

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
 690 Walnut Ave. St. 150  
 Vallejo, CA 94592-1133  
 (707) 649-5453  
 (707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.25B**QUALITY ASSURANCE -- NON-CONFORMANCE REPORT****Location:** Changxing Island, Shanghai, P.R. China**Report No:** NCR-000842**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 19-Sep-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0804**Type of problem:**

<b>Welding</b>	<b>Concrete</b>	<b>Other</b>	
<b>Welding</b>	<b>Curing</b>	<b>Procedural</b>	<b>Bridge No:</b> 34-0006
<b>Joint fit-up</b>	<b>Coating</b>	<b>Other</b>	<b>Component:</b> East Tower Lift 3 Elevation 109m
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b>	

**Reference Description:** East Tower Lift 3: Missed MT Crack at 109m**Description of Non-Conformance:**

During the Quality Assurance Magnetic Particle Testing (MT) review of welds located on North Tower Lift-3, this Quality Assurance Inspector (QA) discovered the following issue:

- One (1) longitudinal toe crack indication on the weld identified as NSD1-FASA3-1B/E-29.
- The weld is a Complete Joint Penetration (CJP) weld T-joint, joining the Cross Bracing gusset plate to Back fill Plate.
- Details of the indication are as follows:  
 Length = 16mm approximately  
 Y location = 0 mm from the Cross Bracing gusset Plate  
 X location=22mm.

The indication is clearly marked on the material.

- Quality Control (QC) elected to remove the crack by grinding. QA inspector performed MT during grinding and observed the crack had disappeared at a depth of approximately 7mm and would require repair by welding.
- North Tower Lift-3 is located at Heavy dock, Tower Trial Assembly .
- The Notice of Witness Inspection Number (NWIT) is 06717.
- This weld is within an area previously tested and accepted by ZPMC (QC) personnel. ZPMC's QC personnel are required to perform 100% MT inspection of these welds.

For further information, please see the pictures below.

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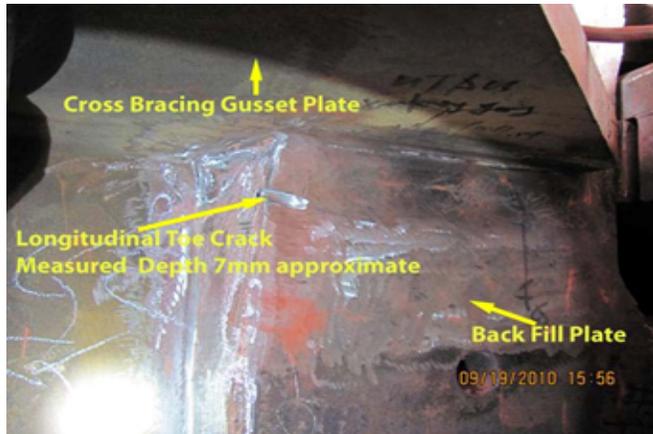
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# QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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### Applicable reference:

Special Provisions Section 8.3 – “Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents.”

AWS D1.5 (02) Section 6.26.2 Welds that subject to RT or MT in addition to visual inspection shall have no cracks...

**Who discovered the problem:** Raghavendra Reddy  
**Name of individual from Contractor notified:** Bi De Wei  
**Time and method of notification:** 1530Hrs, 09/19/10, Verbal  
**Name of Caltrans Engineer notified:** Sean Eagen  
**Time and method of notification:** 1300, 09/20/10, Verbal

**QC Inspector's Name:** Zhao Chen Sun

**Was QC Inspector aware of the problem:** Yes No

**Contractor's proposal to correct the problem:**

N/A

### Comments:

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

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**Inspected By:** Ng,Michael

QA Inspector

**Reviewed By:** Devey,Jim

SMR

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**DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge**  
666 Feng Bin Road Room 708, Changxing Island  
Shanghai 201913 PR China  
Tel: 021-56856666 ext 207061 Fax:

## NON-CONFORMANCE REPORT TRANSMITTAL

**To:** AMERICAN BRIDGE/FLUOR, A JV  
375 BURMA ROAD  
OAKLAND CA 95607

**Date:** 21-Sep-2010

**Contract No:** 04-0120F4  
04-SF-80-13.2 / 13.9

**Dear:** Mr. Charles Kanapicki

**Job Name:** SAS Superstructure

**Attention:** Mr. Thomas Nilsson Project/Fabrication Manager

**Document No:** 05.03.06-000799

**Subject:** NCR No. ZPMC-0804

**Reference Description:** East Tower Lift 3: Missed MT Crack at 109m

The attached Non-Conformance Report describes an occurrence where the contractor did not comply with a requirement of the contract document as indicated below:

- Material or Workmanship not in conformance with contract documents.
- Quality Control (QC) not performed in conformance with contract documents.
- Recurring QC issue that constitutes a systematic problem in quality control.
- Non-Conformance Resolved.

**Material Location:** Tower **Lift:** 03

### Remarks:

During the Quality Assurance Magnetic Particle Testing (MT) review of welds located on North Tower Lift-3, this Quality Assurance Inspector (QA) discovered the following issue:

- One (1) longitudinal toe crack indication on the weld identified as NSD1-FASA3-1B/E-29.
  - The weld is a Complete Joint Penetration (CJP) weld T-joint, joining the Cross Bracing gusset plate to Back fill Plate.
  - Details of the indication are as follows:
    - Length = 16mm approximately
    - Y location = 0 mm from the Cross Bracing gusset Plate
    - X location=22mm.
- The indication is clearly marked on the material.
- Quality Control (QC) elected to remove the crack by grinding. QA inspector performed MT during grinding and observed the crack had disappeared at a depth of approximately 7mm and would require repair by welding.
  - North Tower Lift-3 is located at Heavy dock, Tower Trial Assembly .
  - The Notice of Witness Inspection Number (NWIT) is 06717.
  - This weld is within an area previously tested and accepted by ZPMC (QC) personnel. ZPMC's QC personnel are required to perform 100% MT inspection of these welds.

For further information, please see the pictures below.

### Action Required and/or Action Taken:

Propose a resolution for this non-conformance and provide documentation that the deficiency has been brought into compliance with the contract requirements. Propose a resolution that addresses the apparent failure of Quality Control to identify the indication. Additionally, provide documentation of the steps taken by the Quality Control Manager to prevent future occurrences.

The response for the resolution of this issue is requested within 7 days.

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# NCT

( Continued Page 2 of 2 )

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**Transmitted by:** Sean Eagen      Transportation Engineer

**Attachments:**    ZPMC-0804

**cc:**    Rick Morrow, Peter Siegenthaler, Brian Boal, Mark Woods, Contract Files, Ching Chao, Bill Casey

**File:** 05.03.06

## NCR PROPOSED RESOLUTION

**To:** CALTRANS - SAS Superstructure  
333 Burma Road  
Oakland CA 94607

**Attention:** Siegenthaler, Peter  
Resident Engineer

**Ref:** 05.03.06-000799

**Subject:** NCR No. ZPMC-0804

**Dated:** 27-Sep-2010

**Contract No.:** 04-0120F4  
04-SF-80-13.2 / 13.9

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000802 Rev: 00

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### Contractor's Proposed Resolution:

**Reference Resolution:** ZPMC has repaired the missed indication and is providing the CWR and NDT performed after the repair to show the weld is acceptable.

ZPMC has repaired the missed indication and is providing the CWR and NDT performed after the repair to show the weld is acceptable. To deal with the number of missed indications ABFJV tracks inspector performance to determine which inspector is responsible for missed indications, a pattern of continued missed indications will result in disciplinary action and potential removal. ZPMC has written an internal NCR to document this incident as well. Based on these actions and acceptable results after repair, ZPMC requests closure of this NCR.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000802R00;

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### Caltrans' comments:

**Status:** CLO

**Date:** 28-Sep-2010

This proposed resolution is acceptable. The documentation received is sufficient and the Department concurs that Non-Conformance ZPMC-0804 is closed.

**Submitted by:** Eagen, Sean

**Attachment(s):**

**Date:** 28-Sep-2010



No. T-171

## LETTER OF RESPONSE

**TO: American Bridge/Flour JV**

**DATE: 2010-9-26**

**REGARDING: NCR-000842(ZPMC-0804)**

ZPMC recently received NCR-000842(ZPMC-0804), it mentioned that CT inspector discovered one linear indication measuring approximately during MT review of welds for Tower cross bracing gusset plate.

ZPMC took the immediate action for the repairing on such position. And now, the component has been green tagged after acceptable NDT.

Here provide the CWR and NDT report to show the welds were sound.

So, we hope CT can take a review and close this NCR.

**ATTACHMENT:**

**NCR-000842(ZPMC-0804)**

**T-CWR686**

**T787-MT-11184 R1**

*zhao jia neng*  
*2010-9-26.*



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge  
666 Feng Bin Road Room 708, Changxing Island  
Shanghai 201913 PR China  
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Date: 21-Sep-2010

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04-SF-80-13.2 / 13.9

Dear: Mr. Charles Kanapicki  
Attention: Mr. Thomas Nilsson Project/Fabrication Manager  
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Job Name: SAS Superstructure  
Document No: 05.03.06-000799

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NCT

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Transmitted by: Sean Eagen      Transportation Engineer

Attachments:    ZPMC-0804

cc:    Rick Morrow, Peter Siegenthaler, Brian Boal, Mark Woods, Contract Files, Ching Chao, Bill Casey

File:    05.03.06

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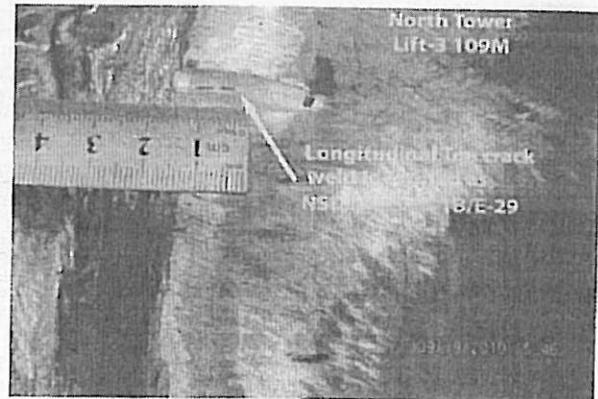
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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



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Time and method of notification: 1530Hrs, 09/19/10, Verbal

Name of Caltrans Engineer notified: Sean Eagen

Time and method of notification: 1300, 09/20/10, Verbal

QC Inspector's Name: Zhao Chen Sun

Was QC Inspector aware of the problem:  Yes  No

Contractor's proposal to correct the problem:

N/A

### Comments:

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By: Ng, Michael

QA Inspector

Reviewed By: Devey, Jim

SMR

车间/Location

OUT SHOP



关键焊缝返修报告  
Critical Welding Repair Report (CWR)

版本  
Rev. No.:

0

项目名称 Project Name:	美国海湾大桥 SFOBB	部件图号 Drawing No.:	NSD1-FASA3-1 B/E	报告编号 Report No.:	T-CWR686
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	Tower(N) 109m cross-bracing plate	NDT 报告编号 NDT Report No.:	T787-MT-11184
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

Description of welding discontinuity:

裂纹返修

Crack repair

List weld No.(焊缝编号) : NSD1-FASA3-1B/E-29

Welder ID No. (焊工编号): 052910

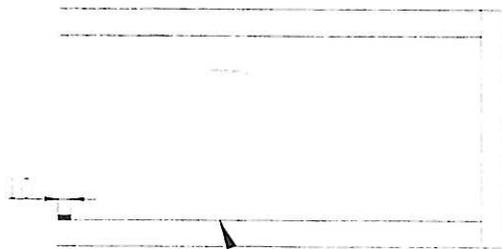
Welding Position(位置) : 4G\_

检验员 (Inspector): Shi Lin *Shi Lin*

日期(Date): 2010.09.19

焊缝返修位置示意图:

Draft of Welding Discontinuity:



WELD NUMBER NSD1-FASA3-1B/E-29

产生原因:

Cause:

1. 火焰加热时, 水汽没有完全的去掉或者这个区域预热不够;
1. Moisture wasn't completely removed during drying operation (preheating) or the area wasn't preheated sufficiently.

车间负责人 (Foreman):

日期 (Date):

2. CJP焊缝裂纹

1. 这次返修时, QC和Leader CWI到现场对打磨, 焊接进行指导和监控工作以保证返修按照处理意见进行;
2. 整个返修的过程, QC和Leader CWI应该有批准CWR的复印件;
3. 去除热影响区域上在各个方向上不小于25mm范围内的油漆;
4. 将杂物以及MT检测遗留的残留物清理干净。然后采用打磨的方法去除裂纹, 打磨前预热至65° C。对于单个裂纹返修, 打磨返修范围清除长度为沿裂纹长度加上超出其每一端50mm, 对于多个裂纹的返修, 打磨返修范围为清除多个裂纹外另加其最外端的每一端加长50mm;
5. 如果打磨时母材损伤, 则在返修前将损伤区域打磨干净;
6. 焊接前按照新的焊接返修工艺准备焊接接头形式;
7. 返修前, VT和MT检测确认返修区域没有裂纹及其他缺陷存在, 同时靠近裂纹的母材也要做MT, 保证没有裂纹延伸到母材。如果在母材上发现裂纹, 则另外需CWR, 且只有当这份另出的CWR批准后才能继续返修;
8. 将杂物以及MT检测遗留的残留物清理干净。按照WPS进行预热和焊接, 预热温度参照下表;
9. 如果打磨深度达到(2/3T+2)mm, 但是缺陷仍然存在, 则停止打磨, 将坡口打磨平滑, 且挖出的凹槽部分两个端头要有1: 1的斜势过渡, 然后按照批准的WPS进行第一个面的焊接, 焊接前需至少160° C的预热。从反面进行打磨直至露出金属光泽, 并对打磨后坡口位置进行100%MT检测, 确保裂纹清洗干净, 然后将坡口打磨平滑, 确保来两个端头有1: 1的斜势过渡, 并按照WPS的要求进行反面的焊接。
10. 焊接后WPS要求进行后热, 后热温度参照下表, 后热时间至少1个小时;
11. 后热后将焊缝逐渐冷却到周围环境温度, 并控制冷却速率不超过50° C每小时;
12. 后热后将修补区域打磨与母材或相邻焊缝平齐;
13. 在焊缝冷却至环境温度至少经过48小时以后进行NDT检查;
14. 返修后根据图纸进行VT, UT和MT检测, 并按照合同10-1.59 “钢结构” 中的“检测和试验” 要求进行附加MT检测。

1. QC and a Lead CWI shall be present, direct and supervise all grinding and welding operations during this repair to ensure the repair is per the disposition requirements.
2. QC and a Lead CWI shall have an approved copy of the CWR in hand prior to the repair.
3. Remove paint ≥25mm in all direction of HAZ prior to MT.
4. Clean the excavation area of all loose debris including MT powder. Preheat to 65° C before removing cracks by grinding and it applied to all the repair process. Repair area shall extend a minimum of 50mm beyond each end of single crack repairs, and 50mm beyond the outermost cracks for multiple crack repairs.
5. If base metal is damaged by grinding, the damaged area shall be ground clean prior to performing weld repair.
6. Prepare excavation in accordance with the New Repair Procedure prior to welding.
7. Before this repair, Verify with VT and MT repair areas are defects free, and also MT shall be performed on the base metal laying abroad cracks to ensure that no cracks were propagated to the base metal. Separate CWR approval is needed if cracks are found in the base metal, and only after this new CWR's approval can continue the repair.
8. Clean excavation area of all loose debris including MT powder after excavation. Preheat and weld according to repair WPS, the preheat in accordance with the following table.

BASE METAL THICKNESS	MINIMUM PREHEAT	MINIMUM POSTHEAT
□ T ≤ 40mm	160°C	160°C
▣ 40mm < T	200°C	200°C

9. If a crack still present and excavation have reached (2/3T+2)mm maximum, the grinding work shall be ceased. Prepare excavation that all metal is ground clean to a smooth, shiny metal finish and starts and stops are tapered to a 1:1 slope. Weld first side of repair according to approved WPS, and the preheat temperature be 160° C at least. Grind from the opposite side until sound weld metal is reached and perform 100% MT of excavation to ensure no crack exists. Prepare excavation that all metal is ground clean to a smooth, shiny metal finish and starts and stops are tapered to a 1:1 slope. Weld opposite side of repair according to approved WPS.
10. Perform post weld heating according to repair WPS, the postheat in accordance with the following table for one hour minimum.

BASE METAL THICKNESS	MINIMUM PREHEAT	MINIMUM POSTHEAT
□ T ≤ 40mm	160°C	160°C
▣ 40mm < T	200°C	200°C

11. Allow the weld to cool to ambient temperature gradually. Control cooling rate after PWHT to no more than 50° C per hour.
12. Grind the repaired area flush with base metal or the adjacent weld after post weld heating.
13. Wait 48 hours at least after the repair area has cooled to ambient temperature before performing NDT.
14. Perform VT, UT and MT inspection to all repair area according to Contract Drawings along with all additional NDT required by the applicable notes Special Provision Section 10-1.59 'Steel Structure', subsection 'inspection testing'.

工艺:

Technical Engineer:

Verified by:

B239

审核:

Approved By:

9-2010

日期:

Date:



# 关键焊缝返修报告

版本  
Rev. No.:-

Critical Welding Repair Report (CWR)

0

项目名称 Project Name:	美国海湾大桥 SFOBB	部件图号 Drawing No.:	<u>NSD1-FASA3-1B/E</u>	报告编号 Report No.:	T-CWR686
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	Tower(N) 109m cr oss bracing plat e	NDT 报告编号 NDT Report No.:	T787-MT-11184
项目编号 Project No.:	ZP06-787				

纠正措施:

Corrective Action to Prevent Re-occurrence:

1. 返修前, QC确认有效的预热, 以将水汽全部去除。

1. QC shall verify sufficient preheat has been applied, to remove moisture, prior to welding.

车间负责人 (Foreman):

日期 (Date):

参照的WPS编号 Repair WPS No.:	<input type="checkbox"/> WPS-345-SMAW-1G(1F)- Repair <input type="checkbox"/> WPS-345-SMAW-2G(2F)-Repair <input type="checkbox"/> WPS-345-SMAW-3G(3F)- Repair <input type="checkbox"/> WPS-345-SMAW-4G(4F)- Repair <input type="checkbox"/> WPS-345-SMAW-1G(1F)-FCM-Repair <input type="checkbox"/> WPS-345-SMAW-2G(2F)-FCM-Repair <input type="checkbox"/> WPS-345-SMAW-3G(3F)-FCM-Repair <input type="checkbox"/> WPS-345-SMAW-4G(4F)-FCM-Repair <input checked="" type="checkbox"/> Others	工艺员 Technologist:	zhang Jindong		
返修(碳刨)前预热温度 Preheat Temperature Before Gouging:	NA	返修的缺陷 Description of Discontinuity:	crack		
焊前处理检查 Inspection Before Welding:	Acc	焊前预热温度 Preheat Temperature Before Welding:	200°C		
最大碳刨深度 Max. Depth of Gouge:	NA	碳刨总长 Total Length of Gouge:	NA		
焊工 Welder:	050038	焊接类型 Welding Type:	SMAW	焊接位置 Position:	4G
焊接电流 Current:	175	焊接电压 Voltage:	24	焊接速度 Speed:	118
返修后检查 Inspection After Repair:					
外观检查 VT Result:	Acc	检验员 Inspector:	zhouchen	日期 Date:	2010.9.20
NDT复检 NDT Result:	MT Acc	探伤员 NDT Person:	Shi Lin	日期 Date:	2010.9.20
见证: Witness/Review:					
备注: Remark:					



# REPORT OF MAGNETIC PARTICLE EXAMINATION

## 磁粉检测报告

REPORT NO. 报告编号 T787-MT-11184R1      DATE日期 2010.09.20      PAGE OF页码 1/1      Revision No: 0

PROJECT NO. 工程编号: ZP06-787      CONTRACTOR: 用户: CALTRANS

DRAWING NO. 图号: NSD1-FASA3-1B/E Tower(N) 109m cross bracing plate      CALTRANS CONTRACT NO.: 加州工程编号 04-0120F4

REFERENCING CODE 参考规范编码: AWS D1.5-2002      ACCEPTANCE STANDARD 接受标准: AWS D1.5-2002      PROCEDURE NO. 程序编号: ZPQC-MT-01      CALIBRATION DUE DATE 仪器校正有效期: Dec. 28<sup>ST</sup>, 2010

EQUIPMENT 设备: MT YOKE      MANUFACTURER 制造商: PARKER      MODEL NO. 样式编号: DA-400S      SERIAL NO. 连续编号: 17366

MAGNETIZING METHOD 磁化方法: Continuous magnetic yoke 磁轭式连续法      CURRENT 电流: AC

PARTICLE TYPE 磁粉类型: Dry magnet powder 干磁粉      YOKE SPACING 磁轭间距: 70~150mm

MATERIAL TO BE EXAMINED 检测材料:  WELDING 焊接件  CASTING 铸件  FORGING 锻造      Material & thickness 母材,厚度: A709M-HPS-485WT2-Z/A709M-345T2-Z 50/40/90mm

WELDING PROCESS 焊接方法: SMAW      TYPE OF JOINT 焊缝类型: T-JOINT

WELD I.D. 焊缝编号	DISCONTINUITY不连续性			ACCEPT 接受	REJECT 拒收	REMARKS 备注
	INDICATION 指示	TYPE 类型	LENGTH IN mm 长度			
NSD1-FASA3-1B/E-29	1R1			ACC.		100%MT

AFTER T-CWR686 REV0

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EXAMINED BY 主探 Shi Lin <i>Shi Lin</i>	REVIEWED BY 审核 <i>Cai Xun</i>
LEVEL - II SIGN 签名 / DATE日期 <i>Lu Jianhua</i> 2010-09-20	LEVEL-II SIGN / DATE日期 2010-09-20
质量经理 / QCM <i>Lu Jianhua</i>	用户 CUSTOMER
签字 SIGN / 日期 DATE 2010-09-20	签字 SIGN / 日期 DATE

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: xx.25A


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**QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION**


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**Location:** Changxing Island, Shanghai, P.R. China**Report No:** NCS-000790**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 27-Sep-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0804**Type of problem:**

<b>Welding</b>	<b>Concrete</b>	<b>Other</b>	
<b>Welding</b>	<b>Curing</b>	<b>Procedural</b>	<b>Bridge No:</b> 34-0006
<b>Joint fit-up</b>	<b>Coating</b>	<b>Other</b>	<b>Component:</b>
<b>Procedural</b>	<b>Procedural</b>	<b>Descriptor:</b>	

**Date the Non-Conformance Report was written:** 19-Sep-2010**Description of Non-Conformance:**

During the Quality Assurance Magnetic Particle Testing (MT) review of welds located on North Tower Lift-3, this Quality Assurance Inspector (QA) discovered the following issue:

- One (1) longitudinal toe crack indication on the weld identified as NSD1-FASA3-1B/E-29.
- The weld is a Complete Joint Penetration (CJP) weld T-joint, joining the Cross Bracing gusset plate to Back fill Plate.
- Details of the indication are as follows:
  - Length = 16mm approximately
  - Y location = 0 mm from the Cross Bracing gusset Plate
  - X location=22mm.

The indication is clearly marked on the material.

- Quality Control (QC) elected to remove the crack by grinding. QA inspector performed MT during grinding and observed the crack had disappeared at a depth of approximately 7mm and would require repair by welding.
- North Tower Lift-3 is located at Heavy dock, Tower Trial Assembly .
- The Notice of Witness Inspection Number (NWIT) is 06717.
- This weld is within an area previously tested and accepted by ZPMC (QC) personnel. ZPMC's QC personnel are required to perform 100% MT inspection of these welds.

**Contractor's proposal to correct the problem:**

Contractor proposes to repair the missed indication with an approved CWR, and provide NDT documentation showing weld is acceptable. An internal NCR will be issued by the Contractor to discipline and potentially remove personnel for repeat incidents.

**Corrective action taken:**

Contractor repaired the missed indication with an approved CWR and submitted NDT documentation support with acceptable results. An internal NCR was issued to document this incident and the personnel involved.

**Did corrective action require Engineer's approval?**

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## QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

( Continued Page 2 of 2 )

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**Yes    No**

**If so, name of Engineer providing approval:**

**Date:**

**Is Engineer's approval attached?**                      **Yes    No**

**Comments:**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact , who represents the Office of Structural Materials for your project.

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**Inspected By:**    Ng,Michael

Quality Assurance Inspector

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**Reviewed By:**    Devey,Jim

QA Reviewer