

**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-000841**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 17-Sep-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0803**Type of problem:**

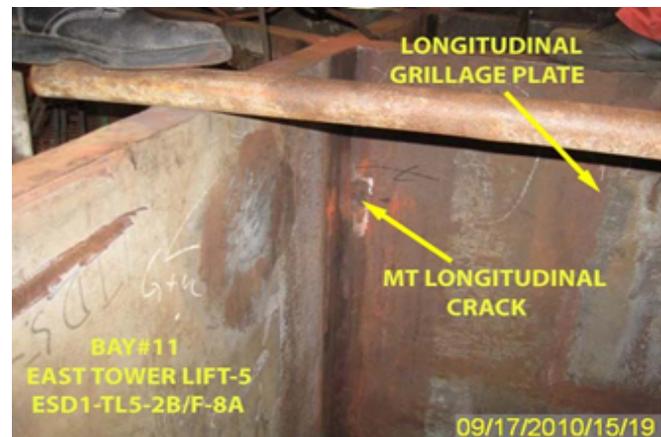
<b>Welding</b>	<b>Concrete</b>	<b>Other</b>
<b>Welding</b>	<b>Curing</b>	<b>Procedural</b>
<b>Joint fit-up</b>	<b>Coating</b>	<b>Other</b>
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b>

**Bridge No:** 34-0006**Component:** East Tower Lift-5 Grillage Assembly**Reference Description:** East Lift 5 MT Missed Crack**Description of Non-Conformance:**

During the Quality Assurance Magnetic Particle Testing (MT) review of welds located on East Tower Lift-5, this Quality Assurance Inspector (QA) discovered the following issue:

- One (1) longitudinal crack 16mm in length found adjacent to the weld identified as ESD1-TL5-2B/F#8A.
  - The weld is a Complete Joint Penetration (CJP) T-joint, joining the longitudinal to transverse grillage plates.
  - The Y location is 310mm measured from the upper termination of the weld and is clearly marked on the material.
  - East Tower Lift-5 is located at Tower fabrication shop Bay#11.
  - The Notice of Witness Inspection Number (NWIT) is 06691.
  - This weld is within an area previously tested and accepted by ZPMC Quality Control (QC) personnel.
- ZPMC's QC personnel are required to perform 100% MT inspection of these welds.

For further information, please see the attached pictures below.

**Applicable reference:**

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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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:** Peter Ferguson

**Time and method of notification:** 1800\_9/17/10\_E-Mail

**Name of Caltrans Engineer notified:** Sean Eagen

**Time and method of notification:** 0815Hrs\_09/18/10\_Email

**QC Inspector's Name:** Xu Jie

**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



**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:** 20-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:** 05.03.06-000797

**Subject:** NCR No. ZPMC-0803

**Reference Description:** East Lift 5 MT Missed Crack

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:** 05

### Remarks:

During the Quality Assurance Magnetic Particle Testing (MT) review of welds located on East Tower Lift-5, this Quality Assurance Inspector (QA) discovered the following issue:

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- The Y location is 310mm measured from the upper termination of the weld and is clearly marked on the material.
- East Tower Lift-5 is located at Tower fabrication shop Bay#11.
- The Notice of Witness Inspection Number (NWIT) is 06691.
- This weld is within an area previously tested and accepted by ZPMC Quality Control (QC) personnel. ZPMC's QC personnel are required to perform 100% MT inspection of these welds.

For further information, please see the attached 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.

**Transmitted by:** Sean Eagen Transportation Engineer

**Attachments:** ZPMC-0803

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

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# NCT

( Continued Page 2 of 2 )

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**File:** 05.03.06

## NCR PROPOSED RESOLUTION

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

**Attention:** Siegenthaler, Peter  
Resident Engineer

**Ref:** 05.03.06-000797

**Subject:** NCR No. ZPMC-0803

**Dated:** 27-Sep-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000796 Rev: 00

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### Contractor's Proposed Resolution:

**Reference Resolution:** ZPMC has repaired the missed indications and is providing the WRRs and NDT performed after the repair to show the welds are acceptable.

ZPMC has repaired the missed indications and is providing the WRRs and NDT performed after the repair to show the welds are 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-000796R00;

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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-0803 is closed.

**Submitted by:** Eagen, Sean

**Attachment(s):**

**Date:** 28-Sep-2010



No. T-168

## LETTER OF RESPONSE

**TO: American Bridge/Flour JV**

**DATE: 2010-09-25**

**REGARDING: NCR-000841(ZPMC-0803)**

ZPMC received NCR-000841(ZPMC-0803), it mentioned that CT inspectors found indication on base metal adjacent to the weld ESD1-TL5-2B/F-8A.

Once CT inspector found indication on metal adjacent to the weld, ZPMC performed grinding work under approval of CT site inspector. Finally the indication was removed and the area was tested and accepted by using MT manner.

As a conscientious attitude and to improve welding quality, we have already inculcated the welder to perform carefully, and welding must be covered by QC, it could believe that such case would decrease in the future.

Here attached related NDT report to show the base metal is sound finally.

Basing on above information, ZPMC hope CT could take a review and close the NCR.

**ATTACHMENT:**

**NCR-000841(ZPMC-0803)**

**T-WR3546**

**T787-MT-11303**

*Zhang Wanda*

*2010. 9. 25*

**DEPARTMENT OF TRANSPORTATION**

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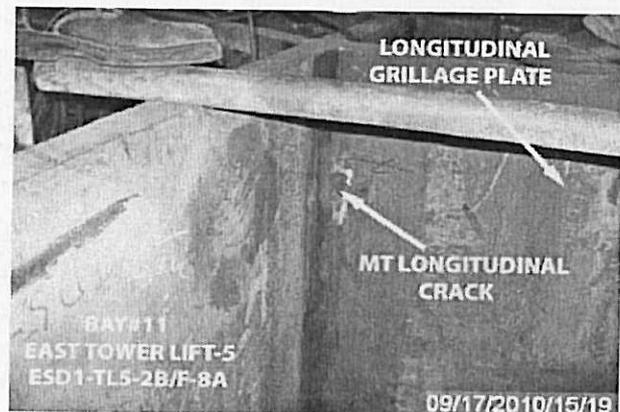
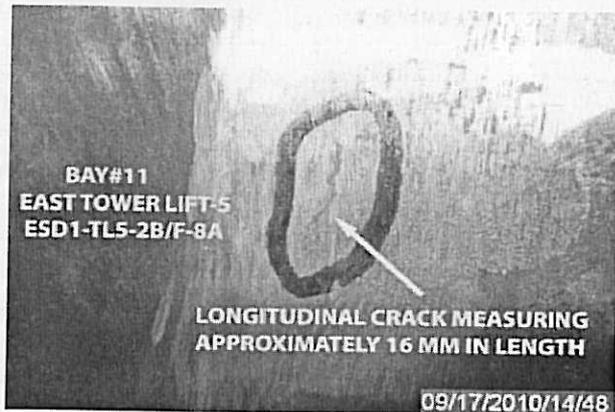
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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

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**QC Inspector's Name:** Xu Jie

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

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

N/A

**Comments:**

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**Inspected By:** Ng,Michael

QA Inspector

**Reviewed By:** Devey,Jim

SMR

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# 焊缝返修报告

版本 Rev. No.

## Welding Repair Report

0

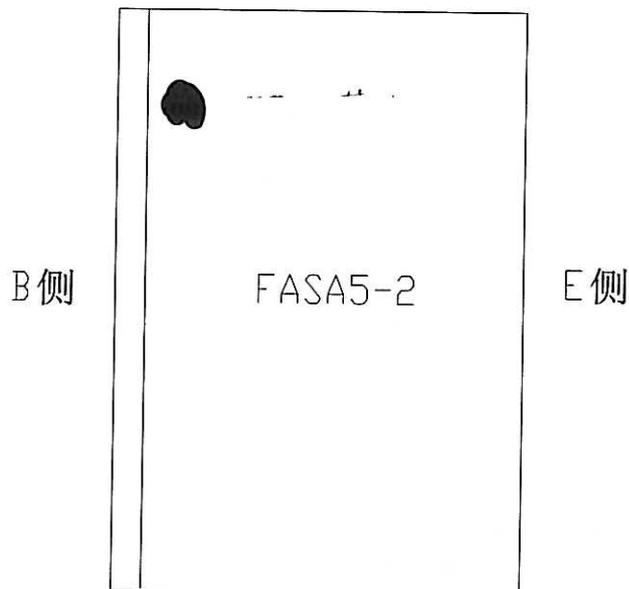
项目名称 Project Name	美国海湾大桥 SFOBB	部件图号 Drawing No	FASA5-2	报告编号 Report No.	T-WR3546
合同号 Contract No.:	04-0120F4	部件名称 Items Name	东塔五吊A面板 Tower(E) 5 <sup>th</sup> 1 ifting Skin A	NDT报告编号 Report No.of NDT	NA
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述：(母材损伤修补)**Description of welding discontinuity:**

东塔第五吊装段A面板FASA5-2, 母材打磨过度, 最深达3MM, 现需要补焊, 具体位置见下图  
 East tower 5<sup>th</sup> lifting Skin A FASA5-2, the base metal was gouged after grinding, maximum 3mm in depth and needed to repair, the detail position sees the following draft.

*Mao Bin bin*
 检验员 (Inspector) : Mao Binbin 日期(Date) : 2010.09.16

焊缝返修位置示意图：

**Draft of welding discontinuity:**

注：阴影部位为母材处需要补焊区域。

Remark: repair area in shadow.

产生原因:

**Caused:**

工人打磨失误, 导致母材损伤。

Worker operator error caused base metal gouged.

车间负责人(Foreman): *Li Shiqun*

日期(Date): *9.16*

处理意见

**Disposition :**

1. 按照焊接返修工艺规程 (WPS) 打磨缺陷区域至光滑;
2. 准备一个正确的接头形式, 具体参见返修的WPS;
3. 对返修区域作100%MT和100%VT检查;
4. 如果仍发现有缺陷, 通过打磨的方法去除所有缺陷以确认缺陷完全被清除, 并重复第三步以确认缺陷完全被清除;
5. 将杂物以及MT检测遗留的残留物清理干净;
6. 根据批准的焊接返修工艺规程 (WPS) 进行预热及焊接;
7. 将焊接区域打磨至与母材平齐;
8. 对返修区域作NDT检查。

1. Grind the repair area to a smooth finish according to the approved repair WPS.
2. Prepare the joint according to the approved WPS.
3. Perform 100%MT and 100%VT of the repair area.
4. Remove all defects by grinding to ensure all defects are completely removed if defects still exist, and repeat "step 4" to assure complete removal of all defects if necessary.
5. Clean the repair area of all loose debris including MT powder.
6. Preheat and weld according to the approved WPS.
7. Grind the weld flush after welding.
8. Perform NDT of the repair area.

工艺: *Zhang Jin Dong*  
Technical engineer

审核:  
Approved by

日期 *9.16*  
Date



# 焊缝返修报告

## Welding Repair Report

版本 Rev. No.

0

项目名称 Project Name	美国海湾大桥 SFOBB	部件图号 Drawing No.	FASA5-2	报告编号 Report No.	T-WR3546
合同号 Contract No.:	04-0120F4	部件名称 Items Name	东塔五吊A面板 Tower(E) 5 <sup>th</sup> lifting Skin A	NDT报告编号 Report No.of NDT	NA
项目编号 Project No.:	ZP06-787				

纠正措施:

**Correction action to prevent re occurrence:**

培训和教育打磨工, 提高打磨水平。

车间负责人(Foreman):

*Lisliqwan*

日期(Date):

9.16

参照的WPS编号 Repair WPS No.	WPS-485-SMAW-1G(1F) -Repair WPS-485-SMAW-2G(2F) -Repair WPS-485-SMAW-3G(3F) -Repair	工艺员 technologist	<i>Zhang Jin Dong</i> 9.16
返修(碳刨)前预热温度 Preheat temperature before gouging		返修的缺陷 Description of discontinuity	
焊前处理检查 Inspection before welding		焊前预热温度 Preheat temperature before welding	
最大碳刨深度 Max. depth of gouging		碳刨总长 Total length of gouging	
焊工 welder	焊接类型 welding type	焊接位置 position	
焊接电流 Current	焊接电压 Voltage	焊接速度 Speed	

返修后检查

**Inspection After repairing:**

外观检查 VT result	检验员 Inspector	日期 Date
NDT复检 NDT result	探伤员 NDT person	日期 Date

见证:

Witness/Review:

备注:

Remark:

#R787-QCP-900



# REPORT OF MAGNETIC PARTICLE EXAMINATION

## 磁粉检测报告

REPORT NO. 报告编号 T787-MT-11303      DATE日期 2010.09.21      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: ESD1-TL5 skin A      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
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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
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MAGNETIZING METHOD 磁化方法	Continuous magnetic yoke 磁轭式连续法	CURRENT 电流	AC
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PARTICLE TYPE 磁粉类型	Dry magnet powder 干磁粉	YOKE SPACING 磁轭间距	70~150mm
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MATERIAL TO BE EXAMINED 检测材料	<input checked="" type="checkbox"/> WELDING 焊接件 <input type="checkbox"/> CASTING 铸件 <input type="checkbox"/> FORGING 锻造	Material & thickness 母材,厚度	A709M-HPS-485WT2-Z 90mm
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WELDING PROCESS 焊接方法	SMAW	TYPE OF JOINT 焊缝类型	NA
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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			
FASA5-2				ACC.		100%MT

Base metal per T-WR3546

BLANK

EXAMINED BY 主探 Xu Bing <i>Xu Bing</i>	REVIEWED BY 审核 Shi Lin <i>Shi Lin</i>
LEVEL - II SIGN 签名 / DATE日期 2010.09.21	LEVEL-II SIGN / DATE日期 2010.09.21
质量经理 / QCM Lu Jianhua <i>Lu Jianhua</i>	用户 CUSTOMER
签字 SIGN / 日期 DATE 2010-09-21	签字 SIGN / 日期 DATE

**DEPARTMENT OF TRANSPORTATION**

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<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:** 17-Sep-2010**Description of Non-Conformance:**

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

Contractor proposes to repair the missed MT indication with an approved WRR and provide NDT documentation showing weld is acceptable. Contractor will issue an internal NCR for this incident to discipline and potentially remove the personnel involved.

**Corrective action taken:**

Contractor repaired the weld indication, and provided the WRR used along with acceptable NDT results. In addition, an internal NCR to record this incident and discipline personnel involved was issued.

**Did corrective action require Engineer's approval?** Yes No**If so, name of Engineer providing approval:****Date:****Is Engineer's approval attached?** Yes No**Comments:**

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# QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

( Continued Page 2 of 2 )

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**Inspected By:** Ng,Michael

Quality Assurance Inspector

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**Reviewed By:** Devey,Jim

QA Reviewer