

**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 #: 04-0120F4  
 Cty: SF/ALA Rte: 80 PM: 13.2/13.9  
 File #: 69.25B

## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

**Location:** Changxing Island, Shanghai, PRC

**Report No:** NCR-000360

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

**Date:** 09-Jul-2009

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

**NCR #:** ZPMC-0334

### 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> FB20-005
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b>	

**Reference Description:** Base Metal Repair to Mis-Located Drill Holes

### Description of Non-Conformance:

Caltrans Quality Assurance (QA) Inspector observed ZPMC personnel performing welded restoration of base material with mis-located drilled holes at five (5) locations. The member is identified as Floor Beam FB020-005. ZPMC QC did not provide an approved Welding Procedure Specification (WPS) or notify the Engineer of the above mentioned welding repair.

For further information, Please see the attached pictures below



### Applicable reference:

AWS D1.5-2002 section 3.7.7.2: "Base metal subject to dynamic tensile stress may be restored by welding providing the following apply:

1. The Engineer approves both repair by welding and the repair WPS.
2. The repair WPS is followed in the work and the soundness of the restored base metal is verified by UT or RT, as specified in the contract documents for examination of tension groove welds or as approved by the Engineer."

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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**Who discovered the problem:** Dhanasingh Sukanthan  
**Name of individual from Contractor notified:** Wang Wen Bin  
**Time and method of notification:** 1700 hours, Verbal  
**Name of Caltrans Engineer notified:** Stanley Ku  
**Time and method of notification:** 1800 hours, Verbal  
**QC Inspector's Name:** Zhang Hai Feng  
**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 Mazen Wahbeh,(818) 292-0659, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Simonis,Jim	QA Inspector
<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:** 04-Aug-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:** 05.03.06-000313

**Subject:** NCR No. ZPMC-0334

**Reference Description:** Base Metal Repair to Mis-Located Drill Holes

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:** N/A

### Remarks:

Caltrans Quality Assurance (QA) Inspector observed ZPMC personnel performing welded restoration of base material with mis-located drilled holes at five (5) locations. The member is identified as Floor Beam FB020-005. ZPMC QC did not provided an approved Welding Procedure Specification (WPS) or notify the Engineer of the above mention welding repair.  
See attached NCR No. ZPMC-0334 for details.

### Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences.

**Transmitted by:** Ching Chao

**Attachments:** ZPMC-0334

**cc:** Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Doug Coe, Jason Tom, Contract Files, Ching Chao, Bill Howe

**File:** 05.03.06

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000313

**Subject:** NCR No. ZPMC-0334

**Dated:** 24-Aug-2009

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000331 Rev: 00

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**Contractor's Proposed Resolution:**

**Reference Resolution:** ZPMC has been informed that this repair requires engineers approval as well as having the proper procedures in place at the worksite during repairs.

ZPMC has been informed that this repair requires engineers approval as well as having the proper procedures in place at the worksite during repairs. ZPMC will submit all repair documentation at a later date to close this NCR.

**Submitted by:**

**Attachment(s):** ABF-NPR-000331R00

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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-0334 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:** 05.03.06-000313

**Subject:** NCR No. ZPMC-0334

**Dated:** 14-Dec-2009

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000331 **Rev:** 01

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**Contractor's Proposed Resolution:**

**Reference Resolution:** ZPMC is providing documentation of the approved CWR and the NDT documentation which shows the weld is now acceptable. Based on this ZPMC requests closure of this NCR.

Per Caltrans comments on the NPR, ZPMC is providing documentation of the approved CWR and the NDT documentation which shows the weld is now acceptable. Based on this ZPMC requests closure of this NCR.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000331R01;

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**Caltrans' comments:**

**Status:** CLO

**Date:** 21-Dec-2009

Correct documentation received.

**Submitted by:** Howe, Bill

**Date:** 21-Dec-2009

**Attachment(s):**



No. B-532

## LETTER OF RESPONSE

**TO: American Bridge/Flour**

**DATE: 2009-12-12**

**REGARDING: NCR-000360 (ZPMC-0334)**

With this letter of response, ZPMC requests closure for CALTRANS NCR-000360 (ZPMC-0334) what mentioned that QA observed base metal repair without approved CWR.

ZPMC acknowledged this problem and has issued internal NCR. ZPMC has submitted CWR to Engineer and get approved. With this approved CWR, ZPMC has finished repairing for these mis-located drill holes. After that NDT was performed to warrant base metal's quality.

According to CT's comments in NPR, ZPMC providing internal NCR, CWR and NDT documentations, hoping CALTRANS could take a review and consider close the NCR.

**ATTACHMENT:**

NCR-B-235

NCR-000360 (ZPMC-0334)

ABF-NPR-000331 R0.

B-CWR618

B787-VT-34736

B787-UT-7838

B-CWR636

B787-UT- 7838R1

*Handwritten signature*  
12/12/09



# Nonconformance Report

## 不符合项报告

Project Name: S.F.O.B.B

NCR Number:

项目名称: 美国加州海湾大桥

NCR 编号: NCR-B-235(ZPMC-0334)

Item: Base Metal Repair to Mis-Located Drill Holes

Item Number:

Drawing:

名称描述: 钻错孔位返修

件号: N/A

图号: FB020-005

Location:

Date:

位置: FB020-005

日期:

2009-08-18

### Description of Nonconformance:

不符合项状态描述:

Caltrans Inspector observed ZPMC personnel performing welded restoration of base material with mis-located drilled holes at five locations. The member is identified as FB020-005. ZPMC QC did not provided an approved WPS or notify the Engineer of the above mention welding repair. For further information, please see the attached picture below.

加州检验员发现 ZPMC 在对母材上钻错的空位进行修补, 共 5 处。经查证该处是横隔板 FB020-005。ZPMC QC 人员没有提供相应的 WPS, 也没有通知工程师该位置的返修。详见照片。

参考标准: AWS D1.5 章节 3.7.7.2。

Work By:

Prepared by:

Reviewed by QCE:

施工方: Li Shijun

准备: Li Shijun

质量工程师批准: Chao Shuangshou

Drawing Error

Material Defect

Fabrication Error

Other 2009.8.18

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:

Check by QC before drilling hole, submit CWR for approve by engineer.  
钻孔前由QC确认, 返修前提交工程师批准。

Prepared by: Li Shijun

Approved by QCA: \_\_\_\_\_

准备

质量经理批准

### Reason for Nonconformance:

不符合原因:

钻孔模板反定位错误, 模板反定位未经QC确认

预防措施:

Model position error before drilling hole and ~~check~~ didn't check by QC.  
仔细定位钻孔模板, 并经QC确认  
Inspect drilling hole model before drilling holes and check by QC.

Approved by/批准: Li Shijun

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

Non-attachment

回用或返修的技术依据:

附件

无附件

Reviewed /批准: Li Shijun

~~附件~~ CUR 618, B-CWR 636 进行返修。

Repair according to B-CWR 618, and B-CWR 636.

Verification:  Acceptable

Unacceptable

确认:

可接受

不可接受

Verified by QCI/质检确认: Li Shijun

Reviewed by QCA/质检主任审核: \_\_\_\_\_



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:** 04-Aug-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:** 05.03.06-000313

**Subject:** NCR No. ZPMC-0334

**Reference Description:** Base Metal Repair to Mis-Located Drill Holes

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

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- Recurring QC issue that constitutes a systematic problem in quality control.
- Non-Conformance Resolved.

**Material Location:** OBG

**Lift:** N/A

**Remarks:**

Caltrans Quality Assurance (QA) Inspector observed ZPMC personnel performing welded restoration of base material with mis-located drilled holes at five (5) locations. The member is identified as Floor Beam FB020-005. ZPMC QC did not provide an approved Welding Procedure Specification (WPS) or notify the Engineer of the above mentioned welding repair.

See attached NCR No. ZPMC-0334 for details.

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

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences.

**Transmitted by:** Ching Chao

**Attachments:** ZPMC-0334

**cc:** Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Doug Coe, Jason Tom, Contract Files, Ching Chao, Bill Ho

**File:** 05.03.06

**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 #: 04-0120F4  
 Cty: SF/ALA Rte: 80 PM: 13.2/13.9  
 File #: 69.25B

## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

**Location:** Changxing Island, Shanghai, PRC

**Report No:** NCR-000360

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

**Date:** 09-Jul-2009

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

**NCR #:** ZPMC-033

### Type of problem:

Welding  Concrete  Other   
 Welding  Curing  Procedural  **Bridge No:** 34-0006  
 Joint fit-up  Coating  Other  **Component:** FB20-005  
 Procedural  Procedural  **Description:**

**Reference Description:** Base Metal Repair to Mis-Located Drill Holes

### Description of Non-Conformance:

Caltrans Quality Assurance (QA) Inspector observed ZPMC personnel performing welded restoration of base material with mis-located drilled holes at five (5) locations. The member is identified as Floor Beam FB020-005. ZPMC QC did not provide an approved Welding Procedure Specification (WPS) or notify the Engineer of the above mentioned welding repair.

For further information, Please see the attached pictures below



### Applicable reference:

AWS D1.5-2002 section 3.7.7.2: "Base metal subject to dynamic tensile stress may be restored by welding providing the following apply:

1. The Engineer approves both repair by welding and the repair WPS.
2. The repair WPS is followed in the work and the soundness of the restored base metal is verified by UT or RT, as specified in the contract documents for examination of tension groove welds or as approved by the Engineer."

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

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(Continued Page 2 of 2)

**Who discovered the problem:** Dhanasingh Sukanthan  
**Name of individual from Contractor notified:** Wang Wen Bin  
**Time and method of notification:** 1700 hours, Verbal  
**Name of Caltrans Engineer notified:** Stanley Ku  
**Time and method of notification:** 1800 hours, Verbal  
**QC Inspector's Name:** Zhang Hai Feng  
**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 Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b> Simonis, Jim	QA Inspector
<b>Reviewed By:</b> Wahbeh, Mazen	SMR

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American  
Bridge

FLUOR

AMERICAN BRIDGE/FLUOR ENTERPRISES, a JV

P.O. BOX 23223 Oakland, CA 94623

Phone (510) 419-0120 / Fax (510) 839-0666

### NCR PROPOSED RESOLUTION

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

Dated: 24-Aug-2009

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

Attention: Pursell, Gary  
Resident Engineer

Job Name: SAS Superstructure

Ref: 05.03.06-000313

Document No.: ABF-NPR-000331 Rev: 00

Subject: NCR No. ZPMC-0334

**Contractor's Proposed Resolution:**

**Reference Resolution:** ZPMC has been informed that this repair requires engineers approval as well as having the proper procedures in place at the worksite during repairs.

ZPMC has been informed that this repair requires engineers approval as well as having the proper procedures in place at the worksite during repairs. ZPMC will submit all repair documentation at a later date to close this NCR.

Submitted by:

Attachment(s): ABF-NPR-000331R00

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-0334 at that time.

Submitted by: Wright, Doug

Date: 28-Aug-2009

Attachment(s):



关键焊缝返修报告  
Critical Welding Repair Report (CWR)

版本  
Rev. No.:

0

项目名称 Project Name:	美国海湾大桥 SFOBB	部件图号 Drawing No.:	FB20	报告编号 Report No.	B-CWR618
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	Floor Beam	NDT报告编号 Report No. of NDT	NA
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

Description of Welding Discontinuity:

李政界施工队在对FL3横隔板钻孔时,因未看清图纸要求,导致翼缘板错误钻孔7个。图号为FB020-005,施工队在没有返修报告情况下已安排堆焊,具体位置见图:

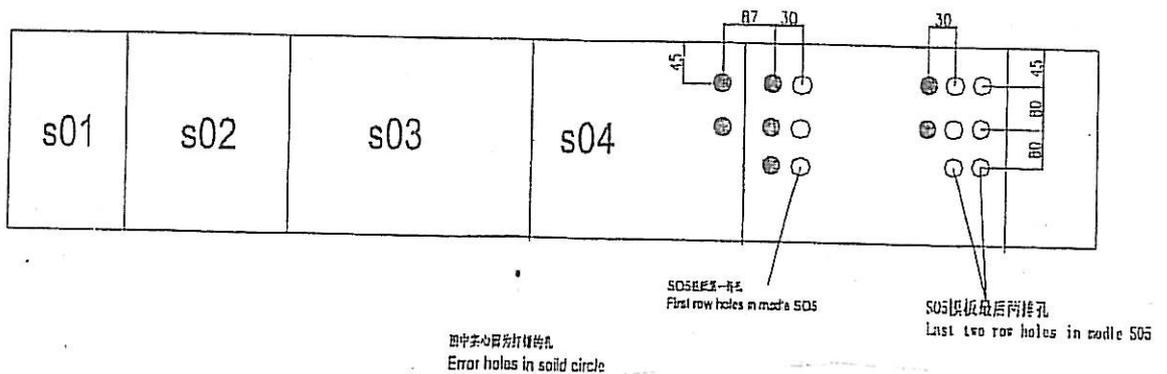
FL3 Floor beam fabricated by Li Zhenjie Work Team, it didn't review drawing requirement caused seven holes drilled error, drawing No.: FB020-005, and Work Team repair holes without approved CWR, the detail position sees the following draft.

检验员 (Inspector): Li Zhijian

日期 (Date): 2009-7-13

焊缝返修位置示意图:

Draft of Welding Discontinuity:



This document is APPROVED  
State of California  
DEPARTMENT OF TRANSPORTATION  
Pursuant to Section 5-1.02 of the  
Standard Specifications  
Initial SP Date: 7/13/09

产生原因:

Cause:

- 1. 在钻孔时, 没有看清楚图纸要求;
  - 2. 模板的位置错误, 导致孔钻错.
- 1. Didn't review drawing requirement during drilling holes;
  - 2. The position of model was error caused holes position error.

车间负责人 (Foreman): Hu Yuzhang

日期 (Date): 07.27.14

处理意见

Disposition :

- 1. 工程师通知到现场;
  - 2. 这次返修时, QC和Leader CWI到现场指导打磨, 焊接和监控的指导工作;
  - 3. 整个返修的过程, QC和Leader CWI应该有批准CWR的复印件;
  - 4. QC和Leader CWI指导返修, 以保证返修按照处理意见进行;
  - 5. 按照批准的WPS准备接头形式;
  - 6. 按照批准的WPS预热和焊接;
  - 7. 打磨返修区域与母材和临近焊缝平齐;
  - 8. 按照WPS程序进行VT,MT,UT检测;
  - 9. 对承受拉应力和反向应力的构件焊缝修补区域应按照AWS D1.5, 3.2.2.3上要求的UT和MT进行检测;
- 1. The Engineer shall be notified and present during this repair.
  - 2. QC and a Lead CWI shall be present and direct all gouging, grinding and welding operations during this repair.
  - 3. QC and a Lead CWI shall have an approved copy of the CWR in hand prior to the repair.
  - 4. QC and a Lead CWI shall direct the repair to ensure the repair is per the disposition requirements.
  - 5. Prepare the excavation according to the approved WPS details.
  - 6. Perform preheating and welding in accordance with the approved WPS.
  - 7. Grind the repaired area flush to base metal or the adjacent weld.
  - 8. Perform VT, MT and UT inspections according to the approved WPS procedure.
  - 9. Weld repairs are being performed on TM/SRM member per AWS D1.5, 3.2.2.3 UT and MT is required.

REPAIR PROCEDURE TO BE IN CONFORMANCE W/ SUBMITTAL 2.00  
STATE LETTER 05 CR.01 - 003474

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: 7/23/07

工艺: Technical Engineer: NIM Trefef 审核: Approved By:

[Signature] for chenbin

日期: Date: 07.27.14



# 关键焊缝返修报告

版本  
Rev. No.:

Critical Welding Repair Report (CWR)

0

项目名称 Project Name:	美国海湾大桥 SFOBB	部件图号 Drawing No.:	FB20	报告编号 Report No.	B-CWR618
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	Floor Beam	NDT报告编号 Report No. of NDT	NA
项目编号 Project No.:	ZP06-787				

纠正措施:

Corrective Action to Prevent Re-occurrence:

1. 钻孔前, 认真的审核图纸, 清楚的了解钻孔的尺寸;
2. 在钻孔时, 经质检确认后, 再进行钻孔.

1. Review drawing carefully before drilling holes to understand drilling holes size;
2. Check drilling holes size by QC before drilling holes.

wps-345-SMAW-2G(C2F)-Repair-misdrilled hole.  
wps-345-SMAW-3G(C3F1)-Repair-misdrilled hole

Lingshikuan  
09.07.25

车间负责人 (Foreman):

Hu Yuzhang

日期 (Date):

09.07.14

参照的 WPS 编号 Repair WPS No.:	WPS-345-SMAW-1G(1F)-Repair-Misdrilled hole WPS-345-FCAW-1G- Repair-Misdrilled hole	工艺员 Technologist:	Min Tiefen 09.07.14
返修 (碳刨) 前预热温度 Preheat Temperature Before Gouging:	NA	返修的缺陷 Description of Discontinuity:	NA
焊前处理检查 Inspection Before Welding:	Acc	焊前预热温度 Preheat Temperature Before Welding:	184°
最大碳刨深度 Max. Depth of Gouge:	NA	碳刨总长 Total Length of Gouge:	NA
焊工 Welder:	040669	焊接类型 Welding Type:	SMAW
焊接电流 Current:	151	焊接电压 Voltage:	25
		焊接位置 Position:	3G
		焊接速度 Speed:	112

返修后检查

Inspection After Repair:

外观检查 VT Result:	Acc	检验员 Inspector:	chen xi	日期 Date:	2009.07.25.
NDT复检 NDT Result:	UTREJ	探伤员 NDT Person:	Xue Hanyang	日期 Date:	09.07.26

见证:

Witness/Review:

备注:

Remark:

This document is APPROVED  
State of California  
DEPARTMENT OF TRANSPORTATION  
Pursuant to Section 5-1.02 of  
Standard Specification

#R787-QCP-900

09/07/09



**Visual Weld Inspection Report**  
**焊缝目视检查报告**

Caltrans Contract No.  
加州合同编号

04-0120F4

Project No.:  
项目名称

San Francisco Oakland Bay Bridge  
美国海湾大桥

Project No.:  
项目编号

ZP06-787

Weld No.  
焊缝编号

Welder I.D.#  
焊工识别号

Location  
位置

Welding consumables  
焊接材料

Porosity  
气孔

Undercut  
咬边

Crater  
弧坑

Arc strike  
电弧擦伤

Spatters  
飞溅

Crack  
裂纹

Accept or Reject  
接受或拒收

Repair  
返修

Accept or Reject after repair  
返修后接受或拒收

FB020-005

040669

3G

E7018 H4 (Ø4.0)

√

√

√

√

√

√

ACC.

NA

NA

After root weld

After CWR or WRR No.: B-CWR618

After cover pass

After HSR No.:

Others

#R787-QCP-603

周数  
日期

90#  
2009.7.26

Girder/梁:  
Tower/塔:

OBG Corner Assembly  
NA

Quality Control Representative:  
质检代表:

*[Signature]*

CWI:  
检验员:

*chen xi 07072021*

Quality Assurance Manager ~Approval  
质量控制经理:

*[Signature]*

"√" is no defects. "X" is defects. "NA" is not applicable.



# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

REPORT NO. 报告编号 B787-UT-7838		DATE 2009.07.26	PAGE 1 OF 1	Revision No: 0
PROJECT NO. 工程编号 ZP06-757			CONTRACTOR: CALTRANS	
ITEMS NAME: 部件名称 FLOOR BEAM	DRAWING NO.: 图号 FB20		CALTRANS CONTRACT NO.: 04-0120F4 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 NA	CALIBRATION DUE DATE 仪器校正有效期 Dec. 28 <sup>th</sup> , 2009		
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, 070452014	
CALIBRATION BLOCK 试块 AWSIWB-BECKER TYPE II	COUPLANT 耦合剂 G.M.G.	MATERIAL/THICKNESS 材料厚度 A709M-395F2X 14mm		

### 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 探伤角度	FRONT 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		
X73E	1	70	A	1	28	32	1	-5	3	34	10	0	0	REJ.	100%
	2	70	A	1	28	32	1	-5	3	34	10	0	0	REJ.	100%

AFTER B-CWR618

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EXAMINED BY 主探 Xue hai rong <i>Xue Hai Rong</i> LEVEL-II SIGN / DATE <i>9-27-09</i>	REVIEWED BY 审核 <i>Zhang Hui</i> LEVEL-II SIGN / DATE <i>9-27-09</i>
质量经理 / QCM <i>Liu Panhua</i> <i>7/26/09</i> 签字 SIGN / 日期 DATE	用户 CUSTOMER  签字 SIGN / 日期 DATE



关键焊缝返修报告  
Critical Welding Repair Report (CWR)

版本  
Rev. No.:

1

项目名称 Project Name:	美国海湾大桥 SFOBB	部件图号 Drawing No.:	FB20	报告编号 Report No.:	B-CWR636
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	OBG FLOOR BEAM	NDT 报告编号 NDT Report No.:	B787-UT-7838
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

Description of Welding Discontinuity:

Two defect found by use of UT on the build-up No. X73E

( ITEM X73E的堆焊处发现3处缺陷) Welder ID No.062645 Position:1G

- APPROVED
  - APPROVED AS NOTED
  - RETURNED FOR CORRECTION
- Pursuant to Section 5-1.02  
of the Standard Specifications  
State of California

DEPARTMENT OF TRANSPORTATION  
Division of Engineering Services  
Office of Structure Construction

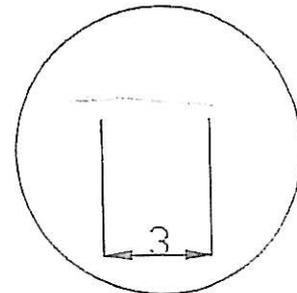
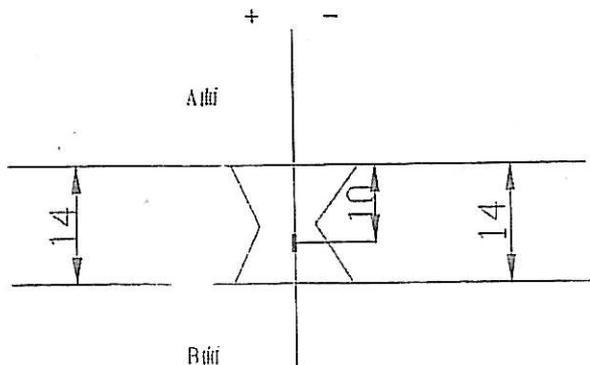
SJE for RM 8/3/2009  
Structure Representative Date

检验员 (Inspector): Xue Hai rong

日期 (Date): 2009-07-26

焊缝返修位置示意图:

Draft of Welding Discontinuity:



产生原因:

Cause:

1. 火焰加热时, 水汽没有完全的去掉或者这个区域预热不够;
1. Moisture wasn't completely removed during drying operation (preheating) or the area wasn't preheated sufficiently.

<input type="checkbox"/>	APPROVED
<input checked="" type="checkbox"/>	APPROVED AS NOTED
<input type="checkbox"/>	RETURNED FOR CORRECTION
Pursuant to Section 5-1.02 of the Standard Specifications State of California	
DEPARTMENT OF TRANSPORTATION	
Division of Engineering Services	
Office of Structure Construction	
SJE for RM	8/3/2009
Structure Representative	Date

车间负责人 (Foreman): Hu Yuzhang 日期 (Date): 09.07.30

处理意见

Disposition:

1. QA和CWI在整个修补过程中都应在场;
  2. 将孔采用碳刨的方法拓宽, 并打磨平滑, 拓宽的孔应符合修补WPS中的接头细节。碳刨前应根据相应的WPS进行预热;
  3. 焊接前采用VT、MT检测确保无缺陷存在;
  4. 贴加钢衬垫, 根据返修WPS进行预热及焊接, 焊接时采用线状纵向进行补焊;
  5. 去除衬垫, 根部焊道反面碳刨清根后MT检测, 然后完成焊接;
  6. 焊后将焊缝打磨与周围母材齐平;
  7. 按照AWS D1.5的12.16.4节中的冷却要求进行;
  8. 采用进行VT、UT、MT对返修区域进行检测;
- 注: QC和Leader CWI检测所有的碳刨, 打磨和焊接;

1. QA and CWI should be present to witness the repair.
  2. Elongate the hole by arc gouging, and grind smooth the surface. The elongated hole should conform to the joint detail in Repair WPS. Preheat before gouging according to relevant WPS.
  3. Perform VT and MT to ensure no defects exist.
  4. Add steel backing. Preheat and weld according to the repair WPS, weld stringers longitudinally along the elongated direction of the hole.
  5. Remove steel backing and back gouge the root pass, MT backing area prior to welding and complete the welding. *BACK GOUGER* *8-3-09*  
*IN ACCORDANCE W/ APPROVED WPS.*
  6. Grind the repair area flush with adjacent base metal.
  7. Cooling time shall conform to AWS D1.5 section 12.16.4 approved FCP.
  8. Check with VT, UT, MT after welding to the repair area.
- Note: ALL gouging, grinding and welding should be inspected by QC and Leader CWI.

工艺: Nia Tiefey 审核: Luy Zankun 日期: 09.07.31  
 Technical Engineer: Nia Tiefey Approved By: Luy Zankun Date: 09.07.31



# 关键焊缝返修报告

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## Critical Welding Repair Report (CWR)

1

项目名称 Project Name:	美国海湾大桥 SFOBB	部件图号 Drawing No.:	FB20	报告编号 Report No.:	B-CWR636
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	OBG FLOOR BEAM	NDT 报告编号 NDT Report No.:	B787-UT-7838
项目编号 Project No.:	ZP06-787				

**纠正措施:**

Corrective Action to Prevent Re-occurrence:

1. 返修前, QC确认有效的预热, 以将水汽全部去除。

1. QC shall verify sufficient preheat has been applied, to remove moisture, prior to welding.

车间负责人 (Foreman): Hu Yuzhenf 日期 (Date): 09.07.30

参照的WPS编号 Repair WPS No.:	WPS-345-SMAW-1G(1F) -FCM-Repair-Misdrilled Hole WPS-345-FCAW-1G(1F)- FCM-Repair-Misdrilled Hole WPS-345-SMAW-3G(3F) -FCM-Repair-Misdrilled Hole	工艺员 Technologist:	<u>Nin Tiefaf</u> <u>09.07.31</u>
返修(碳刨)前预热温度 Preheat Temperature Before Gouging:	<u>93°C</u>	返修的缺陷 Description of Discontinuity:	<u>slag</u>
焊前处理检查 Inspection Before Welding:	<u>AN</u>	焊前预热温度 Preheat Temperature Before Welding:	<u>195°C</u>
最大碳刨深度 Max. Depth of Gouge:	<u>14mm</u>	碳刨总长 Total Length of Gouge:	<u>150mm</u>
焊工 Welder:	<u>Li Xia Chun</u> <u>040733</u>	焊接类型 Welding Type:	<u>SMAW</u>
焊接电流 Current:	<u>151</u>	焊接电压 Voltage:	<u>21.3</u>
		焊接位置 Position:	<u>3G</u>
		焊接速度 Speed:	<u>107</u>

**返修后检查**  
Inspection After Repair:

外观检查 VT Result:	<u>AN</u>	检验员 Inspector:	<u>Chen Xi</u> <u>27073021</u>	日期 Date:	<u>09.8.8</u>
NDT复检 NDT Result:	<u>ACC</u>	探伤员 NDT Person:	<u>Wei Gao</u>	日期	<u>09.8.08</u>

见证: Witness/Review:		<input type="checkbox"/> APPROVED <input checked="" type="checkbox"/> APPROVED AS NOTED <input type="checkbox"/> RETURNED FOR CORRECTION Pursuant to Section 5-1.02 of the Standard Specifications State of California <b>DEPARTMENT OF TRANSPORTATION</b> Division of Engineering Services Office of Structure Construction
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, PRC**Report No:** NCS-000421**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 28-Dec-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0334**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:** 09-Jul-2009**Description of Non-Conformance:**

Caltrans Quality Assurance (QA) Inspector observed ZPMC personnel performing welded restoration of base material with mis-located drilled holes at five (5) locations. The member is identified as Floor Beam FB020-005. ZPMC QC did not provided an approved Welding Procedure Specification (WPS) or notify the Engineer of the above mention welding repair.

For further information, Please see the attached pictures below

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

Provide CWR, perform NDT with verification.

**Corrective action taken:**

ZPMC is providing documentation of the approved CWR and the NDT documentation which shows the weld is now acceptable.

**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, +(86) 134.7247.7571, who represents the Office of Structural Materials for your project.

**Inspected By:** Tsang,Eric

Quality Assurance Inspector

**Reviewed By:** Wahbeh,Mazen

QA Reviewer