

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



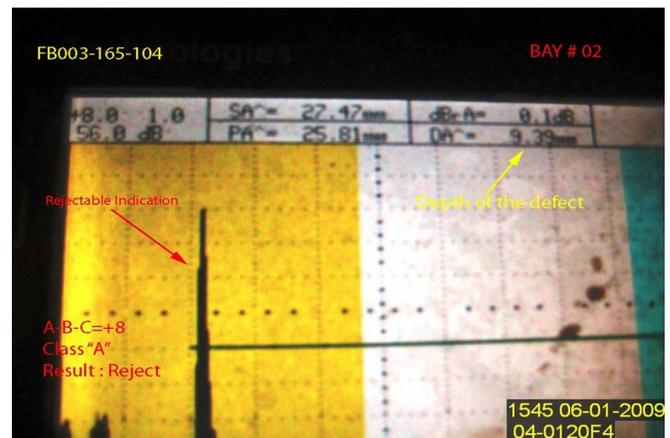
Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

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-000299**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 01-Jun-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0273**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> Floor Beam FB003-165
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b>	

**Reference Description:** Missed UT Indication by QC, Weld Joint FB003-165-104**Description of Non-Conformance:**

During random 10% verification Ultrasonic Testing (UT) on weld joint FB003-165-104, Caltrans Quality Assurance (QA) Inspector discovered a class "A" non conforming indication measuring approximately 20mm in length. This weld was previously tested and accepted by ZPMC Quality Control (QC) UT technician Han Feng.

**Applicable reference:**

AWS D1.5-2002, Section 6, Table 6.3

**Who discovered the problem:** Dhanasingh Sukanthan**Name of individual from Contractor notified:** Wang Wan Lin**Time and method of notification:** 06/1/09, 16:00, Verbal**Name of Caltrans Engineer notified:** Stanley Ku**Time and method of notification:** 06/3/09, 14:00, Verbal**QC Inspector's Name:** Zhu Jun

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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

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

**Comments:**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Skyler Guest, 1500.042.2360, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Guest,Skyler	SMR
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<b>Reviewed By:</b>	Wahbeh,Mazen	SMR
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**DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge**  
666 Feng Bin Road Room 708, Changxing Island  
Shanghai 201913 PR China  
Tel: 021-56856666 ext 207061 Fax:

## NON-CONFORMANCE REPORT TRANSMITTAL

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

**Date:** 08-Jun-2009

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

**Dear:** Mr. Charles Kanapicki

**Job Name:** SAS Superstructure

**Attention:** Mr. Thomas Nilsson Project/Fabrication Manager

**Document No:** 05.03.06-000262

**Subject:** NCR No. ZPMC-0273

**Reference Description:** Missed UT Indication by QC, Weld Joint FB003-165-104

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:**

### Remarks:

During random 10% verification Ultrasonic Testing (UT) on weld joint FB003-165-104, Caltrans Quality Assurance (QA) Inspector discovered a class "A" non conforming indication measuring approximately 20mm in length. This weld was previously tested and accepted by ZPMC Quality Control (QC) UT technician Han Feng.

### Action Required and/or Action Taken:

This is a recurring QC issue that constitutes a systematic problem in quality control, a response for the resolution of this issue is expected within 14 days.

**Transmitted by:** Stanley Ku Sr. Bridge Engineer

**Attachments:** ZPMC-0273

**cc:** Rick Morrow, Gary Pursell, Peter Siegenthaler, Brian Boal, Doug Coe, Jason Tom, Doug Wright, 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:** 05.03.06-000262

**Subject:** NCR No. ZPMC-0273

**Dated:** 24-Aug-2009

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000306 Rev: 00

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### Contractor's Proposed Resolution:

**Reference Resolution:** ABF has notified ZPMC of this nonconformance and instructed the same UT operator to recheck this weld. ABF has discussed UT technique issues with ZPMC to prevent further nonconformances.

ABF has notified ZPMC of this nonconformance and instructed the same UT operator to recheck this weld. The UT operator verified the indication was an unacceptable Class "A" indication and has since marked the part for repair. ABF has discussed UT technique issues with ZPMC to prevent further nonconformances. ZPMC will submit repair reports at a later date to close this NCR.

### Submitted by:

**Attachment(s):** ABF-NPR-000306R00

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### Caltrans' comments:

**Status:** AAP

**Date:** 28-Aug-2009

The response is acceptable, but the Non-Conformance is not closed.

Please provide documentation of the weld repairs that were performed and that the repairs were acceptable. The Department will review the Contractor's proposal to close Non-Conformance ZPMC-0273 at that time.

**Submitted by:** Wright, Doug

**Date:** 28-Aug-2009

**Attachment(s):**

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000262

**Subject:** NCR No. ZPMC-0273

**Dated:** 11-Jan-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000306 Rev: 01

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### Contractor's Proposed Resolution:

**Reference Resolution:** ZPMC has generated an internal NCR and included all repair and subsequent inspection documentation. The ABF QCM has performed training regarding missed indication NCR's with the UT operators.

ZPMC has generated an internal NCR and included all repair and subsequent inspection documentation. The ABF QCM has performed training regarding missed indication NCR's with the UT operators. ZPMC requests closure of this NCR.

**Submitted by:** Lawton, Steve

**Attachment(s):** ABF-NPR-000306R01;

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### Caltrans' comments:

**Status:** CLO

**Date:** 11-Jan-2010

The documentation received is sufficient to close this NCR.

**Submitted by:** Howe, Bill

**Date:** 11-Jan-2010

**Attachment(s):**



No. B-550

## LETTER OF RESPONSE

**TO: American Bridge/Flour**

**DATE: 2010-1-5**

**REGARDING: NCR-000299(ZPMC-0273)**

With this letter of response, ZPMC requests closure of CT NCR-000299(ZPMC-0273) what mentioned that QA observed missed UT indication.

ZPMC acknowledge this problem and has issued internal NCR. WWR was written prior to repairing. After then, UT was performed to warrant weld's quality.

So ZPMC provides internal NCR, WWR, NDT documentation, hoping CT could take a review and consider close this NCR.

**ATTACHMENT:**

NCR-000299(ZPMC-0273)

NCR-B-175(ZPMC-273)

B-WR6910

B787-UT-6873-1

B787-UT-6873R1

A handwritten signature in black ink, appearing to be 'J. W.' with a stylized flourish.

1/5/10



**DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge**  
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## NON-CONFORMANCE REPORT TRANSMITTAL

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

**Date:** 08-Jun-2009

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

**Dear:** Mr. Charles Kanapicki

**Attention:** Mr. Thomas Nilsson Project/Fabrication Manager

**Job Name:** SAS Superstructure

**Subject:** NCR No. ZPMC-0273

**Document No:** 05.03.06-000262

**Reference Description:** Missed UT Indication by QC, Weld Joint FB003-165-104

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**Material Location:** OBG

**Lift:**

**Remarks:**

During random 10% verification Ultrasonic Testing (UT) on weld joint FB003-165-104, Caltrans Quality Assurance (QA) Inspector discovered a class "A" non conforming indication measuring approximately 20mm in length. This weld was previously tested and accepted by ZPMC Quality Control (QC) UT technician Han Feng.

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**Transmitted by:** Stanley Ku Sr. Bridge Engineer

**Attachments:** ZPMC-0273

**cc:** Rick Morrow, Gary Pursell, Peter Siegenthaler, Brian Boal, Doug Coe, Jason Tom, Doug Wright, Ching Chao

**File:** 05.03.06

**DEPARTMENT OF TRANSPORTATION**  
 DIVISION OF ENGINEERING SERVICES  
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Bay Area Branch  
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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-000299

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 01-Jun-2009

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

NCR #: ZPMC-0273

### Type of problem:

Welding  Concrete  Other Welding  Curing  Procedural 

Bridge No: 34-0006

Joint fit-up  Coating  Other 

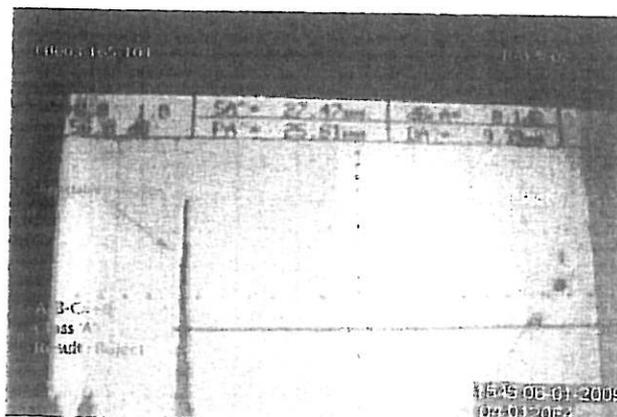
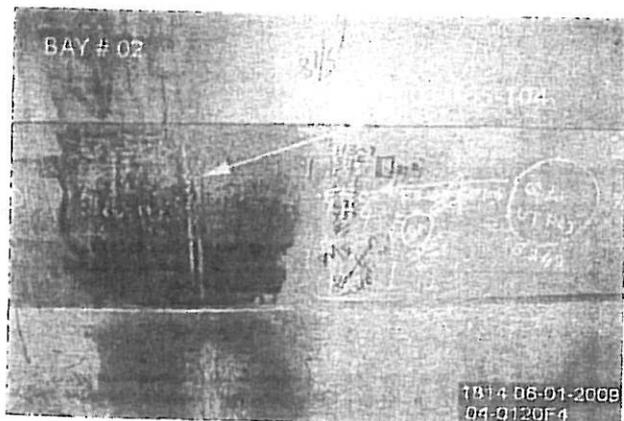
Component: Floor Beam FB003-165

Procedural  Procedural  Description:

Reference Description: Missed UT Indication by QC, Weld Joint FB003-165-104

### Description of Non-Conformance:

During random 10% verification Ultrasonic Testing (UT) on weld joint FB003-165-104, Caltrans Quality Assurance (QA) Inspector discovered a class "A" non conforming indication measuring approximately 20mm in length. This weld was previously tested and accepted by ZPMC Quality Control (QC) UT technician Han Feng.



### Applicable reference:

AWS D1.5-2002, Section 6, Table 6.3

Who discovered the problem: Dhanasingh Sukanthan

Name of individual from Contractor notified: Wang Wan Lin

Time and method of notification: 06/1/09, 16:00, Verbal

Name of Caltrans Engineer notified: Stanley Ku

Time and method of notification: 06/3/09, 14:00, Verbal

QC Inspector's Name: Zhu Jun

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

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(Continued Page 2 of 2)

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Was QC Inspector aware of the problem:       Yes  No

Contractor's proposal to correct the problem:

**Comments:**

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**Inspected By:**      Guest, Skyler

SMR

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**Reviewed By:**      Wahbeh, Mazen

SMR



# 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-B-175 (ZPMC-273)

Item: Missed UT Indication  
by QC  
名称描述: UT 漏检

Item Number:  
件号:  
FB003-165-004

Drawing:  
图号: FB003

Location: OBG FB003-165-004  
位置:

Date:  
日期: 2009-06-10

### Description of Nonconformance:

During random 10% verification Ultrasonic Testing (UT) on weld joint FB003-165-104, Caltrans Quality Assurance (QA) Inspector discovered a class "A" non conforming indication measuring approximately 20mm in length. This weld was previously tested and accepted by ZPMC Quality Control (QC) UT technician Han Feng.

在 BAY2 车间, 加州检验员在对焊缝 FB003-165-104 做 10% UT 复检的时候发现一个长度 20mm 的 A 类缺陷, 此焊缝之前已经被 ZPMC 的 UT 人员 Han Feng 接受合格。

Work By: *[Signature]*  
施工方: *[Signature]*  
 Drawing Error  
图纸错误

Prepared by: *[Signature]*  
准备: *[Signature]*  
 Material Defect  
材料缺陷

Reviewed by QCE: *[Signature]*  
质量工程师批准: *[Signature]*  
 Fabrication Error  
制作错误  
 Other  
其他原因

Disposition:  Use as is  
处理措施: 回用

Repair  
返修

Reject  
拒收

### Recommendation:

建议:

*[Handwritten]* Confirm and repair.

Prepared by: *[Signature]*  
准备: *[Signature]*

Approved by QCA: \_\_\_\_\_  
质量经理批准

### Reason for Nonconformance:

不符合原因:

*[Handwritten]* 因 DB 差异, 产生连续缺陷

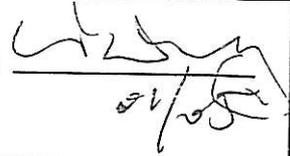
DB error caused discontinue defect.

### Prevention of Re-occurrence:

预防措施:

*[Handwritten]* 加强仪器检测调试, 保证在正常范围内工作。  
Enhance adjustment equipment to ensure normal work.

Approved by/批准:

  
01/05

Technical Justification for Use-As-Is/Repair:

回用或返修的技术依据:

Attachment  
附件

Non-attachment  
无附件

Reviewed /批准: \_\_\_\_\_

Verification:

确认:

Acceptable  
可接受

Unacceptable  
不可接受

Verified by QCI/质检确认: \_\_\_\_\_ Reviewed by QCA/质检主任审核: \_\_\_\_\_

#R787-QCP-1300



# 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	FB3	报告编号 Report No.	B-WR6910
合同号 Contract No.:	04-0120F4	部件名称 Items Name	OBG FLOOR BEAM	NDT报告编号 Report No.of NDT	B787-UT-6873-1
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

Description of welding discontinuity:

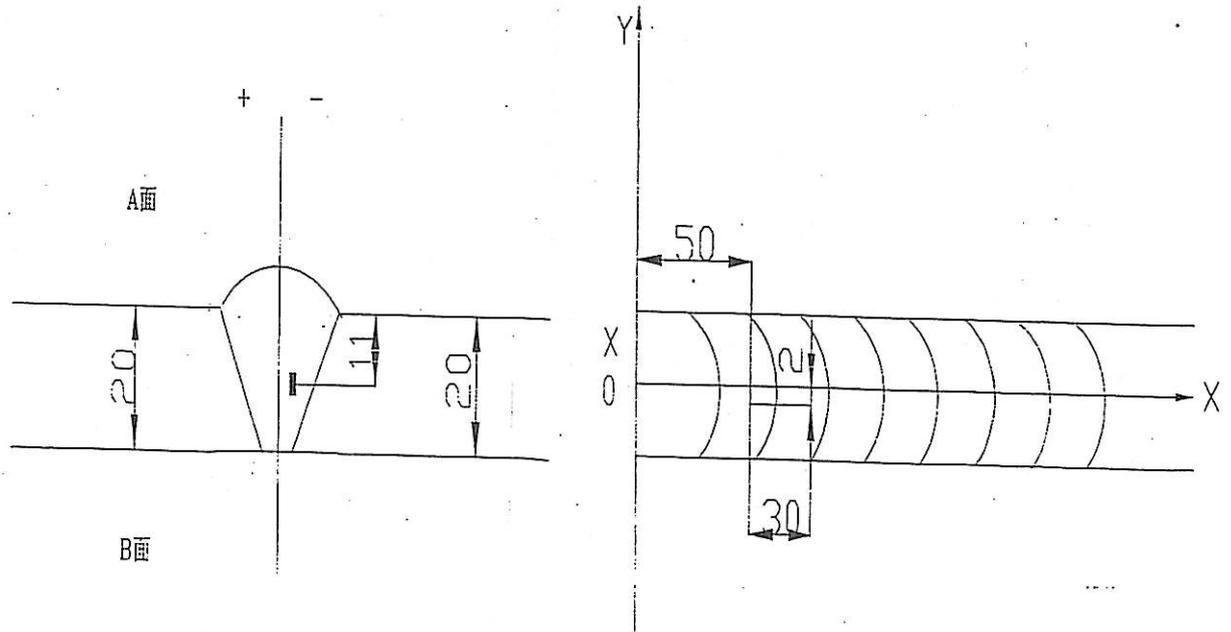
Rejected indication found by ultrasonic inspection is less than the maximum allowance aggregate length.

(UT探伤发现的缺陷总长度小于最大允许长度。) FB003-165-104

检验员 (Inspector): Xue Hairong 日期(Date): 09.08.10

焊缝返修位置示意图:

Draft of welding discontinuity:



WELD NUMBER: FB003-165-104

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): Huyuzhang 日期(Date): 09-08-11

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: Hexiaolin  
Technical engineer

09-08-11

审核:  
Approved by [Signature]

日期  
Date

[Signature]



# 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	FB3	报告编号 Report No.	B-WR6910
合同号 Contract No.:	04-0120F4	部件名称 Items Name	OBG FLOOR BEAM	NDT报告编号 Report No. of NDT	B787-UT-6873-1
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): *Huifuzhang* 日期(Date): *09.08.11*

参照的WPS编号 Repair WPS No.	WPS-345-SMAW-1 G(1F)-Repair WPS-345-FCAW-3 G(3F)-Repair WPS-345-SMAW-3 G(3F)-Repair	工艺员 technologist	<i>Hexiao Lin</i> <i>09.08.11</i>
返修(碳刨)前预热温度 Preheat temperature before gouging	<i>750C</i>	返修的缺陷 Description of discontinuity	<i>porosity</i>
焊前处理检查 Inspection before welding	<i>An</i>	焊前预热温度 Preheat temperature before welding	<i>1050C</i>
最大碳刨深度 Max. depth of gouging	<i>10 mm</i>	碳刨总长 Total length of gouging	<i>110 mm</i>
焊工 welder	<i>Yan shitian</i> <i>062708</i>	焊接类型 welding type	<i>FCAW</i>
焊接电流 Current	<i>205</i>	焊接电压 Voltage	<i>25.6</i>
		焊接位置 position	<i>36</i>
		焊接速度 Speed	<i>173</i>
返修后检查 Inspection After repairing:			
外观检查 VT result	<i>An</i>	检验员 Inspector	<i>Wangjiansu</i>
		日期 Date	<i>2009.8.22</i>
NDT复检 NDT result	<i>AC</i>	探伤员 NDT person	<i>Xuellaibony</i>
		日期 Date	<i>09.08.23</i>
见证: Witness/Review:			
备注: Remark:			





**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: xx.25A**QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION****Location:** Changxing Island, Shanghai, P.R. China**Report No:** NCS-000448**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 20-Jan-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0273**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:** 01-Jun-2009**Description of Non-Conformance:**

During random 10% verification Ultrasonic Testing (UT) on weld joint FB003-165-104, Caltrans Quality Assurance (QA) Inspector discovered a class "A" non conforming indication measuring approximately 20mm in length. This weld was previously tested and accepted by ZPMC Quality Control (QC) UT technician Han Feng.

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

Repair indication, perform required NDT, and provide training for NDT Technicians.

**Corrective action taken:**

Contractor submitted WRR confirming the repair was made along with NDT records verifying the weld is in conformance with Contract specifications. The NDT Technicians received training from the QCM in regards to the missed indications, and an internal NCR was issued by ZPMC.

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

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Jim Simonis, who represents the Office of Structural Materials for your project.

**Inspected By:** Simonis, Jim

Quality Assurance Inspector

**Reviewed By:** Wahbeh, Mazen

QA Reviewer