

**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-000659

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

**Date:** 28-Jan-2010

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

**NCR #:** ZPMC-0630

### 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> 5CW Longitudinal Diaphragm Side Stiffener
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b>	Noted Deflection on welded members

**Reference Description:** Noted deflection exceeding contract requirement on 5CW Longitudinal Diaphragm Side Stiffener

### Description of Non-Conformance:

-During random Quality Assurance In-Process Visual inspection on segment 5CW, this Quality Assurance Inspector (QA) discovered the following issues:

-Two (2) longitudinal diaphragm (LD) stiffeners were found to be out of tolerance over the length of both stiffeners measured vertically.

-16mm max deflection was measured with a straight edge in contact with the bottom of X77V and the top of X77T.

-Stiffeners X77T and X77V are attached to the intermediate stiffener X77G.

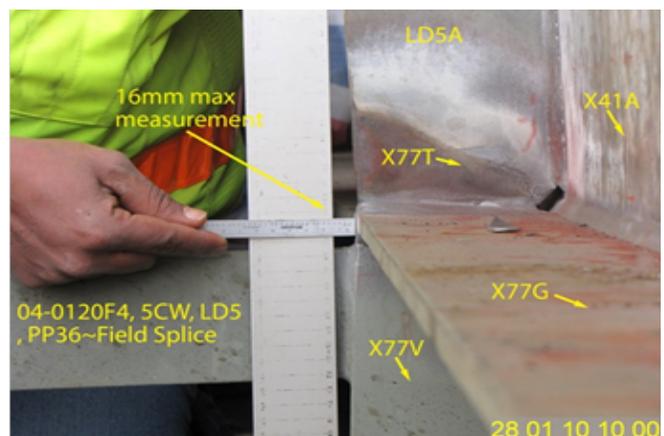
-The LD deflection was measured horizontally across the web and is 11mm in 4000mm on LD5A.

-The full length of LD5A is 4260mm.

-The field splice connecting LD5A is between 5CW to 6AW.

-These measurements were taken at Segment 5CW panel point (PP) 36 Counter Weight side.

-Segment 5CW is located outside in the OBG Trail Assembly area.



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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 3.5.1.5

Allowable lateral variations between the centerline of the web and the centerline of the flange of built-up H or I members at contact surface shall not exceed 6mm (1/4).

**Who discovered the problem:** Mark Miller

**Name of individual from Contractor notified:** CK Chan

**Time and method of notification:** 0945 hours, 01/28/10, Verbal

**Name of Caltrans Engineer notified:** Bill Howe, Ching Chao

**Time and method of notification:** 1430 hours, 01-29-10, Email

**QC Inspector's Name:** Wang Lu

**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, +(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>	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:** 29-Jan-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:** 05.03.06-000619

**Subject:** NCR No. ZPMC-0630

**Reference Description:** Noted deflection exceeding contract requirement on 5CW Longitudinal Diaphragm Side Stiffener

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:** 05

### Remarks:

- During random Quality Assurance In-Process Visual inspection on segment 5CW, this Quality Assurance Inspector (QA) discovered the following issues:
  - Two (2) longitudinal diaphragm (LD) stiffeners were found to be out of tolerance over the length of both stiffeners measured vertically.
  - 16mm max deflection was measured with a straight edge in contact with the bottom of X77V and the top of X77T.
  - Stiffeners X77T and X77V are attached to the intermediate stiffener X77G.
  - The LD deflection was measured horizontally across the web and is 11mm in 4000mm on LD5A.
  - The full length of LD5A is 4260mm.
  - The field splice connecting LD5A is between 5CW to 6AW.
  - These measurements were taken at Segment 5CW panel point (PP) 36 Counter Weight side.
  - Segment 5CW is located outside in the OBG Trail Assembly area.
- Please see attached NCR ZPMC-630 for details.

### Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences and also provide documentation to show that the deflection has been properly corrected to meet contract requirements.

**Transmitted by:** Ching Chao

**Attachments:** ZPMC-0630

**cc:** Rick Morrow, Gary Pursell, Peter Siegenthaler, Contract Files, Ching Chao, Bill Howe

**File:** 05.03.06

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000619

**Subject:** NCR No. ZPMC-0630

**Dated:** 08-Feb-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000580 Rev: 00

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**Contractor's Proposed Resolution:**

**Reference Resolution:** Dimensional acceptance will be available at the time of shipment after all parties are in agreement. ZPMC requests that this NCR be approved with actions pending.

As these are related to the final dimensions of the sub assembly and there is potential for distortion with ongoing work in trial assembly. Dimensional acceptance will be available at the time of shipment after all parties are in agreement. Until that those results are available, ZPMC requests that this NCR be approved with actions pending.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000580R00

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**Caltrans' comments:**

**Status:** REJ

**Date:** 08-Feb-2010

None of the documentation requested was received. This NPR is rejected.

**Submitted by:** Howe, Bill

**Date:** 08-Feb-2010

**Attachment(s):**

## NCR PROPOSED RESOLUTION

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

**Dated:** 10-Feb-2010

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

**Attention:** Pursell, Gary  
Resident Engineer

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000580 Rev: 01

**Ref:** 05.03.06-000619

**Subject:** NCR No. ZPMC-0630

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### Contractor's Proposed Resolution:

**Reference Resolution:** To close this NCR, once the distortion documented in this non conformance is corrected and the applicable documents that verify this are submitted ZPMC will request closure.

To close this NCR, once the distortion documented in this non conformance is corrected and the applicable documents that verify this are submitted ZPMC will request closure. Until they become available ZPMC requests that this proposal be accepted with action pending.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000580R01

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### Caltrans' comments:

**Status:** AAP

**Date:** 11-Feb-2010

AAP approved.

**Submitted by:** Howe, Bill

**Date:** 11-Feb-2010

**Attachment(s):**

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000619

**Subject:** NCR No. ZPMC-0630

**Dated:** 29-Mar-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000580 Rev: 02

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### Contractor's Proposed Resolution:

**Reference Resolution:** Acceptable NDT results are documented on the weld repair reports and this item has since been removed from the punchlist. Based on this ZPMC requests closure of this NCR.

ZPMC has brought the longitudinal diaphragm into dimensional tolerance and is including the welding repair report used. Acceptable NDT results are documented on the weld repair reports and this item has since been removed from the punchlist. Based on this ZPMC requests closure of this NCR.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000580R02;

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### Caltrans' comments:

**Status:** CLO

**Date:** 05-Apr-2010

This proposed resolution is acceptable. The documentation received is sufficient and the Department concurs that Non-Conformance ZPMC-0630 is closed.

**Submitted by:** Eagen, Sean

**Attachment(s):**

**Date:** 05-Apr-2010



No. B-711

## LETTER OF RESPONSE

**TO:** American Bridge/Flour

**DATE:** 2010-3-29

**REGARDING:** NCR-000659 (ZPMC-0630)

ZPMC acknowledged this problem and the rectification has been performed. The stiffeners on LD was cut off and rewelded to fix the deflection. After NDT verification and dimension checking, this issue has been removed from punchlist by CT's representative. Based on this, ZPMC is requesting closure of this NCR.

**ATTACHMENT:**

NCR-000659 (ZPMC-0630)

B-WR10718

*Jim W*

*3/29/10*



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

## NON-CONFORMANCE REPORT TRANSMITTAL

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

Date: 29-Jan-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: 05.03.06-000619

Subject: NCR No. ZPMC-0630

Reference Description: Noted deflection exceeding contract requirement on 5CW Longitudinal Diaphragm Side Stiffener

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Material Location: OBG

Lift: 05

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  - Segment 5CW is located outside in the OBG Trail Assembly area.
- Please see attached NCR ZPMC-630 for details.

### Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences and also provide documentation to show that the deflection has been properly corrected to meet contract requirements.

Transmitted by: Ching Chao

Attachments: ZPMC-0630

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Contract Files, Ching Chao, Bill Howe

File: 05.03.06

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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-000659  
**Prime Contractor:** American Bridge/Fluor Enterprises, a JV **Date:** 28-Jan-2010  
**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0630

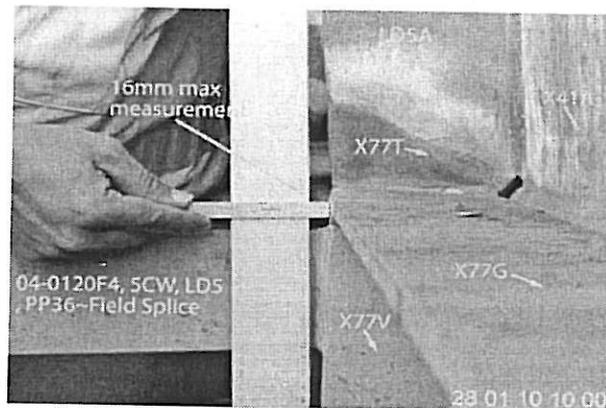
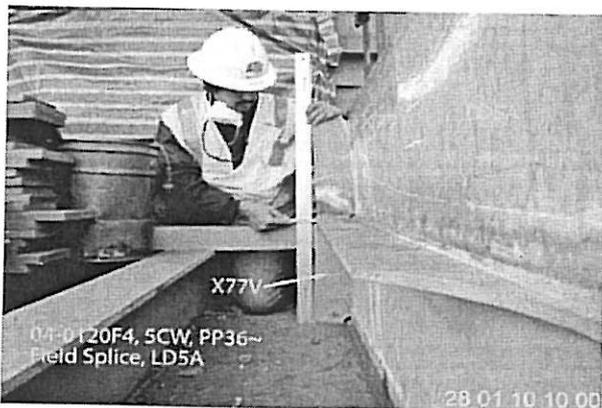
**Type of problem:**

- Welding  Concrete  Other   
 Welding  Curing  Procedural  **Bridge No:** 34-0006  
 Joint fit-up  Coating  Other  **Component:** 5CW Longitudinal Diaphragm Side Stiffener  
 Procedural  Procedural  **Description:** Noted Deflection on welded members

**Reference Description:** Noted deflection exceeding contract requirement on 5CW Longitudinal Diaphragm Side Stiffener

**Description of Non-Conformance:**

- During random Quality Assurance In-Process Visual inspection on segment 5CW, this Quality Assurance Inspector (QA) discovered the following issues:
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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

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( Continued Page 2 of 2 )

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**Applicable reference:**

AWS D1.5-2002 Section 3.5.1.5

Allowable lateral variations between the centerline of the web and the centerline of the flange of built-up H or I members at contact surface shall not exceed 6mm (1/4).

**Who discovered the problem:** Mark Miller

**Name of individual from Contractor notified:** CK Chan

**Time and method of notification:** 0945 hours, 01/28/10, Verbal

**Name of Caltrans Engineer notified:** Bill Howe, Ching Chao

**Time and method of notification:** 1430 hours, 01-29-10, Email

**QC Inspector's Name:** Wang Lu

**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, +(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
<b>Reviewed By:</b> Wahbeh, Mazen	SMR

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# 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	LD5A	报告编号 Report No.	B-WR10718
合同号 Contract No.:	04-0120F4	部件名称 Items Name	纵桁 Longitudinal diaphragm	NDT报告编号 Report No.of NDT	NA
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

**Description of welding discontinuity:**

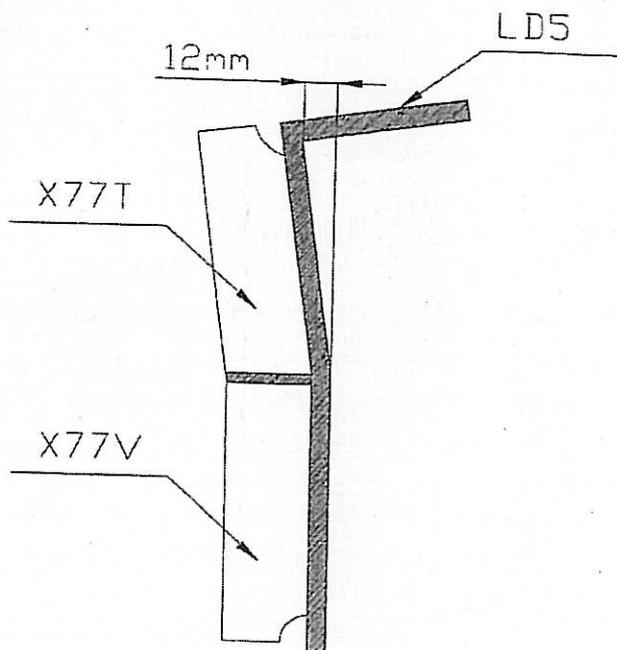
5CW配重块侧纵桁LD5A上的筋板X77T变形约12mm, 需要调整, 具体尺寸见下图:  
 The distortion was found at 5CW longitudinal diaphragm LD5A stiffener X77T face weight counter and needed to adjust, the detail size sees the following draft.

*Wang Jie*

检验员 (Inspector) : Wang Jie 日期(Date) : 10.02.24

焊缝返修位置示意图:

Draft of welding discontinuity:



产生原因:

Caused:

焊接变形和制作误差。

Weld distortion and fabricate error.

车间负责人(Foreman): *Zhong Guiming* 日期(Date): 2-25

处理意见

Disposition :

1. 采用碳刨或火焰切割的方法割除变形位置件X77TV与件X77G之间的焊缝, 碳刨前应根据相应的WPS进行预热;
2. 提交校火报告并对变形区域进行火工校正, 满足图纸要求;
3. 对母材刨除区域进行VT检测确认无缺陷存在;
4. 根据批准的WPS预热并焊接;
5. 将修补焊缝打磨与周边焊缝或母材平齐;
6. 根据图纸要求进行检测。

注意: 在对变形区域进行校火时, 必须保证纵行端口与相应箱梁纵行端口匹配(可用工装件控制其变形)。

1. Remove the welds where the distortion is out of tolerance between X77TV and X77G by the way of gouging or Oxygen. Preheat according to the WPS prior to gouging.
2. Put in the heat straightening report to revise the distortion area to meet the require of the drawing.
3. Perform 100%VT inspection to the metal cutting area to ensure no defects exist ;
4. Preheat and weld according to the approved repair WPS;
5. Grind the weld flush to the adjacent weld or base metal.
6. Check the weld according to the shop drawings.

Note; during the process of heat straightening, fixture can be used to avoid deformation of LD to assure its match with relevant LD at the splice of girder.

工艺: *hexiao lin*  
Technical engineer

审核:  
Approved by

日期  
Date

2-25

#R787-QCP-900



# 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.	LD5A	报告编号 Report No.	B-WR10718
合同号 Contract No.:	04-0120F4	部件名称 Items Name	纵桁 Longitudinal diaphragm	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:

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): Zhang Guiming 日期(Date): 2-25

参照的WPS编号 Repair WPS No.	WPS-345-SMAW-1 G(1F)-Repair WPS-345-FCAW-1 G(1F)-Repair-1 WPS-345-SMAW-2 G(2F)-Repair WPS-345-FCAW-2 G(2F)-Repair-1	工艺员 technologist	Hexiadin 2-25
返修(碳刨)前预热温度 Preheat temperature before gouging	NA	返修的缺陷 Description of discontinuity	焊缝缺陷
焊前处理检查 Inspection before welding	Acc	焊前预热温度 Preheat temperature before welding	167°C
最大碳刨深度 Max. depth of gouging	NA	碳刨总长 Total length of gouging	125mm
焊工 welder	054467	焊接类型 welding type	SMAW
焊接电流 Current	148	焊接电压 Voltage	22.5
		焊接位置 position	2G
		焊接速度 Speed	1.00
返修后检查 Inspection After repairing:			
外观检查 VT result	Acc	检验员 Inspector	Li Tang
		日期 Date	2010.3.20
NDT复检 NDT result	Acc(MT)	探伤员 NDT person	Huang Jing
		日期 Date	10-3-20
见证: Witness/Review:			
备注: Remark:			

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

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Bay Area Branch  
690 Walnut Ave. St. 150  
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(707) 649-5453  
(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-000597**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 14-Apr-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0630**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:** 28-Jan-2010**Description of Non-Conformance:**

-During random Quality Assurance In-Process Visual inspection on segment 5CW, this Quality Assurance Inspector (QA) discovered the following issues:

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-The full length of LD5A is 4260mm.

-The field splice connecting LD5A is between 5CW to 6AW.

-These measurements were taken at Segment 5CW panel point (PP) 36 Counter Weight side.

-Segment 5CW is located outside in the OBG Trail Assembly area.

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

Correct distortion issue by means of heat straightening.

**Corrective action taken:**

Contractor removed welds and performed heat straightening to correct said distortion. LD5A is now within dimensional tolerance constraints set forth by Contract specifications.

**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 152.1675.3703, who represents the Office of Structural Materials for your project.

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## QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

( Continued Page 2 of 2 )

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**Inspected By:** Simonis,Jim

Quality Assurance Inspector

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**Reviewed By:** Wahbeh,Mazen

QA Reviewer