

**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:** Shanghai, China**Report No:** NCR-000012**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 30-Sep-2007**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0008**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> 114 Meter Mock-up
<b>Procedural</b>	<b>Procedural</b>	<b>Descriptor:</b>	114 Meter Mock-up

**Description of Non-Conformance:**

American Bridge/Fluor (ABF) allowed weld repairs to be performed without Engineer notification. The 114 meter mock-up, skin plate E, sub assembly MA109, weld joint #3 has a defect as defined by AWS D1.5, that was found by ultrasonic testing (UT) with a total length in excess of 10% of the weld length. The length of indication and the repair of the weld in question was found to be 100% of the complete joint penetration groove weld.

**Applicable reference:**

Special Provisions Section 10-1.59, Fabrication/Erection Procedure and Mock-ups, Item, B.2 page 313.

**Who discovered the problem:** Quality Assurance (QA) Inspector Sherri Brannon**Name of individual from Contractor notified:** ABF/Bureau Veritas, Tan Da and ABF, QA Manager Steve Lawton**Time and method of notification:** 1400 hour, verbal Sept 30, 2007 and 0800 hour, Oct 1, 2007**Name of Caltrans Engineer notified:** Mr. Stan Ku Senior Bridge Engineer**Time and method of notification:** 0745 hour, verbal Oct 1, 2007**QC Inspector's Name:** Tan Da**Was QC Inspector aware of the problem:** Yes No**Contractor's proposal to correct the problem:**

The contractor proposes to generate a critical weld repair (CWR) report for each case where 10% of the weld length has been exceeded.

**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, 818-292-0659, who represents the Office of Structural Materials for your project.

**Inspected By:** Brannon, Sherri

Quality Assurance Inspector

**Reviewed By:** Cuellar, Robert

QA Reviewer



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge  
333 Burma Road  
Oakland CA 94607  
Tel: 510-622-5158 Fax:

## NON-CONFORMANCE REPORT TRANSMITTAL

**To:** American Bridge/Fluor Enterprises, a JV  
375 BURMA ROAD  
OAKLAND CA 95607

**Date:** 26-Oct-2007

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

**Dear:** Mr. Charles Kanapicki

**Job Name:** SAS Superstructure

**Attention:** Mr. Michael Flowers Project Executive

**Document No:** 05.03.06-000070

**Subject:** NCR No. ZPMC-0008

**Reference Description:** Repairs to skin plate welds greater than 10% in length on the 114m Mock-up

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 - No Response Required.

**Material Location:**

**Lift:**

**Remarks:**

Originally sent by State letter 05.03.01-000757

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

**Transmitted by:** Keith Osantowski Sr. Engineer

**Attachments:** ZPMC-0008

**cc:**

**File:** 05.03.06

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000070

**Subject:** NCR No. ZPMC-0008

**Dated:** 05-Feb-2007

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000004 Rev: 00

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### Contractor's Proposed Resolution:

**Reference Resolution:** ABF has reviewed the Mock-up section of the Special Provisions with ZPMC to gain understanding of this requirement which is different from the requirements for production.

Rejects in Stiffener to Skin Plate welds exceeded 10%, repairs were made contrary to contract requirements.

ABF JV has reviewed the Mock-up section of the Special Provisions with ZPMC to gain understanding of this requirement which is different from the requirements for production. Both ABF JV and ZPMC now understand this requirement. ZPMC initiated an internal NCR to address this nonconformance. ZPMC also conducted internal tests and has submitted a plan to improve weld quality.

Attached for review is the ZPMC Internal NCR and the written plan to improve weld quality.

**Submitted by:** Flowers, Michael

**Attachment(s):** ABF-NPR-000004R00; ABF-NPR-000004-01

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### Caltrans' comments:

**Status:** Approved

**Date:** 24-Mar-2008

See State Letter 05.03.01-001406

**Submitted by:** Pursell, Gary

**Date:** 22-Feb-2008

**Attachment(s):** 05.03.01-001406; TC-20 5,7,8

14-Feb-2008

ABF-CAL-LTR-000444

Mr. Gary Pursell  
Resident Engineer  
**California Department of Transportation**  
333 Burma Road,  
Oakland, CA 94607, USA

**PROJECT: San Francisco Oakland Bay SAS Bridge Superstructure**  
**Caltrans Contract No. 04-0120F4**  
**ABF Job No. 660110**

**SUBJECT: RESPONSE TO NCR-0005, 0007 AND 0008**

Gentlemen:

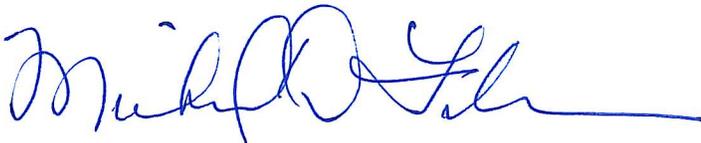
American Bridge / Fluor Enterprises Inc. a Joint Venture (ABFJV) acknowledges receipt of the Department's Letter No.05.03.01-000757 dated October 26, 2007 forwarding the Department's Non-Compliance Report NCR-0005, 0007 and 0008

The attached documents the response to the subject NCRs and closure by the Engineer's China Fabrication Team. Based on the attached ABFJV is requesting written confirmation from the Engineer that these NCR are closed.

If you need any more information, please call Chuck Kanapicki at (510) 808-4609.

Sincerely,

**AMERICAN BRIDGE/FLUOR ENTERPRISES, INC. A JOINT VENTURE**



Michael Flowers  
Project Director  
MF/CK/cc

File: 02.01, 02.28.4  
Enclos: Response to NCR- 0005, 0007 and 0008

## DEPARTMENT OF TRANSPORTATION

CHINA FABRICATION TEAM  
506 Shangcheng Rd., Pudong New District  
Shanghai 200120, PRC



## REVIEW OF CONTRACTOR'S TRANSMITTAL

To: Dave Williams, American Bridge – Fluor, a Joint Venture  
Gary Pursell, Resident Engineer

Review Date: 12/20/2007From: Joshua Ishibashi, Structural Materials RepresentativeContract No.: 04-0120F4Date/Time Submittal Received: 12/05/2007 1315
 China Standard Time  
(GMT+08:00)
Contractor's Transmittal #: TL-07-0704 Rev. # 0

<input checked="" type="checkbox"/>	substantially <b>complies</b> with contract requirements and is approved			
<input type="checkbox"/>	substantially <b>complies</b> with contract requirements and is approved as noted.			
<input type="checkbox"/>	Lacks sufficient information and/or contains unacceptable items that must be corrected or prior to resubmittal			
Verbal Notification		<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	Date: <u>01/18/08</u> Time: <u>1200</u>
Name of individual from Contractor Notified: <u>Steve Lawton</u>				
This submittal is a:		<input type="checkbox"/> Welding Report	<input type="checkbox"/> Critical Weld Repair	
		<input type="checkbox"/> Request for Information	<input type="checkbox"/> Heat Straightening Request	
		<input type="checkbox"/> Fabrication Procedures	<input checked="" type="checkbox"/> Other: <u>NCR Closure</u>	
Submitting Contractor: <u>ZPMC</u>				
ITEMS REVIEWED		COMPLIES		COMMENTS
1.	ABF-SL-07-0236 NCR Resolution for ZPMC 05, 07, 08	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Approved
2.		<input type="checkbox"/> Yes	<input type="checkbox"/> No	
3.		<input type="checkbox"/> Yes	<input type="checkbox"/> No	
4.		<input type="checkbox"/> Yes	<input type="checkbox"/> No	
5.		<input type="checkbox"/> Yes	<input type="checkbox"/> No	
6.		<input type="checkbox"/> Yes	<input type="checkbox"/> No	
7.		<input type="checkbox"/> Yes	<input type="checkbox"/> No	
8.		<input type="checkbox"/> Yes	<input type="checkbox"/> No	
9.		<input type="checkbox"/> Yes	<input type="checkbox"/> No	
10.		<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Remarks: METS has completed the review of ABF-TL-07-0752. This NCR was closed in PMIV on 12/20/07. At the request of ABF China METS is generating a TC20 to document this closure. METS recommends the aforementioned NCR be closed.

Reviewer: Joshua IshibashiDate: 01/18/2008
 Construction Concurrence: JI Initial 1/18/08 Date





A JOINT VENTURE

December 05, 2007

California Department of Transportaion  
666 Feng Bin Road, Room 708  
Changxing Island, Shanghia China

Reply to: SL-ABF-07-0236

Attention: Gary Pursell

Reference: San Francisco Oakland Bay SAS Bridge Superstructure  
Caltrans Contract No. 04-0120F4  
ABF Job No. 660110

Subject: State Letter 05.03.01-000757

Mr. Purcell:

American Bridge / Fluor (ABF) Quality Assurance Department is in receipt of State Letter 05.03.01-000757 October 26, 2007 providing ABF notification regarding Nonconformance Report (NCR) No.005, 007 and 008.

This letter is issued to provide formal response addressing the proposed resolution to each of the mentioned NCR's for Engineer's review and approval.

**NCR-00005 - 77M Mock-up Long Stiffener to Skin Plate welds.**

Rejects in Stiffener to Skin Plate welds exceeded 10%, repairs were made contrary to contract requirements.

ABFJV has reviewed the Mock-up section of the Special Provisions with ZPMC to gain understanding of this requirement which is different from the requirements for production. Both ABFJV and ZPMC now understand this requirement. ZPMC initiated an internal NCR to address this nonconformance. ZPMC also conducted internal tests and has submitted a plan to improve weld quality. Attached for review is the ZPMC Internal NCR and the written plan to improve weld quality.

**NCR-00007 - UT angle determination and db Scanning Levels**

ZPMC UT technicians not using appropriate IIW block nor were they scanning using the correct db scanning levels contrary to the AWS D1.5 code nor their own UT procedure.

ABFJV has informed ZPMC of this nonconformance. ZPMC has since procured an acceptable IIW block to perform calibrations correctly. ABFJV has reviewed the AWS D1.5 code and the ZPMC UT procedure with ZPMC UT technicians to gain understanding of the scanning levels required. Attached is the ZPMC

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Pursuant Section 5-1.02 of the  
Standard Specifications  
Initial *[Signature]* Date: 1/18/08

AMERICAN BRIDGE / FLUOR JV

Page 2

internal NCR addressing this nonconformance.

**NCR-00008 - 114M Mock-up.**

Rejects in Stiffener to Skin Plate welds exceeded 10%, repairs were made contrary to contract requirements.

ABFJV has reviewed the Mock-up section of the Special Provisions with ZPMC to gain understanding of this requirement which is different from the requirements for production. Both ABFJV and ZPMC now understand this requirement. ZPMC initiated an internal NCR to address this nonconformance. ZPMC also conducted internal tests and has submitted a plan to improve weld quality. Attached for review is the ZPMC Internal NCR and the written plan to improve weld quality.

If you have any questions or need additional information, please contact this office

Sincerely,



**AMERICAN BRIDGE / FLUOR JV**

Steve Lawton

Foreign Quality Assurance Manager

cc: file

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State of California  
DEPARTMENT OF TRANSPORTATION  
Pursuant Section 5-1.02 of the  
Standard Specifications  
Initial *SL* Date: *1/18/08*

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY  
DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program  
333 Burma Rd.  
Oakland, CA 94607  
(510) 622-5660, (510) 286-0550 fax

ARNOLD SCHWARZENEGGER, Governor



Flex your power  
Be energy efficient!

October 26, 2007

Contract No. 04-0120F4  
04-SF-80-13.2 / 13.9  
Self-Anchored Suspension Bridge  
Letter No. 05.03.01-000757

Michael Flowers  
Project Executive  
American Bridge/Fluor Enterprises, a JV  
375 Burma Road  
Oakland, CA 94607

Dear Michael Flowers,

NCRs 5, 7 & 8 - Zhenhua Port Machinery Company, Ltd.

This letter is issued to provide a formal notification to American Bridge/Fluor Enterprises (ABF) of the issuance of non-conformance reports (NCRs) at the Zhenhua Port Machinery Company, Ltd. (ZPMC) facility in Shanghai, China. Verbal notification was previously provided to ABF representatives on site. The following is a summary of the NCRs which have been attached to this document:

NCR 5 - 77m Mock-up Longitudinal Stiffener to Skin Plate Welds

The Contractor allowed the Fabricator to make repairs to rejectable indications found in the complete joint penetration welds between the longitudinal stiffener and Skin Plates A and E of the 77m mock-up at lengths greater than 10% of the cumulative length of the welds.

NCR 7 - 114m Mock-up UT Angle Determination and Db Scanning Levels

The Contractor's Quality Control Inspectors were not following the approved UT procedure.

NCR 8 - 114m Mock-up Skin Plate Welds

The Contractor allowed the Fabricator to make repairs to a number of welds for Skin Plates A MA-106 and B MA-101 that had defects with cumulative lengths in excess of 10% of the weld lengths without notifying the Department.

ABF shall provide a formal response addressing the proposed resolution to each of these NCRs for the Engineer's review and approval.

Sincerely,

GARY PURSELL  
Resident Engineer

Attachment

cc: Rick Morrow, Brian Boal  
file: 05.03.01, 09.01.06

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DEPARTMENT OF TRANSPORTATION  
Pursuant Section 6-1.02 of the  
Standard Specifications  
Initial *u* Date: *1/18/08*



## LETTER OF RESPONSE

DATE: 2007.11.26

To: AB/F Steve Lawton

From: ZPMC Yang Xuehui

Subject: Response to CT NCR-000010-CT

Mr. Lawton:

ZPMC has generated internal NCR-CT-006 in Response to NCR-000008-CT, Regarding weld defects exceeding 10% weld length. ZPMC has performed weld trials to determine acceptable method to perform these welds with less than a 10% reject rate.

Attached you will find a copy of ZPMC internal NCR as well as documented plan to perform these welds with less than a 10% reject rate.

If further information is needed, Please contact me.

Sincerely

Yang Xuehui  
*Yang Xuehui*

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Pursuant Section 5-1.02 of the  
Standard Specifications  
Initial *u* Date: *1/18/08*

**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)649-5453

Contract #: 04-0120F4  
 Cty: SF/ALA Rte: 80 PM: 13.9/14.3.0.0/1.6  
 File #: 69.25B

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

**Location:** Shanghai, China **Report No:** NCR-000008  
**Prime Contractor:** American Bridge/Fluor Enterprises, a JV **Date:** 24-Sep-2007  
**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** NCR-000008

**Type of problem:**

Welding  Concrete  Other   
 Welding  Curing  Procedural  **Bridge No:** 34-0006  
 Joint fit-up  Coating  Other  **Component:** 114 Meter Mock-Up  
 Procedural  Procedural  **Description:**

**Description of Non-Conformance:**

A number of welds for Skin Plates A MA-106 and B MA-101 have defects as defined by AWS D1.5, that were found by Ultrasonic Testing with cumulative lengths in excess of 10% of the weld lengths. Cumulative length of indication for the welds in question were found to range of 11% to 45.4% on welds 5 & 7 of A MA-106 and welds 5, 5 R1 and 8 on b MA-101. American Bridge/Flour allowed repairs to be carried out without notifying Caltrans Quality Assurance.

**Applicable reference:**

Special Provisions Contract Number 04-0120F4, Fabrication/Erection Procedure and Mock-Ups, Item B.2 page 313.

**Who discovered the problem:**

**Name of individual from Contractor notified:**

**Time and method of notification:**

**Name of Caltrans Engineer notified:**

**Time and method of notification:**

**QC Inspector's Name:**

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

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

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 DEPARTMENT OF TRANSPORTATION  
 Pursuant Section 5-1.02 of the  
 Standard Specifications  
 Initial u Date: 1/18/08

**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 Patrick Lowry, 916-227-5719, who represents the Office of Structural Materials for your project.

**Inspected By:** Berger, Bruce **Quality Assurance Inspector**  
**Reviewed By:** Cochran, Jim **QA Reviewer**



# Nonconformance Report

## 不符合项报告

Project Name: S.F.O.B.B 项目名称: 美国加州海湾大桥		NCR Number: NCR-CT-006 NCR 编号: (NCR-000008-CT)	
Item: 114M Skin A&B 名称描述: 114M A 面板、B 面板	Item Number: 件号: NA	Drawing Number: 图号: MA106,MA101	
Location: 114M Mock Up 位置: 114 米模型段		Date: 2007-10-17 日期:	
Description of Nonconformance: 不符合项状态描述: A number of welds for Skin Plates A MA106 and B MA-101 have defects as defined by AWS D1.5, that were found by Ultrasonic Testing with cumulative lengths in excess 10% of the weld lengths. Cumulative length of indication for the welds in question were found to range of 11% to 45.4% on welds 5&7 of A MA-106 and welds 5, 5R1, and 8 on b MA-101. American Bridge/Flour allowed repairs to be carried out without notifying Caltrans Quality Assurance. A 面板 MA106 和 B 面板 MA101 的很多焊缝具有 AWS D1.5 定义的缺陷, 他们被 UT 发现累计长度超过 10%。A 面板上焊缝 5&7 及 B 面板上焊缝 5, 5R1 和 8 的缺陷范围为 11%到 45.4%。承包商允许在不通知加州 QA 的情况下进行返修。 Work By: <u>Sun Bo</u> Prepared by: <u>Zhao Chen</u> Reviewed by QCE: <u>Fu Yuhong</u> 2007.10.17 施工方: 2007.10.17 准备: 2007.10.17 质量工程师批准: <input type="checkbox"/> Drawing Error <input type="checkbox"/> Material Defect <input type="checkbox"/> Fabrication Error <input type="checkbox"/> Other 图纸错误 材料缺陷 制作错误 其他原因			
Disposition: <input type="checkbox"/> Use as is <input checked="" type="checkbox"/> Repair <input type="checkbox"/> Reject 处理措施: 回用 返修 拒收			
Recommendation: 建议 1. Do critical welding report. 2. Stop using the low quality welders 3 Do the relevant experiment to look for the best weld method. Prepared by: <u>Yang Xuehui</u> Approved by QCA: <u>Hu Guang</u> 准备: 2007.10.17 质量经理批准: 2007.10.17			
Reason for Nonconformance: 不符合原因: The weld pass wasn't cleaned clearly. Prevention of Re-occurrence: 预防措施 1 Stop using the low quality welders 2. Do the relevant experiment to look for the best weld method. Approved by/批准: <u>Yang Xuehui</u> 2007.10.17			
Technical Justification for Use-As-Is/Repair: <input type="checkbox"/> Attachment <input type="checkbox"/> Non-attachment 回用或返修的技术依据: 附件 无附件 1. Clean the weld pass clearly during the weld. 2. Use the high quality welders. 3. Put the plate up and repair on the horizontal welding location. Reviewed /批准: <u>Lu Wenyu</u> 2007.10.17			
Verification: <input type="checkbox"/> Acceptable <input type="checkbox"/> Unacceptable 确认: 可接受 不可接受 Verified by QCI/质检确认: _____ Reviewed by QCA/质检主任审核: _____			

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Pursuant Section 5-1.02 of the  
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Initial u Date: 1/18/08



# Nonconformance Report

## 不符合项报告

**Project Name:** S.F.O.B.B  
**项目名称:** 美国加州海湾大桥

**NCR Number:**  
**NCR 编号:** NCR-CT-006  
 (NCR-000008-CT)

**Item: 114M Skin A&B**  
**名称描述:** 114M A 面板、B 面板

**Item Number:**  
**件号:** NA

**Drawing Number:**  
**图号:** MA106, MA101

**Location:** 114M Mock Up  
**位置:** 114 米模型段

**Date:**  
**日期:** 2007-10-17

**Description of Nonconformance:**  
**不符合项状态描述:**  
 A number of welds for Skin Plates A MA106 and B MA-101 have defects as defined by AWS D1.5, that were found by Ultrasonic Testing with cumulative lengths in excess 10% of the weld lengths. Cumulative length of indication for the welds in question were found to range of 11% to 45.4% on welds 5&7 of A MA-106 and welds 5, 5R1, and 8 on b MA-101. American Bridge/Flour allowed repairs to be carried out without notifying Caltrans Quality Assurance.  
 A 面板 MA106 和 B 面板 MA101 的很多焊缝具有 AWS D1.5 定义的缺陷, 他们被 UT 发现累计长度超过 10%。A 面板上焊缝 5&7 及 B 面板上焊缝 5, 5R1 和 8 的缺陷范围为 11%到 45.4%。承包商允许在不通知加州 QA 的情况下进行返修。

**Work By:** Sun Bo **Prepared by:** Zhao chensun **Reviewed by QCE:** Fu Yuhong 2007.10.17  
**施工方:** 2007.10.17 **准备:** 2007.10.17 **质量工程师批准:**  
 **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** ①出具关键焊缝返修报告。  
 ②停用合格率低和焊工。  
 ③作相关试验, 寻找最佳焊接途径。  
**Prepared by:** Yang Xuehui 2007.10.17 **Approved by QCA:** Hu Gang  
**准备**                      质量经理批准                      2007.10.17

**Reason for Nonconformance:**  
**不符合原因:** ① 焊缝未清理干净。

**Prevention of Re-occurrence:**  
**预防措施** ① 停用合格率低和焊工  
 ② 作相关试验, 寻找最佳焊接途径。

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 Pursuant Section 5-1.02 of the  
 Standard Specifications  
 Initial u Date: 1/18/08

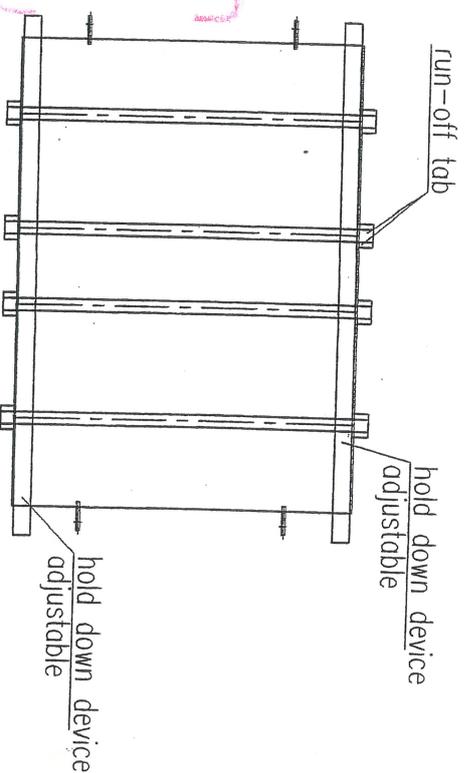
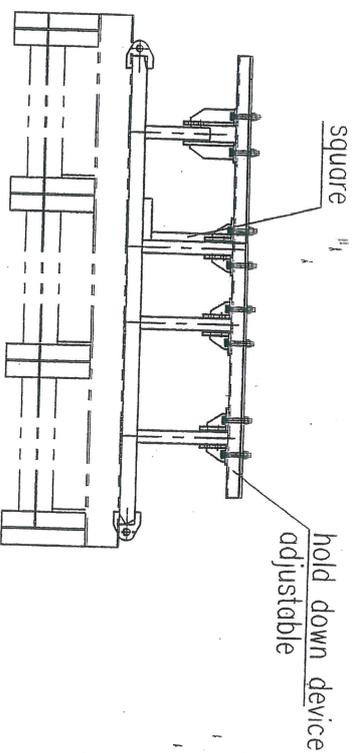
**Technical Justification for Use-As-Is/Repair:**    **Attachment**                       **Non-attachment**  
**回用或返修的技术依据:**                      附件                      无附件  
 1. 焊接过程中及时清理焊缝。  
 2. 使用合格率低焊工。  
 3. 材料厚度增加, 在焊缝位置进行返修。  
**Reviewed /批准:** Liu Meng 2007.10.17

**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:**

## Step 1 装配纵向筋

Step 1. Fit up of Longitudinal Stiffener to Skin Plate.

- 1.1. 在装配纵向筋之前,按照已批准的图纸要求将纵向筋加工到位,
- 1.1. Machine approved weld detail bevels onto longitudinal stiffeners.
- 1.2. 在面板上划好纵向筋的装配线.
- 1.2. Lay out Skin plate and mark longitudinal stiffener positions.
- 1.3. 在两端增加好可调卡码(如右图),安装并根据已批准的WPS的要求把纵向筋点焊固定在面板,检测其垂直度.
- 1.3 Install adjustable holding down device, assemble and tack weld the longitudinal stiffeners to Skin plate inline with the parameters of the approved WPS and check the verticality to the Skin plate.
- 1.4. 对所有尺寸进行检查.
- 1.4. Check all the dimensions.



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 State of California  
 DEPARTMENT OF TRANSPORTATION  
 Pursuant Section 6-1.02 of the  
 Standard Specifications  
 Initial **W** Date: **1/18/08**



SHANGHAI ZHENHUA PORT MACHINERY CO., LTD.

SAN FRANCISCO OAKLAND BAY BRIDGE, EAST SPAN SELF-ANCHORED SUSPENSION SPAN  
 ROUTE 80 EAST OF YERBA BUENA ISLAND, DISTRICT 04, SF COUNTY, CA  
 BRIDGE Nos.: 34-0006L, PM 8.2, KP 13.2 & 34-0006R, PM 8.7, KP 13.9  
 STATE OF CALIFORNIA DEPT. OF TRANSPORTATION CONTRACT NO. 04-0120F-4  
 ENGINEER: CALTRANS ----- TYLIN / MOFFATT & NICHOL, JV.  
 CONTRACTOR: AMERICAN BRIDGE / FLUOR ENTERPRISES, JV.

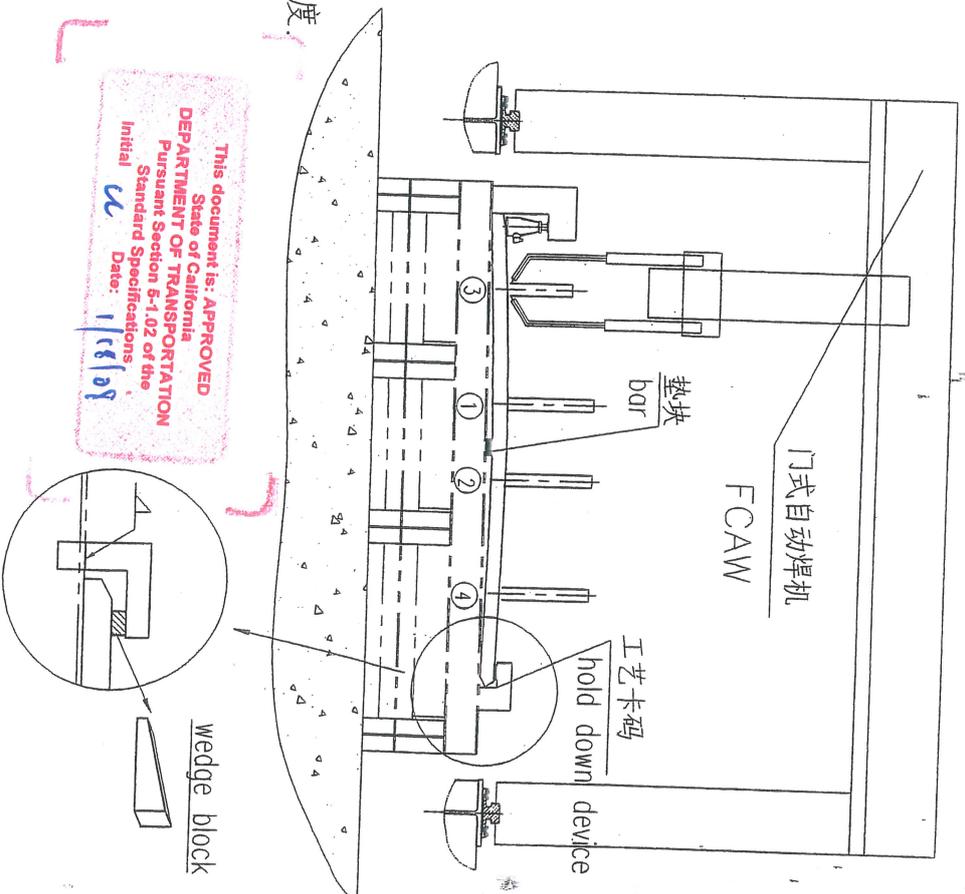
纵向筋与面板CJP焊缝的改进工艺

DRAWN	14-shanghua	SHEET NO.	DRIVER NO.
CHECKED	2007-10-20	RP-01	

## Step2 焊接纵向筋的PJP部分焊缝

### Step2 Welding the PJP joint of longitudinal stiffener

- 2.1. 预放反变形, 在面板中间垫厚度为t的钢板, 两侧用千斤顶压住.
- 2.1. Position flat bar under the center of the Skin plate and pre-set using jacks.
- 2.2. 采用FCAW多头焊机按照已批准的WPS按图示顺序烧焊纵向筋.
- 2.2. Using FCAM multi head welding machine and following the approved WPS, weld the stiffeners simultaneously in sequence as shown on the sketch. (WPS-B-T-2232-TC-P5-F and WPS-B-T-2332-TC-P5-F-1)
- 2.3. 焊后检查纵向垂直度, 如需要按批准的WQCP要求热校正纵向筋垂直度.
- 2.3 Check the verticality of the stiffeners and adjust by heat straightening if required following the approved WQCP.
- 2.4. NDT检测要求: 打底焊和表面焊焊接后进行100%MT及VT检查.
- 2.4 Perform NDT, VT and MT 100% root weld and cap.



SHANGHAI ZHENHUA PORT MACHINERY CO., LTD.

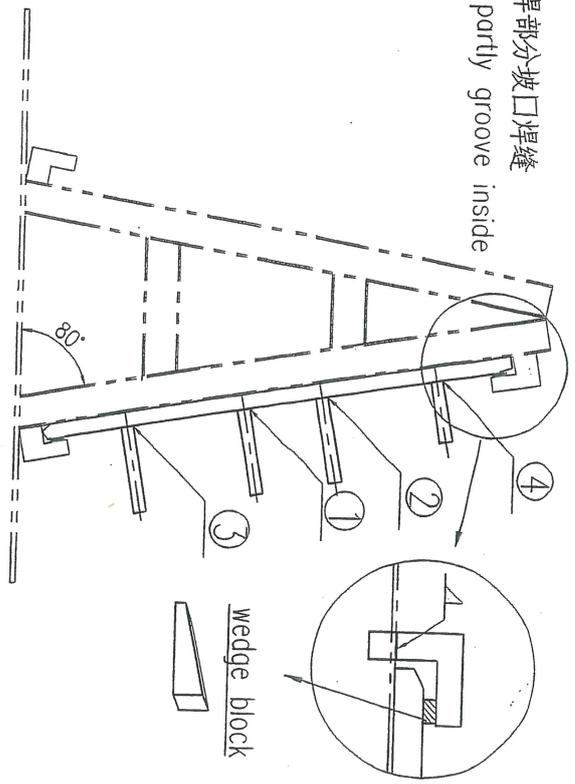
SAN FRANCISCO OAKLAND BAY BRIDGE, EAST SPAN SELF-ANCHORED SUSPENSION SPAN  
ROUTE 80 EAST OF YERBA BUENA ISLAND, DISTRICT 04, SF COUNTY, CA.  
BRIDGE Nos.: 34-0008L PM 8.2, KP 13.2 & 34-0008R PM 8.7, KP 13.9  
STATE OF CALIFORNIA DEPT. OF TRANSPORTATION CONTRACT NO. 04-0120F-4  
ENGINEER: CALTRANS --- TYLIN / MOFRAI & NICHOL, JV.  
CONTRACTOR: AMERICAN BRIDGE / FLUOR ENTERPRISES, JV

纵向筋与面板CJP焊缝的改进工艺

DRAWN BY Zhanghui  
CHECKED BY 2007-10-20  
SHEET NO. RP-02  
ORDER NO.

位置1

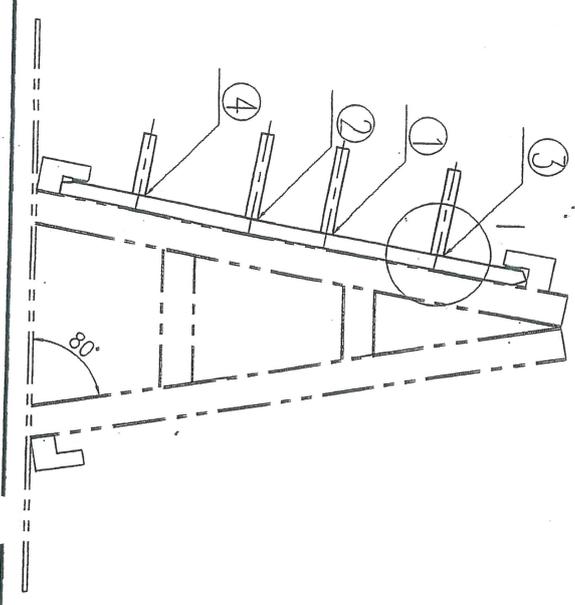
正面焊部分坡口焊缝  
Weld partly groove inside



位置2

翻身碳刨清根, 焊部分坡口焊缝  
Weld partly groove outside

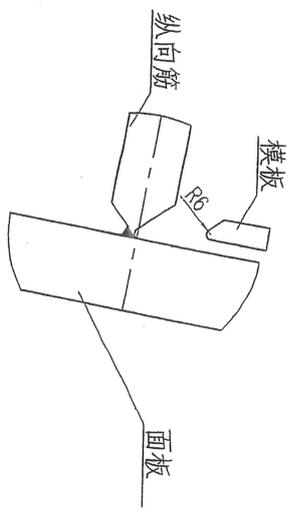
turnover



Step 3 焊接纵向筋的CJP焊缝  
Step 3 Welding the CJP joint of longitudinal stiffeners.

- 3.1. 焊接位置: 将板单元放置在特制的带有80度左右的倾斜角度胎架上, 加好卡码固定.
- 3.1. Position Skin plate in welding jig inclined at approximately 80 degrees and fit holding down attachment.
- 3.2. 采用FCAW手工焊接按照已批准的WPS按图示顺序烧焊纵向筋.
- 3.2. Using manual FCAW and following the approved WPS, weld the stiffeners in sequence as shown on the sketch.  
(Weld WPS: WPS-B-T-2231-TC-U5-F and WPS-B-T-2231-TC-U5-F-1)
- 3.3. 完成打底焊及正面第一次烧焊焊接后, 将面板翻身及进行碳刨.
- 3.3. Complete root weld and part fill, turn over Skin plate and back gouge.

1放大  
检验碳刨



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SHANGHAI ZHENHUA PORT MACHINERY CO., LTD.	
SAN FRANCISCO OAKLAND BAY BRIDGE, EAST SPAN SELF-ANCHORED SUSPENSION SPAN ROUTE 80 EAST OF YERBA BUENA ISLAND, DISTRICT 04, SF COUNTY, CA BRIDGE NOS.: 34-00061, PM 8.2, KP 13.2 & 34-00068, PM 8.7, KP 13.9 STATE OF CALIFORNIA, DEPT. OF TRANSPORTATION CONTRACT NO. 04-0120F4 ENGINEERS: CALTRANS --- TYLON / MOFPAIT & NICHOL, JV. CONTRACTOR: AMERICAN BRIDGE / FLUOR ENTERPRISES, JV.	
纵向筋与面板CJP焊缝的改进工艺 IMPROVED CJP JOINT WELDING OF LONGITUDINAL STIFFENERS AND SKIN PLATE	SHEET NO. RP-03
DRAWN BY: [Name] CHECKED BY: [Name]	BRIDGE NO.

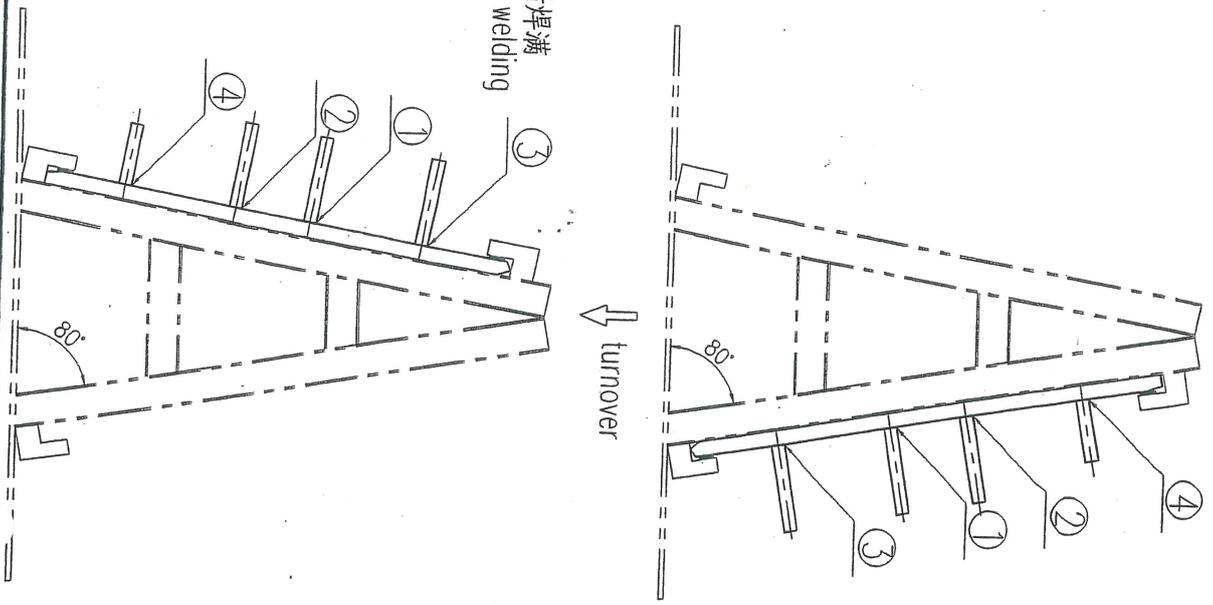
位置3  
翻身  
weld after turnover

↓ turnover

位置1

翻身  
finish welding

↓ turnover



3.4. 碳刨结束后, 将碳刨面打磨光亮, 并利用模板检验碳刨的角度。  
3.4. Grind surface to a smooth finish and check profile of back gouge with template.

3.5. 继续对碳刨面一侧进行烧焊, 并监测焊缝以确保3.6. 焊接时采用多次翻身控制纵向筋垂直度是可行的变形控制方法。  
3.5. Weld to part fill back gouged side and monitor weld to ensure distortion control measures are adequate by rotating the Skin plate when required to control the verticality of stiffener.

3.6. 焊后检查纵向筋垂直度, 如需要按批准的WQCP要求热校正纵向筋垂直度。  
3.6. Check the verticality of the stiffeners and adjust by heat straightening if required following the approved WQCP.

3.7. NDT检测要求: 焊接后进行100% UT及VT检查。  
3.7. Perform NDT, VT and UT 100%.

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Pursuant Section 5-1.02 of the  
Standard Specifications  
Initial: [Signature]  
Date: 1/18/08

<b>ZPMC</b>		SHANGHAI ZHENHUA PORT MACHINERY CO., LTD.	
SAN FRANCISCO OAKLAND BAY BRIDGE, EAST SPAN SELF-ANCHORED SUSPENSION SPAN			
ROUTE 80 EAST OF YERBA BUENA ISLAND, DISTRICT 04, SF COUNTY, CA			
BRIDGE Nos: 34-0008L, PM 8.2, KP 13.2 & 34-0006R, PM 8.7, KP 13.9			
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ENGINEER: CALTRANS ----- TYLUN / MOFATT & NICHOL, JV.			
CONTRACTOR: AMERICAN BRIDGE / FLUOR ENTERPRISES, JV.			
纵向筋与面板CJP焊缝的改进工艺			
DRAWN	CHECKED	SHEET NO.	ORDER NO.
[Signature]	[Signature]	RP-04	

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

333 Burma Rd.  
Oakland, CA 94607  
(510) 622-5660, (510) 286-0550 fax



*Flex your power  
Be energy efficient!*

February 22, 2008

Contract No. 04-0120F4  
04-SF-80-13.2 / 13.9  
Self-Anchored Suspension Bridge  
Letter No. 05.03.01-001406

Michael Flowers  
Project Executive  
American Bridge/Fluor Enterprises, a JV  
375 Burma Road  
Oakland, CA 94607

Dear Michael Flowers,

**Response to NCRs 1, 5, 7, 8, 9, 10, 11, 12 & 13**

This letter is issued as a response to ABF-CAL-LTR-000443, 444, 445, dated February 14, 2008, and ABF-CAL-LTR-000446, dated February 15, 2008, requesting written confirmation from the Engineer that the referenced Non-Conformance Reports (NCRs) at Zhenhua Port Machinery Company, Ltd (ZPMC) have been closed. The Department considers the following ZPMC NCRs closed:

NCR No.	State Letter No.	ABF Document No.	Description
1	05.03.01-000123	ABF-CAL-LTR-000443	Radiographic Testing issues (IQI placement, source type, etc.)
5	05.03.01-000757	ABF-CAL-LTR-000444	Repairs to longitudinal stiffener welds greater than 10% in length on the 77m Mock-up
7	05.03.01-000757	ABF-CAL-LTR-000444	QC not following the approved UT procedure on 114m Mock-up
8	05.03.01-000757	ABF-CAL-LTR-000444	Repairs to skin plate welds greater than 10% in length on the 114m Mock-up
9	05.03.01-000795	ABF-CAL-LTR-000445	Third time repairs to Skin B sub-assemblies on the 114m Mock-up without Engineer approval
10	05.03.01-000795	ABF-CAL-LTR-000445	Repairs to longitudinal stiffener welds greater than 10% in length on the 114m Mock-up
11	05.03.01-000795	ABF-CAL-LTR-000446	Failure to document fit-up of longitudinal stiffener on Mock-up
12	05.03.01-000795	ABF-CAL-LTR-000446	Repairs to skin plate welds greater than 10% in length on the 114m Mock-up
13	05.03.01-000795	ABF-CAL-LTR-000446	Welding electrode used on 89m Strut Sub-Assembly not in compliance

American Bridge/Fluor Enterprises, a JV  
February 22, 2008  
Page 2 of 2

Please contact us if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Gary Purcell".

GARY PURSELL  
Resident Engineer

cc: Rick Morrow  
Brian Boal  
Gary Lai  
Mark Woods

file: 05.03.01

**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:** Shanghai, China**Report No:** NCS-000008**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 20-Dec-2007**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0008**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:** 30-Sep-2007**Description of Non-Conformance:**

American Bridge/Fluor (ABF) allowed weld repairs to be performed without Engineer notification. The 114 meter mock-up, skin plate E, sub assembly MA109, weld joint #3 has a defect as defined by AWS D1.5, that was found by ultrasonic testing (UT) with a total length in excess of 10% of the weld length. The length of indication and the repair of the weld in question was found to be 100% of the complete joint penetration groove weld.

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

The contractor proposes to generate a critical weld repair (CWR) report for each case where 10% of the weld length has been exceeded.

**Corrective action taken:**

ABFJV has reviewed the Mock-up section of the Special Provisions with ZPMC to gain understanding of this requirement which is different from the requirements for production. Both ABFJV and ZPMC now understand this requirement. ZPMC initiated an internal NCR to address this nonconformance. ZPMC also conducted internal tests and has submitted a plan to improve weld quality. Attached for review is the ZPMC Internal NCR and the written plan to improve weld quality.

**Did corrective action require Engineer's approval?** Yes No**If so, name of Engineer providing approval:** **Date:****Is Engineer's approval attached?** Yes No**Comments:**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

**Inspected By:** Ishibashi, Josh

Quality Assurance Inspector

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# QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

( Continued Page 2 of 2 )

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**Reviewed By:** Wahbeh,Mazen

QA Reviewer