

**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


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


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**Location:** Changxing Island, Shanghai, P.R. China**Report No:** NCR-000303**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 10-Jun-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0277**Type of problem:****Welding****Concrete****Other****Welding****Curing****Procedural****Bridge No:** 34-0006**Joint fit-up****Coating****Other****Component:** OBG Segments 4AE/4BE**Procedural****Procedural****Description:**

**Reference Description:** Heat Straightening Without the Engineer's Approval, Longitudinal Diaphragms at 4AE/4BE Segment Splice

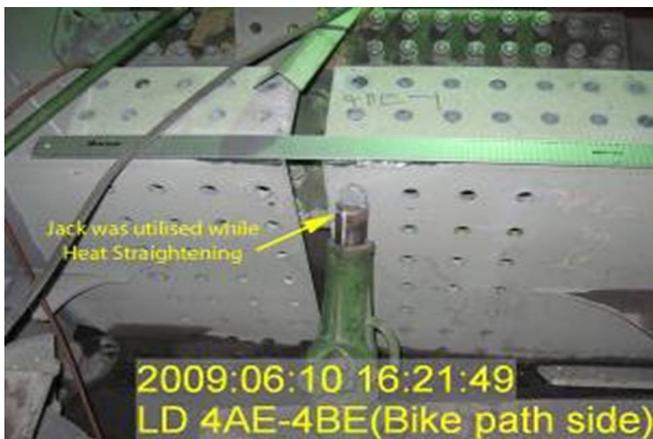
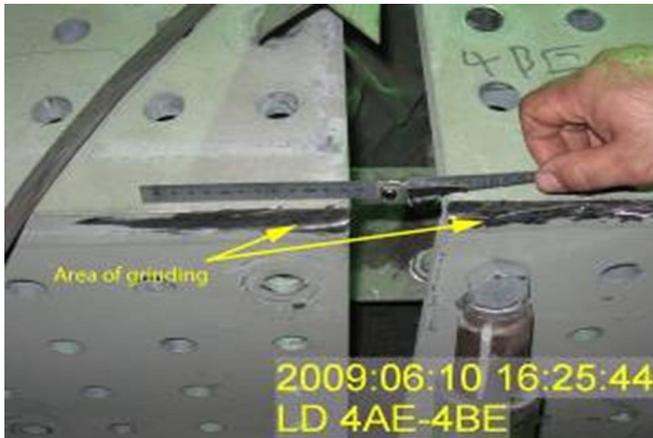
**Description of Non-Conformance:**

Caltrans Quality Assurance (QA) Inspector observed that:

1. The misalignment between Longitudinal Diaphragms LD008-001 (Segment 4AE) and LD018-001 (Segment 4BE) was measured as 12mm. This LD splice was subjected to heat straightening without the Engineer's approval.
2. The heat straightening report utilized at this location was not applicable to the specific work being performed.
3. A mechanical jack was utilized during this process and mechanical jacking was not specified for use on the heat straightening report.
4. Heat straightening was performed without the presence of ZPMC CWI/QC.
5. The base metal edges of the flanges were reduced by grinding to minimize the offset.

# QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 3 )



## Applicable reference:

AWS D1.5 2002 Section 3.7.3: "Members distorted by welding shall be straightened by mechanical means or by carefully supervised application of a limited amount of localized heat as approved by the Engineer."

Special Provisions 8-3-01, Welding Quality Control: "The Engineer shall be notified immediately when weld distortion occurs that cannot be corrected using the standard procedures for heat straightening submitted in the WQCP. Request to heat straighten shall be in writing and include.

- 1) Sketches of each distortion member showing the dimensions, length of weld, out of tolerance values, and locations where heat will be applied.
- 2) Estimate of the number of applications of heat to bring the material back into conformance.
- 3) Explanation of how distortion control procedures will be modified and improved.
- 4) The contractor shall allow the Engineer five (5) days to review these procedures.
- 5) No remedial work shall begin until the repair procedures are approved in writing by the Engineer."

**Who discovered the problem:** M. Manikandan

**Name of individual from Contractor notified:** Steve Lawton

**Time and method of notification:** 17:00, 06/10/09, Verbal

**Name of Caltrans Engineer notified:** Stanley Ku

**Time and method of notification:** 14:00, 06/11/09, Verbal

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 3 of 3 )

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

**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, (86) 1500.042.2360, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Guest,Skyler	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:** 14-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:** 05.03.06-000266

**Subject:** NCR No. ZPMC-0277

**Reference Description:** Heat Straightening Without the Engineer's Approval, Longitudinal Diaphragms at 4AE/4BE Segment Splice

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:** 04

### Remarks:

Caltrans Quality Assurance (QA) Inspector observed that:

1. The misalignment between Longitudinal Diaphragms LD008-001 (Segment 4AE) and LD018-001 (Segment 4BE) was measured as 12mm. This LD splice was subjected to heat straightening without the Engineer's approval.
2. The heat straightening report utilized at this location was not applicable to the specific work being performed.
3. A mechanical jack was utilized during this process and mechanical jacking was not specified for use on the heat straightening report.
4. Heat straightening was performed without the presence of ZPMC CWI/QC.
5. The base metal edges of the flanges were reduced by grinding to minimize the offset.

### Action Required and/or Action Taken:

Propose a resolution for the identified recurring non-conformance with revised procedures to prevent future occurrences. A response for the resolution of this issue is expected within 14 days.

**Transmitted by:** Ching Chao

**Attachments:** ZPMC-0277

**cc:** Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Doug Coe, Jason Tom, Contract Files, 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:** 05.03.06-000266

**Subject:** NCR No. ZPMC-0277

**Dated:** 27-Jul-2009

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000270 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-000270R00;

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**Caltrans' comments:**

**Status:** CLO

**Date:** 10-Aug-2009

The proposed resolution is acceptable. The heat straightening record is included, and the weld in question has been accepted by VT and MT as shown in the attached documents. The Department concurs that Non-Conformance ZPMC-0277 is closed.

**Submitted by:** Wright, Doug

**Date:** 10-Aug-2009

**Attachment(s):**



No. B-407

## LETTER OF RESPONSE

**TO: American Bridge/Flour**

**DATE: 2009-7-20**

**REGARDING: NCR-000303 (ZPMC-0277)**

With this letter of response, ZPMC requests closure for Caltrans NCR-000303 (ZPMC-0277). We have instructed the sub-contractor that the heat straight must follow the procedure, means that if he want to assistant by machinery then he should add the detail in the HSR and got the approval by engineer prior the corrective action, Otherwise will not be allowed to straight by mechanical method especially the grinding to minimize the offset.

Another way we have concern that the CWI should be witness all of the heat straight process, that can avoid the non-conformace action happen with the worker personal disobeyer. We also have completed the corresponding NDT inspection for the influenceable weld to verify the quality and provide at this time for support.

So base on the above explanation and attached documentations, ZPMC applies to close the caltrans's report NCR-000303 (ZPMC-0277).

Please reference attached documentation for acceptance and closure the NCR-000303 (ZPMC-0277).

**ATTACHMENT:**

**NCR-000303 (ZPMC-0277)**

**ZPMC internal NCR**

**The closed HSR**

**The final VT/MT report**

*Zhao Shuangbao*

*2009. 7. 20*



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-196 (NCR-00277)  
 NCR 编号:

Item: Heat Straightening without the Engineer's approval  
 Item Number: 件号: N/A  
 Drawing: 4AE/4BE  
 名称描述: 校火报告未得到批准  
 图号:

Location: 4AE/4BE  
 位置:  
 Date: 2009-06-20  
 日期:

Description of Nonconformance:  
 不符合项状态描述:  
 Caltrans Quality Assurance inspector observed that:  
 1, The misalignment between longitudinal diaphragms LD008-001 and LD018-001 was measured as 12mm, This LD splice was subjected to heat straightening without the Engineer's approval.  
 2, The heat straightening report utilized at this location was not applicable to the specific work being performed,  
 3, A mechanical jack was utilized during this process and mechanical jacking was not specified for use on the heat straightening report.  
 4, Heat straightening was performed without the presence of ZPMC CWI/QC.  
 5, The base metal edges of the flanges were reduced by grinding to minimize the offset.  
 加州检验员发现以下问题:  
 1, 纵桁 LD008-001 与 LD018-001 最大错边达 12mm. 这个纵桁连接处私自校火而未得到工程师批准.  
 2, 校火时, 并未按照报告中的内容操作.  
 3, 校火时使用了千斤顶, 但是在报告中并未要求使用千斤顶.  
 4, 校火时没有 ZPMC CWI 和 QC 监控.  
 5, 纵桁的法栏面的母材有被打磨过, 以此来减少偏差.

Work By: Xiafa Lin  
 施工方:  
 Prepared by: wangfu  
 准备: 6.20  
 Reviewed by QCE: huoshuangbao  
 质量工程师批准: 6.20  
 Drawing Error  Material Defect  Fabrication Error  Other  
 图纸错误 材料缺陷 制作错误 其他原因

Disposition:  Use as is  Repair  Reject  
 处理措施: 回用 返修 拒收

Recommendation:  
 建议:  
 Prepared by: \_\_\_\_\_ Approved by QCA: \_\_\_\_\_  
 准备 质量经理批准

Reason for Nonconformance:  
 不符合原因:  
 由于纵桁 LD008-001 与 LD018-001 错边达 12mm 且私自对连接处校火, 并未按照报告内容操作。  
 The misalignment was 12mm at longitudinal LD008-001 and LD018-001, worker privately heat straighten component without according to heat straightening report.  
 预防措施: 加强现场监控或检查, 并对工人进行教育、培训和监督。  
 Enhance supervision and training workers.  
 Approved by/批准: Gao Jun 09.06.20

Technical Justification for Use-As-Is/Repair:  Attachment  Non-attachment  
 回用或返修的技术依据:  
 附件 无附件  
 Reviewed /批准: jiangyabo

(附件) 回用或返修的技术依据:

1、将涉及到的焊缝校火区域进行 MT 检测, 并加强现场的监控及检查力度, 对相关人员进行教育和培训, 杜绝此类似问题再次发生;

2、将变形的纵桁连接板拆下, 重新更换新的连接板, 连接板在安装时, 需检查相邻纵桁匹配时的错边量;

Tang Yongbo

① 是4号见技术依据. 6786  
 ② 2号见技术依据及已更换. 附件和附件已见125.  
 ③ 3号已拆下. 附件和附件  
 CWI 07120671  
 7.16

Attachment Technical Justification for Use-As-Is/Repair:

1. Perform MT of heat straightening area, and enhance inspection and train and educate relevant personnel;

2. Remove distortion ~~part~~ connect plate and re-assemble connect plate and it shall inspect alignment of longitudinal diaphragm before assembly longitudinal diaphragm.

1). The detail see HSR 16786.

2). ~~Changed~~ distortion connect with witness by QA  
 3) ABF and Caltrans inspected longitudinal diaphragm.

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NON-CONFORMANCE REPORT TRANSMITTAL

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

Date: 14-Jun-2009  
Contract No: 04-0120F4  
04-SF-80-13.2 / 13.9  
Job Name: SAS Superstructure  
Document No: 05.03.06-000266

Dear: Mr. Charles Kanapicki  
Attention: Mr Thomas Nilsson Project/Fabrication Manager  
Subject: NCR No. ZPMC-0277

Reference Description: Heat Straightening Without the Engineer's Approval, Longitudinal Diaphragms at 4AE/4BE Segment Splice

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File: 05.03.06

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**DIVISION OF ENGINEERING SERVICES**  
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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-000303

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

**Date:** 10-Jun-2009

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

**NCR #:** ZPMC-0277

**Type of problem:**

Welding  Concrete  Other

Welding  Curing  Procedural

**Bridge No:** 34-0006

Joint fit-up  Coating  Other

**Component:** OBG Segments 4AE/4BE

Procedural  Procedural  Description:

**Reference Description:** Heat Straightening Without the Engineer's Approval, Longitudinal Diaphragms at 4AE/4BE Segment Splice

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(Continued Page 2 of 3)



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**Name of individual from Contractor notified:** Steve Lawton

**Time and method of notification:** 17:00, 06/10/09, Verbal

**Name of Caltrans Engineer notified:** Stanley Ku

**Time and method of notification:** 14:00, 06/11/09, Verbal

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

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( Continued Page 3 of 3 )

QC Inspector's Name: Wang Lu

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, (86) 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







VF30606, 30607

MF 1219号  
缺-MI 报塔



火工校正记录

Heat Straightening Record(HSR1)

报告号 Record #

HSR1(B)-6786

版本号 Revision #

0

日期 Date

2009.06.08

美国海湾大桥 San Francisco Oakland Bay Bridge

CALTRANS #04-0120F4

工程编号 JOB#: ZP06-787

装配 Assembly:	质检代表/Quality Control Representative
部装 Sub-Assembly:	Xu Jun 209 611
梁段 Gird: 4Lift-E	质检经理/Quality Assurance Manager-Approval
塔段 Tower: N/A	Luyankhua
焊缝号 Weld No: See Sketch	
焊缝地图号 Weld Map No: See Sketch	

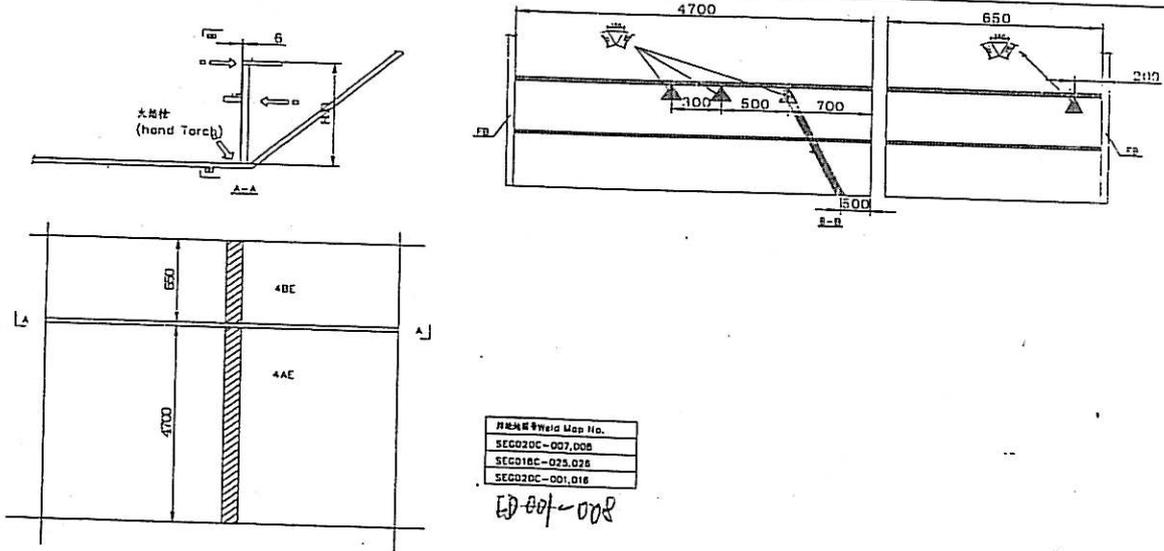
情况描述 Description of Condition

Cause原因: Welding distortion 焊接变形  
 Type of Defect缺陷类型: Welding distortion 焊接变形  
 Inspection Method检查方法: Visual 目检

处置方法 Disposition

缺陷去除方法(Defect Removal Method): Flame Straightening by oxygen acetylene  
 后续NDE(Post-Removal NDE): After finishing heat straightening, the weld of the heat area shall perform NDT according to the approved shop drawing  
 纠正措施(Corrective Action(s)): Control current, voltage and weld speed according to relevant WPS. If necessary anti-deformation or hold down device can be added.  
 实施次数(Number of application): 1~3  
 最高温度(Maximum temperature): <650°C

简图 Sketch



注: 最大变形量约6mm, 最大宽度20~40mm.  
 NOTE: the max deformation is about 6mm, the width is 20~40mm.

\*\*\*To be signed when Closing HSR~Verify compliance and all necessary reports are ready to attach\*\*\*

检验员 Inspector:	Shi Lin	签字 Signature:	[Signature]
CWI #	07120781	Closing Date:	09.07.05
II 级探伤 NDE Certification:	Level II		

质检经理 QC Manager: [Signature] 审核日期 Review Date: [Signature]

Note: All repair work shall be performed in accordance with applicable CALTRANS approved procedures, contract specifications and AWS D1.5 2002.

#R787-QCP-1101

Approved by Luyankhua 6/11/09



美国钢桥钢板平整度火工校正检查记录卡

The report of steel plate heat straightening process checking

工程编号: The serial no. of project:	2106-787	图号: The drawing no.:	SZG 020C, SZG 018C	构件名称: The part name.:	钢架
材质: Material:	A709m-345	炉批号: The heatno of plate:	N/A	火工校正次数: The times of heat straightening:	3
移植是否正确: Material mark checking:	right	钢板编号: Plate ID:	N/A	桥段名称: Section name:	4A2 t41S2

火工校正温度控制 The temperature record of heat straightening

检查时间 Checking time:	9:20	60:00	10:30						
测量温度 Measure result:	512	482	462						

校火前平整度测量 Flatness checking before heat straightening (mm)

测量点 Measure position:	1	2	3						
测量值 Measure result:	6	5.3	5.7						

校火后平整度测量 Flatness checking after heat straightening (mm)

测量点 Measure position:	1	2	3						
测量值 Measure result:	1	0.8	0.5						

整体平整度 / 筋板垂直度是否合格  
Heat straightening result:

合格

检验员  
QC inspector:

Zhongxiaoping

日期  
Date:

09.6.13

若校正影响焊缝, 请填写以下项目  
Fill the following items if the straightening affects the weld

对应NDT报告编号  
NDT report no.

✓

NDT检验员签字  
NDT inspector:

Jin Jianling

日期  
Date:

09.7.4



# REPORT OF MAGNETIC PARTICLE EXAMINATION

## 磁粉检测报告

REPORT NO. 报告编号 B787-MT-12193		DATE日期 2009.07.06		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: OBE4 OBG LONGITUDINAL			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 14/20/30 mm			
WELDING PROCESS 焊接方法	FCAW	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			
SEG020C-007						*
SEG020C-008				ACC.		100%MT
SEG020C-001						*
SEG020C-016				ACC.		100%MT
SEG018C-025						*
SEG018C-026				ACC.		100%MT
<b>AFTER HSR1 (B) - 6786</b>						
* SEG020C-008、SEG020C-016、SEG018C-026 were MT inspection and ACC, which is the result of required 15% MT.						
* SEG020C-008、SEG020C-016、SEG018C-026 焊缝经MT检测合格, 累积检测长度已经达到了此批要求的15%检测长度。						
<b>BLANK</b>						
EXAMINED BY主探 Jin Jianting <i>Jin Jianting</i> 09.07.06 LEVEL - II SIGN 签名 / DATE日期			REVIEWED BY 审核 <i>Cai XinXin</i> 09.07.06 LEVEL-II SIGN / DATE日期			
质量经理 / QCM			用户CUSTOMER			
签字 SIGN / 日期 DATE			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  
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 #: xx.25A**QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION****Location:** Changxing Island, Shanghai, P.R. China**Report No:** NCS-000268**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 25-Aug-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0277**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:** 10-Jun-2009**Description of Non-Conformance:**

Caltrans Quality Assurance (QA) Inspector observed that:

1. The misalignment between Longitudinal Diaphragms LD008-001 (Segment 4AE) and LD018-001 (Segment 4BE) was measured as 12mm. This LD splice was subjected to heat straightening without the Engineer's approval.
2. The heat straightening report utilized at this location was not applicable to the specific work being performed.
3. A mechanical jack was utilized during this process and mechanical jacking was not specified for use on the heat straightening report.
4. Heat straightening was performed without the presence of ZPMC CWI/QC.
5. The base metal edges of the flanges were reduced by grinding to minimize the offset.

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

Submit approved HSR and perform subsequent NDT.

**Corrective action taken:**

Contractor submitted HSR as well as VT and MT reports verifying repair was performed in conformance with Contract requirements.

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

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

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