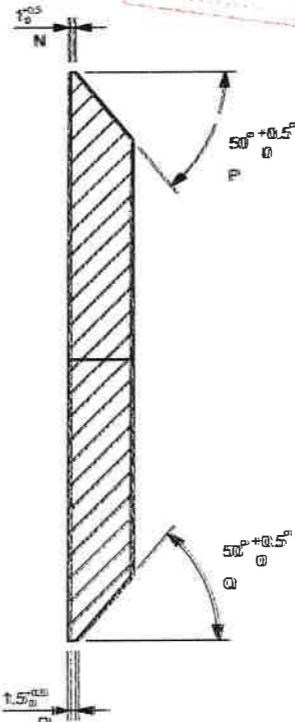
GENERAL TOLERANCES	
ISO 14405-1 DIMENSIONAL TOLERANCING	ISO 13920-B F WELDEMENTS
ISO 8015 TOLERANCING	EN 10243-F FORGING
ISO 2768-mK-E LINEAR DIMENSIONS, SYMMETRY	DIN 6935 COLD BENDING
ISO 9013-422 THERMAL CUTTING	DIN 6930-m STAMPING
ISO 8062 CASTING	



DETAIL A
SCALE 1:1



SECTION A-A
SCALE 1:1



SECTION B-B
SCALE 1:1



PART EDGES ISO 13715

REV 4 DIMENSION ADDED PD_PEL_KLP_DRW_23E 2015-02-19 M.J.M.
REV 3 TOLERANCES ALTERED PD_PEL_KLP_DRW_23E 2015-11-11 M.J.M.
REV 2 LETTERS ADDED FOR SOP. PD_PEL_KLP_DRW_23E 2015-08-13 M.J.M.
REV 1 MARGINS CHANGED PD_PEL_KLP_DRW_23E 27-07-2015 M.J.M.
AMENDMENTS
MASS 20.11 Kg

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TRANSNET ENGINEERING

ASSEMBLY DRG No. -	DRAWN M.J.M.
	CHECKED M.J.M.
CLASS 23E	APPROVED B.E.D.
TYPE ELECTRIC LOCOMOTIVE	DATE -
	SCALE 1:5

KILNER PARK	LOCOMOTIVES
WEB	
DERAILMENT PROTECTION BAR	

TRANSNET ENGINEERING	No.
SHEET 1 OF 1	

MATERIAL
STEEL SANS 50025 GRADE S355 J2+N PLATE 12 1972 x 116

A-2 PROJECTION

DOCUMENT REFERENCE No.

PD_PEL_KLP_DRW_23E

TRANSNET ENGINEERING

No.

MAC 66A0203 REV. -4

ITEM NO.		FOR UNTOLERANCED DIMENSIONS SEE ISO 2768-1:		DESIGNATION		2D STATUS		IN WORK	
BT DRW. REV_0		FOR GENERAL TOLERANCE ON WELDED CONSTRUCTIONS SEE ISO 13920: CLASS		M A E		GENERAL TOLERANCES			
GROUP 10.3						ISO 14405-1 DIMENSIONAL TOLERANCING		ISO 13920-B F WELDMENTS	
						ISO 8015 TOLERANCING		EN 10243-F FORGING	
						ISO 2768-mK-E LINEAR DIMENSIONS, SYMMETRY		DIN 6935 COLD BENDING	
						ISO 9013-422 THERMAL CUTTING		DIN 6930-m STAMPING	
						ISO 8062 CASTING			

1972±1.2

120±2

4°+0.5°
0

792±0.8

792±0.8

12°+0.5°
0

DETAIL B
SCALE 1:2

SEE DETAIL B

2024-07-13

REV_2
TOLERANCES ALTERED
PD_PEL_KLP_DRW_23E
2015-11-11 M.J.M.

REV_1
MARGINS CHANGED
PD_PEL_KLP_DRW_23E
27-07-2015 M.J.M.

AMENDMENTS

MASS 22.04 Kg

PART EDGES ISO 13715

+0.3

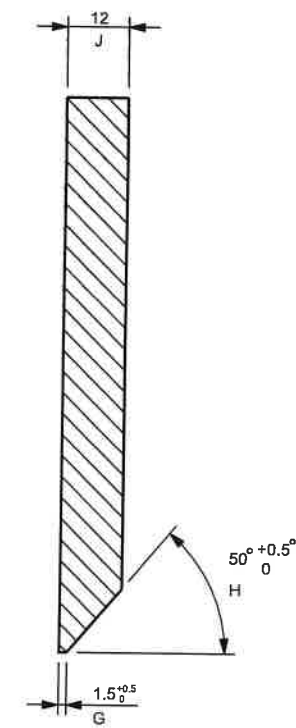
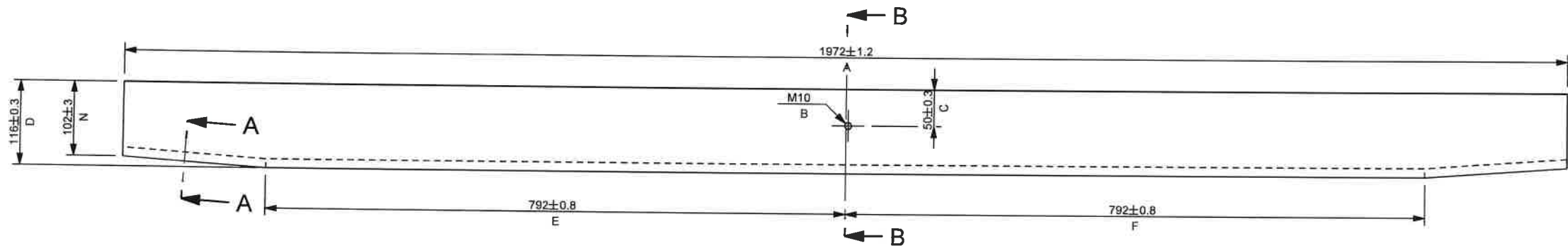
+0.3

(L)

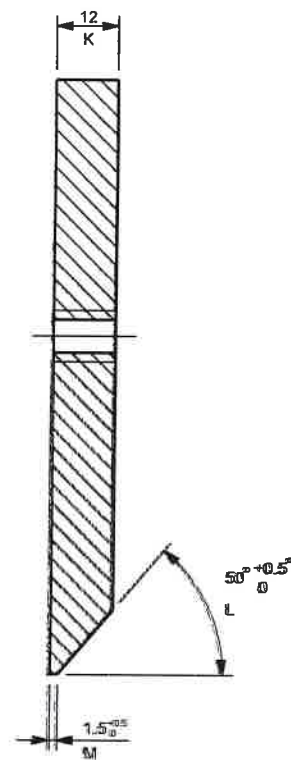
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				CHECKED M.N.N.		WEB		STEEL	
		CLASS 23E		APPROVED B.E.D.		DERAILMENT PROTECTION BAR		SANS 50025 GRADE S355 J2+N	
		TYPE ELECTRIC LOCOMOTIVE		DATE -				PLATE 12	
				SCALE 1:5				1972 x 120	
A-3 PROJECTION		DOCUMENT REFERENCE No.		PD_PEL_KLP_DRW_23E		TRANSNET ENGINEERING		SHEET 1 OF 1	
						No.		CUT 66A0203	
								REV. -2	

GROUP 10.4

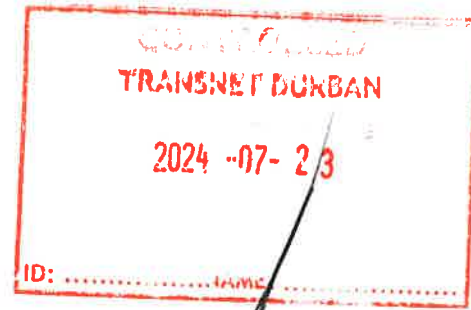
GENERAL TOLERANCES	
ISO 14405-1 DIMENSIONAL TOLERANCING	ISO 13920-B F WELDEMENTS
ISO 8015 TOLERANCING	EN 10243-F FORGING
ISO 2768-mK-E LINEAR DIMENSIONS, SYMMETRY	DIN 6935 COLD BENDING
ISO 9013-422 THERMAL CUTTING	DIN 6930-m STAMPING
ISO 8062 CASTING	



SECTION A-A
SCALE 1:1



SECTION B-B
SCALE 1:1



12.5



PART EDGES ISO 13715

REV_4 DIMENSION ADDED PD_PEL_KLP_DRW_23E 2016-02-19 M.J.M.
REV_3 TOLERANCES ALTERED PD_PEL_KLP_DRW_23E 2015-11-11 M.J.M.
REV_2 LETTERS ADDED FOR SOP. PD_PEL_KLP_DRW_23E. 2015-08-13 M.J.M.
REV_1 MARGINS CHANGED PD_PEL_KLP_DRW_23E 27-07-2015 M.J.M.
AMENDMENTS
MASS 20.28 Kg

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		CLASS Z3E	CHECKED M.N.N.	WEB		STEEL	
		TYPE ELECTRIC LOCOMOTIVE	APPROVED B.E.D.	DERAILMENT PROTECTION BAR		SANS 50025 GRADE S355 J2+N	
			DATE -			PLATE 12	
			SCALE 1:5			1972 x 116	
A-2	PROJECTION	DOCUMENT REFERENCE No.	PD_PEL_KLP_DRW_23E	TRANSNET ENGINEERING		No.	REV. -4

MAC_66A0204

ITEM NO.		FOR UNTOLERANCED DIMENSIONS SEE ISO 2768-1:		DESIGNATION		M		2D STATUS		IN WORK	
BT DRW. REV_0		FOR GENERAL TOLERANCE ON WELDED CONSTRUCTIONS SEE ISO 13920: CLASS		CLASS		A E		GENERAL TOLERANCES			
GROUP 10.4								ISO 14405-1 DIMENSIONAL TOLERANCING		ISO 13920-B F WELDMENTS	
								ISO 8015 TOLERANCING		EN 10243-F FORGING	
								ISO 2768-mK-E LINEAR DIMENSIONS, SYMMETRY		DIN 6935 COLD BENDING	
								ISO 9013-422 THERMAL CUTTING		DIN 6930-m STAMPING	
								ISO 8062 CASTING			

1972±1.2

792±0.8

792±0.8

120±2

4°+0.5°/0

12°+0.5°/0

SEE DETAIL A

DETAIL A

SCALE 1:2

2024-07-15

REV_2
TOLERANCES ALTERED
PD_PEL_KLP_DRW_23E
2015-11-11 M.J.M.

REV_1
MARGINS CHANGED
PD_PEL_KLP_DRW_23E
27-07-2015 M.J.M.

AMENDMENTS

MASS 22.04 Kg

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ASSEMBLY DRG No. -

DRAWN M.J.M.

CHECKED M.N.N.

CLASS 23E

APPROVED B.E.D.

TYPE ELECTRIC LOCOMOTIVE

DATE -

SCALE 1:5

DOCUMENT REFERENCE No. PD_PEL_KLP_DRW_23E

KILNER PARK

LOCOMOTIVES

WEB

DERAILMENT PROTECTION BAR

SHEET 1 OF 1

TRANSNET ENGINEERING

No.

CUT 66A0204

REV. -2

PART EDGES ISO 13715

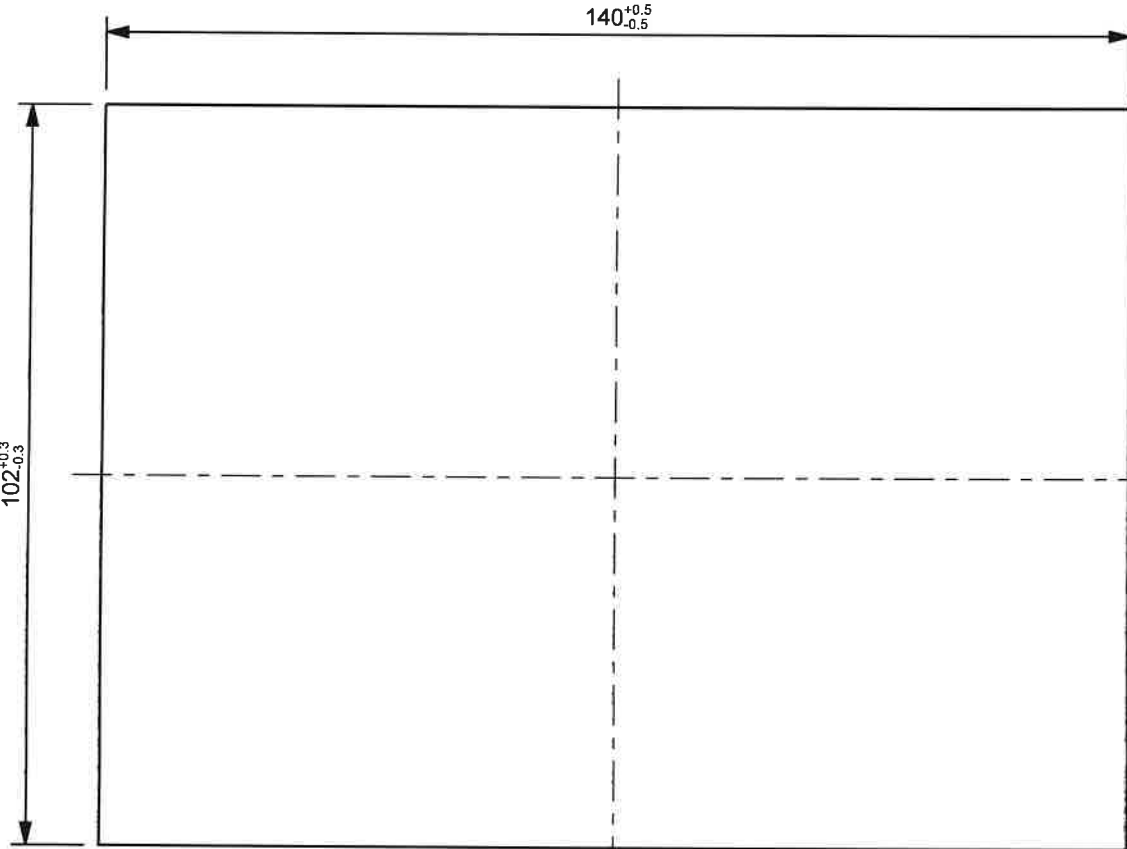

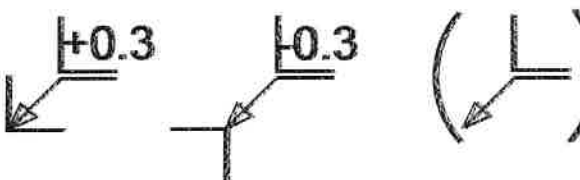
STEEL

SANS 50025 GRADE S355 J2+N

PLATE 12

1972 x 120

REV. -3

ITEM NO.		FOR UNTOLERANCED DIMENSIONS SEE ISO 2768-1:		DESIGNATION		M		2D STATUS		IN WORK	
BT DRW. REV_0		FOR GENERAL TOLERANCE ON WELDED CONSTRUCTIONS SEE ISO 13920: CLASS		A		E		GENERAL TOLERANCES			
GROUP 10.5						ISO 14405-1		ISO 13920-B F			
						DIMENSIONAL TOLERANCING		WELDMENTS			
						ISO 8015		EN 10243-F			
						TOLERANCING		FORGING			
						ISO 2768-mK-E		DIN 6935			
LINEAR DIMENSIONS, SYMMETRY		COLD BENDING									
ISO 9013-422		DIN 6930-m									
THERMAL CUTTING		STAMPING									
ISO 8062											
CASTING											
		REV_1 TOLERANCES ALTERED PD_PEL_KLP_DRW_23E 2015-11-11 M.J.M.		AMENDMENTS							
				MASS							
				1.79 Kg							
				MATERIAL							
				STEEL							
SANS 50025 GRADE S355 J2+N											
PLATE 16											
140 x 102											
SHEET 1 OF 1		No.		CUT_66A0207		REV. -1					
A-3		PROJECTION		TRANSNET ENGINEERING							
DOCUMENT REFERENCE No.		PD_PEL_KLP_DRW_23E									
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