

**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

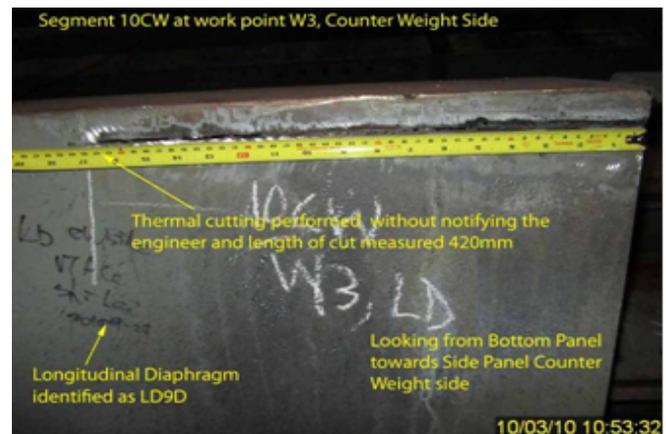
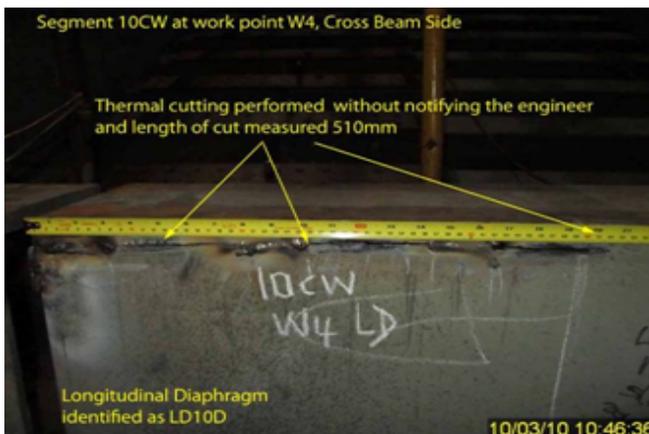
Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.25B**QUALITY ASSURANCE -- NON-CONFORMANCE REPORT****Location:** Changxing Island, Shanghai, P.R. China**Report No:** NCR-000854**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 03-Oct-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0816**Type of problem:****Welding****Concrete****Other****Welding****Curing****Procedural****Bridge No:** 34-0006**Joint fit-up****Coating****Other****Component:** Longitudinal Diaphragm in Segment 10CW**Procedural****Procedural****Description:**

**Reference Description:** Flame cutting performed without Engineer's approval and utilizing mechanical guide on LD (Segment 10CW)

**Description of Non-Conformance:**

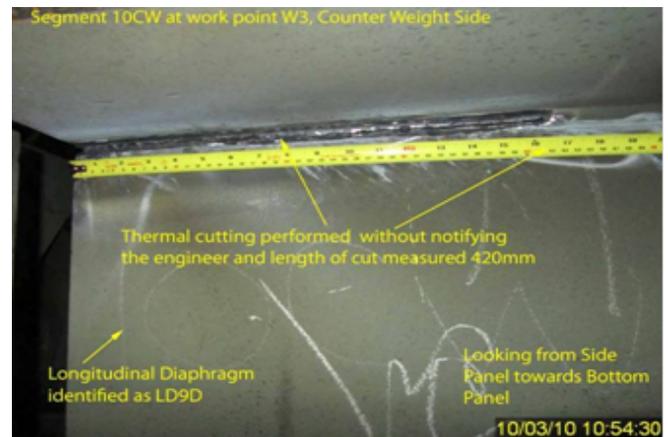
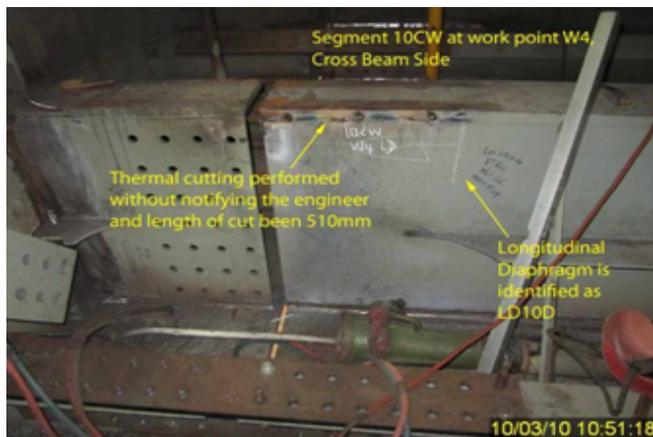
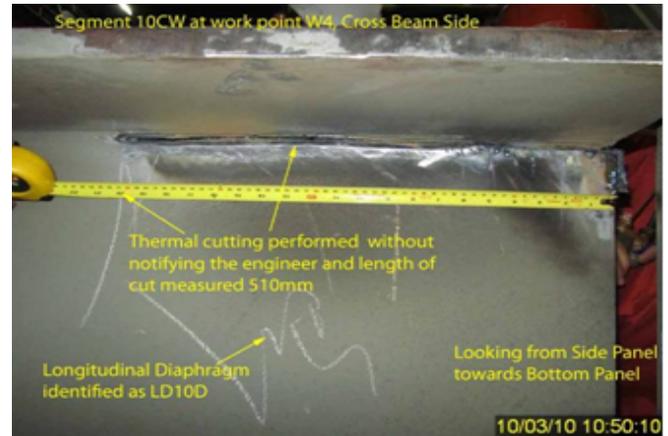
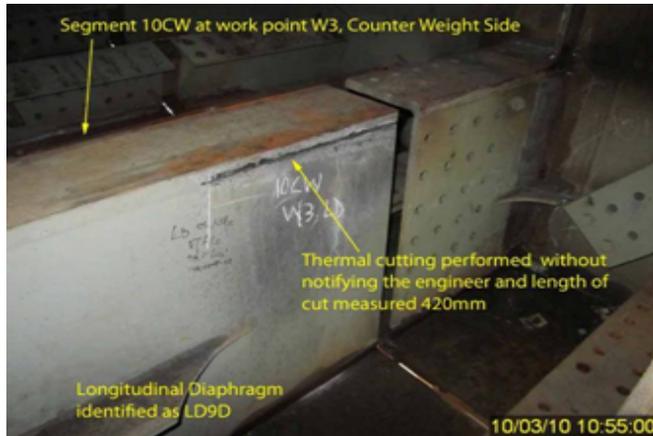
During Caltrans Quality Assurance (QA) random in process observations of the trial assembly of OBG segments 10CW, this QA Inspector discovered the following issues:

- ZPMC workers have removed a weld joint connecting Longitudinal Diaphragm (LD) web to flange side with an approximate length of 510mm at LD located at work point W4 and 420mm at LD located at work point W3.
- The Contractor failed to notify the Engineer of the intent to remove/cut the above welds.
- The removal of the welds was performed by free-hand flame cutting while it is possible to perform mechanically guided flame cutting.
- These free hand flame cutting performed were not in the scope of "Submittal 872R1: Free Hand Flame Cutting Procedure," as the cuts were over 300mm and that mechanical guides are available.
- These welds are Complete Joint Penetration (CJP), joining Longitudinal Diaphragm Web to Flange: Longitudinal Diaphragm at work point W3 identified as LD9D; Longitudinal Diaphragm at work point W4 identified as LD10D.



# QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 3 )



## Applicable reference:

-AWS D1.5 (02) Section 3.7.5: The Engineer shall be notified before improperly fitted and welded members are cut apart.

-Special Provisions Section 8-3: The Engineer shall be notified in writing when welding problems, deficiencies, base metal repairs, or any other type of repairs not submitted in the WQCP are discovered and also of the proposed repair procedures to correct them.

-Submittal 872R1: Free Hand Flame Cutting Procedure: "Request Engineer's approval for flame cutting when mechanically guided flame cutting is not practical due to accessibility, cross sectional geometry and or position."  
"

**Who discovered the problem:** S. Manjunath. Math

**Name of individual from Contractor notified:** Ding Xing Chi

**Time and method of notification:** 11:00 hours, 10/03/10, Verbal

**Name of Caltrans Engineer notified:** Laraine Woo

**Time and method of notification:** 08:10 hours, 10/04/10, Verbal

**QC Inspector's Name:** Gu Rong Jian

**Was QC Inspector aware of the problem:**

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# QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 3 of 3 )

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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, +(86) 134.7247.7571, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Tsang, Eric	SMR
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<b>Reviewed By:</b>	Devey, Jim	SMR
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**DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge**  
 333 Burma Road  
 Oakland CA 94607  
 Tel: Fax:

**NON-CONFORMANCE REPORT TRANSMITTAL**

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

**Date:** 04-Oct-2010

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

**Dear:** Mr. Charles Kanapicki  
**Attention:** Mr. Thomas Nilsson Project/Fabrication Manager  
**Subject:** NCR No. ZPMC-0816

**Job Name:** SAS Superstructure  
**Document No:** 05.03.06-000811

**Reference Description:** Flame cutting performed without Engineer's approval and utilizing mechanical guide on LD (Segment 10CW)

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:** OBG **Lift:** 10

**Remarks:**

During Caltrans Quality Assurance (QA) random in process observations of the trial assembly of OBG segments 10CW, Caltrans QA Inspector discovered the following issues:

- ZPMC workers have removed a weld joint connecting Longitudinal Diaphragm (LD) web to flange side with an approximate length of 510mm at LD located at work point W4 and 420mm at LD located at work point W3.
- The Contractor failed to notify the Engineer of the intent to remove/cut the above welds.
- The removal of the welds was performed by free-hand flame cutting while it is possible to perform mechanically guided flame cutting.
- These free hand flame cutting performed were not in the scope of "Submittal 872R1: Free Hand Flame Cutting Procedure," as the cuts were over 300mm and that mechanical guides are available.
- These welds are Complete Joint Penetration (CJP), joining Longitudinal Diaphragm Web to Flange: Longitudinal Diaphragm at work point W3 identified as LD9D; Longitudinal Diaphragm at work point W4 identified as LD10D.

**Action Required and/or Action Taken:**

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences. A response for the resolution of this issue is expected within 7 days.

**Transmitted by:** Laraine Woo Transportation Engineer

**Attachments:** ZPMC-0816

**cc:** Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Jason Tom, 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:** 05.03.06-000811

**Subject:** NCR No. ZPMC-0816

**Dated:** 04-Nov-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000831 Rev: 00

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### Contractor's Proposed Resolution:

**Reference Resolution:** ZPMC has discussed and reviewed the free handing cutting procedure with the production team to prevent future occurrences.

ZPMC has discussed and reviewed the free handing cutting procedure with the production team to prevent future occurrences. This refresher training should reduce the possibility of a repeat of this non conformance. Based on this ZPMC requests closure of this NCR.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000831R00;

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### Caltrans' comments:

**Status:** CLO

**Date:** 07-Nov-2010

The repair work was performed per the WRR along with acceptable NDT documentation. The proposed resolution is acceptable. This NCR is considered closed.

**Submitted by:** Woo, Laraine

**Date:** 07-Nov-2010

**Attachment(s):**



TRANSMITTAL LETTER

PROJECT: S.F.O.B.B.

DATE:2010-11-04

TO: ROSEMARY/ABF JV QA DEPARTMENT

FROM: ZPMC QA DEPARTMENT

SUBJECT: OBG NCR

SUBMITTED FOR YOUR APPROVAL AND SUBMITTAL TO CALTRANS

ENCLOSED WITH THIS TRANSMITTAL IS ONE COPY OF

(01) LR: No. B-925

(02) NCR-000854(ZPMC-0816)

B-WR15277

B787-MT-29562

PLEASE SIGN THIS TRANSMITTAL AND RETURN TO ME.

ACKNOWLEDGEMENT

PLAN HOLDER: *Lee*

RECEIVED 04 NOV 2010

DATE: *14:15*

COMPANY:



PHONE NO.

PLAN NUMBER:N/A  
#R787-QCP-102



No. B-925

## LETTER OF RESPONSE

**TO: American Bridge/Flour**

**DATE: 2010-11-04**

**REGARDING: NCR-000854(ZPMC-0816)**

ZPMC acknowledged this problem and has issued an internal NCR. ZPMC QA personnel have talked with the head of production department to address the requirement of free hand cutting procedure. ZPMC is providing the WRR and NDT record to show the soundness of these affected welds after repair. Based on this, ZPMC is requesting closure of this NCR.

**ATTACHMENT:**

NCR-000854(ZPMC-0816)

B-WR15277

B787-MT-29562

*[Handwritten signature]*  
11/4/2010

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Contract #: 04-0120F4  
 Cty: SF/ALA Rte: 80 PM: 13.2/13.9  
 File #: 69.25B

**QUALITY ASSURANCE -- NON-CONFORMANCE REPORT**

**Location:** Changxing Island, Shanghai, P.R. China

**Report No:** NCR-000854

**Prime Contractor:** American Bridge/Fluor Enterprises, a JV

**Date:** 03-Oct-2010

**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

**NCR #:** ZPMC-0816

**Type of problem:**

- Welding  Concrete  Other   
 Welding  Curing  Procedural   
 Joint fit-up  Coating  Other   
 Procedural  Procedural  Description:

**Bridge No:** 34-0006

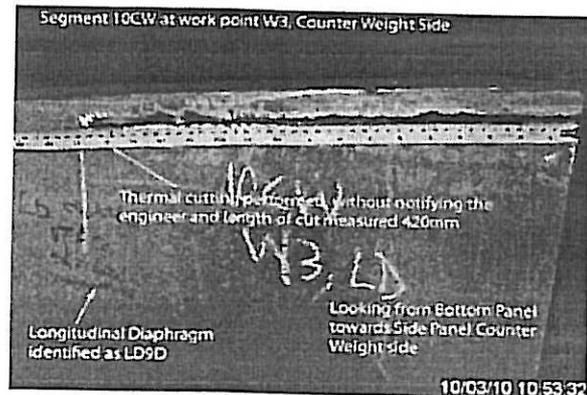
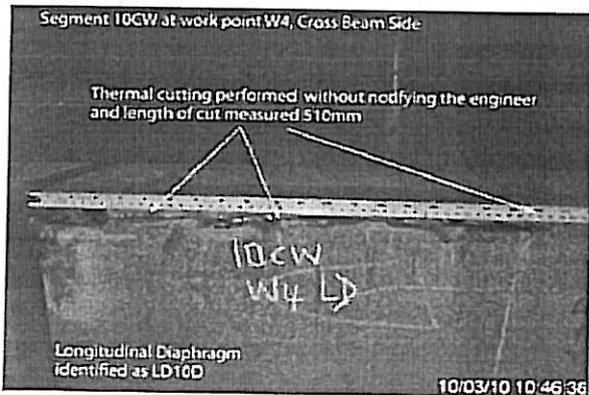
**Component:** Longitudinal Diaphragm in Segment 10CW

**Reference Description:** Flame cutting performed without Engineer's approval and utilizing mechanical guide on LD (Segment 10CW)

**Description of Non-Conformance:**

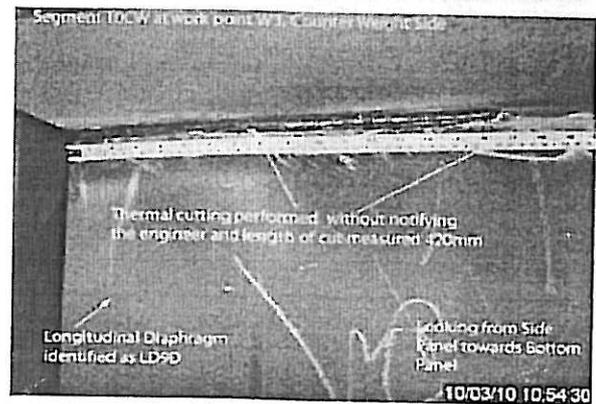
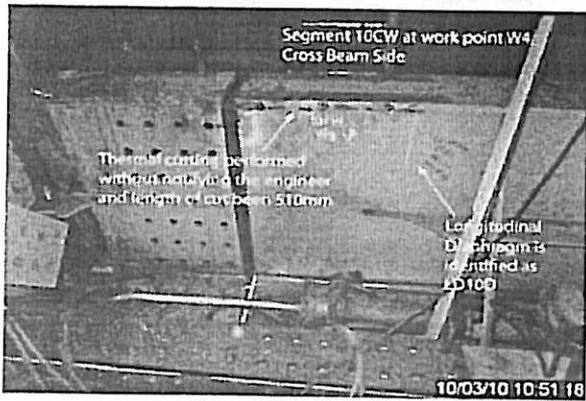
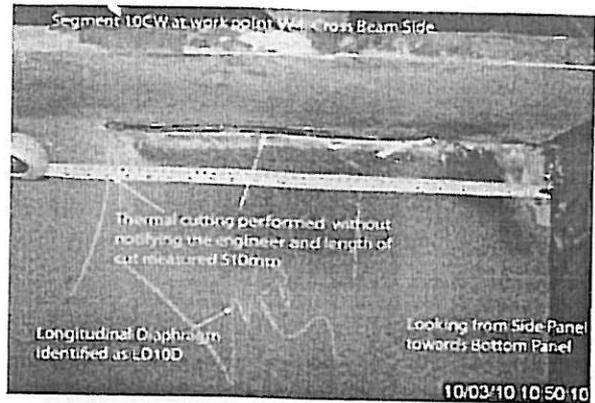
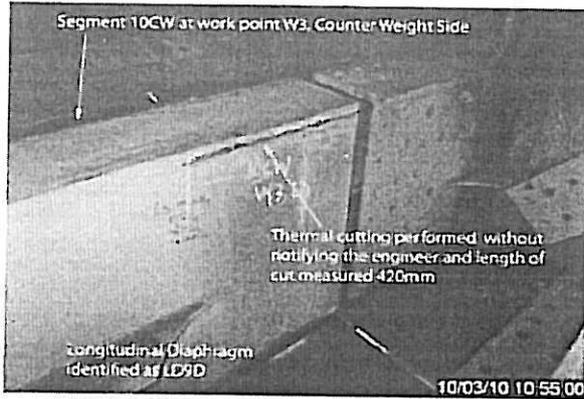
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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 3)



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-AWS D1.5 (02) Section 3.7.5: The Engineer shall be notified before improperly fitted and welded members are cut apart.

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Time and method of notification: 11:00 hours, 10/03/10, Verbal

Name of Caltrans Engineer notified: Laraine Woo

Time and method of notification: 08:10 hours, 10/04/10, Verbal

QC Inspector's Name: Gu Rong Jian

Was QC Inspector aware of the problem:

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

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( Continued Page 3 of 3 )

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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, +(86) 134.7247.7571, who represents the Office of Structural Materials for your project.

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**Inspected By:** Tsang, Eric

SMR

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**Reviewed By:** Devey, Jim

SMR

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# 焊缝返修报告

版本  
Rev. No.:

## Welding Repair Report

0

### 焊缝缺陷描述:

Description of welding discontinuity:

经检查发现10CW+11AW非联系梁侧纵桁高低错位达7mm, 联系梁侧纵桁高低错位达10mm, 现需将10CW纵桁面板与腹板焊缝去除, 焊缝编号为: LD009-007-011/012; LD010-007-011/012. 具体见下图所示:

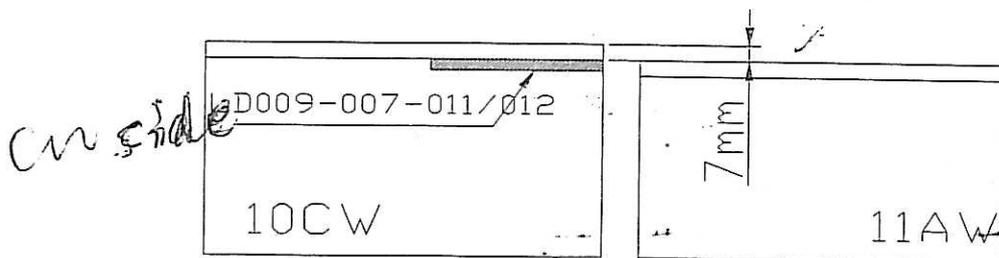
After inspection 10CW and 11AW, the misalignment was 7mm at longitudinal diaphragm non face cross beam, 10mm at longitudinal diaphragm face cross beam, and needed to remove welds at longitudinal diaphragm skin plate and edge plate, welds ID: LD009-007-011/012; LD010-007-011/012. the detail sees the following draft.

检验员 (Inspector): wang zhu

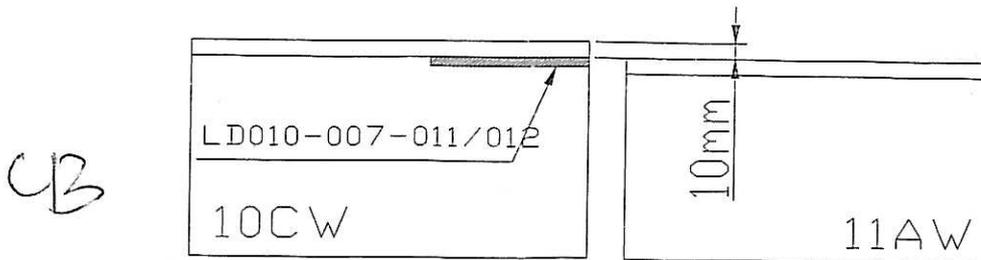
日期 (Date): 2010.09.30

### 焊缝返修位置示意图:

Draft of Welding Discontinuity:



非联系梁侧



联系梁侧

注: 阴影区域为焊缝开刀处

Remark: cut weld on shadow.

产生原因:

Cause:

焊接变形和制作误差。

Weld distortion and fabricate error.

车间负责人 (Foreman):

*Ma Puqun*

日期 (Date):

*10.29.30*

处理意见

Disposition :

1. 从对接端口处破刨或火焰切割去除阴影区域焊缝;
2. 采用外力调整对接错边量以满足公差要求;
3. 根据批准的WPS准备焊接接头;
4. 焊接返修前进行VT与MT检测确认无缺陷存在;
5. 根据批准的WPS进行预热及焊接焊缝;
6. 返修结束后将返修处焊缝打磨光滑;
7. 返修后根据图纸要求对返修区域进行NDT检测;

- 1.Remove the weld on shadow by gouging or heat cutting.
- 2.Adjust the misalignment and the straightness to meet the tolerance by outer force.
3. Prepare right excavation according to the approved WPS.
4. Perform 100% VT and MT inspection to the groove to ensure no defects exist prior to welding;
5. Preheat and weld according to approved WPS.
- 6: Grind the welds with a smooth surface.
7. Perform NDT inspection to the repair area according to work drawing.

工艺:

Technical Engineer:

*Xin Dajun*

审核:

Approved By:

*Lu Jianhua*

日期:

Date:

*10.29.30*



# 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.:	OBW10/OBW11	报告编号 Report No.:	B-WR15277
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	10CW+11AW纵桁 10CW and 11AW longitudinal diaphragm	NDT 报告编号 NDT Report No.:	NA
项目编号 Project No.:	ZP06-787				

纠正措施:

Corrective Action to Prevent Re-occurrence:

加强制作过程中的监控, 减少误差。

Enhance supervision in process of fabrication to reduce error.

车间负责人 (Foreman): *Ma Peng* 日期 (Date): *10.09.20*

参照的WPS编号 Repair WPS No.:	<input type="checkbox"/> WPS-345-SMAW-4G(4F)- Repair <input type="checkbox"/> WPS-345-FCAW-4G(4F)- Repair <input type="checkbox"/> WPS-B-P-2214-TC-U4b <input type="checkbox"/> WPS-B-P-2314-P4 <input type="checkbox"/> WPS-B-T-2334-TC-P4-F <input type="checkbox"/> WPS-B-T-2234-TC-U4b-F	工艺员 Technologist:	<i>Xu Dujin</i> <i>10.09.20</i>
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返修(碳刨)前预热温度 Preheat Temperature Before Gouging:	<i>110</i>	返修的缺陷 Description of Discontinuity:	<i>裂纹</i>
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焊前处理检查 Inspection Before Welding:	<i>180</i>	焊前预热温度 Preheat Temperature Before Welding:	<i>170°C</i>
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最大碳刨深度 Max. Depth of Gouge:	<i>7mm</i>	碳刨总长 Total Length of Gouge:	<i>1200mm</i>
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焊工 Welder:	<i>041713</i>	焊接类型 Welding Type:	<i>SMAW</i>	焊接位置 Position:	<i>2F/4F</i>
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焊接电流 Current:	<i>152</i>	焊接电压 Voltage:	<i>28-4</i>	焊接速度 Speed:	<i>110</i>
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返修后检查  
Inspection After Repair:

外观检查 VT Result:	<i>ARC</i>	检验员 Inspector:	<i>Zhu Zhonghai</i>	日期 Date:	<i>2010.10.04</i>
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NDT复检 NDT Result:	<i>NDT OK</i>	探伤员 NDT Person:	<i>Wang</i>	日期 Date:	<i>2010.11.03</i>
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见证:  
Witness/Review:备注:  
Remark:



# REPORT OF MAGNETIC PARTICLE EXAMINATION

## 磁粉检测报告

REPORT NO. 报告编号 B787-MT-29562      DATE日期 2010.11.03      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: OBW10+OBW11 longitudinal diaphragm		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 17372
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: <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-345T2-X 25/14mm	
WELDING PROCESS 焊接方法: SMAW		TYPE OF JOINT 焊缝类型: CORNER 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			
LD009-007-011				ACC.		100%MT
LD009-007-012				ACC.		100%MT
LD010-007-011				ACC.		100%MT
LD010-007-012				ACC.		100%MT
AFTER B-WR15277						
BLANK						

EXAMINED BY 主探 Wang Wei <u>Wang Wei</u>	REVIEWED BY 审核 <u>XU hai</u>
LEVEL - II SIGN 签名 / DATE日期 <u>2010.11.03</u>	LEVEL-II SIGN / DATE日期 <u>2010.11.03</u>
质量经理 / QCM <u>Lu Jianhua</u>	用户CUSTOMER
签字 SIGN / 日期 DATE <u>2010.11.03</u>	签字 SIGN / 日期 DATE

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: xx.25A**QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION****Location:** Changxing Island, Shanghai, P.R. China**Report No:** NCS-000829**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 07-Nov-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0816**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>Description:</b>	

**Date the Non-Conformance Report was written:** 03-Oct-2010**Description of Non-Conformance:**

During Caltrans Quality Assurance (QA) random in process observations of the trial assembly of OBG segments 10CW, this QA Inspector discovered the following issues:

- ZPMC workers have removed a weld joint connecting Longitudinal Diaphragm (LD) web to flange side with an approximate length of 510mm at LD located at work point W4 and 420mm at LD located at work point W3.
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**Contractor's proposal to correct the problem:**

Contractor will perform repair work per the Welding Repair Report. NDT will be performed after repair. Contractor will discuss and review the free hand cutting procedure with the production team to prevent future occurrence. Contractor will provide refresher training to reduce the possibility of repeat of the non-conformance.

**Corrective action taken:**

Contractor repaired the work per WRR provided. NDT performed after repair. NDT documentation showed the repair is acceptable. Contractor conducted refresher training to reduce to personnel involved to ensure similar non-conformance will not be repeated in future.

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

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## QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

( Continued Page 2 of 2 )

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**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 Wahbeh, Mazen 818-292-0659, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Ng,Michael	Quality Assurance Inspector
<b>Reviewed By:</b>	Wahbeh,Mazen	QA Reviewer

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