

**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 #: 04-0120F4  
 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-000296

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

**Date:** 02-Jun-2009

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

**NCR #:** ZPMC-0270

**Type of problem:**

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

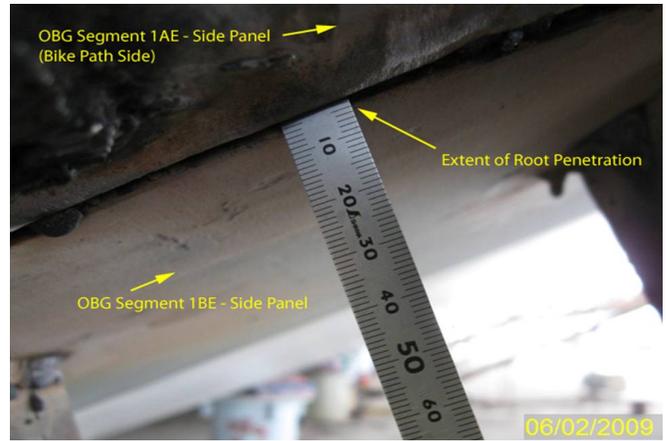
**Bridge No:** 34-0006

**Component:** OBG Segment Splice 1AE/1BE

**Reference Description:** Welding in Downward Progression, Weld Joint OBE1A-009

**Description of Non-Conformance:**

Caltrans Quality Assurance (QA) Inspector observed welding being performed in a downward progression on side panel splice weld OBE1A-009 (OBG Segments 1AE to 1BE). The vertical weld progression should be upwards per AWS D1.5 requirements.



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# QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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### Applicable reference:

AWS D1.5 2002, Section 1.9 Welding Procedure Specifications (WPSs): "All production welding shall be performed in conformance with the provisions of an approved Welding Procedure Specification (WPS), which is based upon successful test results as recorded in a Procedure Qualification Record (PQR) unless qualified in conformance with 1.3.1."

AWS D1.5 2002, Section 4.14.1.7: "The progression for all passes of vertical position welding shall be upwards, unless a downward progression shall be qualified by tests approved by the Engineer."

**Who discovered the problem:** Rory O'Kane  
**Name of individual from Contractor notified:** Larry Lu  
**Time and method of notification:** 15:20 hours, 06-02-09, Verbal  
**Name of Caltrans Engineer notified:** Stanley Ku  
**Time and method of notification:** 14:00 hours, 06-03-09, Verbal  
**QC Inspector's Name:** Xeng Yajun  
**Was QC Inspector aware of the problem:** Yes No  
**Contractor's proposal to correct the problem:**

### 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 Skyler Guest, 1500.042.2360, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Guest, Skyler	SMR
<b>Reviewed By:</b>	Wahbeh, Mazen	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:** 08-Jun-2009

**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:** 05.03.06-000259

**Subject:** NCR No. ZPMC-0270

**Reference Description:** Welding in Downward Progression, Weld Joint OBE1A-009

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:**

**Remarks:**

Caltrans Quality Assurance (QA) Inspector observed welding being performed in a downward progression on side panel splice weld OBE1A-009 (OBG Segments 1AE to 1BE). The vertical weld progression should be upwards per AWS D1.5 requirements.

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

Please propose a resolution for the identified non-conformance to prevent future occurrences.

**Transmitted by:** Stanley Ku Sr. Bridge Engineer

**Attachments:** ZPMC-0270

**cc:** Rick Morrow, Gary Pursell, Peter Siegenthaler, Brian Boal, Doug Coe, Jason Tom, Doug Wright, Ching Chao

**File:** 05.03.06

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000259

**Subject:** NCR No. ZPMC-0270

**Dated:** 27-Jul-2009

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000268 **Rev:** 00

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### Contractor's Proposed Resolution:

**Reference Resolution:** ZPMC has responded to this NCR and has attached documents as evidence of completion. ZPMC requests closure of this NCR.

ZPMC has responded to this NCR and has attached documents as evidence of completion. ZPMC requests closure of this NCR.

### Submitted by:

**Attachment(s):** ABF-NPR-000268R00;

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### Caltrans' comments:

**Status:** CLO

**Date:** 18-Aug-2009

The proposed resolution is acceptable. An internal ZPMC NCR was written, and the welder received additional training. Also, the weld in question has been accepted by VT, MT, and UT as shown in the attached documents. The Department concurs that Non-Conformance ZPMC-0270 is closed.

**Submitted by:** Wright, Doug

**Date:** 18-Aug-2009

**Attachment(s):**



No. B-417

## LETTER OF RESPONSE

**TO: American Bridge/Flour**

**DATE: 2009-7-23**

**REGARDING: NCR-000296 (ZPMC-0270)**

With this letter of response, ZPMC requests closure for Caltrans **NCR-000296 (ZPMC-0270)**. We agree what describe in the non-conformance report, as we all know the weld should be upward in the vertical direction except for the special electrode. ZPMC have instructed the worker foreman and the welder which mentioned in the report, especially remind that the downward weld although can improve the speed, but the liquid metal can't be hold by the before cooling weld, then there will be not enough fusion between the base metal and weld, and some of the defect will occur and the visual condition also will be more worse than the upward.

By the way we have punished the sub-constructor with the ZPMC quality states. as the concern of the weld quality we have inspected the weld strictly by visual and NDE, with the normal procedure the weld also verified by the caltrans inspector.

So base on the above explanation and attached documentations, ZPMC applies to close the caltrans's report **NCR-000296 (ZPMC-0270)**.

Please reference attached documentation for acceptance and closure the **NCR-000296 (ZPMC-0270)**.

**ATTACHMENT:**

**NCR-000296 (ZPMC-0270)**

**ZPMC internal NCR**

**The final VT/UT/MT report**

*Zhao Shuangbao*

*2009. 7. 23*



# Nonconformance Report

## 不符合项报告

Project Name: S.F.O.B.B 项目名称: 美国加州海湾大桥		NCR Number: NCR-B-182 NCR 编号: (NCR-000296)	
Item: Welding in Down Progression 名称描述: 立焊向下焊		Item Number: N/A 件号:	Drawing: 1AE+1BE 图号:
Location: 外场 位置:		Date: 2009-06-11 日期:	
Description of Nonconformance: 不符合项状态描述: Caltrans Quality Assurance Inspector observed welding being performed in a downward progression on side panel splice weld OBE1A-009(OBG Segment 1AE to 1BE), The vertical weld progression should be upwards per AWS D1.5 requirements. 加州检验员发现当在烧 OBE1A-009 这条立焊位置时, 未按照 AWS1.5 要求从下往上焊, 而是从上往下焊。			
Work By: <u>Yuan Du</u> 施工方:		Prepared by: <u>W. Jun</u> 准备: 09.6.11	Reviewed by QCE: <u>Chen Shuang</u> 质量工程师批准: 6.11
<input type="checkbox"/> Drawing Error <input type="checkbox"/> Material Defect <input type="checkbox"/> Fabrication Error <input type="checkbox"/> Other 图纸错误                      材料缺陷                      制作错误                      其他原因			
Disposition: <input type="checkbox"/> Use as is <input type="checkbox"/> Repair <input type="checkbox"/> Reject 处理措施:                      回用                      返修                      拒收			
Recommendation: 建议: 加强对现场的监控, 严格按照 AWS1.5 要求制作 Enhance supervision on-site and perform fabrication according to AWS1.5 requirement.			
Prepared by: <u>Du Wenling</u> 准备:		Approved by QCA: _____ 质量经理批准:	
Reason for Nonconformance: 不符合原因: 因当在烧 OBE1A-009 焊缝位置时未按照 AWS1.5 要求从下往上焊, 而是从上往下焊。 During weld OBE1A-009, didn't perform accord to AWS1.5 requirement, vertical weld weld from downward to upward. 预防措施: AWS1.5 requirement, vertical weld weld from downward to upward. Enhance supervision and inspection and educate worker. 加强对现场的监控和检查, 并对工人进行教育。 Approved by/批准: <u>Guo Jun</u> 09.06.12			
Technical Justification for Use-As-Is/Repair: <input type="checkbox"/> Attachment <input type="checkbox"/> Non-attachment 回用或返修的技术依据: 附件                      无附件			
Reviewed /批准: _____			
Verification: <input type="checkbox"/> Acceptable <input type="checkbox"/> Unacceptable 确认:                      可接受                      不可接受			
Verified by QCI/质检确认: _____		Reviewed by QCA/质检主任审核: _____	

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File #: 69.25B



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

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

Report No: NCR-000296

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 02-Jun-2009

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

NCR #: ZPMC-0270

Type of problem:

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

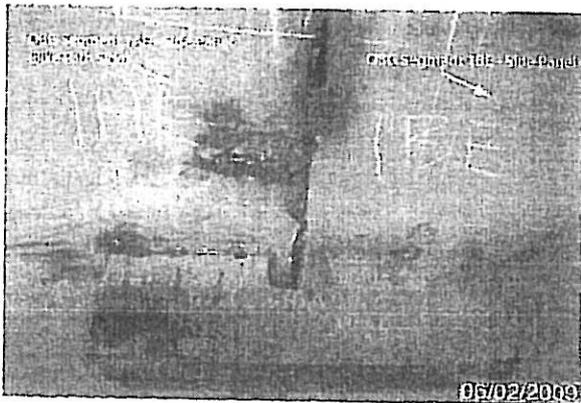
Bridge No: 34-0006

Component: OBG Segment Splice 1AE/1BE

Reference Description: Welding in Downward Progression, Weld Joint OBE1A-009

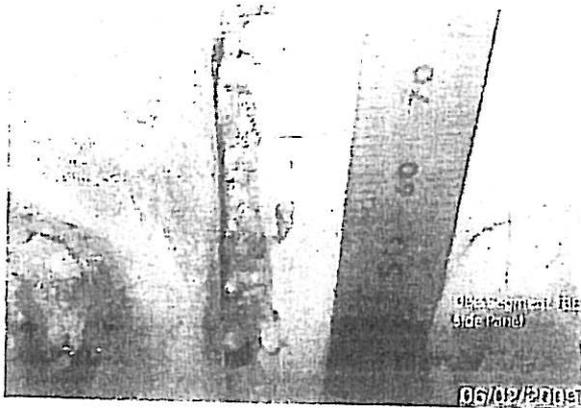
Description of Non-Conformance:

Caltrans Quality Assurance (QA) Inspector observed welding being performed in a downward progression on side panel splice weld OBE1A-009 (OBG Segments 1AE to 1BE). The vertical weld progression should be upwards per AWS D1.5 requirements.



## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )



### Applicable reference:

AWS D1.5 2002, Section 1.9 Welding Procedure Specifications (WPSs): "All production welding shall be performed in conformance with the provisions of an approved Welding Procedure Specification (WPS), which is based upon successful test results as recorded in a Procedure Qualification Record (PQR) unless qualified in conformance with 1.3.1."

AWS D1.5 2002, Section 4.14.1.7: "The progression for all passes of vertical position welding shall be upwards, unless a downward progression shall be qualified by tests approved by the Engineer."

Who discovered the problem: Rory O'Kane

Name of individual from Contractor notified: Larry Lu

Time and method of notification: 15:20 hours, 06-02-09, Verbal

Name of Caltrans Engineer notified: Stanley Ku

Time and method of notification: 14:00 hours, 06-03-09, Verbal

QC Inspector's Name: Xeng Yajun

Was QC Inspector aware of the problem:  Yes  No

Contractor's proposal to correct the problem:

### 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 Skyler Guest, 1500.042.2360, who represents the Office of Structural Materials for your project.

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Inspected By: Guest, Skyler

SMR

Reviewed By: Wahbeh, Mazen

SMR









REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 B787-MT-12238		DATE日期 2009.07.15	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: OBE1 1AE+1BE		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> , 2009	
EQUIPMENT 设备 MT YOKE	MANUFACTURER 制造商 PARKER	MODEL NO. 样式编号 B310S	SERIAL NO. 连续编号 5395 5617 5620	
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-345 20/28 mm	
WELDING PROCESS 焊接方法	FCAW	TYPE OF JOINT 焊缝类型	BUTT	

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			
OBE1A-009				ACC.		100%MT
<b>BLANK</b>						

EXAMINED BY主探 Jin Jianting Jin Jianting 09.07.15 LEVEL - II SIGN 签名 / DATE日期	REVIEWED BY 审核 Sun Gongchang Sun Gongchang 09.07.15 LEVEL-II SIGN / DATE日期
质量经理 / QCM  签字 SIGN / 日期 DATE	用户CUSTOMER  签字 SIGN / 日期 DATE

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(707) 649-5493

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-000345**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 30-Nov-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0270**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:** 02-Jun-2009**Description of Non-Conformance:**

Caltrans Quality Assurance (QA) Inspector observed welding being performed in a downward progression on side panel splice weld OBE1A-009 (OBG Segments 1AE to 1BE). The vertical weld progression should be upwards per AWS D1.5 requirements.

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

Perform required NDT and submit reports verifying the weld is in conformance with Contract specifications.

**Corrective action taken:**

ZPMC performed visual inspection as well as magnetic particle testing and ultrasonic testing on the weld in question and submitted the reports verifying that the welds are in conformance. The welder and quality control technician relieved further instruction on welding in accordance with the approved WPS. Furthermore, the weld in question has received further testing and repairs since the non conformance 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:**

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 Jim Simonis, who represents the Office of Structural Materials for your project.

**Inspected By:** Simonis, Jim

Quality Assurance Inspector

**Reviewed By:** Wahbeh, Mazen

QA Reviewer