

**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-000558**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 22-Dec-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0531**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> Lift 5 East
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b>	Dimensional Control

**Reference Description:** Side Panel Flatness, L5E**Description of Non-Conformance:**

During a random visual skin flatness survey of exterior surfaces of segment Lift 5 East located in the Trial Assembly area, the Caltrans Quality Assurance (QA) Inspector discovered the following issues:

5AE to 5BE

## 1) 5AE SP (SP304A) to SP (SP423A) - Bike path side

Surface flatness surveys were taken on the exterior Side Panel (SP) surface of weld splice SEG022A-010, Bike path side of 5AE between PP31 to PP32. The out of flatness measurements were taken across the Side Panel in the transverse direction between the longitudinal weld splice. These measurements were out of flatness 8mm in 630mm, which exceeds the maximum 5mm out of flatness requirement per State letter 05.03.01.004667.

- Out of flatness 8mm in 630mm
- The longitudinal weld splice is identified as: SEG022A-010.
- The Transverse weld splice is identified as: OBE5A-004 & OBE5A-005.
- The SP to SP plate numbers are: SP304A to SP423A.
- The location was at the Bike path side of Segment 5AE.
- Between PP31 to PP32

## 2) 5AE SP (SP521A) to SP (SP419A) - Cross beam Side

Surface flatness surveys were taken on the exterior Side Panel (SP) surface of weld splice SEG022A-001, Cross beam side of 5AE between PP31 to PP32. The out of flatness measurements were taken across the Side Panel in the transverse direction between the longitudinal weld splice. These measurements were out of flatness 7mm in 630mm, which exceeds the maximum 5mm out of flatness requirement per State letter 05.03.01.004667.

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 4 )

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- Out of flatness 7mm in 630mm
- The longitudinal weld splice is identified as: SEG022A-001.
- The Transverse weld splice is identified as: OBE5A-002 & OBE5A-001.
- The SP to SP plate numbers are: SP521A to SP419A.
- The location was at the Cross Beam side of Segment 5AE.
- Between PP31 to PP32

5BE to 5CE

### 1) 5BE SP (SP305A) to SP (SP424A) - Bike path side

Surface flatness surveys were taken on the exterior Side Panel (SP) surface of weld splice SEG024A-031, Bike path side of 5BE between PP34 to PP35. The out of flatness measurements were taken across the Side Panel in the transverse direction between the longitudinal weld splice. These measurements were out of flatness 7mm in 630mm, which exceeds the maximum 5mm out of flatness requirement per State letter 05.03.01.004667.

- Out of flatness 7mm in 630mm.
- The longitudinal weld splice is identified as: SEG024A-031.
- The Transverse weld splice for 5BE to 5CE is identified as: OBE5A-009 & OBE5A-010.
- The SP to SP plate numbers are: SP305A to SP424A.
- The location was at the Bike path side of Segment 5BE.
- Between PP34 to PP35

### 2) 5CE SP (SP524A) to SP (SP422A) - Cross beam Side

Surface flatness surveys were taken on the exterior Side Panel (SP) surface of weld splice SEG026A-009, Cross beam side of 5CE between PP34 to PP35. The out of flatness measurements were taken across the Side Panel in the transverse direction between the longitudinal weld splice. These measurements were out of flatness 7mm in 630mm, which exceeds the maximum 5mm out of flatness requirement per State letter 05.03.01.004667.

- Out of flatness 7mm in 630mm
- The longitudinal weld splice is identified as: SEG026A-009.
- The Transverse weld splice for 5BE to 5CE is identified as: OBE5A-007 & OBE5A-006.
- The SP to SP plate numbers are: SP524A to SP422A
- The location was at the Cross Beam side of Segment 5CE.
- Between PP34 to PP35

# QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 3 of 4 )



## Applicable reference:

CALTRANS Letter No. 05.03.01-004667 Subject: OBG Skin Plate Flatness

“The maximum deviation from detailed flatness for the stiffened plate would not exceed the greater of 5mm.”

“The 630mm long template (straight edge) could be used to check both transversely between stiffeners, and along the length of the stiffeners to determine local deviations.”

Standard Specifications July, 1999: Section 55-3.17 WELDING; The flat side of all butt welded joints shall not deviate from flatness by more than 5 mm in a length of 600 mm centered over the weld joint.

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

**Name of individual from Contractor notified:** Kevin Chen

**Time and method of notification:** 1600 hours, 12-22-09, Verbal

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

**Time and method of notification:** 1700 hours, 12-22-09, Verbal

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

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

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

**Comments:**

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 4 of 4 )

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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 Eric Tsang, 15000422372, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Guest,Skylar	SMR
<b>Reviewed By:</b>	Wahbeh,Mazen	SMR

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**DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge**

333 Burma Road  
Oakland CA 94607  
Tel: Fax:

**NON-CONFORMANCE REPORT TRANSMITTAL**

<b>To:</b>	AMERICAN BRIDGE/FLUOR, A JV 375 BURMA ROAD OAKLAND CA 95607	<b>Date:</b>	25-Dec-2009
<b>Dear:</b>	Mr. Charles Kanapicki	<b>Contract No:</b>	04-0120F4 04-SF-80-13.2 / 13.9
<b>Attention:</b>	Mr. Thomas Nilsson Project/Fabrication Manager	<b>Job Name:</b>	SAS Superstructure
<b>Subject:</b>	NCR No. ZPMC-0531	<b>Document No:</b>	05.03.06-000519
<b>Reference Description:</b>	Side Panel Flatness, L5E		

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 a random visual skin flatness survey of exterior surfaces of segment Lift 5 East located in the Trial Assembly area, the Caltrans Quality Assurance (QA) Inspector discovered the following issues:

5AE to 5BE

1) 5AE SP (SP304A) to SP (SP423A) - Bike path side

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- Out of flatness 8mm in 630mm
- The longitudinal weld splice is identified as: SEG022A-010.
- The Transverse weld splice is identified as: OBE5A-004 & OBE5A-005.
- The SP to SP plate numbers are: SP304A to SP423A.
- The location was at the Bike path side of Segment 5AE.
- Between PP31 to PP32

2) 5AE SP (SP521A) to SP (SP419A) - Cross beam Side

Surface flatness surveys were taken on the exterior Side Panel (SP) surface of weld splice SEG022A-001, Cross beam side of 5AE between PP31 to PP32. The out of flatness measurements were taken across the Side Panel in the transverse direction between the longitudinal weld splice. These measurements were out of flatness 7mm in 630mm, which exceeds the maximum 5mm out of flatness requirement per State letter 05.03.01.004667.

- Out of flatness 7mm in 630mm

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# NCT

( Continued Page 2 of 2 )

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- The longitudinal weld splice is identified as: SEG022A-001.
- The Transverse weld splice is identified as: OBE5A-002 & OBE5A-001.
- The SP to SP plate numbers are: SP521A to SP419A.
- The location was at the Cross Beam side of Segment 5AE.
- Between PP31 to PP32

5BE to 5CE

1) 5BE SP (SP305A) to SP (SP424A) - Bike path side

Surface flatness surveys were taken on the exterior Side Panel (SP) surface of weld splice SEG024A-031, Bike path side of 5BE between PP34 to PP35. The out of flatness measurements were taken across the Side Panel in the transverse direction between the longitudinal weld splice. These measurements were out of flatness 7mm in 630mm, which exceeds the maximum 5mm out of flatness requirement per State letter 05.03.01.004667.

- Out of flatness 7mm in 630mm.
- The longitudinal weld splice is identified as: SEG024A-031.
- The Transverse weld splice for 5BE to 5CE is identified as: OBE5A-009 & OBE5A-010.
- The SP to SP plate numbers are: SP305A to SP424A.
- The location was at the Bike path side of Segment 5BE.
- Between PP34 to PP35

2) 5CE SP (SP524A) to SP (SP422A) - Cross beam Side

Surface flatness surveys were taken on the exterior Side Panel (SP) surface of weld splice SEG026A-009, Cross beam side of 5CE between PP34 to PP35. The out of flatness measurements were taken across the Side Panel in the transverse direction between the longitudinal weld splice. These measurements were out of flatness 7mm in 630mm, which exceeds the maximum 5mm out of flatness requirement per State letter 05.03.01.004667.

- Out of flatness 7mm in 630mm
- The longitudinal weld splice is identified as: SEG026A-009.
- The Transverse weld splice for 5BE to 5CE is identified as: OBE5A-007 & OBE5A-006.
- The SP to SP plate numbers are: SP524A to SP422A
- The location was at the Cross Beam side of Segment 5CE.
- Between PP34 to PP35

## Action Required and/or Action Taken:

Submit a repair procedure to the engineer for approval. A response for the resolution of this issue is expected within 7 days.

**Transmitted by:** Bill Howe

**Attachments:** ZPMC-0531

**cc:** Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, 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:** 05.03.06-000519

**Subject:** NCR No. ZPMC-0531

**Dated:** 08-Feb-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000577 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-000577R00

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### Caltrans' comments:

**Status:** REJ

**Date:** 08-Feb-2010

The information requested has not been 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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000519

**Subject:** NCR No. ZPMC-0531

**Dated:** 10-Feb-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000577 Rev: 01

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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-000577R01

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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:** 05.03.06-000519

**Subject:** NCR No. ZPMC-0531

**Dated:** 17-Mar-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000577 Rev: 02

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**Contractor's Proposed Resolution:**

**Reference Resolution:** ZPMC has rectified the skin flatness using heat straightening. Attached are the heat straightening reports and non destructive testing that was performed.

ZPMC has rectified the skin flatness using heat straightening. Attached are the heat straightening reports and non destructive testing that was performed after to show that the affected welds are acceptable. Based on this ZPMC requests closure of this NCR.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000577R02;

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**Caltrans' comments:**

**Status:** CLO

**Date:** 24-Mar-2010

This proposed resolution is acceptable. The documentation received is sufficient and the Department concurs that Non-Conformance ZPMC-0531 is closed.

**Submitted by:** Eagen, Sean

**Attachment(s):**

**Date:** 24-Mar-2010



No. B-688

## LETTER OF RESPONSE

**TO: American Bridge/Flour**

**DATE: 2010-3-17**

**REGARDING: NCR-000558(ZPMC-0531)**

ZPMC acknowledged this problem and has issued internal NCR. ZPMC performed heat straightening to rectify the flatness issue of SPs. ZPMC is providing the HSR1s & HSRs what show the heat straightening technique for the rectification. ZPMC is providing the NDT records show all the affected welds' soundness after heat straightening. After rectification this issue of flatness of SPs have been confirmed and removed from punchlist by CT's representative. Based on this, ZPMC is requesting this NCR to be closed.

**ATTACHMENT:**

NCR-000558(ZPMC-0531)

NCR-B-347(ZPMC-0531)

HSR(B)-351

HSR(B)-352

HSR1(B)-8146

HSR1(B)-8128

B787-MT-19651

B787-UT-11265

B787-UT-11265 R1

A handwritten signature in black ink, appearing to be 'Jing W'.

3/17/10



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge  
333 Burma Road  
Oakland CA 94607  
Tel: Fax:

## NON-CONFORMANCE REPORT TRANSMITTAL

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

Date: 25-Dec-2009

Contract No: 04-01201-4  
04-SF-80-13.2 / 13.9

Dear: Mr. Charles Knapicki  
Attention: Mr. Thomas Nilsson Project/Fabrication Manager

Job Name: SAS Superstructure  
Document No: 05.03.06-000519

Subject: NCR No. ZPMC-0531

Reference Description: Side Panel Flatness, L5E

The attached Non-Conformance Report describes an occurrence where the contractor did not comply with a requirement of the contract documents as indicated below:

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- Quality Control (QC) not performed in conformance with contract documents
- Recurring QC issue that constitutes a systematic problem in quality control
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Material Location: OBG

Lift: 05

### Remarks:

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- Between PP31 to PP32

2) 5AE SP (SP521A) to SP (SP419A) - Cross beam Side

Surface flatness surveys were taken on the exterior Side Panel (SP) surface of weld splice SEG022A-001. Cross-beam side of 5AE between PP31 to PP32. The out of flatness measurements were taken across the Side Panel in the transverse direction between the longitudinal weld splice. These measurements were out of flatness 7mm in 630mm, which exceeds the maximum 5mm out of flatness requirement per State letter 05.03.01.004667

- Out of flatness 7mm in 630mm

05.03.06-000519.NCT

NCT

(Continued Page 2 of 2)

- The longitudinal weld splice is identified as SEG022A-001.
- The Transverse weld splice is identified as OBE5A-002 & OBE5A-001
- The SP to SP plate numbers are SP521A to SP419A.
- The location was at the Cross Beam side of Segment 5AE  
Between PP31 to PP32

SBE to SCE

1) SBE SP (SP305A) to SP (SP424A) - Bike path side

Surface flatness surveys were taken on the exterior Side Panel (SP) surface of weld splice SEG024A-031, Bike path side of SBE between PP34 to PP35. The out of flatness measurements were taken across the Side Panel in the transverse direction between the longitudinal weld splice. These measurements were out of flatness 7mm in 630mm, which exceeds the maximum 5mm out of flatness requirement per State letter 05.03.01.004667.

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- The SP to SP plate numbers are: SP305A to SP424A.
- The location was at the Bike path side of Segment SBE.  
-Between PP34 to PP35

2) SCE SP (SP524A) to SP (SP422A) - Cross beam Side

Surface flatness surveys were taken on the exterior Side Panel (SP) surface of weld splice SEG026A-009, Cross beam side of SCE between PP34 to PP35. The out of flatness measurements were taken across the Side Panel in the transverse direction between the longitudinal weld splice. These measurements were out of flatness 7mm in 630mm, which exceeds the maximum 5mm out of flatness requirement per State letter 05.03.01.004667.

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-Between PP34 to PP35

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

Submit a repair procedure to the engineer for approval. A response for the resolution of this issue is expected within 7 days.

Transmitted by: Bill Howe

Attachments: ZPMC-0531

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Jason Toni, Contract Files, Chung Chao  
File: 05.03.06

h/ 05.03.06.0003, NCT

## DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection

Bay Area Branch  
693 Walnut Ave St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5483

Contract #: 04-0120F4

City: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.2513

## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

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

Report No: NCR-000558

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 22-Dec-2009

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

NCR #: ZPMC-0531

## Type of problem:

Welding  Concrete  Other   
 Welding  Curing  Procedural  Bridge No: 34-0006  
 Joint fit-up  Coating  Other  Component: Lift 5 East  
 Procedural  Procedural  Description: Dimensional Control

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(Continued Page 2 of 4)

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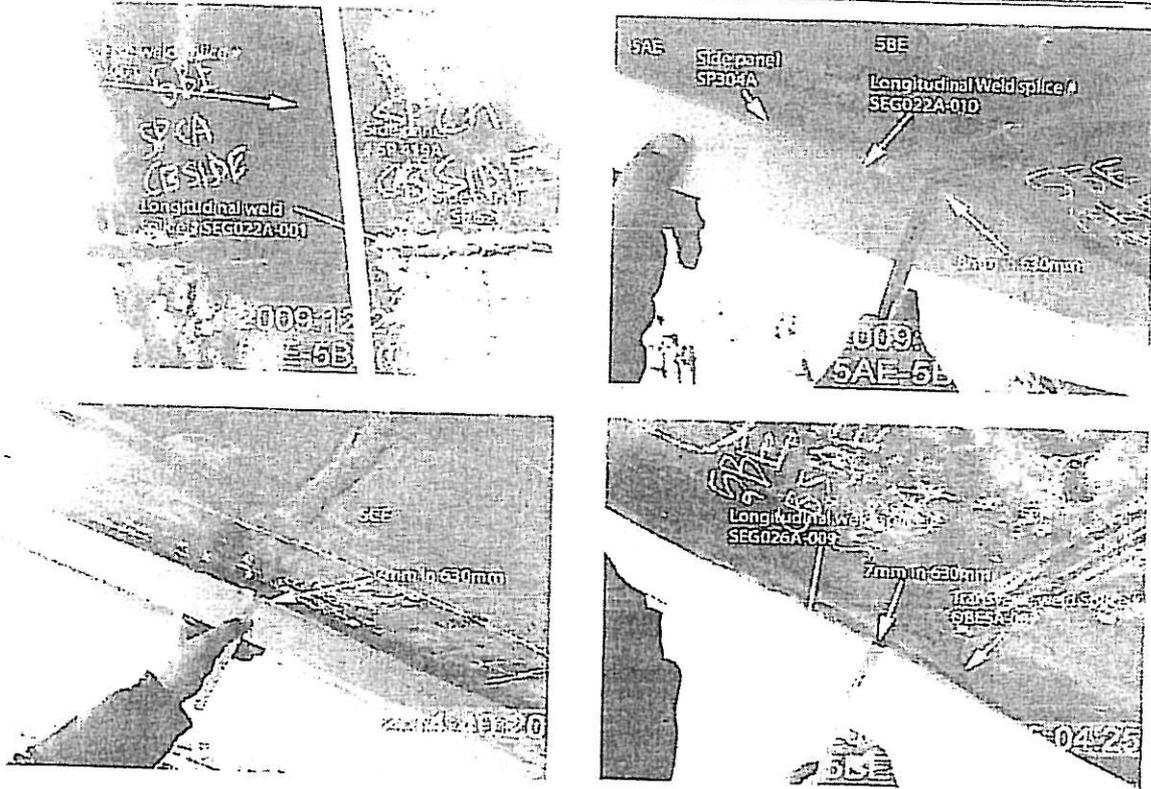
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# QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 3 of 4)



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Who discovered the problem: M. Manikandan

Name of individual from Contractor notified: Kevin Chen

Time and method of notification: 1600 hours, 12-22-09, Verbal

Name of Caltrans Engineer notified: Ching Chao and Bill Howe

Time and method of notification: 1700 hours, 12-22-09, Verbal

QC Inspector's Name: Wang Lu

Was QC Inspector aware of the problem:  Yes  No

Contractor's proposal to correct the problem:

Comments:

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 4 of 4 )

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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 Eric Tsang, 15000422372, who represents the Office of Structural Materials for your project.

---

Inspected By: Guest,Skylar

SMR

Reviewed By: Wahbeh,Mazen

SMR

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5.2 HSR

1.11.2-黄



# Nonconformance Report

## 不符合项报告

Project Name: 项目名称:	S.F.O.B.B 美国加州海湾大桥	NCR Number: NCR 编号:	NCR-B-347(ZPMC-0531)
Item: 名称描述:	skin panel flatness 面板平整度	Item Number: 件号:	N/A
Location: 位置:	outside yard 外场	Date: 日期:	2009-12-30
Drawing: 图号: LSF			

### Description of Nonconformance:

#### 不符合项状态描述:

Flatness issue to skin panels in Lift 5 East Segments:

5AE to 5BE

- 1) 5AE SP304A to SP423A - Bk side HSR (A) 352
  - Out of flatness 8mm in 630mm, PP31-PP32
- 2) 5AE SP521A to SP419A - CB side HSR (B) - 8128
  - Out of flatness 7mm in 630mm, PP31-PP32

5BE to 5CE

- 1) 5BE SP305A to SP424A - BK side HSR (B) - 351
  - Out of flatness 7mm in 630mm, PP34-PP35
- 2) 5BE SP524A to SP422A - CB side HSR (B) - 8146
  - Out of flatness 7mm in 630mm, PP34-PP35

在对 5 段东线箱梁外壳板的平整度测量中发现如下问题:

5AE+5BE

- 1) 5AE SP304A+SP423A 自行车道侧
  - 630mm 内测得 8mm 变形, PP31-PP32
- 2) 5AE SP521A+SP419A 联系梁侧
  - 630mm 内测得 7mm 变形, PP31-PP32

5BE+5CE

- 1) 5AE SP304A+SP423A 自行车道侧
  - 630mm 内测得 7mm 变形, PP34-PP35
- 2) 5AE SP521A+SP419A 联系梁侧
  - 630mm 内测得 7mm 变形, PP34-PP35

Work By: 施工方: Xia Fa Ling 2.26	Prepared by: 准备: [Signature]	Reviewed by QCE: 质量工程师批准: [Signature]
<input type="checkbox"/> Drawing Error 图纸错误	<input type="checkbox"/> Material Defect 材料缺陷	<input checked="" type="checkbox"/> Fabrication Error 制作错误
<input type="checkbox"/> Other 其他原因		

Disposition: 处理措施:	<input type="checkbox"/> Use as is 回用	<input type="checkbox"/> Repair 返修	<input type="checkbox"/> Reject 拒收
-----------------------	--	---------------------------------------	---------------------------------------

Recommendation:  
建议:

Prepared by: 准备	Approved by QCA: 质量经理批准
--------------------	----------------------------

Reason for Nonconformance:

不符合原因:

由于5段系铸箱单面板平整度变形。

Per flatness exceeded requirement at 5 lifting cast

line box.

Prevention of Re-occurrence:

预防措施:

加强现场监控检查。

Enhance supervision and inspection on-site.

Approved by/批准: Guo Jun 2.26

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

见校正记录 HSR1(B)-8128,

See Heat Straightening Report HSR1(B)-8128

Reviewed /批准: Man Liji 3.1/12

Verification:

Acceptable

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: \_\_\_\_\_

#R787-QCP-1300



# 火工校正报告

## Heat Straightening Report(HSR)

报告号 Report#

HSR(B)-351

版本号 Revision #

0

日期 Date

2010.02.09

美国海湾大桥 San Francisco Oakland Bay Bridge

CALTRANS #04-0120F4

工程编号 JOB#: ZP06-787

装配 Assembly: N/A

质检代表/Quality Control Representative

部装 Sub-Assembly: N/A

Xu Jun 02.09.10

梁段 Gird: 5BE SP305A+SP424A

质检经理/Quality Assurance Manager-Approval

塔段 Tower: N/A

焊缝号 Weld No: 031

焊缝地图号 Weld Map No: SEG024A

### 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):

Using hand torch and Jack, Jack shall be used in a manner such that all forces are applied passively.  
使用火焰枪以及千斤顶进行校火,千斤顶只能起到固定作用不能产生塑性变形。

后续NDE(Post-Removal NDE):

1. Remove paint and perform 100%VT, MT & UT on welds in heat straightened areas.  
将校火区域的油漆移除,并对此区域进行100%VT, MT和UT. AFTER HEAT STRAIGHTENING
2. Jacking shall not be used to plastically deform the flange. The Jack shall only be used as a fixture. After finishing heat straightening, the weld of the heat area shall perform NDT according to the approved shop drawing.  
不能使用千斤顶进行塑性变形,千斤顶只能用作固定装置。校火后需按照图纸上的要求对热影响区域进行NDT检测。

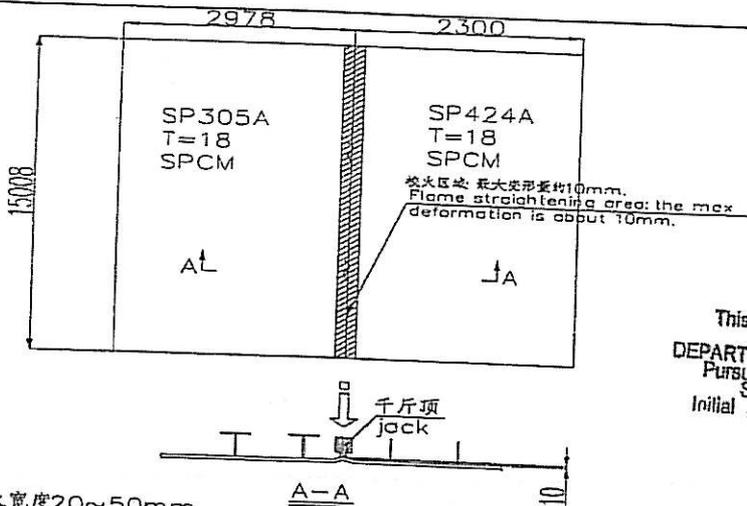
纠正措施(Corrective Action(s)):

Increase the flange anti-deformation allowance during the course of fit-up, and Control the welding parameters according to associated WPS. 在装配的过程中增加反变形余量。根据相关WPS控制焊接参数。

实施次数(Number of application): 1~3

最高温度(Maximum temperature): &lt;600°C

### 简图 Sketch



This document is APPROVED as noted  
State of California  
DEPARTMENT OF TRANSPORTATION  
Pursuant to Section 5-1.02 of the  
Standard Specifications  
Initial *[Signature]* Date 2/10/10

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

检验员 Inspector:

签字 Signature:

CWI #

II 级探伤 NDE Certification:

Level II

Closing Date:

质检经理 QC Manager

审核日期 Review Date:

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

#R787-QCP-1100



# 火工校正报告

## Heat Straightening Report(HSR)

报告号 Report#

HSR(B)-352

版本号 Revision #

0

日期 Date

2010.02.09

美国海湾大桥 San Francisco Oakland Bay Bridge

CALTRANS #04-0120F4

工程编号 JOB#: ZP06-787

装配 Assembly:

N/A

质检代表/Quality Control Representative

部装 Sub-Assembly:

N/A

Xu Jun 02.09.10

梁段 Gird:

5AE

SP304A+SP423A

质检经理/Quality Assurance Manager-Approval

塔段 Tower:

N/A

焊缝号 Weld No:

010

焊缝地图号 Weld Map No:

SEG022A

### 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):

Using hand torch and Jack, Jack shall be used in a manner such that all forces are applied passively. 使用火焰枪以及千斤顶进行校火,千斤顶只能起到固定作用不能产生塑性变形。

后续NDE(Post-Removal NDE):

1. Remove paint and perform 100%VT, MT & UT on welds in heat straightened areas. 将校火区域的油漆移除, 并对此区域进行100%VT, MT 和 UT. AFTER HEAT STRAIGHTENING
2. Jacking shall not be used to plastically deform the flange. The Jack shall only be used as a fixture. After finishing heat straightening, the weld of the heat area shall perform NDT according to the approved shop drawing. 不能使用千斤顶进行塑性变形。千斤顶只能用作固定装置。校火后需按照图纸上的要求对热影响区域进行NDT检测。

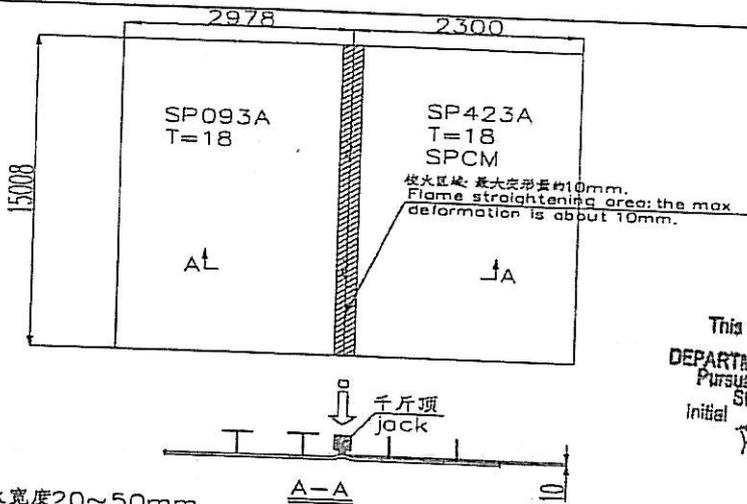
纠正措施(Corrective Action(s)):

Increase the flange anti-deformation allowance during the course of fit-up, and Control the welding parameters according to associated WPS. 在装配的过程中增加反变形余量。根据相关WPS控制焊接参数。

实施次数(Number of application): 1-3

最高温度(Maximum temperature): &lt;600°C

### 简图 Sketch



校火宽度20~50mm.

The heat straightening width is about 20~50mm.

This document is APPROVED as  
State of California  
DEPARTMENT OF TRANSPORTATION  
Pursuant to Section 9-1.02 of the  
Standard Specifications  
initial Date 2/10/10

noted

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

检验员 Inspector:

签字 Signature:

CWI #

II 级探伤 NDE Certification:

Level II

Closing Date:

质检经理 QC Manager

审核日期 Review Date:

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

#R787-QCP-1100



# 火工校正记录

## Heat Straightening Record (HSR1)

报告号 Record #

HSR(B)-8146

版本号 Revision #

0

日期 Date

2010.02.09

美国海湾大桥 San Francisco Oakland Bay Bridge

CALTRANS #04-0120F4

工程编号 JOB#: ZP06-787

装配 Assembly:

N/A

质检代表/Quality Control Representative

部装 Sub-Assembly:

N/A

Wu Jun 02/09/10

梁段 Gird: 5CE

质检经理/Quality Assurance Manager-Approval

塔段 Tower:

N/A

Long Gankun

焊缝号 Weld No:

009

焊缝地图号 Weld Map No:

SEG026A

### 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 运用氧乙炔进行校火

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 校火后, 根据图纸要求对热影响区域进行 NDT 检测。

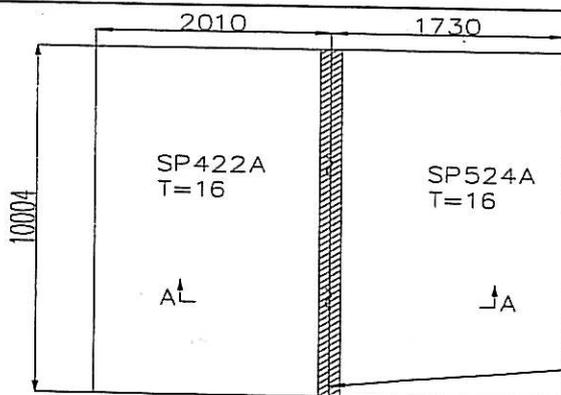
纠正措施(Corrective Action(s)):

Control current, voltage and weld speed according to relevant WPS. If necessary anti-deformation or hold down device can be added. 依据相应的WPS的要求控制电流, 电压和焊接速度。如有必要, 可使用反变形设施进行校正。

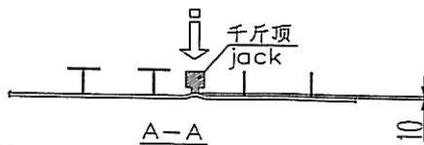
实施次数(Number of application): 1~3

最高温度(Maximum temperature): &lt;650°C

### 简图 Sketch



校火区域: 最大变形量约10mm.  
Flame straightening area; the max deformation is about 10mm.



校火宽度20~50mm.

The heat straightening width is about 20~50mm.

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

检验员 Inspector:

Li Yanhua

签字 Signature:

李燕华

CWI #

07120701

II 级探伤 NDE Certification:

Level II

Closing Date:

2010.02.18

质检经理 QC Manager

审核日期 Review Date:

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

#R787-QCP-1100

Approved by Long Gankun 2/9/10



# 火工校正记录

## Heat Straightening Record(HSR1)

报告号 Record#

HSR1(B)-8128

版本号 Revision #

0

日期 Date

2010.01.25

美国海湾大桥 San Francisco Oakland Bay Bridge

CALTRANS #04-0120F4

工程编号 JOB#: ZP06-787

装配 Assembly:

部装 Sub-Assembly:

梁段 Gird: 5AE- 5BE

塔段 Tower:

N/A

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 运用氧乙炔进行校火

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 校火后, 根据图纸要求对热影响区域进行 NDT 检测。

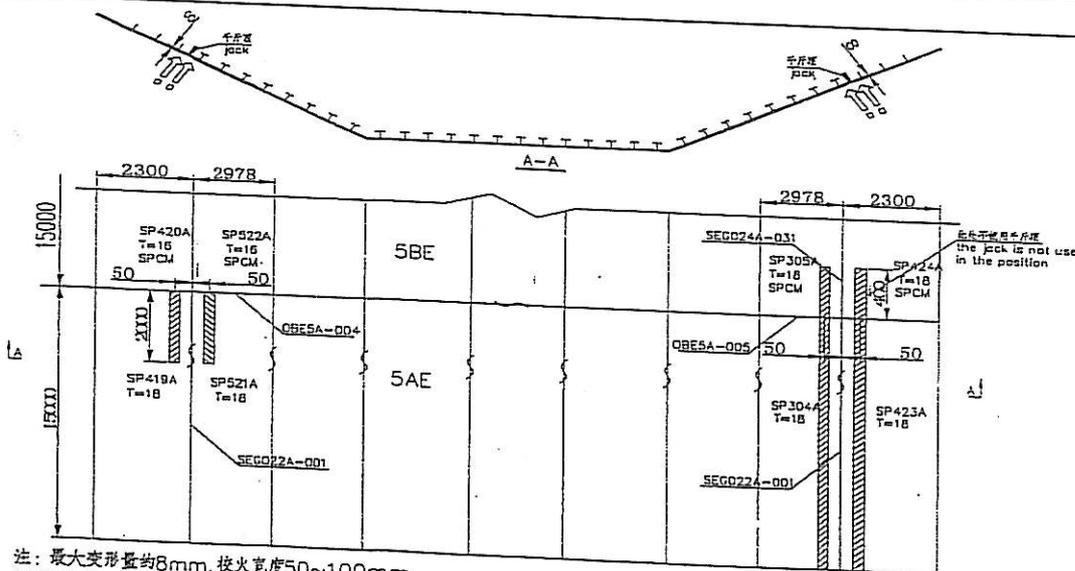
纠正措施 (Corrective Action(s)):

Control current, voltage and weld speed according to relevant WPS. If necessary anti-deformation or hold down device can be added. 依据相应的 WPS 的要求控制电流, 电压和焊接速度。如有必要, 可使用反变形设施进行校正。

实施次数 (Number of application): 1~3

最高温度 (Maximum temperature): &lt;650°C

### 简图 Sketch



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

检验员 Inspector:

Zhang Hua

签字 Signature:

Zhang Hua

CWI #

0720701

2010.2.11

II 级探伤 NDE Certification:

Level II

Closing Date:

2010.2.27

质检经理 QC Manager

审核日期 Review Date:

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 Zhang Hua 1/26/10





# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

REPORT NO. 报告编号 B787-UT-11265      DATE 2010.02.23      PAGE 1 OF 1      Revision No: 0

PROJECT NO.: 工程编号 ZP06-787      CONTRACTOR: CALTRANS

ITEMS NAME: CORNER ASSEMBLY BOTTOM PLATE AND BOX SIDE PLATE      DRAWING NO.: 5AE/5BE/5CE      CALTRANS CONTRACT NO.: 04-0120F4  
 部件名称      图号      加州工程编号

REFERENCING CODE 参考规范      ACCEPTANCE STANDARD 接受标准      PROCEDURE NO. 程序编号  
 AWS D1.5-2002      AWS D1.5-2002(Table 6.3)      ZPQC-UT-01

WELDING PROCESS 焊接方法      JOINT TYPE 焊缝类型      CALIBRATION DUE DATE 仪器校正有效期  
 SAW      BUTT      Dec. 28<sup>ST</sup>, 2010

EQUIPMENT 设备      MANUFACTURER 制造商      MODEL NO. 样式编号      SERIAL NO. 序列编号  
 UT SCOPE      PANAMETRICS      EPOCH-4B      071565311, 061488510, 061495811, 070152011,  
 CALIBRATION BLOCK 试块      COUPLANT 耦合剂      MATERIAL/THICKNESS 材料厚度  
 AWS IIW BLOCK TYPE II      C.M.C      A709M-345T2/F2-X      18/16mm

### TRANSDUCER 探头

MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸	MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸
Changchao	70°	2.5MHz	18×18mm				
Changchao	0°	2.5MHz	20mm	Reference Level 参考灵敏度			20dB

Base metal inspected per AWS D1.5-2002 Section 6.19.5      0° UT OK.

WELD IDENTIFICATION 焊缝部件编号	INDICATION NO. 指示号	PROBE ANGLE 探测角度	FROM FACE 检测面	LEG (次数)	DECIBELS 分贝				DISCONTINUITY 不连续性					Discontinuity Evaluation 缺陷估计	Remark 备注	
					Indication Level	Reference Level	Attenuation Factor	Indication Rating	LOCATION OF DISCONTINUITY 不连续位置(mm)							
									a	b	c	d	Length 长度			Sound Path 声程
SEG022A-001		70				32									ACC.	100%
SEG022A-010		70				32									ACC.	100%
SEG024A-031		70				32									ACC.	100%
SEG026A-009	1	70	A	1	43	32	3	+8	10	63	13	-10	5570	REJ.	100%	
SEG026A-010		70				32								ACC.	100%	

AFTER HSR(B)-352, 345, 351, 353, HSR1(B)-8145, 8146

BLANK

EXAMINED BY 主探  
*Tang Hong Shan 1.02.25*  
 LEVEL - II SIGN / DATE

REVIEWED BY 审核  
*Pai Gary Shouy 1.02.25*  
 LEVEL - II SIGN / DATE

质量经理 / QCM  
*Lup...*  
 签字 SIGN / 日期 DATE

用户 CUSTOMER  
 签字 SIGN / 日期 DATE



# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

REPORT NO. 报告编号 B787-UT-11265R1      DATE 2010.02.26      PAGE 1 OF 1      Revision No: 0

PROJECT NO.: 工程编号 ZP06-787      CONTRACTOR: CALTRANS

ITEMS NAME: CORNER ASSEMBLY BOTTOM PLATE AND BOX SIDE PLATE      DRAWING NO.: 5AE/5BE/5CE      CALTRANS CONTRACT NO.: 04-0120F4  
 部件名称      图号      加州工程编号

REFERENCING CODE 参考规范 AWS D1.5-2002      ACCEPTANCE STANDARD 接受标准 AWS D1.5-2002(Table 6.3)      PROCEDURE NO. 程序编号 ZPQC-UT-01

WELDING PROCESS 焊接方法 SMAW      JOINT TYPE 焊缝类型 BUTT      CALIBRATION DUE DATE 仪器校正有效期 Dec. 28<sup>ST</sup>, 2010

EQUIPMENT 设备 UT SCOPE      MANUFACTURER 制造商 PANAMETRICS      MODEL NO. 样式编号 EPOCH-4B      SERIAL NO. 序列编号 071565311, 061488510, 061495811, 070152011,

CALIBRATION BLOCK 试块 AWS IIV BLOCK TYPE II      COUPLANT 耦合剂 C.M.C      MATERIAL/THICKNESS 材料厚度 A709M-345T2/F2-X 18/16mm

### TRANSDUCER 探头

MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸	MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸
Changchao	70°	2.5MHz	18×18mm				
Changchao	0°	2.5MHz	20mm	Reference Level 参考灵敏度		20dB	

Base metal inspected per AWS D1.5-2002 Section 6.19.5      0° UT OK.

WELD IDENTIFICATION 焊缝部件编号	INDICATION NO. 指示号	PROBE ANGLE 探测角度	FROM FACE 检测面	LEG (次数)	DECIBELS分贝				DISCONTINUITY 不连续性					Discontinuity Evaluation 缺陷估计	Remark 备注	
					Indication Level	Reference Level	Attenuation Factor	Indication Rating	LOCATION OF DISCONTINUITY 不连续位置(mm)							
									a	b	c	d	Length 长度			Sound Path 声程
SEG026A-009	1R1	70						32							ACC.	100%

AFTER B-WR10701

BLANK


EXAMINED BY 主探 Tony Xing Sheng 10.02.26      REVIEWED BY 审核 Da. Gray Sheng 10.2.26

LEVEL - II SIGN / DATE      LEVEL - II SIGN / DATE

质量经理 / QCM L. Parkers 2/26/10      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


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**QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION**


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**Location:** Changxing Island, Shanghai, P.R. China**Report No:** NCS-000566**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 24-Mar-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0531**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:** 22-Dec-2009**Description of Non-Conformance:**

During a random visual skin flatness survey of exterior surfaces of segment Lift 5 East located in the Trial Assembly area, the Caltrans Quality Assurance (QA) Inspector discovered the following issues:

5AE to 5BE

## 1) 5AE SP (SP304A) to SP (SP423A) - Bike path side

Surface flatness surveys were taken on the exterior Side Panel (SP) surface of weld splice SEG022A-010, Bike path side of 5AE between PP31 to PP32. The out of flatness measurements were taken across the Side Panel in the transverse direction between the longitudinal weld splice. These measurements were out of flatness 8mm in 630mm, which exceeds the maximum 5mm out of flatness requirement per State letter 05.03.01.004667.

- Out of flatness 8mm in 630mm
- The longitudinal weld splice is identified as: SEG022A-010.
- The Transverse weld splice is identified as: OBE5A-004 & OBE5A-005.
- The SP to SP plate numbers are: SP304A to SP423A.
- The location was at the Bike path side of Segment 5AE.
- Between PP31 to PP32

## 2) 5AE SP (SP521A) to SP (SP419A) - Cross beam Side

Surface flatness surveys were taken on the exterior Side Panel (SP) surface of weld splice SEG022A-001, Cross beam side of 5AE between PP31 to PP32. The out of flatness measurements were taken across the Side Panel in the transverse direction between the longitudinal weld splice. These measurements were out of flatness 7mm in 630mm, which exceeds the maximum 5mm out of flatness requirement per State letter 05.03.01.004667.

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## QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

( Continued Page 2 of 3 )

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- Out of flatness 7mm in 630mm
- The longitudinal weld splice is identified as: SEG022A-001.
- The Transverse weld splice is identified as: OBE5A-002 & OBE5A-001.
- The SP to SP plate numbers are: SP521A to SP419A.
- The location was at the Cross Beam side of Segment 5AE.
- Between PP31 to PP32

5BE to 5CE

### 1) 5BE SP (SP305A) to SP (SP424A) - Bike path side

Surface flatness surveys were taken on the exterior Side Panel (SP) surface of weld splice SEG024A-031, Bike path side of 5BE between PP34 to PP35. The out of flatness measurements were taken across the Side Panel in the transverse direction between the longitudinal weld splice. These measurements were out of flatness 7mm in 630mm, which exceeds the maximum 5mm out of flatness requirement per State letter 05.03.01.004667.

- Out of flatness 7mm in 630mm.
- The longitudinal weld splice is identified as: SEG024A-031.
- The Transverse weld splice for 5BE to 5CE is identified as: OBE5A-009 & OBE5A-010.
- The SP to SP plate numbers are: SP305A to SP424A.
- The location was at the Bike path side of Segment 5BE.
- Between PP34 to PP35

### 2) 5CE SP (SP524A) to SP (SP422A) - Cross beam Side

Surface flatness surveys were taken on the exterior Side Panel (SP) surface of weld splice SEG026A-009, Cross beam side of 5CE between PP34 to PP35. The out of flatness measurements were taken across the Side Panel in the transverse direction between the longitudinal weld splice. These measurements were out of flatness 7mm in 630mm, which exceeds the maximum 5mm out of flatness requirement per State letter 05.03.01.004667.

- Out of flatness 7mm in 630mm
- The longitudinal weld splice is identified as: SEG026A-009.
- The Transverse weld splice for 5BE to 5CE is identified as: OBE5A-007 & OBE5A-006.
- The SP to SP plate numbers are: SP524A to SP422A
- The location was at the Cross Beam side of Segment 5CE.
- Between PP34 to PP35

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

Heat Straighten said locations to bring members within allowable tolerances and perform NDT required to verify weld quality.

### **Corrective action taken:**

Contractor submitted Heat Straightening procedures used to address flatness issues along with subsequent NDT reports verifying the welds are in conformance with Contract specifications.

### **Did corrective action require Engineer's approval?**

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## QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

( Continued Page 3 of 3 )

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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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**Inspected By:**    Simonis,Jim

Quality Assurance Inspector

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**Reviewed By:**    Wahbeh,Mazen

QA Reviewer