

**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-000560**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 23-Dec-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0533**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 5W Side Panels
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b> Skin Flatness is out of allowable tolerance	

**Reference Description:** Skin flatness allowable tolerance not met at Side Panels on Lift 5W**Description of Non-Conformance:**

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

## Issues found in 5AW to 5BW Side Panels:

5AW SP (SP918A) to SP (SP409A) - CW Side

Surface flatness surveys were taken on the exterior Side Panel (SP) surface of longitudinal weld joint identified as SEG021A-001, counterweight side of 5AW between PP31 to PP32. The measurements were taken transverse to the direction of the side panel longitudinal weld joint. This area exceeded the maximum 5mm deviation from flat specified in State letter 05.03.01.004667.

-Deviation from flat is 8mm in 630mm

-The longitudinal weld splice is identified as: SEG021A-001.

-The transverse weld splice is identified as: OBE5A-002 &amp; OBE5A-001.

-The SP plate numbers are: SP918A to SP409A.

-The location is on the counterweight side of segment 5AW between PP31 to PP32.

## Issues found in 5BW to 5CW Side Panels:

5BW SP (SP92A) to SP (SP410A) - CW Side

Surface flatness surveys were taken on the exterior Side Panel (SP) surface of longitudinal weld joint identified as SEG023A-031, counterweight side of 5BW between PP34 to PP35. The measurements were taken transverse to the direction of the side panel longitudinal weld joint. This area exceeded the maximum 5mm deviation from flat specified in State letter 05.03.01.004667.

-Deviation from flat is 7mm in 630mm.

-The longitudinal weld splice is identified as: SEG023A-031.

-The transverse weld splice for 5BW to 5CW is identified as: OBW5A-007 &amp; OBW5A-006.

-The SP plate numbers are: SP92A to SP410A.

# QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 3 )

-The location is on the counterweight side of segment 5BW between PP34 to PP35.

5CW SP (SP472A) to SP (SP418A) - CB Side

Surface flatness surveys were taken on the exterior Side Panel (SP) surface of longitudinal weld joint identified as SEG025A-010, cross beam side of 5CW between PP34 to PP35. The measurements were taken transverse to the direction of the side panel longitudinal weld joint. This area exceeded the maximum 5mm deviation from flat specified in State letter 05.03.01.004667.

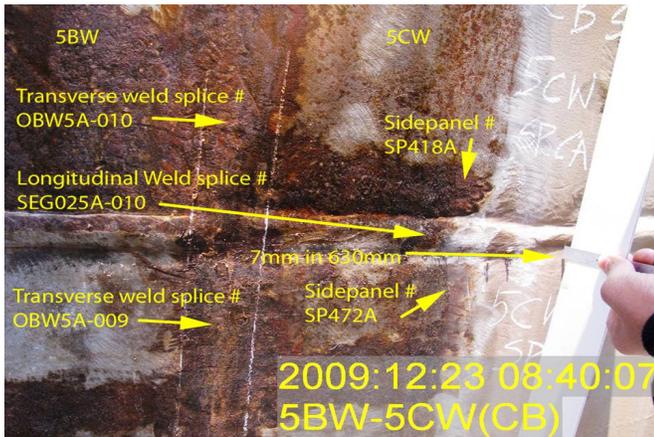
-Deviation from flat is 7mm in 630mm

-The longitudinal weld splice is identified as: SEG025A-010.

-The transverse weld splice for 5BE to 5CE is identified as: OBW5A-009 & OBW5A-010

-The SP plate numbers are: SP472A to SP418A

-The location is on the cross beam side of segment 5CW between PP34 to PP35.



## 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.

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 3 of 3 )

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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, 12-23-09, Verbal  
**Name of Caltrans Engineer notified:** Bill Howe  
**Time and method of notification:** 1023 hours, 12-24-09, 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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**DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge**

333 Burma Road  
Oakland CA 94607  
Tel: Fax:

**NON-CONFORMANCE REPORT TRANSMITTAL**

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

**Date:** 25-Dec-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:** 05.03.06-000521

**Subject:** NCR No. ZPMC-0533

**Reference Description:** Skin flatness allowable tolerance not met at Side Panels on Lift 5W

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

Issues found in 5AW to 5BW Side Panels:

5AW SP (SP918A) to SP (SP409A) - CW Side

Surface flatness surveys were taken on the exterior Side Panel (SP) surface of longitudinal weld joint identified as SEG021A-001, counterweight side of 5AW between PP31 to PP32. The measurements were taken transverse to the direction of the side panel longitudinal weld joint. This area exceeded the maximum 5mm deviation from flat specified in State letter 05.03.01.004667.

- Deviation from flat is 8mm in 630mm
- The longitudinal weld splice is identified as: SEG021A-001.
- The transverse weld splice is identified as: OBE5A-002 & OBE5A-001.
- The SP plate numbers are: SP918A to SP409A.
- The location is on the counterweight side of segment 5AW between PP31 to PP32.

Issues found in 5BW to 5CW Side Panels:

5BW SP (SP92A) to SP (SP410A) - CW Side

Surface flatness surveys were taken on the exterior Side Panel (SP) surface of longitudinal weld joint identified as SEG023A-031, counterweight side of 5BW between PP34 to PP35. The measurements were taken transverse to the direction of the side panel longitudinal weld joint. This area exceeded the maximum 5mm deviation from flat specified in State letter 05.03.01.004667.

- Deviation from flat is 7mm in 630mm.
- The longitudinal weld splice is identified as: SEG023A-031.
- The transverse weld splice for 5BW to 5CW is identified as: OBW5A-007 & OBW5A-006.
- The SP plate numbers are: SP92A to SP410A.
- The location is on the counterweight side of segment 5BW between PP34 to PP35.

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# NCT

( Continued Page 2 of 2 )

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5CW SP (SP472A) to SP (SP418A) - CB Side

Surface flatness surveys were taken on the exterior Side Panel (SP) surface of longitudinal weld joint identified as SEG025A-010, cross beam side of 5CW between PP34 to PP35. The measurements were taken transverse to the direction of the side panel longitudinal weld joint. This area exceeded the maximum 5mm deviation from flat specified in State letter 05.03.01.004667.

-Deviation from flat is 7mm in 630mm

-The longitudinal weld splice is identified as: SEG025A-010.

-The transverse weld splice for 5BE to 5CE is identified as: OBW5A-009 & OBW5A-010

-The SP plate numbers are: SP472A to SP418A

-The location is on the cross beam side of segment 5CW between PP34 to PP35.

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

Provide 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-0533

**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:** 05.03.06-000521

**Subject:** NCR No. ZPMC-0533

**Dated:** 08-Feb-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000578 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-000578R00

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**Caltrans' comments:**

**Status:** REJ

**Date:** 08-Feb-2010

The information requested was not submitted. This NPR is rejected.

**Submitted by:** Howe, Bill

**Attachment(s):** NPR CT Comments

**Date:** 08-Feb-2010

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000521

**Subject:** NCR No. ZPMC-0533

**Dated:** 10-Feb-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000578 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-000578R01

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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:** 05.03.06-000521

**Subject:** NCR No. ZPMC-0533

**Dated:** 01-Mar-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000578 Rev: 02

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**Contractor's Proposed Resolution:**

**Reference Resolution:** ZPMC repaired the welds and is attaching documentation to show that welds documented in the NCR are acceptable after both heat straightening and repair.

After this NCR was written, ZPMC performed heat straightening to bring the flatness of the plates into tolerance during NDT of the welds after heat straightening defects were discovered. ZPMC repaired the welds and is attaching documentation to show that welds documented in the NCR are acceptable after both heat straightening and repair. The plates documented are in conformance with flatness requirements and has been verified by Caltrans inspector who have jointly closed this item on the punchlist. Based on this ZPMC requests closure of this NCR.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000578R02;

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**Caltrans' comments:**

**Status:** CLO  
**Date:** 07-Mar-2010

The documentation received is sufficient to close this NCR.

**Submitted by:** Howe, Bill

**Attachment(s):**

**Date:** 07-Mar-2010



No. B-627

## LETTER OF RESPONSE

**TO: American Bridge/Flour**

**DATE: 2010-2-28**

**REGARDING: NCR-000560 (ZPMC-0533)**

With this letter of response, ZPMC requests closure of CT NCR-000560 (ZPMC-0533) what mentioned about the flatness issue of SPs.

- ZPMC has rectified the flatness according to approved HSRs.
- After heat straightening the flatness for SPs were accepted by three parities.
- Punch List Item 333 what mentioned this issue has been confirmed and closed by CT inspector.
- The affected welds were tested, repaired, retested and accepted after then.

Base on the taken actions and attached documentations, ZPMC requests closure of this NCR.

**ATTACHMENT:**

NCR-000560 (ZPMC-0533)

B-WR10705

B-WR10700

B-WR10706

B787-UT-11240 R1

B787-MT-19651

Handwritten signature and date. The signature is a stylized cursive mark, and the date is written as '2/28/10'.



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

## NON-CONFORMANCE REPORT TRANSMITTAL

**To:** AMERICAN BRIDGE/FLUOR, A JV  
375 BURMA ROAD  
OAKLAND CA 95607  
**Date:** 25-Dec-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:** 05.03.06-000521  
**Subject:** NCR No. ZPMC-0533  
**Reference Description:** Skin flatness allowable tolerance not met at Side Panels on Lift 5W

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**Lift:** 05

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( Continued Page 2 of 2 )

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**File:** 05.03.06

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Contract #: 04-0120F4  
Cty: SF/ALA Rte: 80 PM: 13.2/13.9  
File #: 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-000560**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 23-Dec-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0533**Type of problem:**Welding  Concrete  Other Welding  Curing  Procedural  **Bridge No:** 34-0006Joint fit-up  Coating  Other  **Component:** Lift 5W Side PanelsProcedural  Procedural  **Description:** Skin Flatness is out of allowable tolerance**Reference Description:** Skin flatness allowable tolerance not met at Side Panels on Lift 5W**Description of Non-Conformance:**

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 3)

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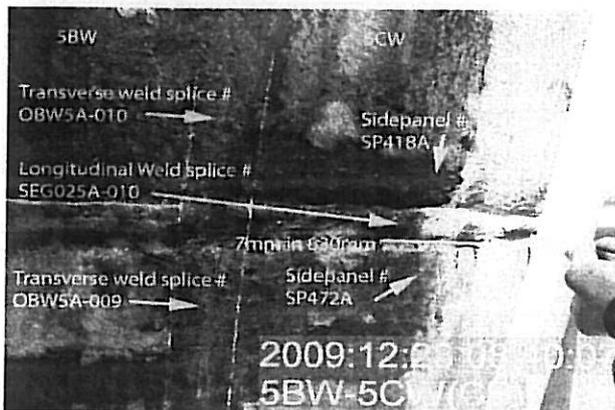
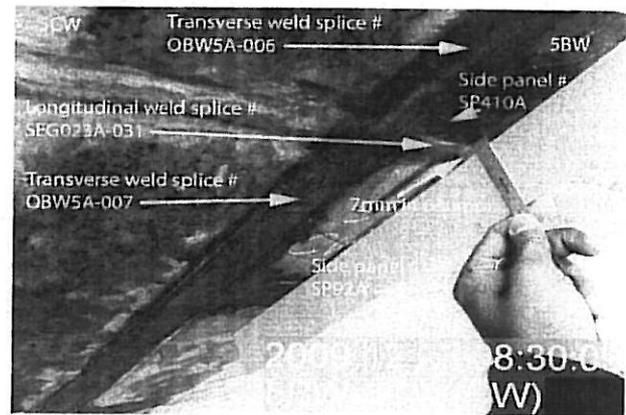
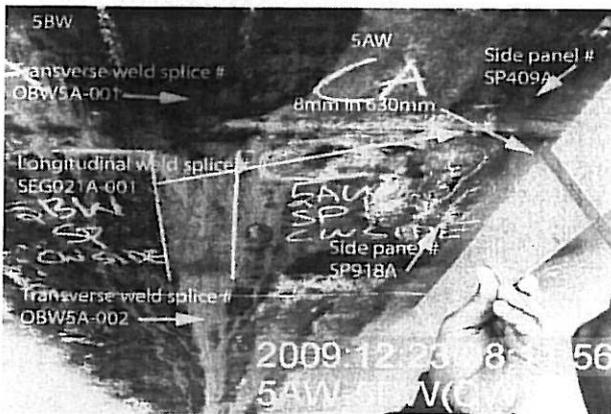
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-The location is on the cross beam side of segment 5CW between PP34 to PP35.



### 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.

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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, 12-23-09, Verbal  
**Name of Caltrans Engineer notified:** Bill Howe  
**Time and method of notification:** 1023 hours, 12-24-09, 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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ZPMC-033



# 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	5AW/5BW/5CW	报告编号 Report No.	B-WR10705
合同号 Contract No	04-0120F4	部件名称 Items Name	CORNER ASSEMBLY B OTTOM PLATE AND B OX SIDE PLATE	NDT报告编号 Report No. of NDT	B787-UT-11240
项目编号 Project No.:	ZP06-787				

**焊缝缺陷描述:**

**Description of welding discontinuity:**

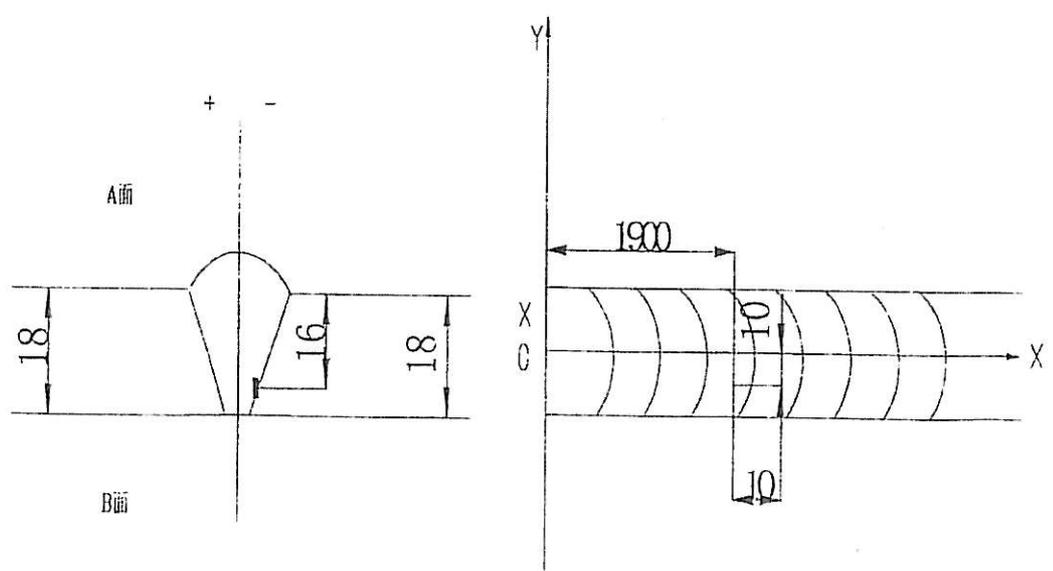
Rejected indication found by ultrasonic inspection is less than the maximum allowance aggregate length.

(UT探伤发现的缺陷总长度小于最大允许长度。) SEG021A-001

检验员 (Inspector) : Xue Hairong 日期(Date) : 2010.02.20

**焊缝返修位置示意图:**

**Draft of welding discontinuity:**



WELD NUMBER: SEG021A-001

6F 2010.02.20

产生原因:

Caused:

1、焊道未及时处理干净。

1. Did not clear the weld pass completely in time.

车间负责人(Foreman): *Gao Jun* 日期(Date): *2-23*.

处理意见

Disposition :

1. 从缺陷距离端面较近一侧 ( $D \leq 0.65T$ , D为缺陷深度, T为板厚) 采用碳刨或打磨的方法去除焊缝缺陷;
2. 参照返修焊接工艺规程 (WPS) 准备正确的接头型式, 预热和焊接;
3. 焊前对修补区域进行VT检测保证缺陷完全被消除;
4. 将修补区域打磨到与母材或邻近焊缝平齐;
5. 根据批准的车间图纸检查焊缝.

1. Gouge or grind from nearer side from metal edge ( $D \leq 0.65T$ , "D" is depth of defects, "T" is thickness of metal) to remove all defects;
2. Follow repair WPS for joint preparation, preheat, and weld deposit;
3. Verify with VT no defects remain in the weld joint prior to welding;
4. Grind the repaired area flush with base metal or the adjacent weld;
5. Check the welds according to the working drawings.

工艺: *Xu Dong Kai*  
Technical engineer  
*10.02.23*

审核:  
Approved by

日期  
Date



# 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	5AW/5BW/5CW	报告编号 Report No.	B-WR10705
合同号 Contract No.:	04-0120F4	部件名称 Items Name	CORNER ASSEMBLY BOTTOM PLATE AN D BOX SIDE PLATE	NDT报告编号 Report No. of NDT	B787-UT-11240
项目编号 Project No.:	ZP06-787				

纠正措施:

Correction action to prevent re occurrence:

1. 加强焊接监控和道间清理。

1. Improve monitoring of welding and interpass cleaning.

车间负责人(Foreman): Guo Jun 日期(Date): 2.23

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-4 G(4F)-Repair	工艺员 technologist	<u>Xu Dong kai</u>  2.23
返修(碳刨)前预热温度 Preheat temperature before gouging	95°C	返修的缺陷 Description of discontinuity	ZIF
焊前处理检查 Inspection before welding	All	焊前预热温度 Preheat temperature before welding	115°C
最大碳刨深度 Max. depth of gouging	10mm	碳刨总长 Total length of gouging	110mm
焊工 welder	<u>069183</u>	焊接类型 welding type	<u>GTAW</u>
焊接电流 Current	<u>160</u>	焊接电压 Voltage	<u>25.2</u>
		焊接位置 position	<u>4G</u>
		焊接速度 Speed	<u>10</u>

返修后检查  
Inspection After repairing:

外观检查 VT result	检验员 Inspector	日期 Date
<u>All</u>	<u>Zi Kanhua</u> 07120701	<u>2010.2.24.</u>
NDT复检 NDT result	探伤员 NDT person	日期 Date
<u>All</u>	<u>Tang Xiang shan</u>	<u>10.02.25</u>

见证:  
Witness/Review:备注:  
Remark:



# 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	5AW/5BW/5CW	报告编号 Report No.	B-WR10700
合同号 Contract No.	04-0120F4	部件名称 Items Name	CORNER ASSEMBLY B OTTOM PLATE AND B OX SIDE PLATE	NDT报告编号 Report No.of NDT	B787-UT-11240
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

Description of welding discontinuity:

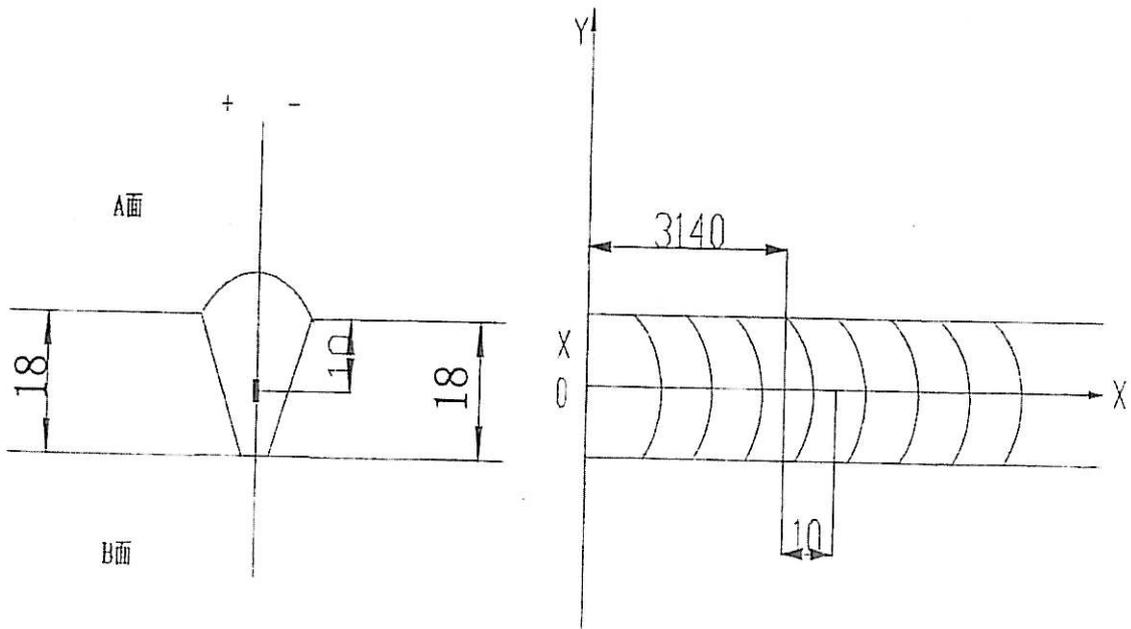
Rejected indication found by ultrasonic inspection is less than the maximum allowance aggregate length.

(UT探伤发现的缺陷总长度小于最大允许长度。) SEG023A-031

检验员 (Inspector) : Xue Hairong 日期(Date) : 2010.02.20

焊缝返修位置示意图:

Draft of welding discontinuity:



WELD NUMBER: SEG021A-031

产生原因:

Caused:

1. 焊道未及时处理干净。
1. Did not clear the weld pass completely in time.

车间负责人(Foreman):

日期(Date):

处理意见

Disposition :

1. 从缺陷距离端面较近一侧 ( $D \leq 0.65T$ , D为缺陷深度, T为板厚) 采用碳刨或打磨的方法去除焊缝缺陷;
  2. 参照返修焊接工艺规程 (WPS) 准备正确的接头型式, 预热和焊接;
  3. 焊前对修补区域进行VT检测保证缺陷完全被消除;
  4. 将修补区域打磨到与母材或邻近焊缝平齐;
  5. 根据批准的车间图纸检查焊缝.
- 
1. Gouge or grind from nearer side from metal edge ( $D \leq 0.65T$ , "D" is depth of defects, "T" is thickness of metal) to remove all defects;
  2. Follow repair WPS for joint preparation, preheat, and weld deposit;
  3. Verify with VT no defects remain in the weld joint prior to welding;
  4. Grind the repaired area flush with base metal or the adjacent weld;
  5. Check the welds according to the working drawings.

工. 艺:  
Technical engineer

审核:  
Approved by

日期  
Date



# 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	5AW/5BW/5CW	报告编号 Report No.	B-WR10700
合同号 Contract No.:	04-0120F4	部件名称 Items Name	CORNER ASSEMBLY BOTTOM PLATE AND D BOX SIDE PLATE	NDT报告编号 Report No. of NDT	B787-UT-11240
项目编号 Project No.:	ZP06-787				

纠正措施:

Correction action to prevent re occurrence:

1. 加强焊接监控和道间清理。

1. Improve monitoring of welding and interpass cleaning.

车间负责人(Foreman):

日期(Date):

参照的WPS编号 Repair WPS No.	WPS-345-SMAW-1 G(1F)-FCM-Repair WPS-345-FCAW-1 G(1F)-FCM-Repair WPS-345-SMAW-4 G(4F)-FCM-Repair	工艺员 technologist	
返修(碳刨)前预热温度 Preheat temperature before gouging	N/A	返修的缺陷 Description of discontinuity	Z.F
焊前处理检查 Inspection before welding	Aa	焊前预热温度 Preheat temperature before welding	90°C
最大碳刨深度 Max. depth of gouging	10mm	碳刨总长 Total length of gouging	120mm
焊工 welder	069683	焊接类型 welding type	SMAW
焊接电流 Current	154	焊接电压 Voltage	23.6
		焊接位置 position	4G
		焊接速度 Speed	102

返修后检查

Inspection After repairing:

外观检查 VT result	检验员 Inspector	日期 Date
Aa	L. Kan 57120701	2010.2.22
NDT复检 NDT result	探伤员 NDT person	日期 Date
Aa	Tang Hong Shun	10-12-25

见证:

Witness/Review:

备注:

Remark:



# 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	5AW/5BW/5CW	报告编号 Report No.	B-WR10706
合同号 Contract No.	04-0120F4	部件名称 Items Name	CORNER ASSEMBLY B OTTOM PLATE AND B OX SIDE PLATE	NDT报告编号 Report No. of NDT	B787-UT-11240
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

Description of welding discontinuity:

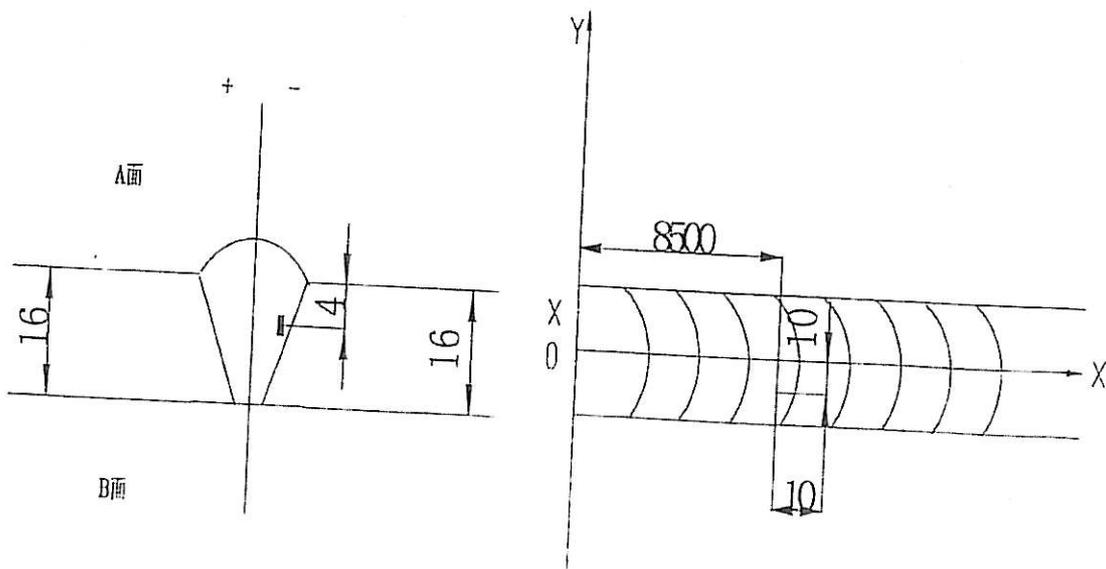
Rejected indication found by ultrasonic inspection is less than the maximum allowance aggregate length.

(UT探伤发现的缺陷总长度小于最大允许长度。) SEG025A-010

检验员 (Inspector): Xue Hairong 日期(Date): 2010.02.20

焊缝返修位置示意图:

Draft of welding discontinuity:



WELD NUMBER: SEG025A-010

产生原因:

**Cause:**

1. 焊道未及时处理干净。
1. Did not clear the weld pass completely in time.

车间负责人(Foreman): *GaoJun* 日期(Date): *2.23*

处理意见

**Disposition :**

1. 从缺陷距离端面较近一侧 ( $D \leq 0.65T$ , D为缺陷深度, T为板厚) 采用破刨或打磨的方法去除焊缝缺陷;
  2. 参照返修焊接工艺规程 (WPS) 准备正确的接头型式, 预热和焊接;
  3. 焊前对修补区域进行VT检测保证缺陷完全被消除;
  4. 将修补区域打磨到与母材或邻近焊缝平齐;
  5. 根据批准的车间图纸检查焊缝.
- 
1. Gouge or grind from nearer side from metal edge ( $D \leq 0.65T$ , "D" is depth of defects, "T" is thickness of metal) to remove all defects;
  2. Follow repair WPS for joint preparation, preheat, and weld deposit;
  3. Verify with VT no defects remain in the weld joint prior to welding;
  4. Grind the repaired area flush with base metal or the adjacent weld;
  5. Check the welds according to the working drawings.

工艺: *Yu Dong Kai*  
Technical engineer

审核:  
Approved by

日期  
Date



# 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	5AW/5BW/5CW	报告编号 Report No.	B-WR10706
合同号 Contract No.:	04-0120F4	部件名称 Items Name	CORNER ASSEMBLY BOTTOM PLATE AND D BOX SIDE PLATE	NDT报告编号 Report No. of NDT	B787-UT-11240
项目编号 Project No.:	ZP06-787				

纠正措施:

Correction action to prevent re occurrence:

1. 加强焊接监控和道间清理。

1. Improve monitoring of welding and interpass cleaning.

车间负责人(Foreman): Gao Jun 日期(Date): 2.23

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-4 G(4F)-Repair	工艺员 technologist	Xu Dong kai 2.23
返修(碳刨)前预热温度 Preheat temperature before gouging	78°C	返修的缺陷 Description of discontinuity	I.F
焊前处理检查 Inspection before welding	Acc	焊前预热温度 Preheat temperature before welding	110°C
最大碳刨深度 Max. depth of gouging	10mm	碳刨总长 Total length of gouging	2.0mm
焊工 welder	069683	焊接类型 welding type	SMAW
焊接电流 Current	178 154	焊接电压 Voltage	21.1 23.4
		焊接位置 position	1G/4G
		焊接速度 Speed	107 102

返修后检查  
Inspection After repairing:

外观检查 VT result	检验员 Inspector	日期 Date
Acc	Zi Kanhua 07120701	2010.2.24.
NDT复检 NDT result	探伤员 NDT person	日期 Date
Acc	Tang Hong Shan	10.02.25

见证:  
Witness/Review:备注:  
Remark:



# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

REPORT NO. 报告编号 B787-UT-11240      DATE 2010.02.20      PAGE 1 OF 1      Revision No: 0

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

ITEMS NAME: CORNER BOTTOM PLATE AND BOX SIDE PLATE      DRAWING NO.: 5AW/5BW/5CW      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	Depth from Surface 距表面深度	From X 距X	From Y 距Y		
SEG021A-001	1	70	A	1	41	32	2	+7	10	48	16	-10	1900	REJ.	100%
SEG021A-010	1	70	A	1	40	32	1	+7	10	42	14	+10	4050	REJ.	100%
	2	70	A	1	40	32	1	+7	10	39	13	0	5420	REJ.	100%
SEG023A-031	1	70	A	1	41	32	1	+8	10	38	10	0	3140	REJ.	100%
	2	70	A	1	41	32	2	+7	10	56	2	-10	9100	REJ.	100%
SEG025A-009		70				32								ACC.	100%
SEG025A-010	1	70	A	1	41	32	2	+7	10	55	4	-10	8500	REJ.	100%

AFTER HSR1(B)-348-350

EXAMINED BY 主探 <i>Tang Xingshan 20/2.02.20</i> LEVEL - II SIGN / DATE	REVIEWED BY 审核 <i>XU Ronggang 20/2.02.20</i> LEVEL - II SIGN / DATE
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质量经理 / QCM  签字 SIGN / 日期 DATE	用户 CUSTOMER  签字 SIGN / 日期 DATE
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# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

REPORT NO. 报告编号 B787-UT-11240R1      DATE 2010.02.25      PAGE 1 OF 1      Revision No: 0

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

ITEMS NAME: CORNER BOTTOM PLATE AND BOX SIDE PLATE      DRAWING NO.: 5AW/5BW/5CW      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  
 SMAW      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
SEG021A-001	1R1	70				32									ACC.	100%
SEG021A-010	1R1	70				32									ACC.	100%
	2R1	70				32									ACC.	100%
SEG023A-031	1R1	70				32									ACC.	100%
	2R1	70				32									ACC.	100%
SEG025A-010	1R1	70				32									ACC.	100%

AFTERB-WR10699.10700.10705.10706.

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EXAMINED BY 主探 Tang Xingshan 17/2/10, 02.25      REVIEWED BY 审核 Xu Binyang 20/02.25  
 LEVEL - II SIGN / DATE      LEVEL - II SIGN / DATE

质量经理 / QCM      用户 CUSTOMER  
 签字 SIGN / 日期 DATE      签字 SIGN / 日期 DATE



# REPORT OF MAGNETIC PARTICLE EXAMINATION

## 磁粉检测报告

REPORT NO. 报告编号 B787-MT-19651		DATE日期 2010.02.25	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: 5AE/5BE/5CE CORNER ASSEMBLY BOTTOM PLATE		CALTRANS CONTRACT NO.: 加州工程编号 04-0120F4		
REFERENCING CODE 参考规范编码 AWS D1.5-2002	ACCEPTANCE STANDARD 接受标准 AWS D1.5-2002	PROCEDURE NO. 程序编号 ZPQC-MT-01	CALIBRATION DUE DATE 仪器校正有效期 Dec. 28 <sup>ST</sup> , 2010	
EQUIPMENT 设备 MT YOKE	MANUFACTURER 制造商 PARKER	MODEL NO. 样式编号 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-345T2/F2-X 16/18mm	
WELDING PROCESS 焊接方法	SAW	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			
SEG021A-001				ACC.		100%MT
SEG021A-010				ACC.		100%MT
SEG023A-031				ACC.		100%MT
SEG025A-009				ACC.		100%MT
SEG025A-010				ACC.		100%MT

AFTER HSR(B)-349~354

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EXAMINED BY 主探 <i>Ding Sheng</i> 1-02-25	REVIEWED BY 审核 <i>Swei</i> 1-02-25
LEVEL - II SIGN 签名 / DATE日期	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


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


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**Location:** Changxing Island, Shanghai, P.R. China**Report No:** NCS-000527**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 11-Mar-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0533**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:** 23-Dec-2009**Description of Non-Conformance:**

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

## Issues found in 5AW to 5BW Side Panels:

5AW SP (SP918A) to SP (SP409A) - CW Side

Surface flatness surveys were taken on the exterior Side Panel (SP) surface of longitudinal weld joint identified as SEG021A-001, counterweight side of 5AW between PP31 to PP32. The measurements were taken transverse to the direction of the side panel longitudinal weld joint. This area exceeded the maximum 5mm deviation from flat specified in State letter 05.03.01.004667.

-Deviation from flat is 8mm in 630mm

-The longitudinal weld splice is identified as: SEG021A-001.

-The transverse weld splice is identified as: OBE5A-002 &amp; OBE5A-001.

-The SP plate numbers are: SP918A to SP409A.

-The location is on the counterweight side of segment 5AW between PP31 to PP32.

## Issues found in 5BW to 5CW Side Panels:

5BW SP (SP92A) to SP (SP410A) - CW Side

Surface flatness surveys were taken on the exterior Side Panel (SP) surface of longitudinal weld joint identified as SEG023A-031, counterweight side of 5BW between PP34 to PP35. The measurements were taken transverse to the direction of the side panel longitudinal weld joint. This area exceeded the maximum 5mm deviation from flat specified in State letter 05.03.01.004667.

-Deviation from flat is 7mm in 630mm.

-The longitudinal weld splice is identified as: SEG023A-031.

-The transverse weld splice for 5BW to 5CW is identified as: OBW5A-007 &amp; OBW5A-006.

-The SP plate numbers are: SP92A to SP410A.

