

DO NOT SCALE – IF IN DOUBT ASK

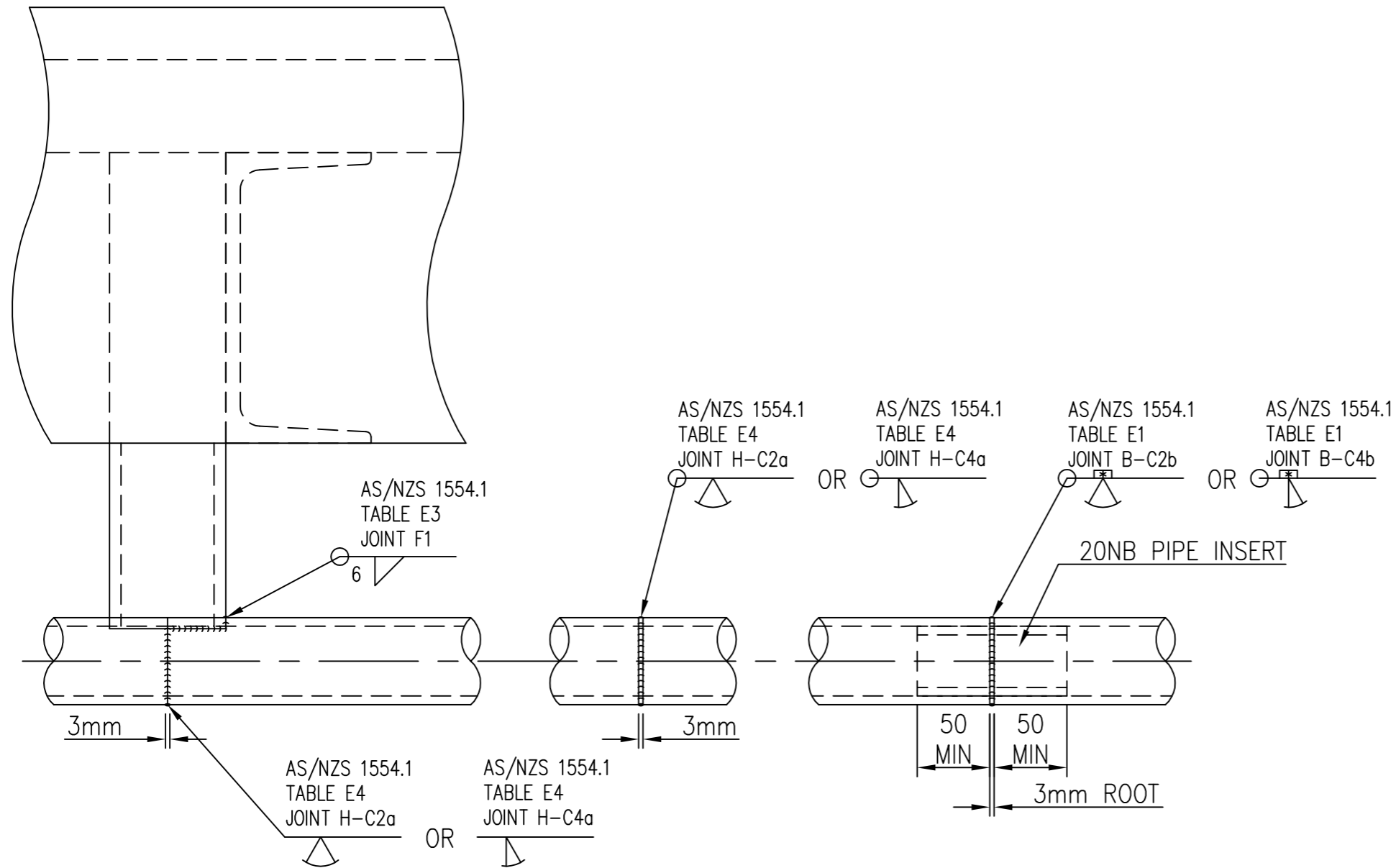
ALL DIMENSIONS IN MILLIMETRES  
TOLERANCES CLASS II UNLESS  
OTHERWISE SPECIFIED  
WELD SYMBOLS TO AS1101.3-1987

DRAWING LIMITATIONS:

SUITS 25NB MEDIUM WALL PIPE.  
REPLACEMENT OF DAMAGED/CORRODED RAIL. ONLY  
NOT FOR INSTALLATION OF NEW RAIL.  
IF MORE THAN ONE RAIL SECTION IS REPLACED  
CONSULT A LOAD ANCHORAGE ENGINEER

NOTES:

1. DO NOT SCALE OFF DRAWING
2. WELDING OF STEEL SECTIONS TO COMPLY WITH AS/NZS1554 PART 1(CATEGORY SP)
  - WELDING AND JOINT PREP. TO COMPLY WITH SECTION 4.
  - WELDER TO BE CURRENTLY CERTIFIED TO CLAUSE 4.11.2 IN APPROPRIATE POSITIONS AND TECHNIQUES USED.
  - WELDING CONSUMABLES TO COMPLY WITH SECTION 4.5 FOR THE TYPE AND GRADE OF MATERIALS USED.
  - INSPECTION TO BE CARRIED OUT AS PER SECTION 7.
3. RHS TO COMPLY WITH AS 1163, GRADE 350 OR EQUIVALENT, AND TO MEET CHARPY IMPACT REQUIREMENTS AS STATED IN NZS 5446:1991 APPENDIX A2. (UNLESS SPECIFIED)
4. STEEL SECTIONS MEET BS 4360 GRADE 43A, (MINIMUM YIELD STRESS OF 250Mpa) OR EQUIVALENT. (UNLESS SPECIFIED)
5. REMOVE ALL BURRS AND SHARP EDGES, DRESS WELD TERMINATIONS
6. ENSURE WELDING COMPATIBILITY OF MATERIAL. THIS REPAIR IS ONLY SUITABLE FOR CHASSIS MATERIAL UP TO 350 MPa YIELD. CONSULT AN ENGINEER WITH THE LOAD ANCHOR CATEGORY IF HIGHER YIELD MATERIAL IS USED



JOINT AT DROPPER  
ENSURE WELDER QUALIFICATION FOR SINGLE SIDED BUTT WELD

MIDSPAN JOINT  
MIDSPAN JOINT WITH INSERT  
(PREFERRED)

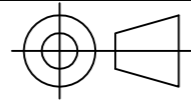
OWNER			
MAKE		MODEL	
CERTIFIER		CERT. No.	

C		
B	09/07/19	UPDATE FOR ISSUE IN NZTA VIRM
A		FIRST ISSUE TO CLIENT
ISSUE	DATE	CHANGES MADE
		BY

**ttmf**  
N7 Truck Trailer Manufacturers Federation Inc

ITEM	QTY	MATERIAL	DESCRIPTION	DRAWING
25NB (Medium Wall) Pipe Rail Replacement/Repair Fy < 350 MPa			4 – MRCP – A001	Sheet: 1/1
		Drawn: R.F.	Issue: B	Chkd:
		Job: 12726	Ref: MRCP-A001	Scale: NTS
		Date: 30/3/2015	Date:	

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DO NOT SCALE – IF IN DOUBT ASK

ALL DIMENSIONS IN MILLIMETRES  
TOLERANCES CLASS II UNLESS  
OTHERWISE SPECIFIED  
WELD SYMBOLS TO AS1101.3-1987

**DRAWING LIMITATIONS:**

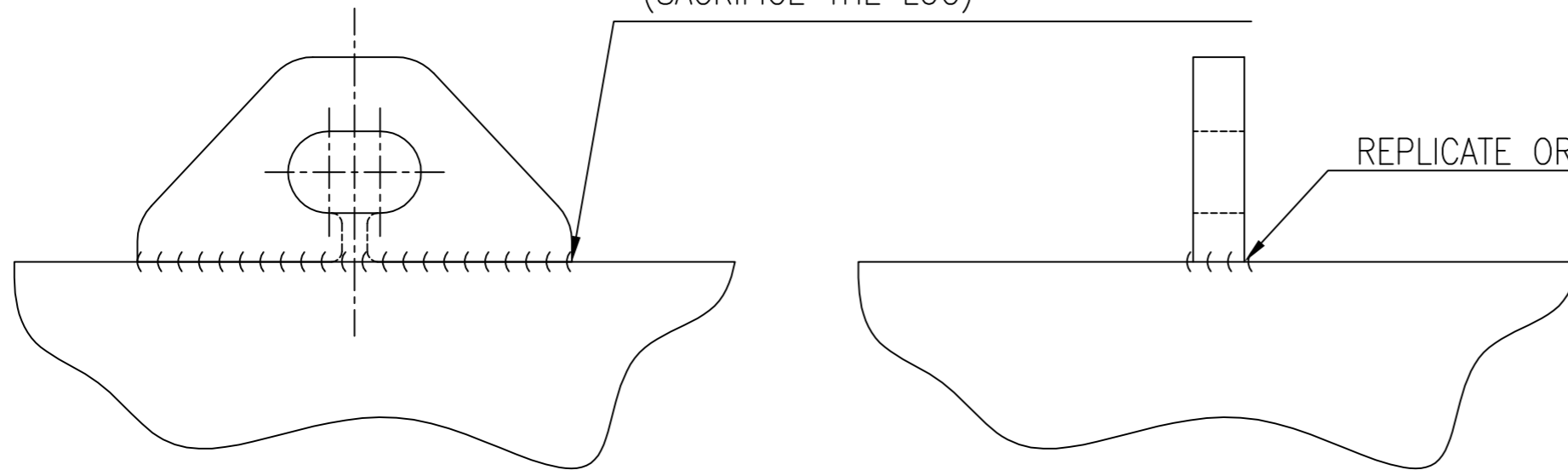
REPLACEMENT OF DAMAGED/CORRODED LUG ONLY,  
NOT FOR INSTALLATION OF NEW LUGS.  
EXCLUDES LUGS ON SUSPENSION COMPONENTS OR AXLES  
UNLESS EXPRESSLY PERMITTED BY AXLE/SUSPENSION MANUFACTURER

**NOTES:**

1. WELDING OF STEEL SECTIONS TO COMPLY WITH AS/NZS1554 PART 1(CATEGORY SP)
  - WELDING AND JOINT PREP. TO COMPLY WITH SECTION 4.
  - WELDER TO BE CURRENTLY CERTIFIED TO CLAUSE 4.11.2 IN APPROPRIATE POSITIONS AND TECHNIQUES USED. (ALL POSITIONS AND STEELS UP TO CLASS 3 MIN.)
  - WELDING CONSUMABLES TO COMPLY WITH SECTION 4.5 FOR THE TYPE AND GRADE OF MATERIALS USED.
  - INSPECTION TO BE CARRIED OUT AS PER SECTION 7.
2. REMOVE ALL BURRS AND SHARP EDGES, DRESS WELD TERMINATIONS
3. ENSURE WELDING COMPATIBILITY OF MATERIAL. THIS REPAIR IS ONLY SUITABLE FOR CHASSIS MATERIAL UP TO 350 MP<sub>a</sub> YIELD. CONSULT AN ENGINEER WITH THE CHASSIS CATEGORY IF HIGHER YIELD MATERIAL IS USED
4. ATTACHMENT AREA SURFACE TO BE CAREFULLY EXAMINED FOR CRACKS AFTER REMOVAL. ANY CRACKS FOUND TO BE REFERRED TO AN ENGINEER WITH THE CHASSIS CATEGORY

GRIND OUT OR ARC-AIR EXISTING LUG  
DO NOT DAMAGE MOUNTING SURFACE  
(SACRIFICE THE LUG)

REPLICATE ORIGINAL WELD



SIDE VIEW

END VIEW

CONDITIONS:

REPLACE LUG IF DAMAGE OR WEAR IS GREATER THAN 10% OF ORIGINAL DIMENSIONS

INSTRUCTIONS:

MATCH EXISTING LUGS FOR: – PROFILE  
– WELD DETAIL  
– MATERIAL

WORKSHOP	
OWNER	
MAKE	MODEL
CERTIFIER	CERT. No.
JOB #	

C		
B		UPDATED FOR ISSUE IN NZTA VIRM
A	09/07/19	FIRST ISSUE TO CLIENT
ISSUE DATE	CHANGES MADE	BY

ITEM	QTY	MATERIAL	DESCRIPTION	DRAWING
			4 – MRCP – A002	Sheet: 1/1
			Drawn: R.F.	Issue: B
			Scale: NTS	Chkd:
			Date: 30/10/2015	Date:



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REPLACEMENT ANCHOR LUGS  
F<sub>y</sub> < 350 MPa

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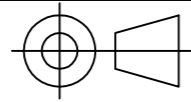
Job: 12726

Ref: MRCP-A002

Scale: NTS

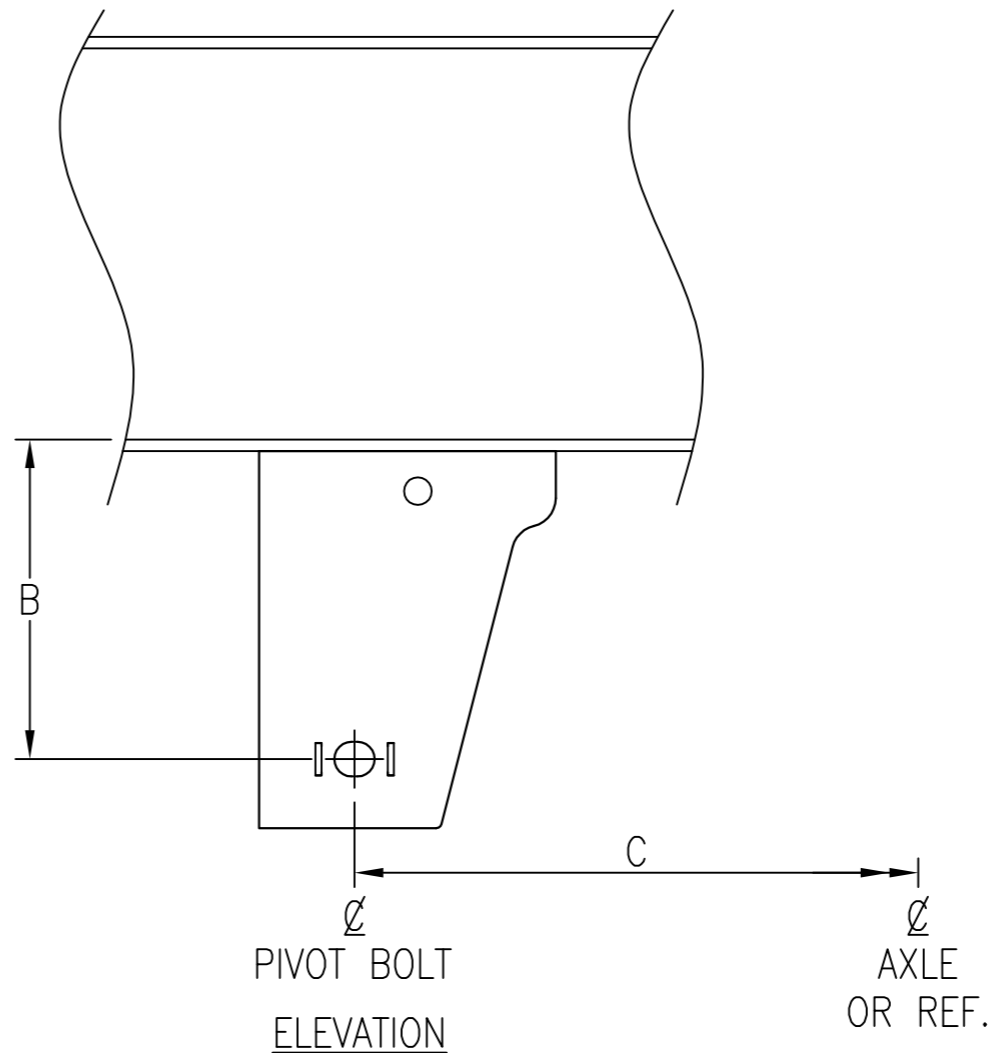
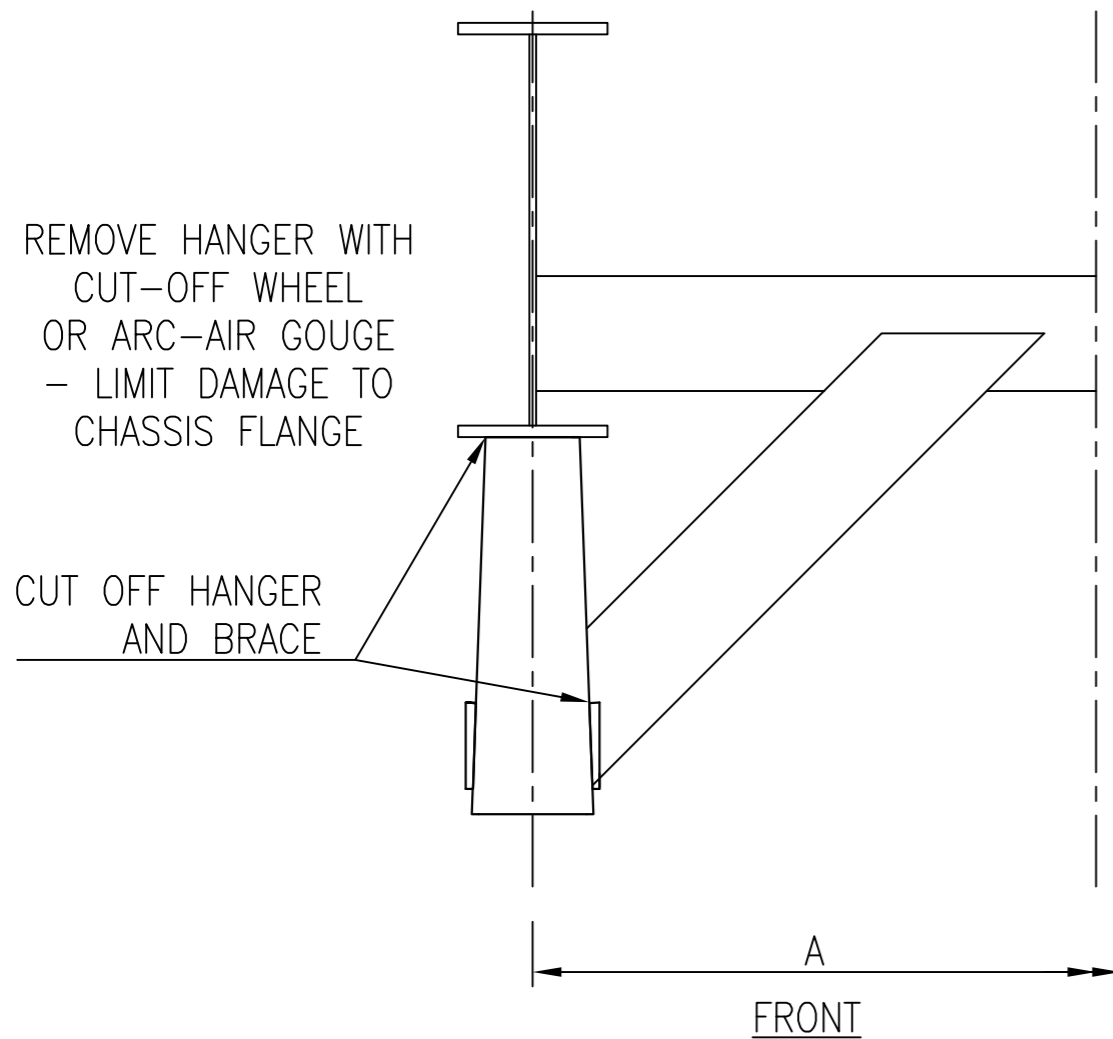
Date: 30/10/2015

Date:



DO NOT SCALE – IF IN DOUBT ASK

ALL DIMENSIONS IN MILLIMETRES  
TOLERANCES CLASS II UNLESS  
OTHERWISE SPECIFIED  
WELD SYMBOLS TO AS1101.3-1987

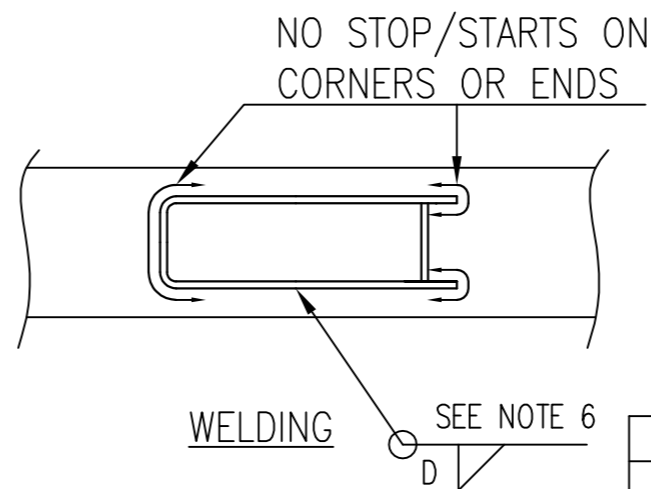


- NOTES:
- LIMITATIONS:
    - FOR REPLACEMENT OF HANGER ONLY NOT NEW INSTALLATION
    - APPLIES ONLY TO TRAILER SUSPENSIONS
  - WELDING OF STEEL SECTIONS TO COMPLY WITH AS/NZS1554 PART 1(CATEGORY SP)
    - WELDING AND JOINT PREP. TO COMPLY WITH SECTION 4.
    - WELDER TO BE CURRENTLY CERTIFIED TO CLAUSE 4.11.2 IN APPROPRIATE POSITIONS AND TECHNIQUES USED.
    - WELDING CONSUMABLES TO COMPLY WITH SECTION 4.5 FOR THE TYPE AND GRADE OF MATERIALS USED.
    - INSPECTION TO BE CARRIED OUT AS PER SECTION 7.
  - RHS TO COMPLY WITH AS 1163, GRADE 350 OR EQUIVALENT
  - STEEL SECTIONS MEET AS/NZS 3678 &/OR 3679, OR EQUIVALENT. (UNLESS SPECIFIED)
  - REMOVE ALL BURRS AND SHARP EDGES, DRESS WELD TERMINATIONS
  - ENSURE WELDING COMPATIBILITY OF MATERIAL. THIS REPAIR IS ONLY SUITABLE FOR CHASSIS MATERIAL UP TO 350 MP<sub>a</sub> YIELD. CONSULT AN ENGINEER WITH THE CHASSIS CATEGORY IF HIGHER YIELD MATERIAL IS USED
  - RE-WELD NEW HANGER IN PLACE USING SUSPENSION MANUFACTURERS WELD DETAILS
- OR
- COPY OEM WELDING IF MANUFACTURERS INSTRUCTIONS ARE NOT AVAILABLE
- REINSTALL SUSPENSION AND AXLE IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS
  - REFIT WHEELS/TYRES & TORQUE TO MANUFACTURERS RECOMENDATIONS
  - REALIGN ALL TRAILER AXLES AFTER HANGER FITTINGS

**DRAWING LIMITATIONS:**

FOR REPLACEMENT OF HANGER ONLY  
NOT TO BE USED FOR NEW INSTALLATION  
APPLIES ONLY TO TRAILER SUSPENSIONS

RECORD EXISTING DIMENSION (MM)					
A					
B					
C					
D					
AXLE	1	2	3	4	5



OWNER				
VEHICLE	MAKE		MODEL	
SUSPENSION	MAKE		MODEL	

C		
B	09/07/19	UPDATE FOR ISSUE IN NZTA VIRM
A		FIRST ISSUE TO CLIENT
ISSUE DATE	CHANGES MADE	BY

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AIR SUSPENSION HANGER REPLACEMENT ONLY  
FOR WEAR OR DAMAGE – MATERIAL YIELD < 350 MP<sub>a</sub>

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ITEM	QTY	MATERIAL	DESCRIPTION	DRAWING
			4 – MRCP – C012	Sheet: 1/1
			Drawn: R.F.	Issue: B
			Scale: NTS	Chkd:
			Date: 2/3/2015	Date:

Job: 12726

Ref: MRCP-C012

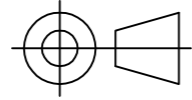
Scale: NTS

Date: 2/3/2015

Date:

**DRAWING LIMITATIONS:**

CRACKS IN CHASSIS WEB ONLY  
CRACK LENGTH < 30mm



DO NOT SCALE – IF IN DOUBT ASK

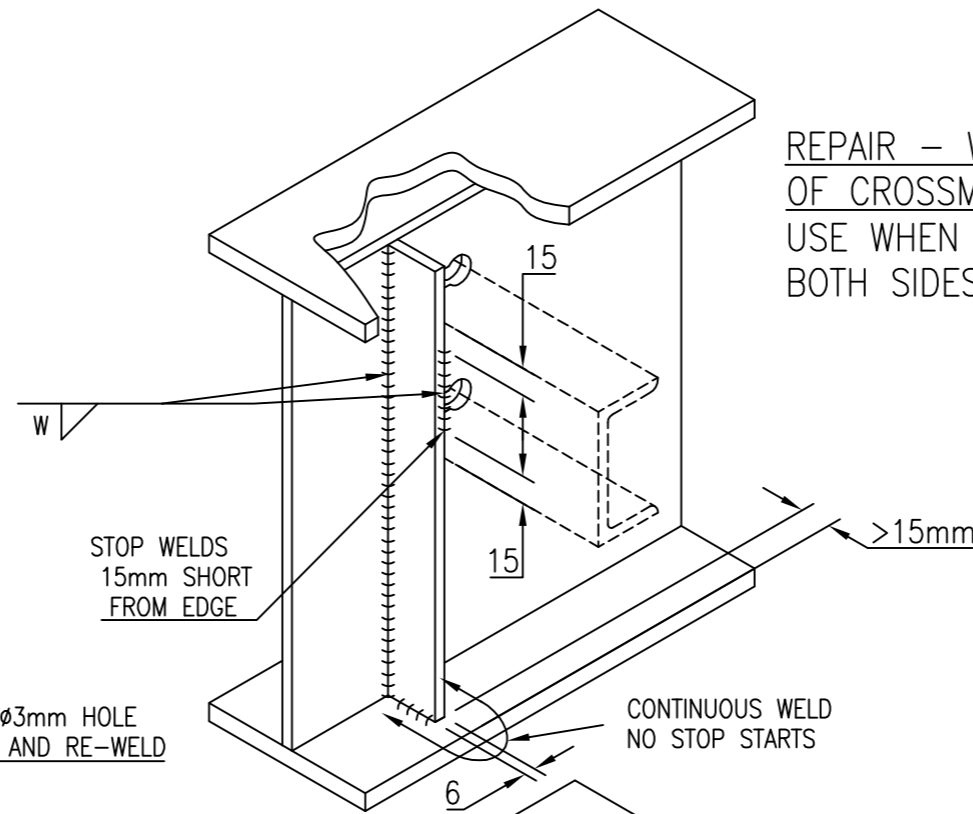
ALL DIMENSIONS IN MILLIMETRES  
TOLERANCES CLASS II UNLESS  
OTHERWISE SPECIFIED  
WELD SYMBOLS TO AS1101.3-1987

**NOTES:**

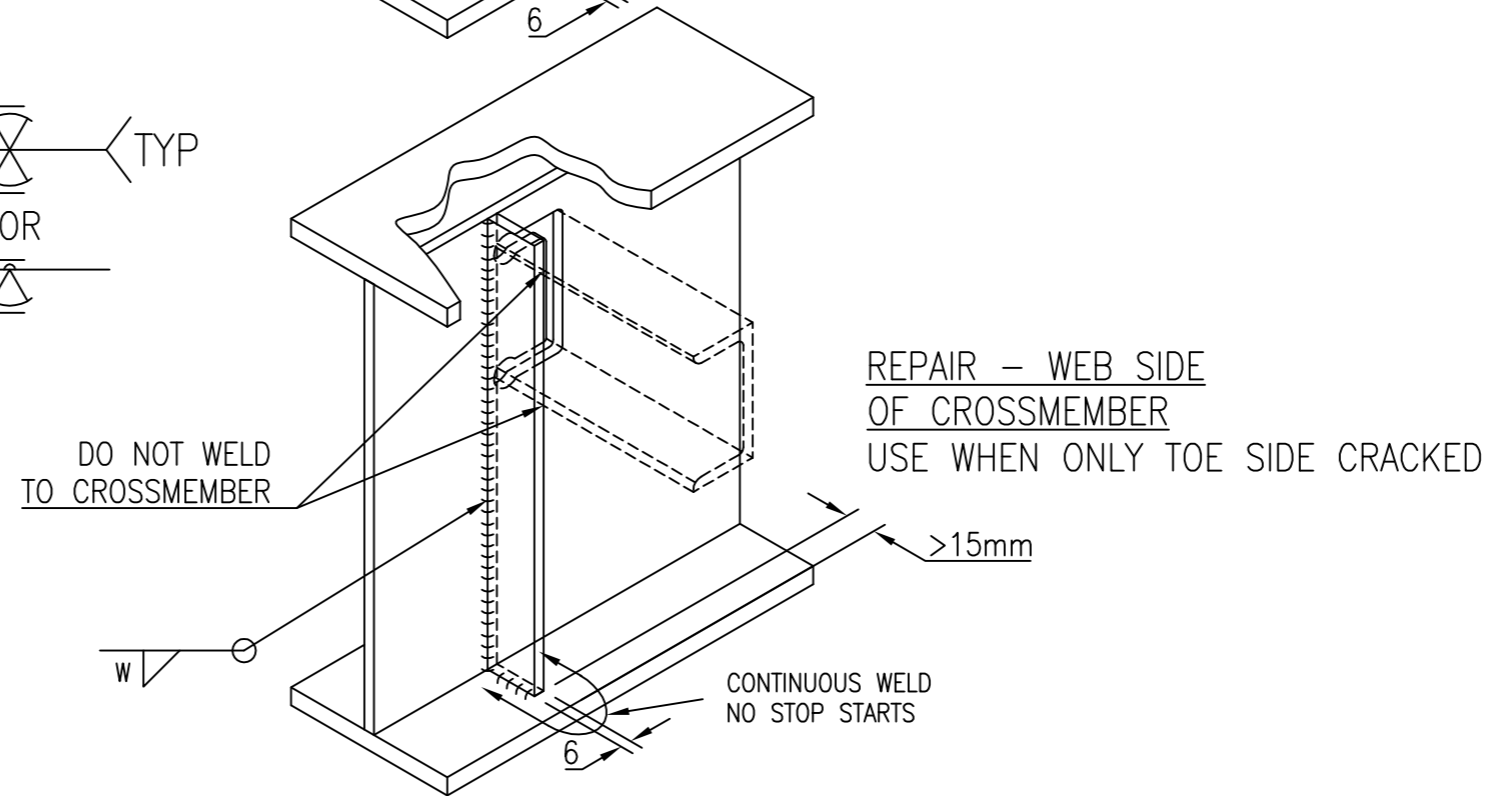
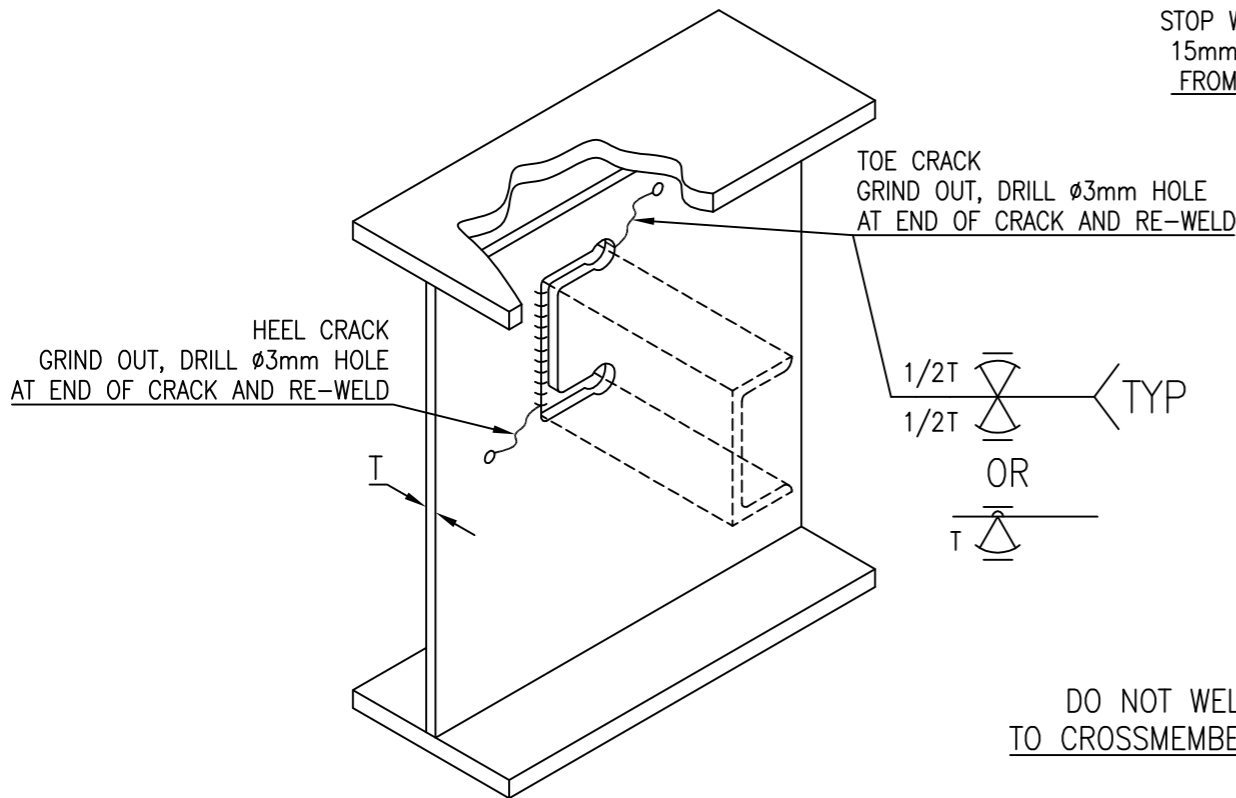
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  - WELDING CONSUMABLES TO COMPLY WITH SECTION 4.5 FOR THE TYPE AND GRADE OF MATERIALS USED.
  - INSPECTION TO BE CARRIED OUT AS PER SECTION 7.
2. CHASSIS MATERIAL TO BE IDENTIFIED BEFORE REPAIR  
ADDITIONAL MATERIAL TO BE EQUIVALENT
3. REMOVE ALL BURRS AND SHARP EDGES, DRESS WELD TERMINATIONS
4. ENSURE WELDING COMPATIBILITY OF MATERIAL.  
THIS REPAIR IS ONLY SUITABLE FOR CHASSIS MATERIAL UP TO 350 MP<sub>a</sub> YIELD. CONSULT AN ENGINEER WITH THE CHASSIS CATEGORY IF HIGHER YIELD MATERIAL IS USED
5. STEEL PLATE TO MEET AS/NZS 3678 &/OR 3679 OR EQUIVALENT (UNLESS SPECIFIED)

**WELD SYMBOLS TO AS/NZS 1554.1**

SYMBOL	JOINT	TABLE
	B-C2a	E1
	B-C3	E1
	F1	E3



REPAIR – WEB SIDE  
OF CROSSMEMBER  
USE WHEN WEB OR  
BOTH SIDES CRACKED



REPAIR – WEB SIDE  
OF CROSSMEMBER  
USE WHEN ONLY TOE SIDE CRACKED

CRACK DETAIL – HEEL OR TOE  
INSTALL STIFFENER ON ONE SIDE ONLY  
T = THICKNESS OF WEB (mm)  
W = MIN = 4mm  
MAX = 1.5 X T

WORKSHOP			
OWNER			
MAKE		MODEL	
CERTIFIER		CERT. No.	
JOB #			

C			
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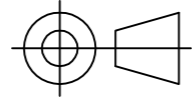
WEB CRACKS AT X-MEMBER CUTOUTS  
CHANNEL CROSSMEMBER AND CUTOUT. MATERIAL YIELD < 350 MP<sub>a</sub>

4 – MRCP – C003

Sheet: 1/3

DRAWING LIMITATIONS:

CRACKS IN CHASSIS WEB ONLY  
CRACK LENGTH < 30mm



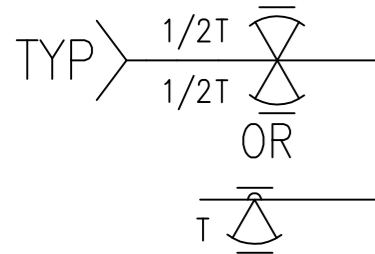
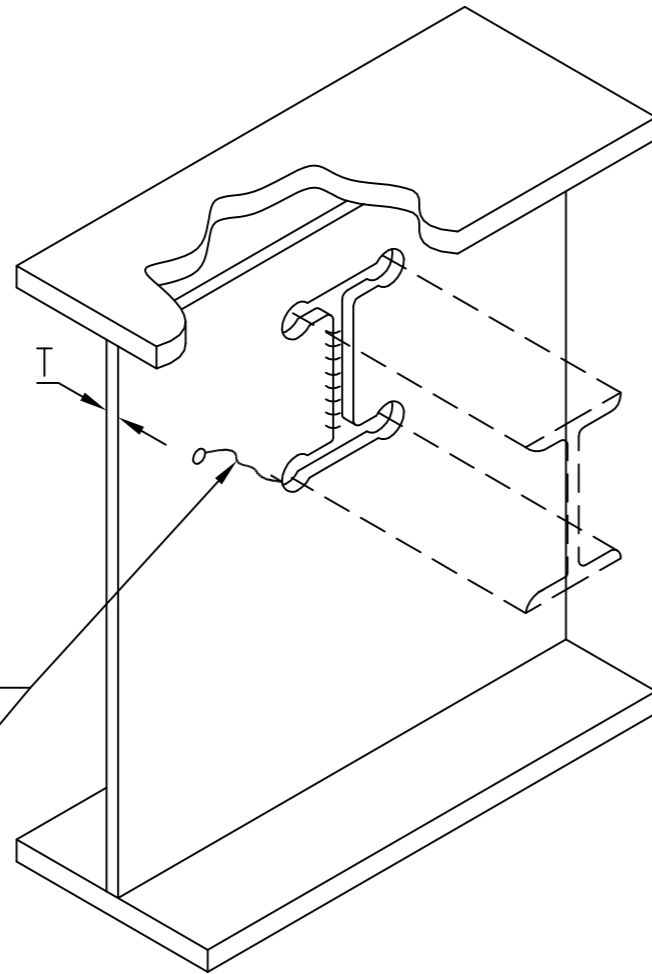
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ALL DIMENSIONS IN MILLIMETRES  
TOLERANCES CLASS II UNLESS  
OTHERWISE SPECIFIED  
WELD SYMBOLS TO AS1101.3-1987

WELDING OF STEEL SECTIONS TO COMPLY WITH AS/NZS1554  
PART 1(CATEGORY SP)

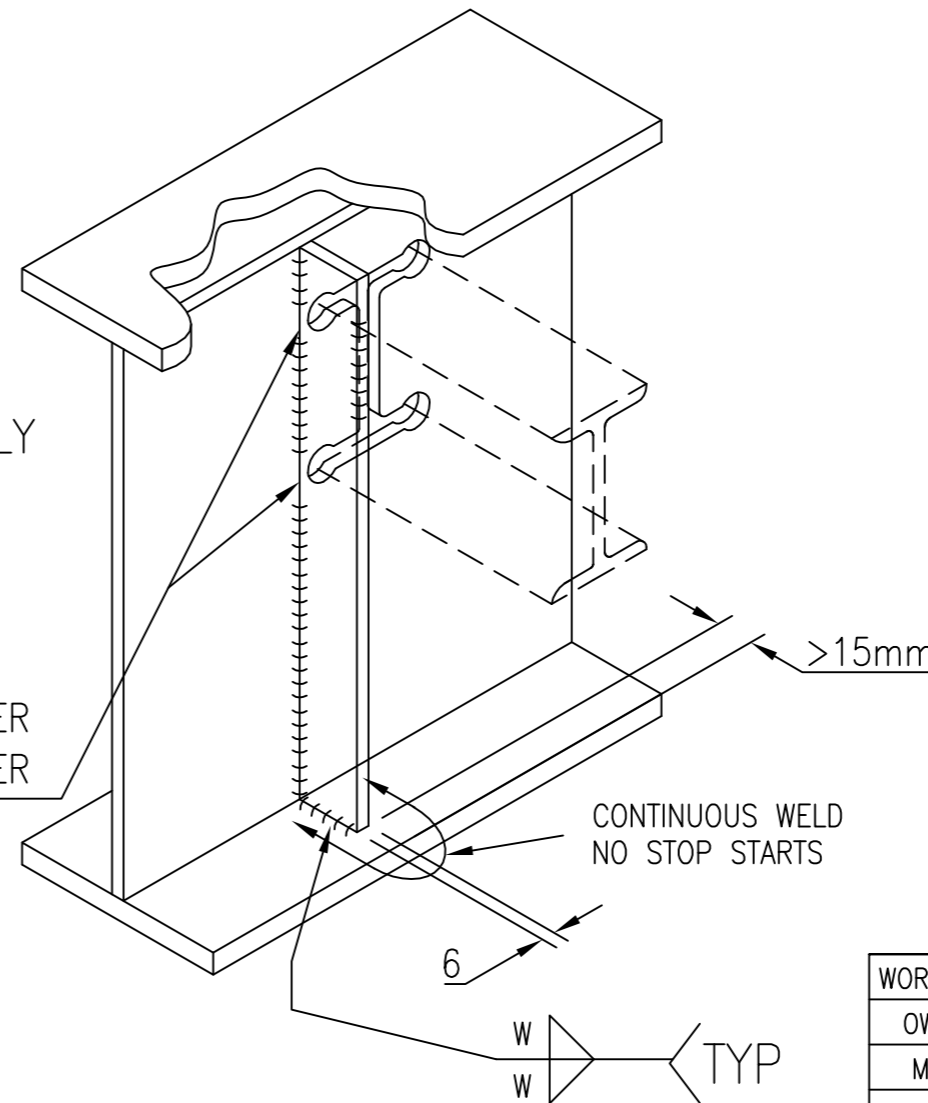
- WELDING AND JOINT PREP. TO COMPLY WITH SECTION 4.
  - WELDER TO BE CURRENTLY CERTIFIED TO CLAUSE 4.11.2 IN APPROPRIATE POSITIONS AND TECHNIQUES USED. (ALL POSITIONS AND STEELS UP TO CLASS 3 MIN.)
  - WELDING CONSUMABLES TO COMPLY WITH SECTION 4.5 FOR THE TYPE AND GRADE OF MATERIALS USED.
  - INSPECTION TO BE CARRIED OUT AS PER SECTION 7.
- CHASSIS MATERIAL TO BE IDENTIFIED BEFORE REPAIR  
ADDITIONAL MATERIAL TO BE EQUIVALENT
- REMOVE ALL BURRS AND SHARP EDGES, DRESS WELD TERMINATIONS
- ENSURE WELDING COMPATIBILITY OF MATERIAL.  
THIS REPAIR IS ONLY SUITABLE FOR CHASSIS MATERIAL UP TO 350 MP<sub>a</sub> YIELD. CONSULT AN ENGINEER WITH THE CHASSIS CATEGORY IF HIGHER YIELD MATERIAL IS USED
- STEEL PLATE TO MEET AS/NZS 3678 &/OR 3679 OR EQUIVALENT (UNLESS SPECIFIED)

TOE CRACK  
GRIND OUT, DRILL  $\phi 3$ mm HOLE  
AT END OF CRACK AND RE-WELD



TOE CRACK DETAIL  
INSTALL STIFFENER ON ONE SIDE ONLY  
T = THICKNESS OF WEB (mm)  
W = MIN = 4mm  
MAX = 1.5 X T

DO NOT WELD STIFFENER TO CROSSMEMBER  
WELD/BACKFILL WEB CUTOUT BEHIND STIFFENER



REINFORCEMENT DETAIL

WELD SYMBOLS TO AS/NZS 1554.1

SYMBOL	JOINT	TABLE
	B-C2a	E1
	B-C3	E1
	F1	E3

WORKSHOP	
OWNER	
MAKE	MODEL
CERTIFIER	CERT. No.
JOB #	

C		
B		
A	FIRST ISSUE TO CLIENT	
ISSUE DATE	CHANGES MADE	BY

**ttmf**

N7 Truck Trailer Manufacturers Federation Inc.

WEB CRACKS AT X-MEMBER CUTOUTS  
RSJ CROSSMEMBER AND CUTOUT. MATERIAL YIELD < 350 MP<sub>a</sub>

4 - MRCP - C003

Sheet: 3/3

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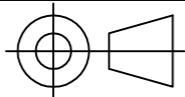
Job: 12726

Ref: MRCP-C003

Scale: NTS

Date: 2/11/2015

Date:



DO NOT SCALE - IF IN DOUBT ASK

ALL DIMENSIONS IN MILLIMETRES  
TOLERANCES CLASS II UNLESS  
OTHERWISE SPECIFIED  
WELD SYMBOLS TO AS1101.3-1987

DRAWING LIMITATIONS:

SIDE-ARM INNER WALL IS NOT  
CRACKED OR PERMANENTLY DEFLECTED.  
SEE DENT DEFINITION  
SEE REQUIRED CERT TEXT BELOW

THE FOLLOWING TEXT MUST APPEAR ON THE LT400 FOR THIS REPAIR:

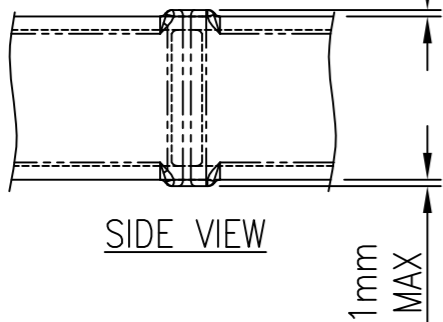
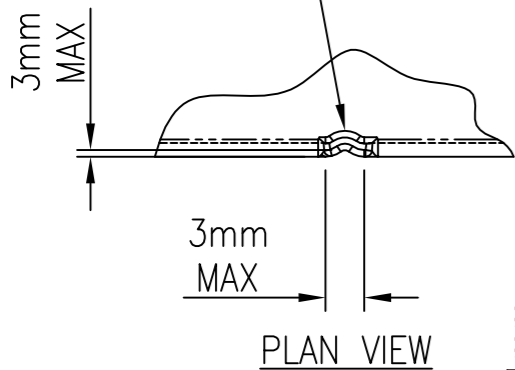
A MODIFICATION CARRIED OUT TO THIS DRAWING IS APPROVED BY THIS  
AGENCY NOT TO SUPERCEDE THE CURRENT CERTIFICATION

CHECK DIAGONAL DIMENSIONS FOR DRAWBAR TO CONFIRM  
STRAIGHTNESS OF DRAWBAR SIDEARMS  
CHECK STRAIGHTNESS OF BOTH ARMS OF DRAWBAR  
AS NO BOWING ALLOWED IN SIDE ARMS OF DRAWBAR

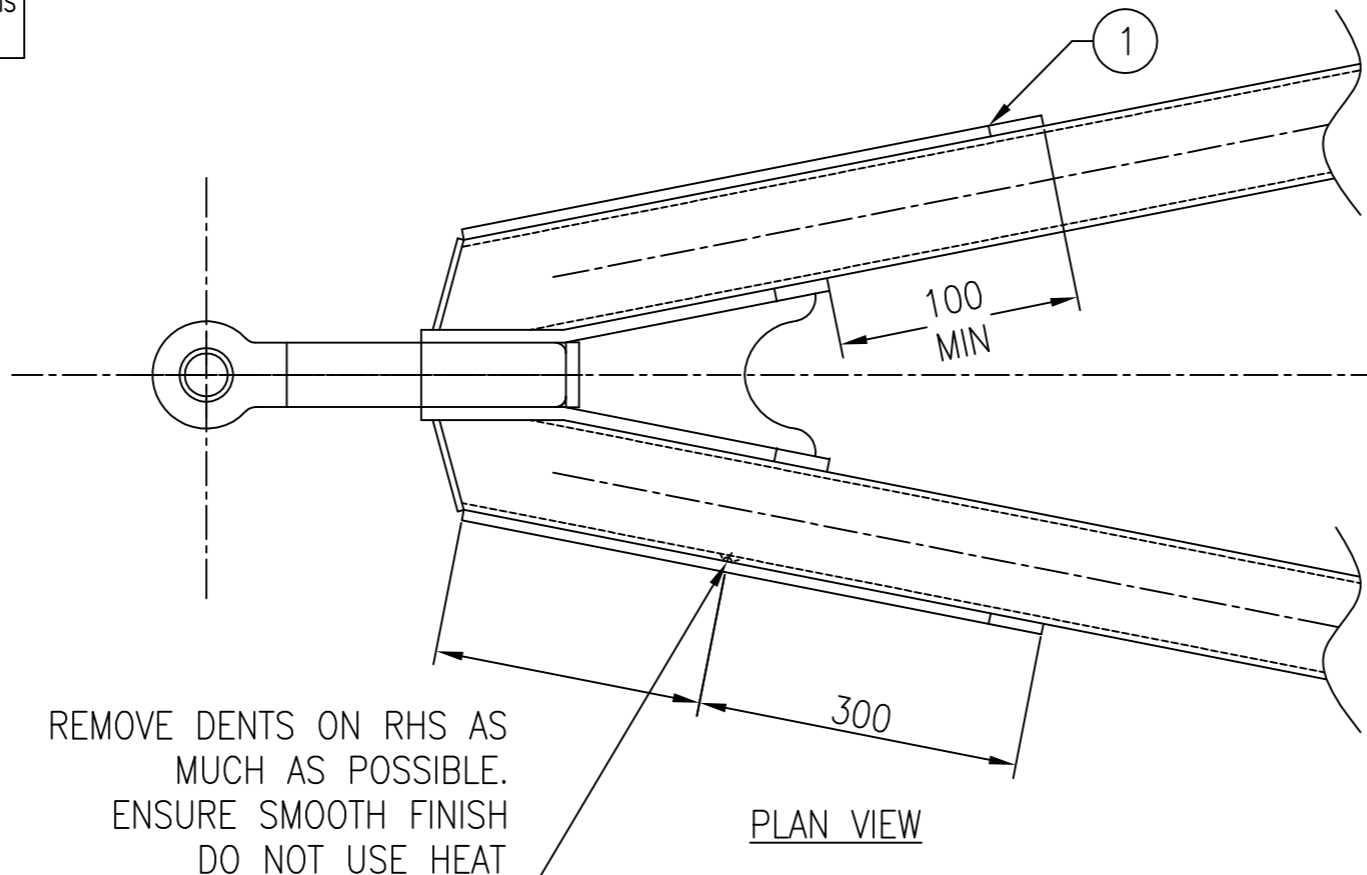
NOTES:

1. WELDING OF STEEL SECTIONS TO COMPLY WITH AS/NZS1554 PART 1(CATEGORY SP)
  - WELDING AND JOINT PREP. TO COMPLY WITH SECTION 4.
  - WELDER TO BE CURRENTLY CERTIFIED TO CLAUSE 4.11.2 IN APPROPRIATE POSITIONS AND TECHNIQUES USED.
  - WELDING CONSUMABLES TO COMPLY WITH SECTION 4.5 FOR THE TYPE AND GRADE OF MATERIALS USED.
  - INSPECTION TO BE CARRIED OUT AS PER SECTION 7.
2. REMOVE ALL BURRS AND SHARP EDGES, DRESS WELD TERMINATIONS
3. ENSURE WELDING COMPATIBILITY OF MATERIAL. THIS REPAIR IS ONLY SUITABLE FOR MATERIAL UP TO 350 MPa YIELD. CONSULT AN ENGINEER WITH THE CHASSIS CATEGORY IF HIGHER YIELD MATERIAL IS USED
4. MAXIMUM RATING NOT TO EXCEED VEHICLE OR COUPLING MANUFACTURERS RATINGS. COUPLING MAY MATCH ORIGINAL CERTIFICATION RATING IF THE ABOVE CONDITIONS ARE MET OTHERWISE CONTACT AN ENGINEERING CERTIFIER WITH THE TOWING CATEGORY.
5. ADDITIONAL STEEL PLATE MATERIAL TO MEET AS/NZS 3678 &/OR AS/NZS 3679

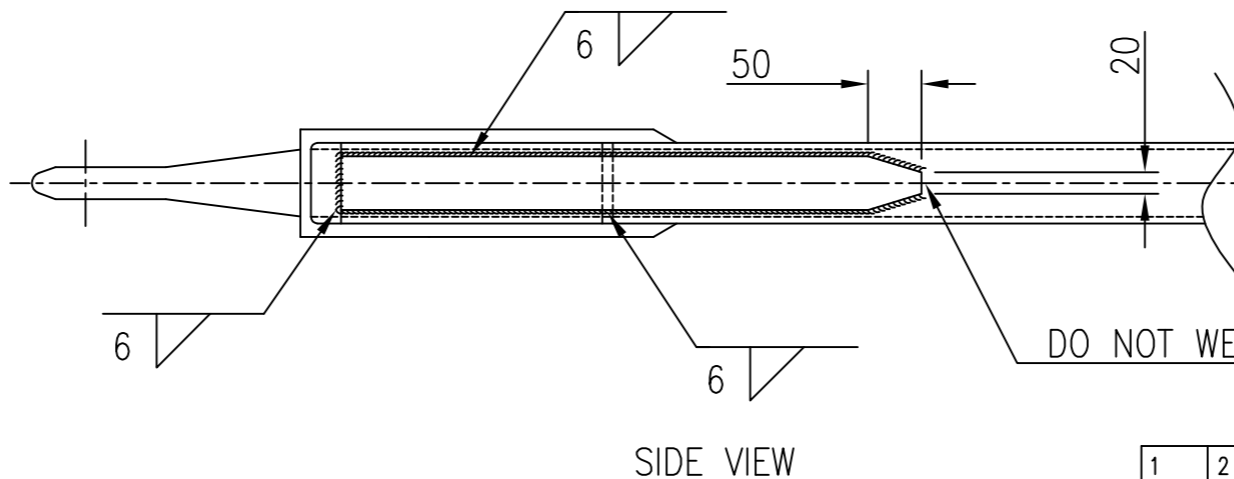
NO EVIDENCE OF  
BROKEN INNNER SKIN



MAXIMUM REPAIRABLE DENT SIZE



STRAPS MUST BE FITTED TO BOTH SIDES OF DRAWBAR



WELD SYMBOLS TO AS/NZS 1554.1

SYMBOL	JOINT	TABLE
	F1	E3

OWNER			
MAKE		MODEL	
CERTIFIER		CERT. No.	

THIS REPAIRED UNIT MUST COMPLY WITH  
INSPECTION REQUIRMENTS IN THE HVSC VIRM SECTION 9-2

C			
B	09/07/19	UPDATE FOR ISSUE IN NZTA VIRM	
A		FIRST ISSUE TO CLIENT	
ISSUE DATE	CHANGES MADE		BY

1	2	50/60/80 X 10 MSF	FLATBAR REINFORCING STRAP	
ITEM	QTY	MATERIAL	DESCRIPTION	DRAWING



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A-FRAME - DRAWBAR DENT REPAIR - MATERIAL YIELD < 350 MPa  
WORKSHOP: \_\_\_\_\_ CLIENT: \_\_\_\_\_

4 - MRCP - T002

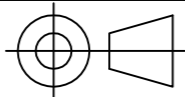
Sheet: 1/1

Drawn: R.F.	Issue: B	Chkd:
Scale: NTS	Date: 2/11/2015	Date:

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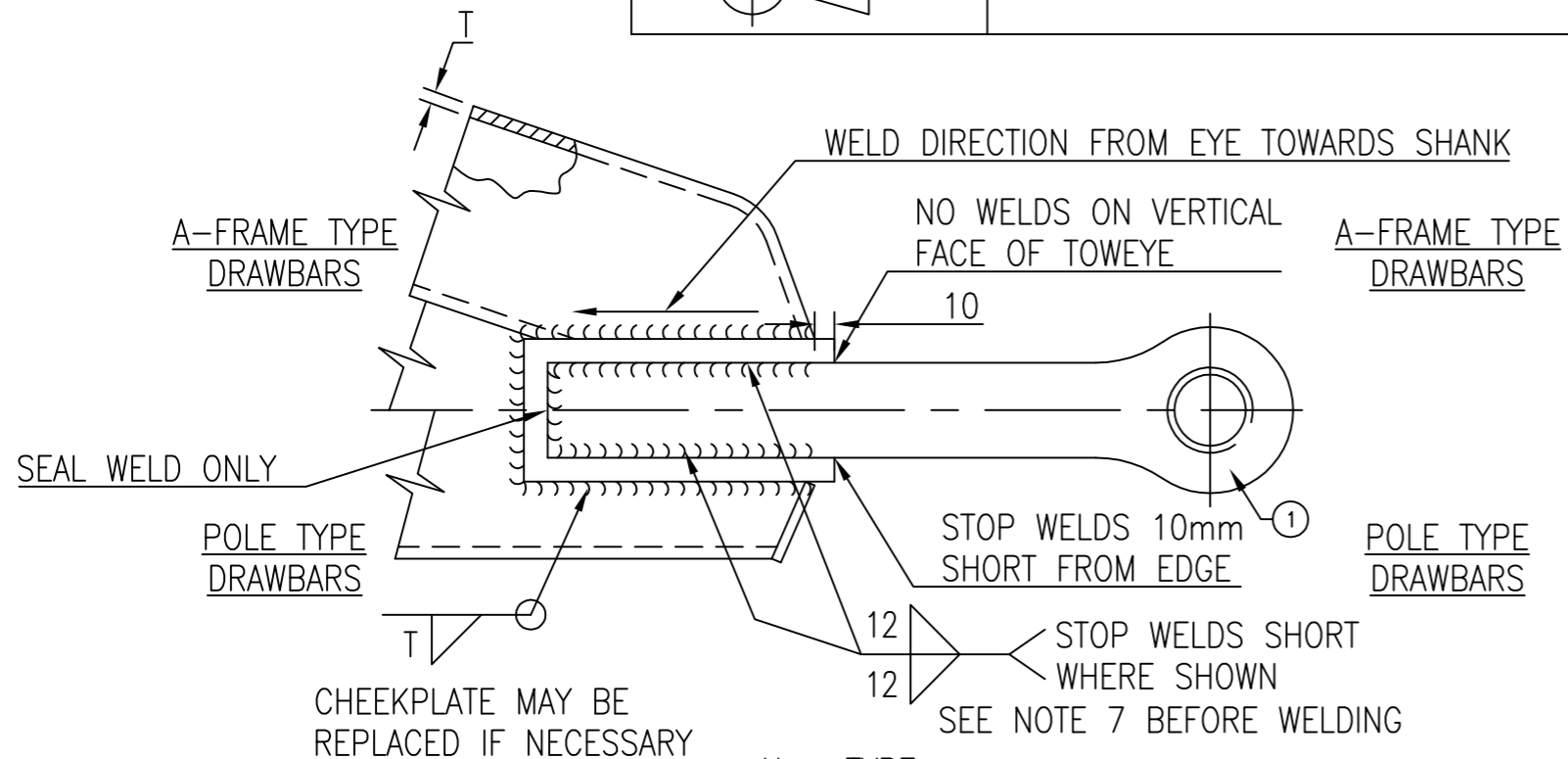
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Ref: MRCP-T002

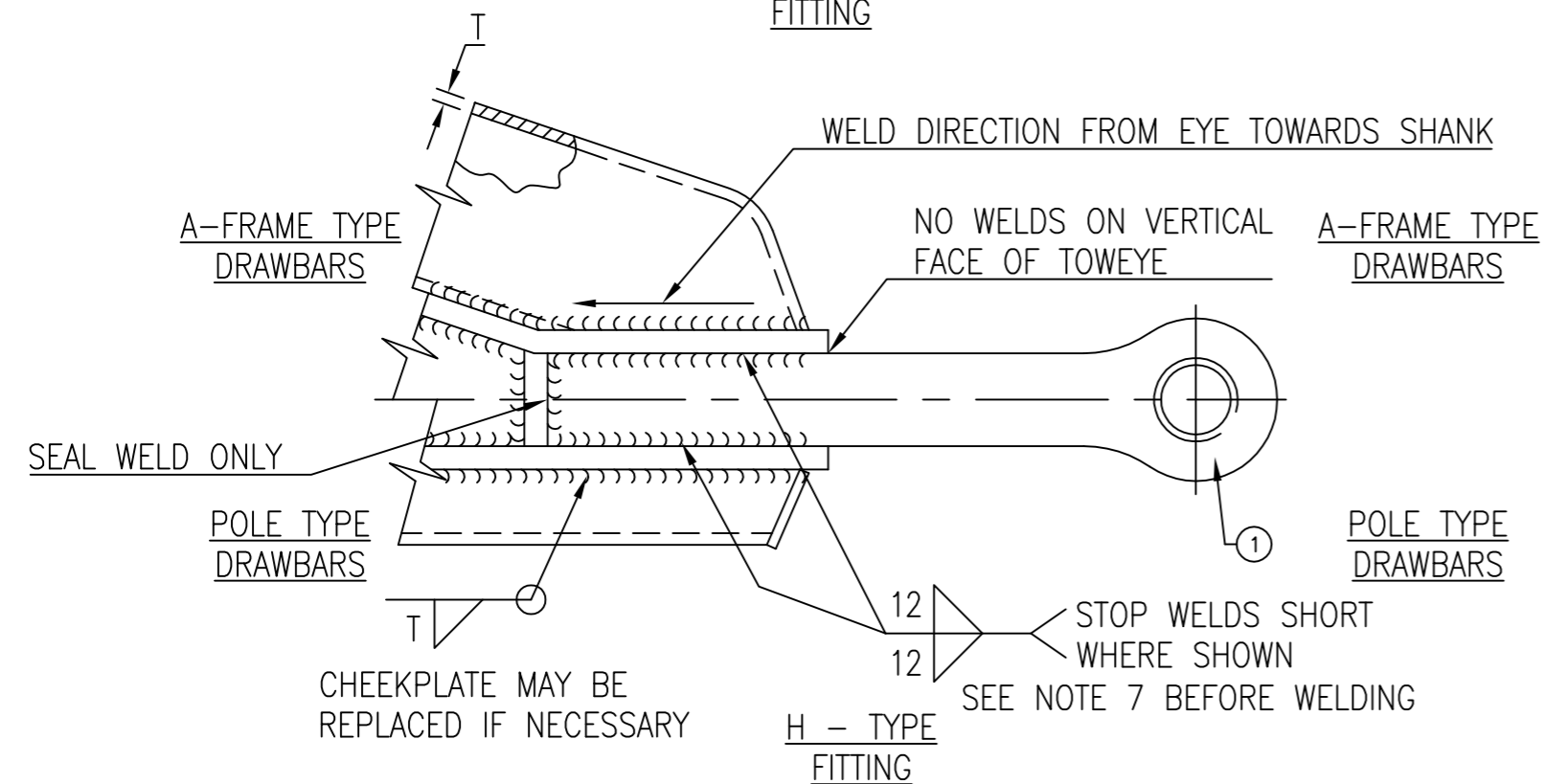


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TOLERANCES CLASS II UNLESS  
OTHERWISE SPECIFIED  
WELD SYMBOLS TO AS1101.3-1987



U - TYPE FITTING



H - TYPE FITTING

ENSURE TOWEYE D-VALUE RATING IS EQUIVELANT  
DRAWBAR LENGTH IS NOT TO BE ALTERED  
ORIGINAL STRUCTURE MUST BE REPLICATED.  
MODIFICATIONS ARE NOT ALLOWED

NOTES:

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  - WELDING AND JOINT PREP. TO COMPLY WITH SECTION 4.
  - WELDER TO BE CURRENTLY CERTIFIED TO CLAUSE 4.11.2 IN APPROPRIATE POSITIONS AND TECHNIQUES USED. (STEELS UP TO CLASS 3 MINIMUM)
  - WELDING CONSUMABLES TO COMPLY WITH SECTION 4.5 FOR THE TYPE AND GRADE OF MATERIALS USED.
  - INSPECTION TO BE CARRIED OUT AS PER SECTION 7.
- STEEL SECTIONS MEET AS/NZS 1163 GRADE 350, & AS/NZS 3968 FOR PLATE OR EQUIVALENT. (UNLESS SPECIFIED)
- REMOVE ALL BURRS AND SHARP EDGES, DRESS WELD TERMINATIONS
- CERTIFICATION IS VOID IF:
  - THE TOWEYE IS MANUFACTURED OR MODIFIED OUTSIDE THE SCOPE OF THIS DRAWING.
  - THE DRAWBAR IS MODIFIED FROM ITS ORIGINAL CONFIGURATION (PRIOR TO TOWEYE DAMAGE)
- DO NOT WELD ON VERTICAL FACE OF TOWEYE OR WITHIN 10mm OF FRONT EDGE.  
FOLLOW MANUFACTURERS FITTING/WELDING INSTRUCTIONS
- IF THE MANUFACTURER DOES NOT PROVIDE SPECIFIC WELDING INTRUCTIONS THE FOLLOWING INFORMATION FROM NZS5446 2007 SHALL BE USED:
  - PRE HEAT TO 250°C
  - HYDROGEN CONTROLLED ELECTRODES DRIED TO MANUFACTURERS RECCOMENDATIONS OR HYDROGEN CONTROLLED WELDING PROCESS SHALL BE USED TO MAKE ALL WELDS, INCLUDING TACK WELDS, WELDS ON COVER PLATES ETC...
  - WELDING OF THE THE TOWEYE SHANK SHALL BE ON THE PARELELL SECTION OF THE SHANK ONLY, EXCEPT A SEAL WELD MAY BE APPLIED TO REAR FACE OF SHANK
  - AFTER WELDING, THE TOWEYE SHALL BE PROTECTED BY SUITABLE MEANS TO ENSURE SLOW COOLING FROM WELDING TEMPERATURES
  - IF WELDING ON THE TOWEYE SHANK IS STOPPED AND THE TEMPERATURE FALLS BELOW 250°, THE COMPONENT SHALL BE RAISED BACK TO 250° BEFORE WELDING IS RECCOMMENCED.
- FOR OTHER VARIANTS OF TOWEYE ATTACHMENT, CONSULT ORIGINAL MANUFACTURER OF DRAWBAR FOR REPAIR INSTRUCTION OR CERTIFYING ENGINEER TO PROVIDE REPAIR DETAIL.

WELD SYMBOLS TO AS/NZS 1554.1

SYMBOL	JOINT	TABLE
	F1	E3
	F1	E3

C			
B	09/07/19	UPDATE FOR ISSUE IN NZTA VIRM	
A		FIRST ISSUE TO CLIENT	
ISSUE	DATE	CHANGES MADE	BY

OWNER			
MAKE		MODEL	
CERTIFIER		CERT. No.	
EXPIRY		LENGTH	
1	1	12T MIN. D-VALUE	TOWEYE - TO DIN. 74053/74054
ITEM	QTY	MATERIAL	DESCRIPTION
			4 - MRCP - T001
Drawn: R.F.		Issue: B	Chkd:
Job: 12726		Ref: MRCP-T001	Date: 2/11/2015
Scale: NTS		Date: 2/11/2015	Date:



N7 Truck Trailer Manufacturers Federation Inc

TOWEYE REPLACEMENT - A FRAME / POLE TYPE  
WORKSHOP \_\_\_\_\_ CLIENT \_\_\_\_\_

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Job: 12726

Ref: MRCP-T001

Scale: NTS

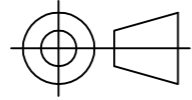
Date: 2/11/2015

Date:

Sheet: 1/1

**DRAWING LIMITATIONS:**

CRACKS IN CHASSIS WEB ONLY  
EXCLUDES ALL FLANGE CRACKS

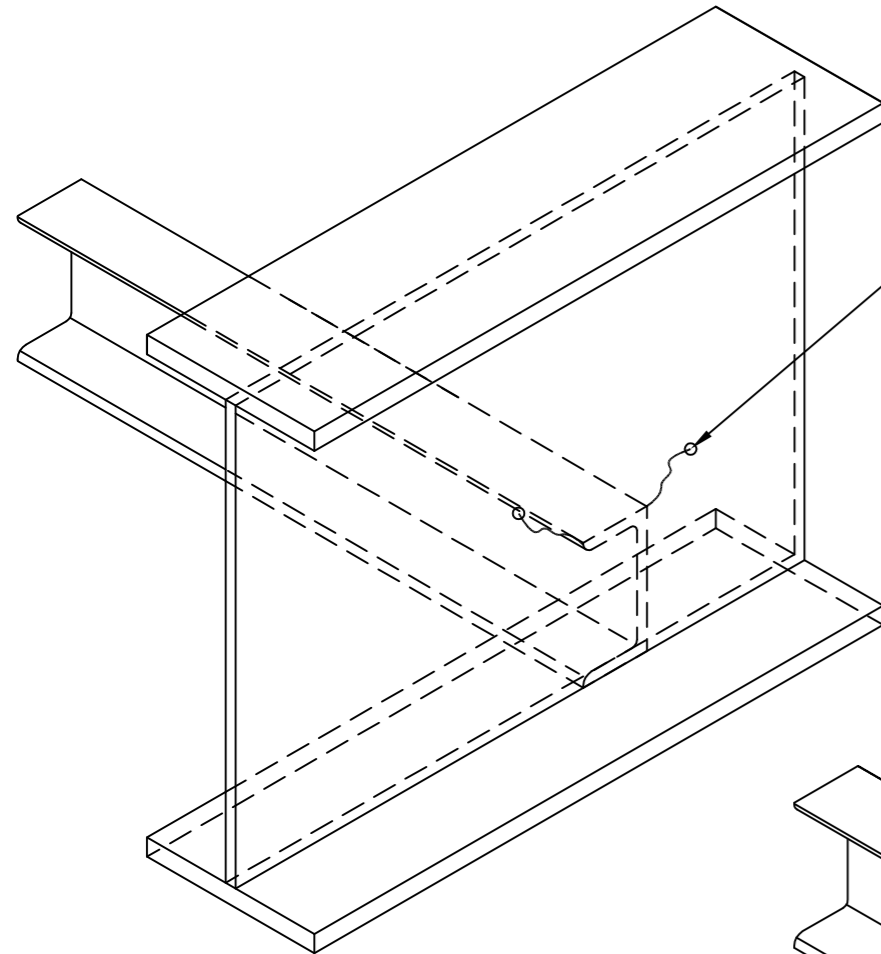


DO NOT SCALE – IF IN DOUBT ASK

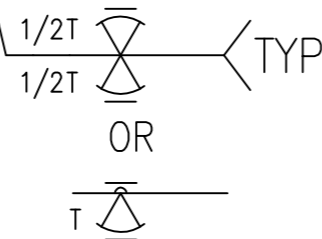
ALL DIMENSIONS IN MILLIMETRES  
TOLERANCES CLASS II UNLESS  
OTHERWISE SPECIFIED  
WELD SYMBOLS TO AS1101.3-1987

**NOTES:**

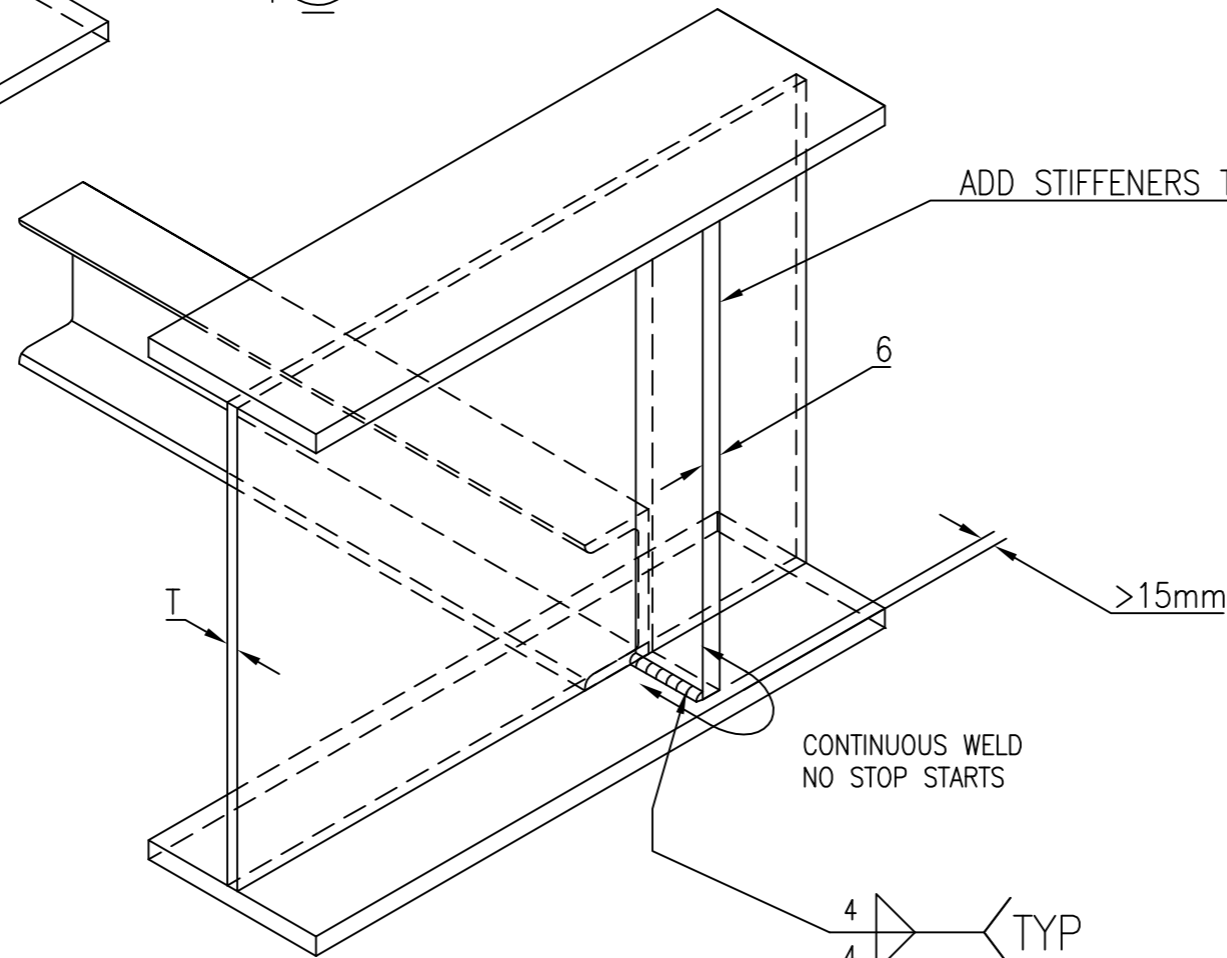
1. WELDING OF STEEL SECTIONS TO COMPLY WITH AS/NZS1554 PART 1(CATEGORY SP)
  - WELDING AND JOINT PREP. TO COMPLY WITH SECTION 4.
  - WELDER TO BE CURRENTLY CERTIFIED TO CLAUSE 4.11.2 IN APPROPRIATE POSITIONS AND TECHNIQUES USED. (ALL POSITIONS AND STEELS UP TO CLASS 3 MIN.)
  - WELDING CONSUMABLES TO COMPLY WITH SECTION 4.5 FOR THE TYPE AND GRADE OF MATERIALS USED.
  - INSPECTION TO BE CARRIED OUT AS PER SECTION 7.
2. CHASSIS MATERIAL TO BE IDENTIFIED BEFORE REPAIR  
ADDITIONAL MATERIAL TO BE EQUIVALENT
3. REMOVE ALL BURRS AND SHARP EDGES, DRESS WELD TERMINATIONS
4. ENSURE WELDING COMPATIBILITY OF MATERIAL.  
THIS REPAIR IS ONLY SUITABLE FOR CHASSIS MATERIAL UP TO 350 MPa YIELD. CONSULT AN ENGINEER WITH THE CHASSIS CATEGORY IF HIGHER YIELD MATERIAL IS USED
5. STEEL PLATE TO MEET AS/NZS 3678 &/OR 3679 OR EQUIVELANT (UNLESS SPECIFIED)



WEB CRACKS  
GRIND OUT, DRILL  $\phi 3$ mm HOLE  
AT END OF CRACK AND RE-WELD



WEB CRACK DETAIL



ADD STIFFENERS TO OUTSIDE OF WEB

CONTINUOUS WELD  
NO STOP STARTS

REINFORCEMENT DETAIL

WELD SYMBOLS TO AS/NZS 1554.1

SYMBOL	JOINT	TABLE
	B-C2a	E1
	B-C3	E1
	F1	E3

C		
B	09/07/19	UPDATE FOR ISSUE IN NZTA VIRM
A		FIRST ISSUE TO CLIENT
ISSUE DATE	CHANGES MADE	BY

WORKSHOP	
OWNER	
MAKE	MODEL
CERTIFIER	CERT. No.
JOB #	



N7 Truck Trailer Manufacturers Federation Inc

CHASSIS WEB CRACKS AT CHANNEL CROSSMEMBER JOINT  
MATERIAL YIELD < 350 MPa

4 – MRCP – C006

Sheet: 1/1

Drawn: R.F.	Issue: B	Chkd:
Date: 30/10/2015	Date:	

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Job: 12726

Ref: MRCP-C006

Scale: NTS

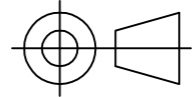
Date: 30/10/2015

Date:



DRAWING LIMITATIONS:

CRACKS IN CHASSIS WEB ONLY  
EXCLUDES ALL FLANGE CRACKS

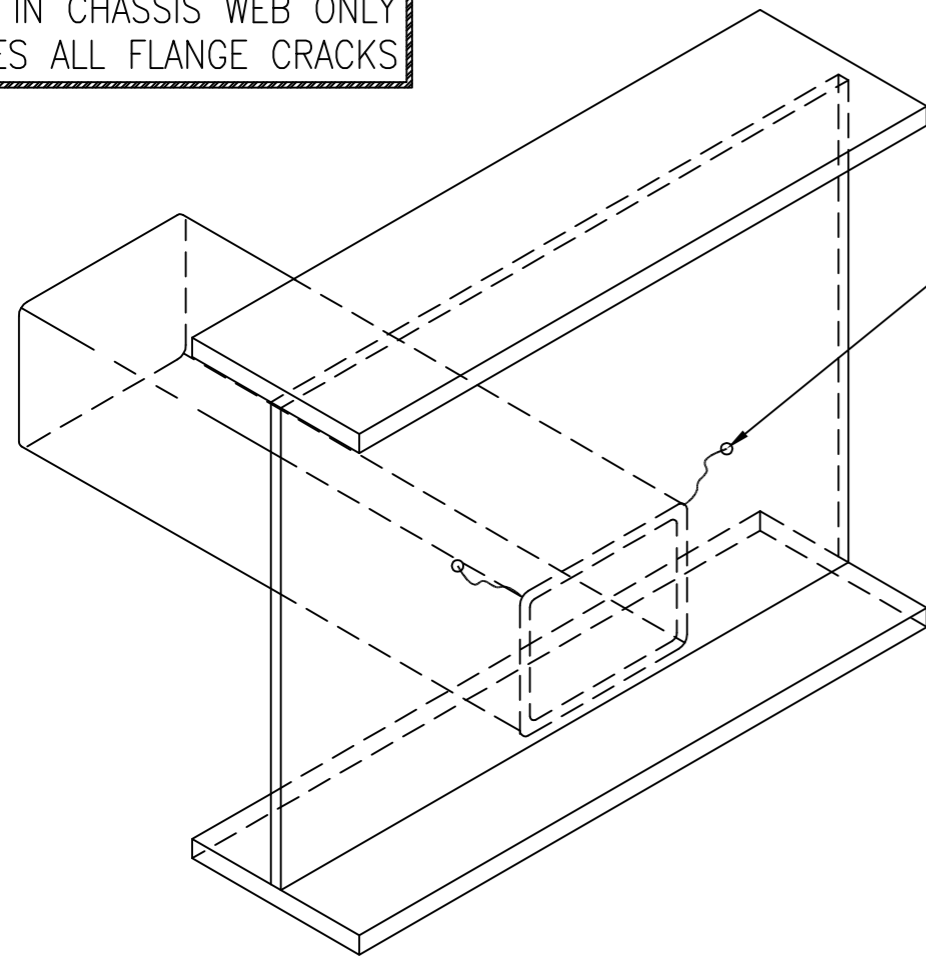


DO NOT SCALE – IF IN DOUBT ASK

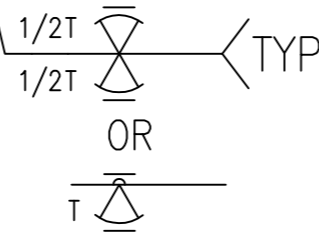
ALL DIMENSIONS IN MILLIMETRES  
TOLERANCES CLASS II UNLESS  
OTHERWISE SPECIFIED  
WELD SYMBOLS TO AS1101.3-1987

NOTES:

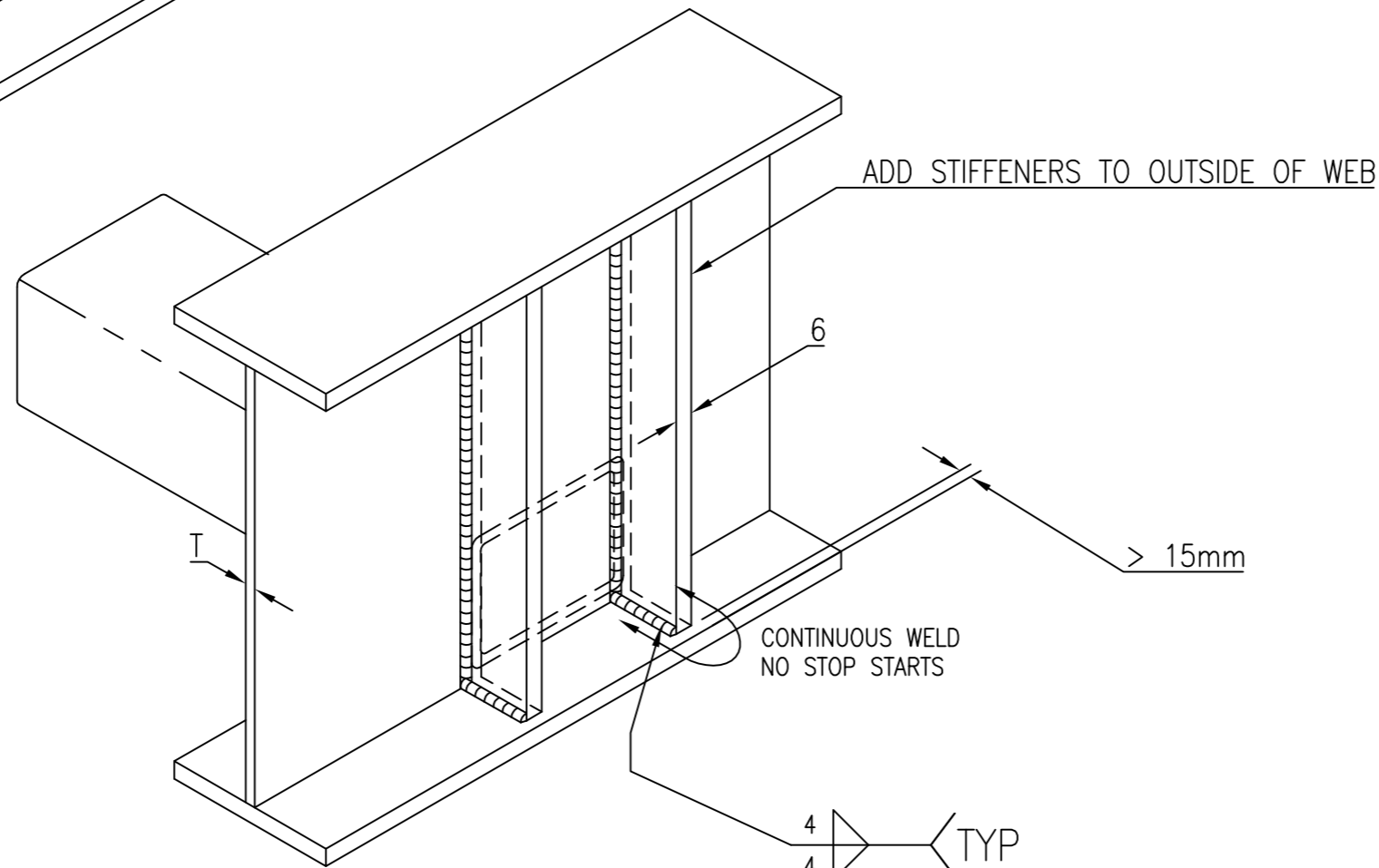
1. WELDING OF STEEL SECTIONS TO COMPLY WITH AS/NZS1554 PART 1(CATEGORY SP)
  - WELDING AND JOINT PREP. TO COMPLY WITH SECTION 4.
  - WELDER TO BE CURRENTLY CERTIFIED TO CLAUSE 4.11.2 IN APPROPRIATE POSITIONS AND TECHNIQUES USED. (ALL POSITIONS AND STEELS UP TO CLASS 3 MIN.)
  - WELDING CONSUMABLES TO COMPLY WITH SECTION 4.5 FOR THE TYPE AND GRADE OF MATERIALS USED.
  - INSPECTION TO BE CARRIED OUT AS PER SECTION 7.
2. CHASSIS MATERIAL TO BE IDENTIFIED BEFORE REPAIR  
ADDITIONAL MATERIAL TO BE EQUIVALENT
3. REMOVE ALL BURRS AND SHARP EDGES, DRESS WELD TERMINATIONS
4. ENSURE WELDING COMPATIBILITY OF MATERIAL.  
THIS REPAIR IS ONLY SUITABLE FOR CHASSIS MATERIAL UP TO 350 MPa YIELD. CONSULT AN ENGINEER WITH THE CHASSIS CATEGORY IF HIGHER YIELD MATERIAL IS USED
5. STEEL PLATE TO MEET AS/NZS 3678 &/OR 3679 OR EQUIVALENT (UNLESS SPECIFIED)



WEB CRACKS  
GRIND OUT, DRILL  $\phi 3\text{mm}$  HOLE  
AT END OF CRACK AND RE-WELD



WEB CRACK DETAIL



REINFORCEMENT DETAIL

WELD SYMBOLS TO AS/NZS 1554.1

SYMBOL	JOINT	TABLE
	B-C2a	E1
	B-C3	E1
	F1	E3

C		
B	09/07/19	UPDATE FOR ISSUE IN NZTA VIRM
A		FIRST ISSUE TO CLIENT
ISSUE	DATE	CHANGES MADE
		BY

WORKSHOP	
OWNER	
MAKE	MODEL
CERTIFIER	CERT. No.
JOB #	



N7 Truck Trailer Manufacturers Federation Inc

CHASSIS WEB CRACKS AT SHS/RHS CROSSMEMBER JOINT  
MATERIAL YIELD < 350 MPa

4 – MRCP – C005

Sheet: 1/1

Drawn: R.F.	Issue: B	Chkd:
Date: 30/10/2015	Date:	

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Job: 12726

Ref: MRCP-C005

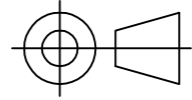
Scale: NTS

Date: 30/10/2015

Date:

DRAWING LIMITATIONS:

CRACKS IN CHASSIS WEB ONLY  
CRACK LENGTH < 30mm

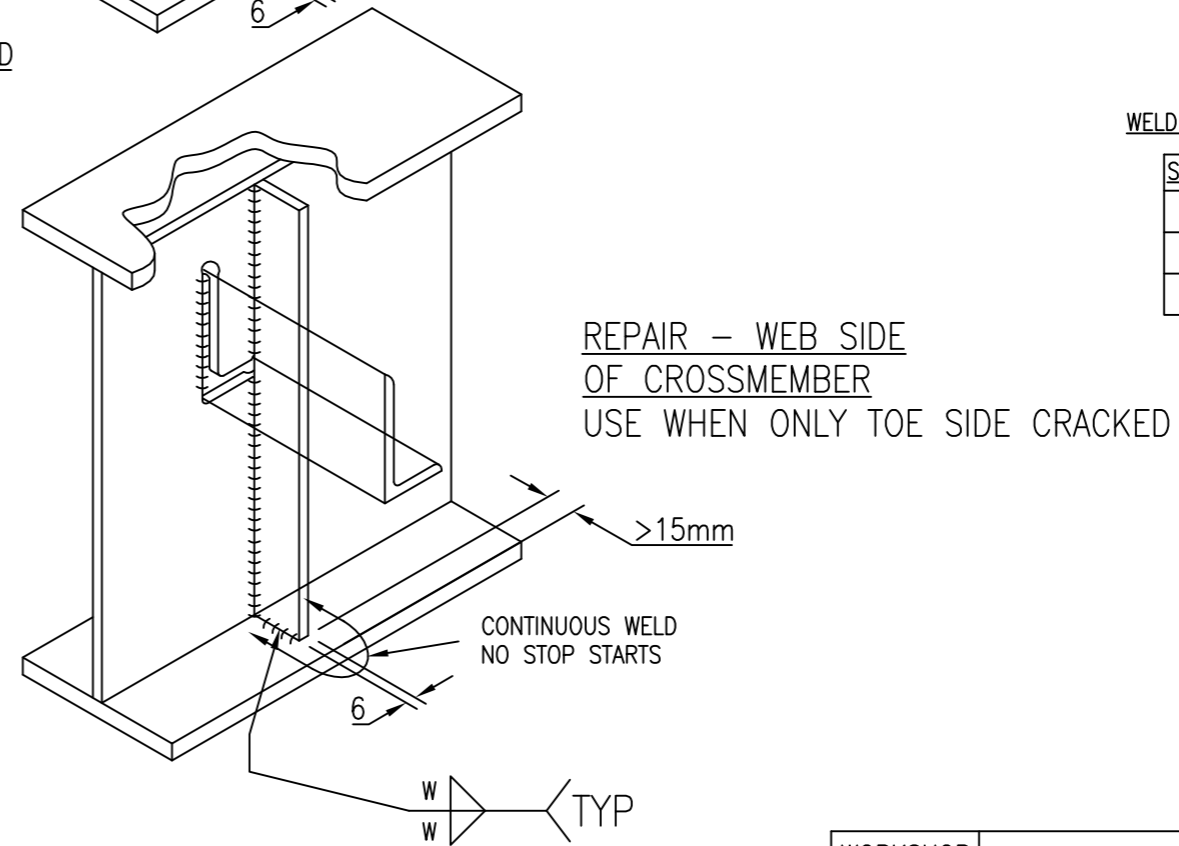
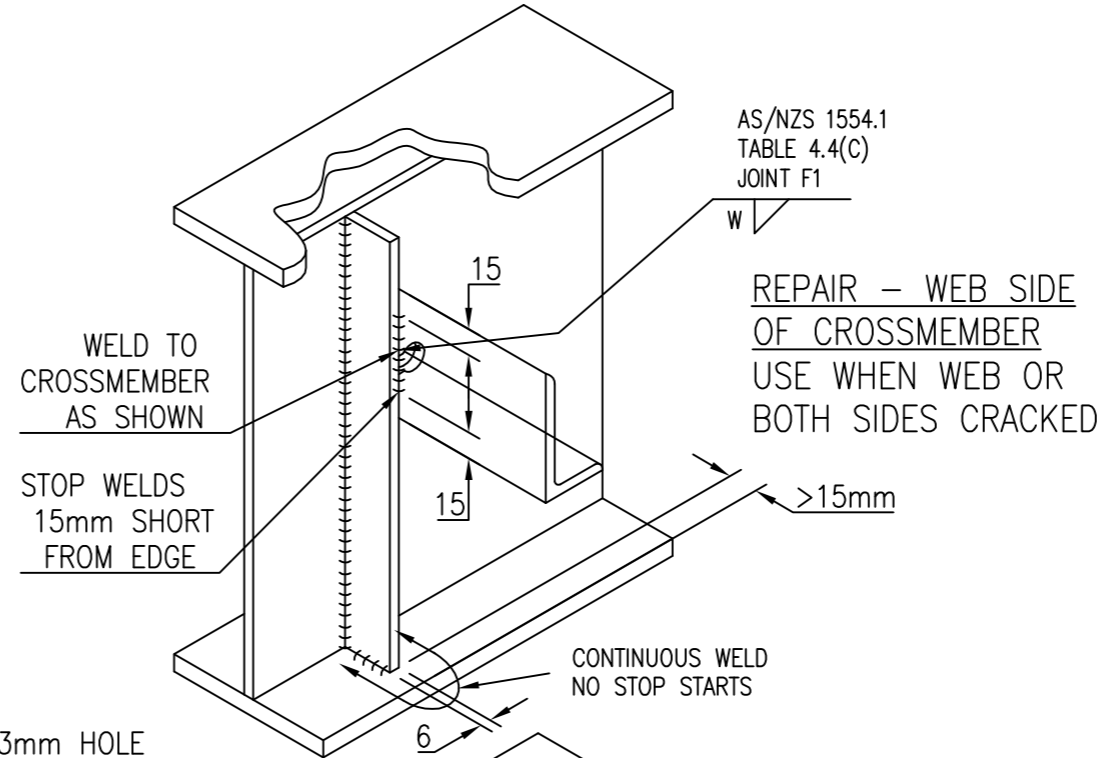
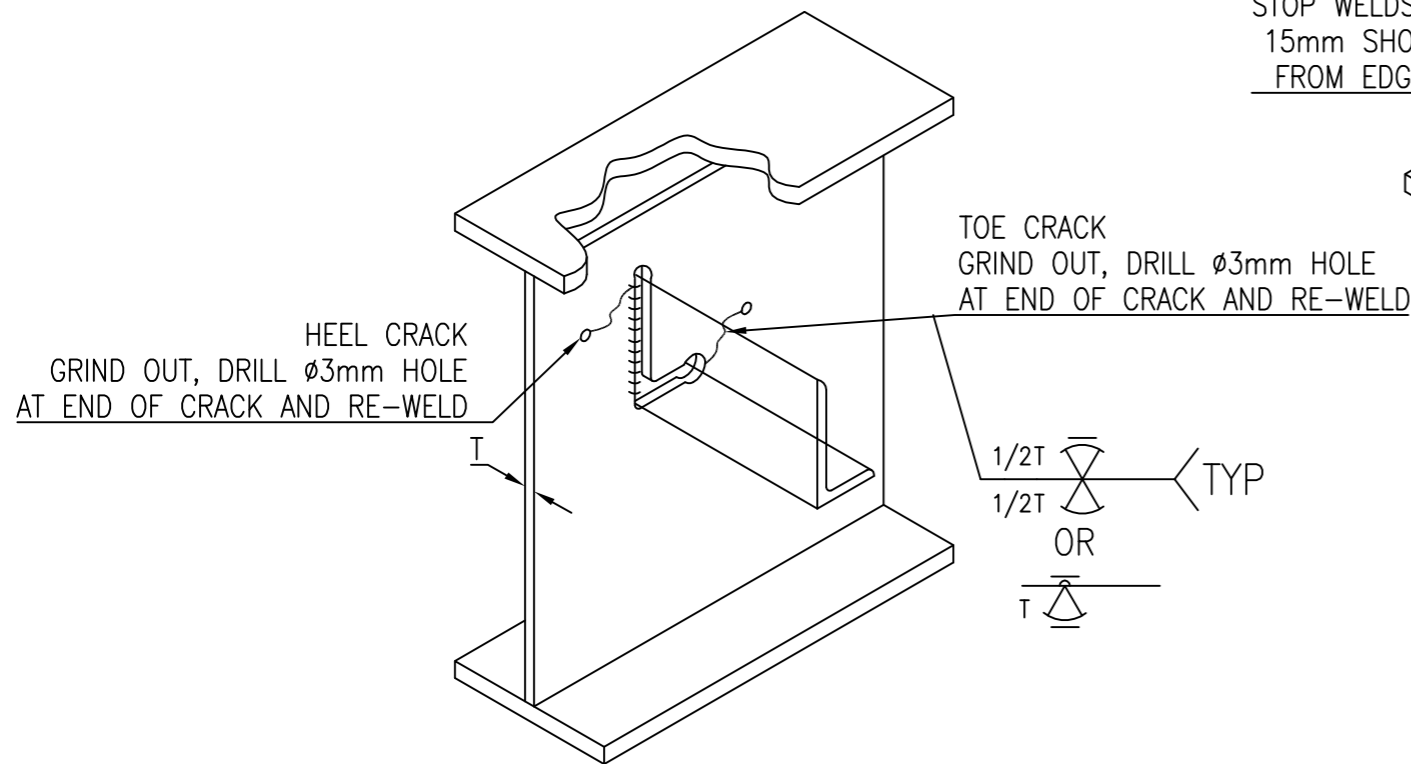


DO NOT SCALE – IF IN DOUBT ASK

ALL DIMENSIONS IN MILLIMETRES  
TOLERANCES CLASS II UNLESS  
OTHERWISE SPECIFIED  
WELD SYMBOLS TO AS1101.3-1987

NOTES:

1. WELDING OF STEEL SECTIONS TO COMPLY WITH AS/NZS1554 PART 1(CATEGORY SP)
  - WELDING AND JOINT PREP. TO COMPLY WITH SECTION 4.
  - WELDER TO BE CURRENTLY CERTIFIED TO CLAUSE 4.11.2 IN APPROPRIATE POSITIONS AND TECHNIQUES USED. (ALL POSITIONS AND STEELS UP TO CLASS 3 MIN.)
  - WELDING CONSUMABLES TO COMPLY WITH SECTION 4.5 FOR THE TYPE AND GRADE OF MATERIALS USED.
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2. CHASSIS MATERIAL TO BE IDENTIFIED BEFORE REPAIR  
ADDITIONAL MATERIAL TO BE EQUIVALENT
3. REMOVE ALL BURRS AND SHARP EDGES, DRESS WELD TERMINATIONS
4. ENSURE WELDING COMPATIBILITY OF MATERIAL.  
THIS REPAIR IS ONLY SUITABLE FOR CHASSIS MATERIAL UP TO 350 MP<sub>a</sub> YIELD. CONSULT AN ENGINEER WITH THE CHASSIS CATEGORY IF HIGHER YIELD MATERIAL IS USED
5. STEEL PLATE TO MEET AS/NZS 3678 &/OR 3679 OR EQUIVALENT (UNLESS SPECIFIED)



WELD SYMBOLS TO AS/NZS 1554.1

SYMBOL	JOINT	TABLE
	B-C2a	E1
	B-C3	E1
	F1	E3

WORKSHOP			
OWNER			
MAKE		MODEL	
CERTIFIER		CERT. No.	
JOB #			

C		
B	09/07/19	UPDATED FOR ISSUE IN NZTA VIRM
A		FIRST ISSUE TO CLIENT
ISSUE DATE	CHANGES MADE	BY



N7 Truck Trailer Manufacturers Federation Inc.

WEB CRACKS AT X-MEMBER CUTOUTS  
ANGLE CROSSMEMBER AND CUTOUT. MATERIAL YIELD < 350 MP<sub>a</sub>

4 – MRCP – C003

Sheet: 2/3

Drawn: R.F.	Issue: B	Chkd:
Date: 2/11/2015	Date:	

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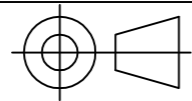
Job: 12726

Ref: MRCP-C003

Scale: NTS

Date: 2/11/2015

Date:



DO NOT SCALE – IF IN DOUBT ASK

ALL DIMENSIONS IN MILLIMETRES  
TOLERANCES CLASS II UNLESS  
OTHERWISE SPECIFIED  
WELD SYMBOLS TO AS1101.3-1987

**DRAWING LIMITATIONS:**

CROSSMEMBER AND GUSSET CRACKS ONLY  
CHASSIS WEB, CHASSIS FLANGE OR CHASSIS  
WELDS ARE EXPRESSLY EXCLUDED

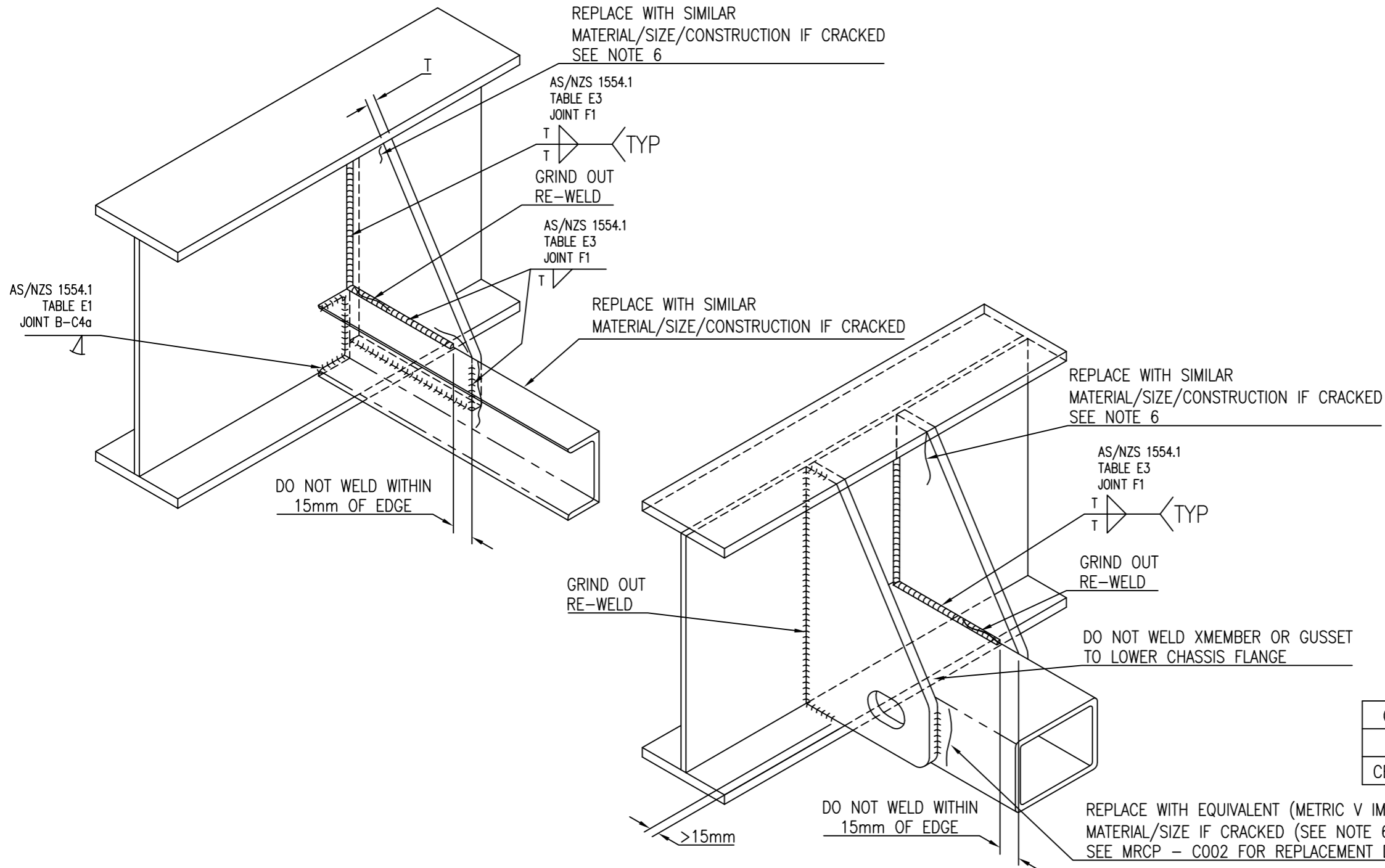
**NOTES:**

1. WELDING OF STEEL SECTIONS TO COMPLY WITH AS/NZS1554 PART 1(CATEGORY SP)
  - WELDING AND JOINT PREP. TO COMPLY WITH SECTION 4.
  - WELDER TO BE CURRENTLY CERTIFIED TO CLAUSE 4.11.2 IN APPROPRIATE POSITIONS AND TECHNIQUES USED.
  - WELDING CONSUMABLES TO COMPLY WITH SECTION 4.5 FOR THE TYPE AND GRADE OF MATERIALS USED.
  - INSPECTION TO BE CARRIED OUT AS PER SECTION 7.
2. RHS TO COMPLY WITH AS 1163, GRADE 350 OR EQUIVALENT
3. STEEL SECTIONS MEET AS/NZS 3678 &/OR 3679, OR EQUIVALENT. (UNLESS SPECIFIED)
4. REMOVE ALL BURRS AND SHARP EDGES, DRESS WELD TERMINATIONS
5. ENSURE WELDING COMPATIBILITY OF MATERIAL. THIS REPAIR IS ONLY SUITABLE FOR CHASSIS MATERIAL UP TO 350 MPa YIELD. CONSULT AN ENGINEER WITH THE CHASSIS CATEGORY IF HIGHER YIELD MATERIAL IS USED
6. ANY WELDED COMPONENT REMOVED FROM THE CHASSIS MUST BE REMOVED USING A CUTTING WHEEL, DISC OR OTHER ABRASIVE CUTTING DEVICE

NO THERMAL CUTTING TOOLS TO BE USED  
THIS EXCLUSION INCLUDES BUT IS NOT LIMITED TO:

- OXY-FUEL TORCHES
- ARC-AIR TORCHES
- PLASMA CUTTERS

ATTACHMENT AREA SURFACE TO BE CAREFULLY EXAMINED FOR CRACKS AFTER REMOVAL. ANY CRACKS FOUND TO BE REFERRED TO AN ENGINEER WITH THE CHASSIS CATEGORY



OWNER			
MAKE		MODEL	
CERTIFIER		CERT. No.	

C			
B	09/07/19	UPDATE FOR ISSUE IN NZTA VIRM	
A		FIRST ISSUE TO CLIENT	
ISSUE	DATE	CHANGES MADE	BY

**ttmf**  
N7 Truck Trailer Manufacturers Federation Inc

Chassis Crossmember or Gusset Crack  
MATERIAL YIELD < 350 MPa

4 – MRCP – C004

Sheet: 1/1

Drawn: R.F.

Issue: B

Chkd:

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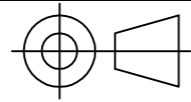
Job: 12726

Ref: MRCP-C004

Scale: NTS

Date: 8/4/2014

Date:

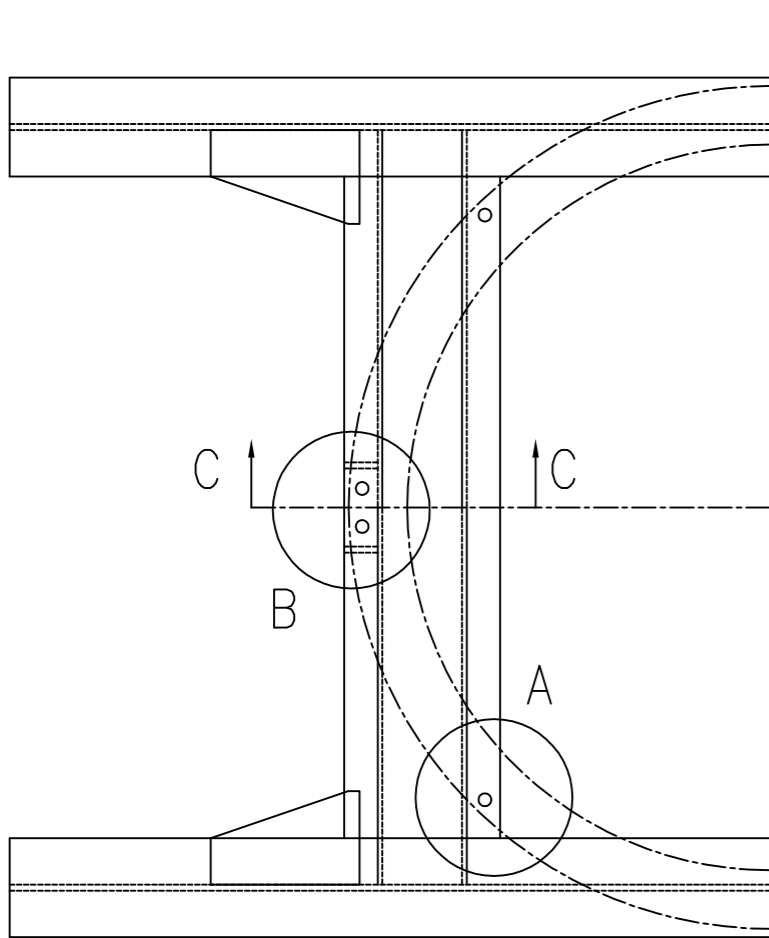


DO NOT SCALE – IF IN DOUBT ASK

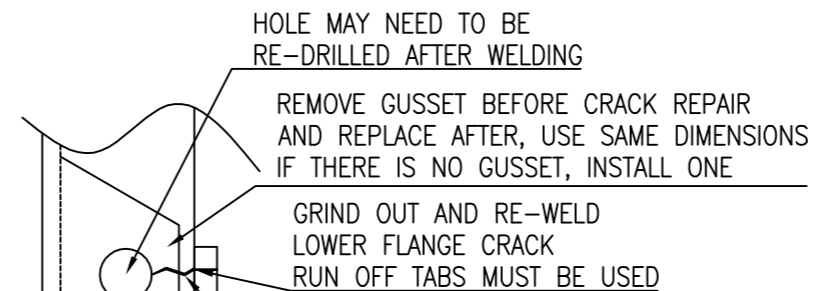
ALL DIMENSIONS IN MILLIMETRES  
TOLERANCES CLASS II UNLESS  
OTHERWISE SPECIFIED  
WELD SYMBOLS TO AS1101.3-1987

**DRAWING LIMITATIONS:**

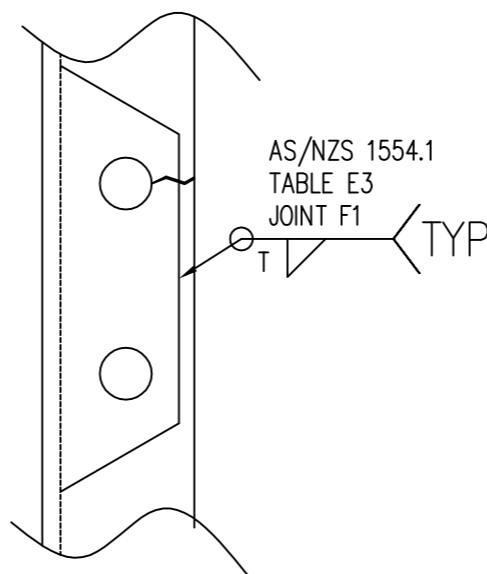
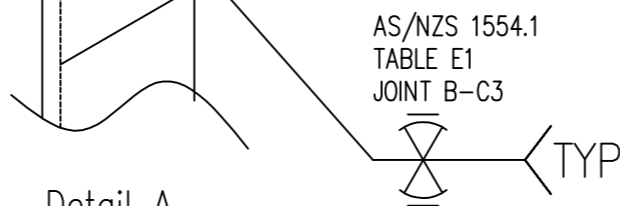
TOES DOWN CHANNEL CROSSMEMBERS ONLY  
BALLRACE SUPPORT CROSSMEMBER ONLY



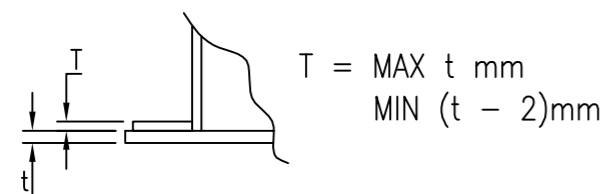
1/2 PLAN VIEW



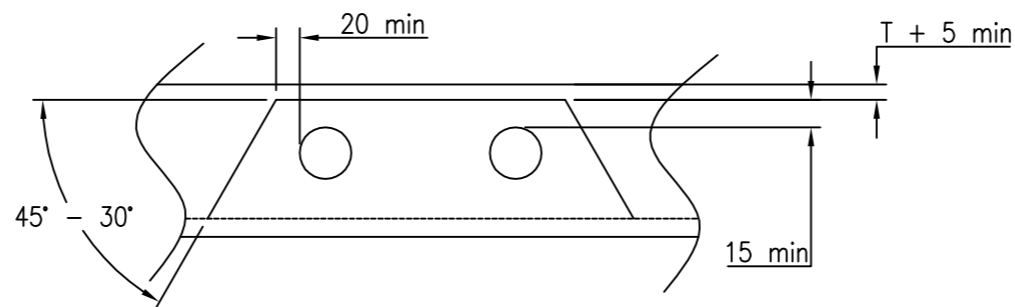
Detail A



Detail B



SECTION C-C



GUSSET DIMENSIONS

**NOTES:**

- WELDING OF STEEL SECTIONS TO COMPLY WITH AS/NZS1554 PART 1(CATEGORY SP)
  - WELDING AND JOINT PREP. TO COMPLY WITH SECTION 4.
  - WELDER TO BE CURRENTLY CERTIFIED TO CLAUSE 4.11.2 IN APPROPRIATE POSITIONS AND TECHNIQUES USED.
  - WELDING CONSUMABLES TO COMPLY WITH SECTION 4.5 FOR THE TYPE AND GRADE OF MATERIALS USED.
  - INSPECTION TO BE CARRIED OUT AS PER SECTION 7.
- RHS TO COMPLY WITH AS 1163, GRADE 350 OR EQUIVALENT
- STEEL SECTIONS MEET AS/NZS3679 &/OR 3679, OR EQUIVALENT. (UNLESS SPECIFIED)
- REMOVE ALL BURRS AND SHARP EDGES, DRESS WELD TERMINATIONS
- ENSURE WELDING COMPATIBILITY OF MATERIAL. THIS REPAIR IS ONLY SUITABLE FOR CHASSIS MATERIAL UP TO 350 MPa YIELD. CONSULT AN ENGINEER WITH THE CHASSIS CATEGORY IF HIGHER YIELD MATERIAL IS USED
- ANY WELDED COMPONENT REMOVED FROM THE CHASSIS MUST BE REMOVED USING A CUTTING WHEEL, DISC OR OTHER ABRASIVE CUTTING DEVICE
  - NO THERMAL CUTTING TOOLS TO BE USED THIS EXCLUSION INCLUDES BUT IS NOT LIMITED TO:
    - OXY-FUEL TORCHES
    - ARC-AIR TORCHES
    - PLASMA CUTTERS
  - ATTACHMENT AREA SURFACE TO BE CAREFULLY EXAMINED FOR CRACKS AFTER REMOVAL. ANY CRACKS FOUND TO BE REFERRED TO AN ENGINEER WITH THE CHASSIS CATEGORY

OWNER			
MAKE		MODEL	
CERTIFIER		CERT. No.	

C			
B	09/07/19	UPDATE FOR ISSUE IN NZTA VIRM	
A		FIRST ISSUE TO CLIENT	
ISSUE	DATE	CHANGES MADE	BY

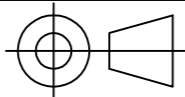
ITEM	QTY	MATERIAL	DESCRIPTION	DRAWING
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**ttmf**  
N7 Truck Trailer Manufacturers Federation Inc.

**CRACKS AT BALLRACE BOLT HOLES  
MATERIAL YIELD < 350 MPa**

4 – MRCP – C010

Sheet: 1/1



DO NOT SCALE – IF IN DOUBT ASK

ALL DIMENSIONS IN MILLIMETRES  
TOLERANCES CLASS II UNLESS  
OTHERWISE SPECIFIED  
WELD SYMBOLS TO AS1101.3-1987

**DRAWING LIMITATIONS:**  
CROSSMEMBER AND GUSSET CRACKS ONLY  
OR CROSSMEMBER REPLACEMENT  
CHASSIS WEB, CHASSIS FLANGE OR CHASSIS  
WELDS ARE EXPRESSLY EXCLUDED

**NOTES:**

1. WELDING OF STEEL SECTIONS TO COMPLY WITH AS/NZS1554 PART 1(CATEGORY SP)

MATERIAL YIELD STRENGTH < 1000Mpa, > 500Mpa TO COMPLY WITH: PART 4[CATEGORY SP OR FP(SPECIFIED)]

-WELDING AND JOINT PREP. TO COMPLY WITH SECTION 4.  
-WELDER TO BE CURRENTLY CERTIFIED TO CLAUSE 4.11.2 IN APPROPRIATE POSITIONS AND TECHNIQUES USED.  
-WELDING CONSUMABLES TO COMPLY WITH SECTION 4.5 FOR THE TYPE AND GRADE OF MATERIALS USED.  
-INSPECTION TO BE CARRIED OUT AS PER SECTION 7.

2. RHS TO COMPLY WITH AS 1163, GRADE 350 OR EQUIVALENT, AND TO MEET CHARPY IMPACT REQUIREMENTS AS STATED IN NZS 5446:1991 APPENDIX A2. (UNLESS SPECIFIED)

3. STEEL PLATE MEET AS/NZS 3678 &/OR 3679 OR EQUIVALENT. (UNLESS SPECIFIED)

4. REMOVE ALL BURRS AND SHARP EDGES, DRESS WELD TERMINATIONS

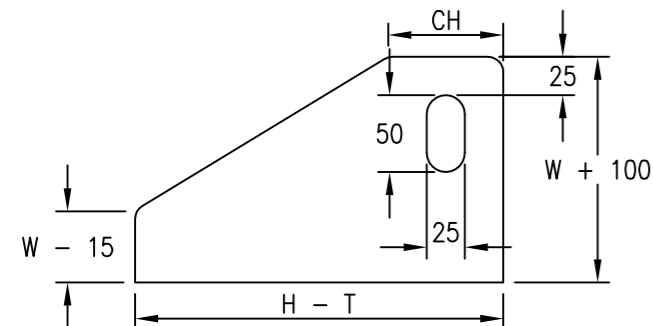
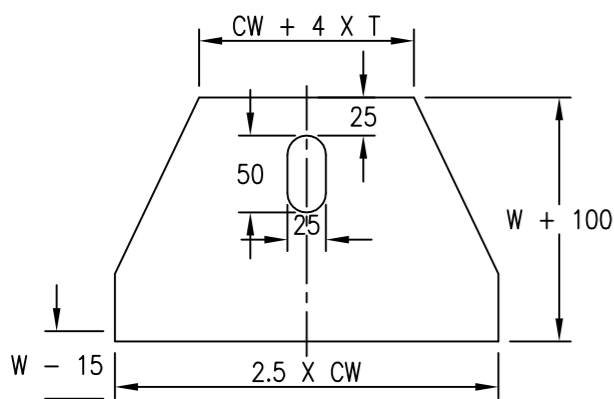
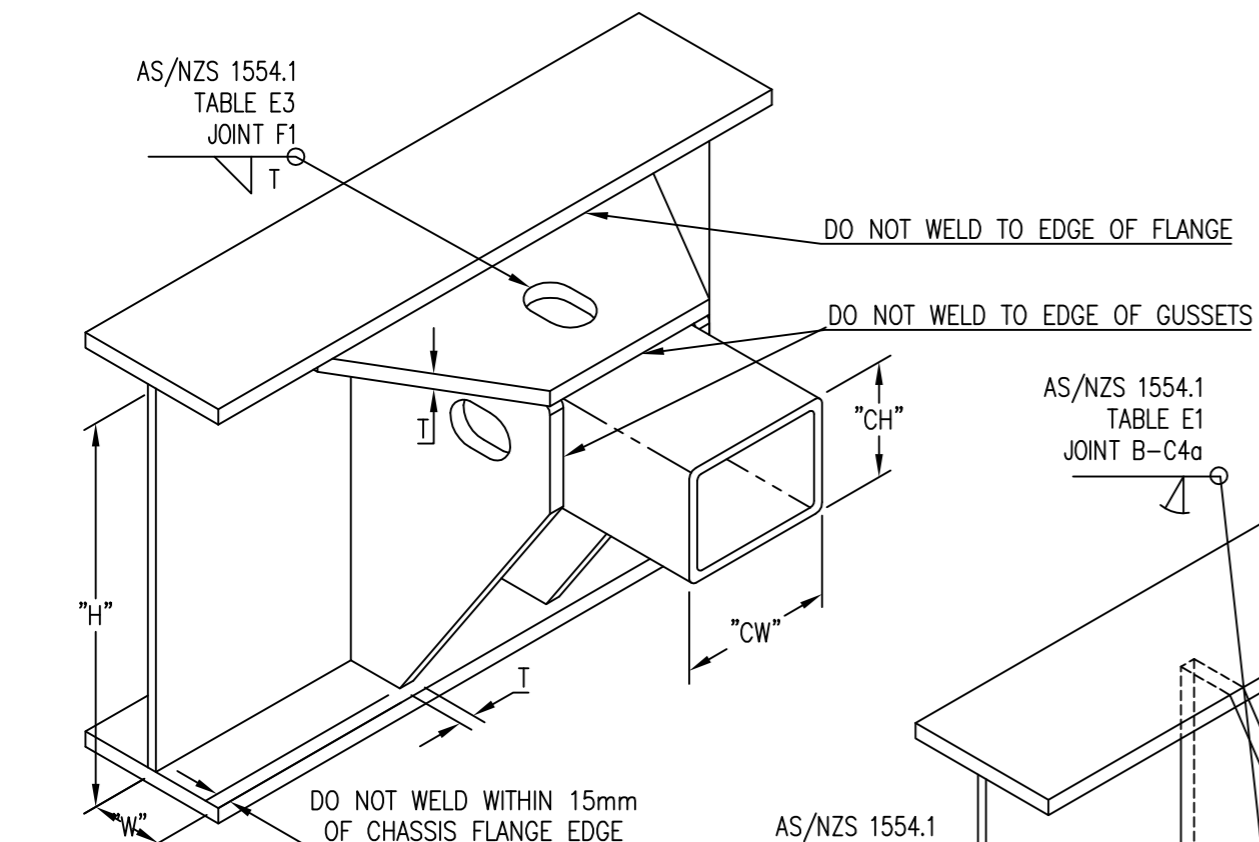
5. ENSURE WELDING COMPATIBILITY OF MATERIAL. THIS REPAIR IS ONLY SUITABLE FOR CHASSIS MATERIAL UP TO 350 MPa YIELD. CONSULT AN ENGINEER WITH THE CHASSIS CATEGORY IF HIGHER YIELD MATERIAL IS USED

6. ANY WELDED COMPONENT REMOVED FROM THE CHASSIS MUST BE REMOVED USING A CUTTING WHEEL, DISC OR OTHER ABRASIVE CUTTING DEVICE

NO THERMAL CUTTING TOOLS TO BE USED THIS EXCLUSION INCLUDES BUT IS NOT LIMITED TO:

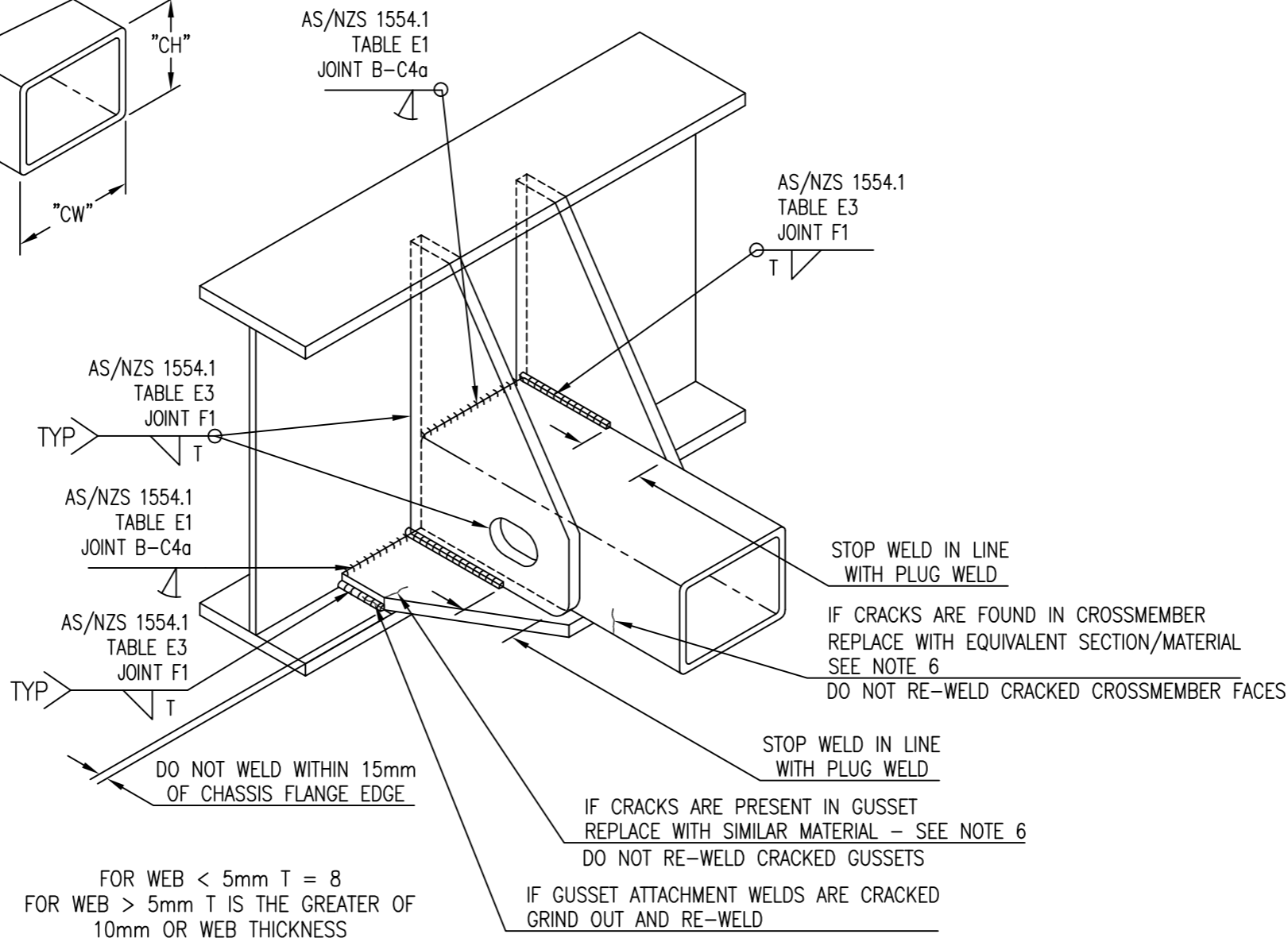
- OXY-FUEL TORCHES
- ARC-AIR TORCHES
- PLASMA CUTTERS

ATTACHMENT AREA SURFACE TO BE CAREFULLY EXAMINED FOR CRACKS AFTER REMOVAL. ANY CRACKS FOUND TO BE REFERRED TO AN ENGINEER WITH THE CHASSIS CATEGORY



UNDERSIDE MOUNTING PLATE  
2 REQUIRED PER XMEMBER

CROSSMEMBER GUSSET  
4 REQUIRED PER XMEMBER



FOR WEB < 5mm T = 8  
FOR WEB > 5mm T IS THE GREATER OF  
10mm OR WEB THICKNESS

OWNER			
MAKE		MODEL	
CERTIFIER		CERT. No.	

C			
B	09/07/19	UPDATE FOR ISSUE IN NZTA VIRM	
A		FIRST ISSUE TO CLIENT	
ISSUE DATE	CHANGES MADE		BY

ITEM	QTY	MATERIAL	DESCRIPTION	DRAWING
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**ttmf**  
N7 Truck Trailer Manufacturers Federation Inc

REPLACEMENT OR REPAIR OF TRAILER CROSSMEMBER  
Fy < 350 MPa

4 - MRCP - C002

Sheet: 1/1

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Scale: NTS	Date: 16/9/2015	Date:

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