

**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, P.R. China

**Report No:** NCR-000525

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

**Date:** 04-Dec-2009

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

**NCR #:** ZPMC-0498

### 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 12 Floor Beam Web Plate-X3003C
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b>	

**Reference Description:** Base Metal damage in SPCM material during the weld repair process in Lift 12 Floorbeam

### Description of Non-Conformance:

During random in process visual inspection at Bay #2, the Quality Assurance Inspector (QA) observed an OBG FL3 lift 12 Floor Beam web plate-X3003C had been arc-gouged approximately 15 mm in depth into the base material and 670 mm in length during the excavation of complete joint penetration (CJP) web to flange T-weld joint. The excavation was supposed to be for the weld reject that was found by ZPMC Ultrasonic Testing (UT) technician.

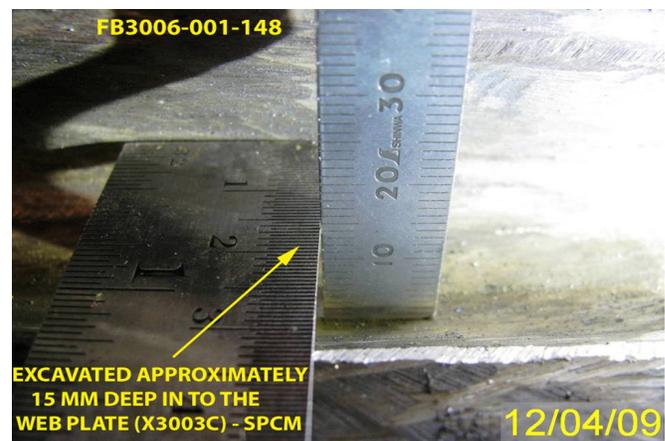
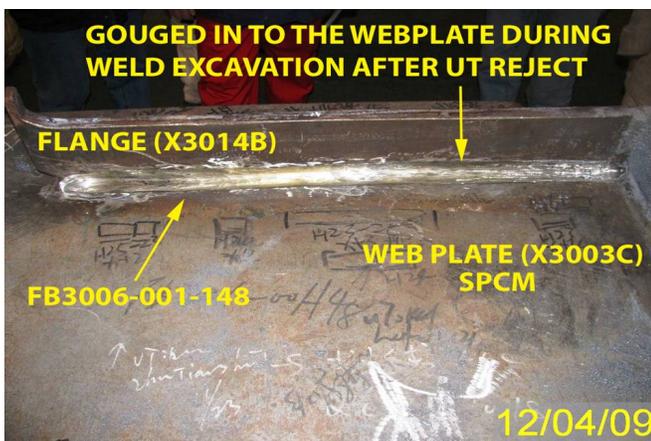
The affected Floor Beam and weld joint details are as follow:

FB3006-001-148 (Web to flange)

Complete Joint Penetration (CJP) T- joint

Web Plate – X3003C, SPCM

Flange – X3014B



### Applicable reference:

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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Special Provisions Section 8.3: "Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents."

AWS D1.5 2002, Section 3.7.1; "The removal of the weld metal or portions of the base metal may be done by machining, carbon arc cutting and gouging, thermal cutting, chipping, or grinding. It shall be done in such a manner that the remaining weld metal or base metal is not nicked or undercut."

"Unacceptable portions of the weld shall be removed without substantial removal of the base metal."

**Who discovered the problem:** Sandeep Kumar Naddi

**Name of individual from Contractor notified:** Luo Gui Lin

**Time and method of notification:** 0800 hours, Verbal

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

**Time and method of notification:** 0930 hours, Verbal

**QC Inspector's Name:** Zhu Tian Shu

**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>	Carreon,Albert	Lead Reviewer/Task Leader
<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:** 24-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:** 05.03.06-000486

**Subject:** NCR No. ZPMC-0498

**Reference Description:** Base Metal damage in SPCM material during the weld repair process in Lift 12 Floorbeam

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:** 12

**Remarks:**

During random in process visual inspection at Bay #2, the Quality Assurance Inspector (QA) observed an OBG FL3 lift 12 Floor Beam web plate-X3003C had been arc-gouged approximately 15 mm in depth into the base material and 670 mm in length during the excavation of complete joint penetration (CJP) web to flange T-weld joint. The excavation was supposed to be for the weld reject that was found by ZPMC Ultrasonic Testing (UT) technician.

The affected Floor Beam and weld joint details are as follow:

FB3006-001-148 (Web to flange)

Complete Joint Penetration (CJP) T- joint

Web Plate – X3003C, SPCM

Flange – X3014B

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

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences. A response for the resolution of this issue is expected within 7 days.

**Transmitted by:** Bill Howe

**Attachments:** ZPMC-0498

**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:** 05.03.06-000486

**Subject:** NCR No. ZPMC-0498

**Dated:** 01-Mar-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000603 Rev: 00

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**Contractor's Proposed Resolution:**

**Reference Resolution:** ZPMC recognized that this plate was SPCM material and issued a CWR. Please see the attached documents which shows an approved CWR.

ZPMC recognized that this plate was SPCM material and issued a CWR. Please see the attached documents which shows an approved CWR. Attached is the documentation of successful repair of the weld in question. Based on this ZPMC requests that this NCR be rescinded.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000603R00;

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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

**Date:** 07-Mar-2010

**Attachment(s):**



No. B-626

## LETTER OF RESPONSE

**TO: American Bridge/Flour**

**DATE: 2010-2-28**

**REGARDING: NCR-000525 (ZPMC-0498)**

With this letter of response, ZPMC requests withdrawal of CT NCR-000525 (ZPMC-0498) what mentioned about the UT repair for FB.

- ZPMC realized the indication was in SPCM plate and has issued CWR.
- No ZPMC QA personnel was informed at that moment on site, without good communication this CT inspector thought there was no CWR reflecting to this repair. Misunderstanding occurred to this inspector.

Base on the response above and attached documentations, ZPMC requests withdrawal of this NCR.

**ATTACHMENT:**

NCR-000525 (ZPMC-0498)

B-WR8877

B-CWR956

B787-UT-9900

A handwritten signature in black ink, appearing to be "Jing" followed by a flourish.

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:** 24-Dec-2009

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 04-SF-80-13.2 / 13.9

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**NCR #:** ZPMC-0498

### Type of problem:

Welding  Concrete  Other

Welding  Curing  Procedural

**Bridge No:** 34-0006

Joint fit-up  Coating  Other

**Component:** Lift 12 Floor Beam Web Plate-X3003C

Procedural  Procedural  Description:

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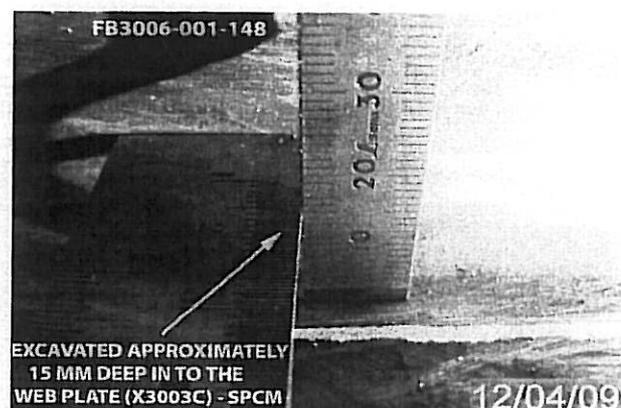
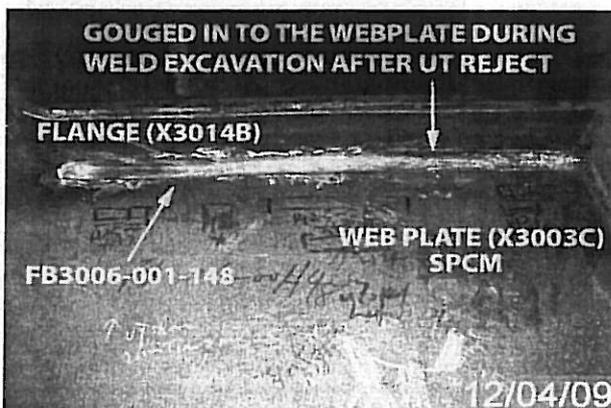
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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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**Time and method of notification:** 0800 hours, Verbal

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

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**QC Inspector's Name:** Zhu Tian Shu

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

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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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**Inspected By:** Carreon,Albert

Lead Reviewer/Task Leader

**Reviewed By:** Wahbeh,Mazen

SMR

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# 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	FB3006	报告编号 Report No.	B-WR8877
合同号 Contract No.	04-0120F4	部件名称 Items Name	OBG FLOOR BEAM 12 LIFTING	NDT报告编号 Report No. of NDT	B787-UT-9900
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

Description of welding discontinuity:

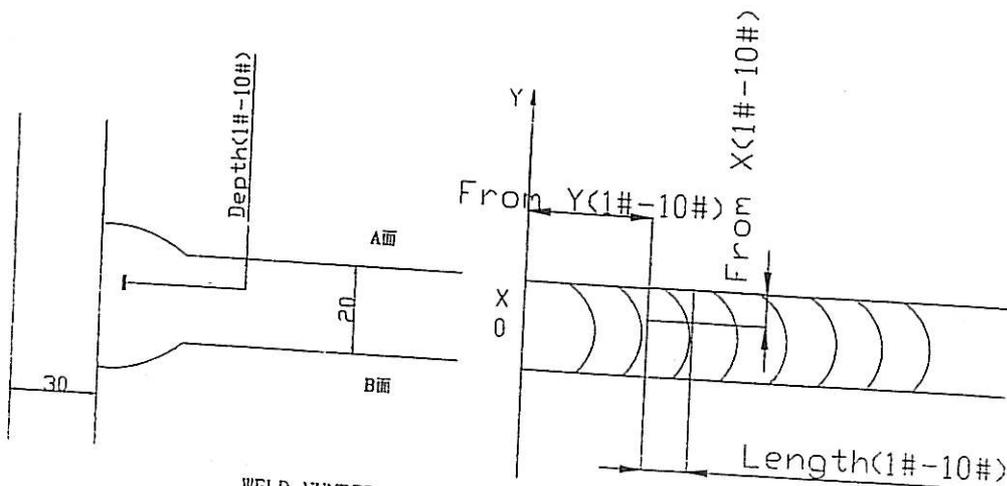
Rejected indication found by ultrasonic inspection is less than the maximum allowance aggregate length.

(UT探伤发现的缺陷总长度小于最大允许长度。) FB3006-001-148

检验员 (Inspector): Han Feng 日期(Date): 09.12.01

焊缝返修位置示意图:

Draft of welding discontinuity:



WELD NUMBER: FB3006-001-148  
Please see the detail data from UT report!

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): *Hu Yuzhang* 日期(Date): *09.12.01*

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清除;
  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 Dongkai*  
Technical engineer  
*09.12.01*

审核:  
Approved by

*[Signature]*

日期  
Date

*12/08/09*

		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	FB3006	报告编号 Report No.
合同号 Contract No.:	04-0120F4	部件名称 Items Name	OBG FLOOR BEAM 12 LIFTING	NDT报告编号 Report No.of NDT	B787-UT-9900	
项目编号 Project No.:	ZP06-787					
纠正措施: <b>Correction action to prevent re occurrence:</b> 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): <i>Hu Yuzong</i> 日期(Date): <i>09.12.01</i>						
参照的WPS编号 Repair WPS No.	WPS-345-SMAW-2 G(2F)-FCM-Repair WPS-345-FCAW-2 G(2F)-FCM-Repair		工艺员 technologist	<i>Xu Dongkai</i> <i>09.12.01</i>		
返修(碳刨)前预热温度 Preheat temperature before gouging	<i>79°C</i>		返修的缺陷 Description of discontinuity	<i>slag</i>		
焊前处理检查 Inspection before welding	<i>Ac</i>		焊前预热温度 Preheat temperature before welding	<i>125°C</i>		
最大碳刨深度 Max. depth of gouging	<i>10mm</i>		碳刨总长 Total length of gouging	<i>300mm</i>		
焊工 welder	<i>Franky Jaffer</i> <i>045276</i>	焊接类型 welding type	<i>SAW</i>	焊接位置 position	<i>2G</i>	
焊接电流 Current	<i>281A</i>	焊接电压 Voltage	<i>30.8V</i>	焊接速度 Speed	<i>53mm/min</i>	
返修后检查 Inspection After repairing:						
外观检查 VT result	<i>Acc</i>	检验员 Inspector	<i>chen xi</i>	日期 Date	<i>2009.12.04.</i>	
NDT复检 NDT result	<i>REJ</i>	探伤员 NDT person	<i>han jiang</i>	日期 Date	<i>2009.12.3</i>	
见证: Witness/Review:						
备注: Remark:						



# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

REPORT NO. 报告编号 B787-UT-9900      DATE 2009.12.01      PAGE 1 OF 2      Revision No: 0

PROJECT NO.: 工程编号 ZP06-787		CONTRACTOR: CALTRANS	
ITEMS NAME: 部件名称 OBG FLOOR BEAM 12 LIFTING	DRAWING NO.: 图号 FB3006	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 FCAW	JOINT TYPE 焊缝类型 T-JOINT	CALIBRATION DUE DATE 仪器校正有效期 Dec. 28 <sup>ST</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, 070152011,
CALIBRATION BLOCK 试块 AWS IIV BLOCK TYPE II	COUPLANT 耦合剂 C.M.C	MATERIAL/THICKNESS 材料厚度 A709M-345F2-X      30/20mm	

### 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		
FB3006-001-148	1	70	A	1	39	32	1	+6	20	38	13	-7	20	REJ.	100%
	2	70	A	1	41	32	2	+7	20	46	18	0	30	REJ.	100%
	3	70	A	1	41	32	2	+7	30	46	18	0	50	REJ.	100%
	4	70	A	1	42	32	2	+8	20	45	18	0	165	REJ.	100%
	5	70	A	1	39	32	2	+5	40	52	18	0	220	REJ.	100%
	6	70	A	1	39	32	1	+6	20	43	16	-7	130	REJ.	100%
	7	70	A	1	40	32	2	+6	20	48	22	0	170	REJ.	100%
	8	70	A	1	40	32	2	+6	30	54	24	0	220	REJ.	100%

EXAMINED BY 主探 <i>Han Zeng</i> 09.12.01 LEVEL - II SIGN / DATE	REVIEWED BY 审核 <i>Su Wei</i> 09.12.01 LEVEL - II SIGN / DATE
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质量经理 / QCM <i>W. J. ...</i> 签字 SIGN / 日期 DATE	用户 CUSTOMER  签字 SIGN / 日期 DATE
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## DEPARTMENT OF TRANSPORTATION

CHINA FABRICATION TEAM  
666 Feng Bin Road  
Changxing Island, Shanghai, PRC



### REVIEW OF CONTRACTOR'S SUBMITTAL

To: Thomas Nilsson, American Bridge/Fluor, a Joint Venture  
Gary Pursell, Resident Engineer

Review Date: Dec-08-2009

From: Eric Tsang, Structural Materials Representative

Contract No.: 04-0120F4

Date/Time Submittal Received: Dec-07-2009/ 15:00

China Standard Time  
(GMT+08:00)

Contractor's Transmittal #: AFC-CAL-TRN-004926

Rev. # 0

<input type="checkbox"/> substantially complies with contract requirements and is approved	
<input checked="" type="checkbox"/> substantially complies 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 resubmital	
Verbal Notification	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes    Date:                      Time:
Name of individual from Contractor Notified:	
This submittal is a:	<input type="checkbox"/> Welding Report <input checked="" type="checkbox"/> Critical Weld Repair
	<input type="checkbox"/> Request for Information <input type="checkbox"/> Heat Straightening Request
	<input type="checkbox"/> Fabrication Procedures <input type="checkbox"/> Other: _____
Submitting Contractor: <u>American Bridge – Fluor, a Joint Venture</u>	
ITEMS REVIEWED	COMPLIES                      COMMENTS
1.    B-CWR956 R0	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                      Third Time UT Reject, FB, Lift 12

**Remarks:**

Preheat to 65°C prior to grinding or gouging.

Reviewer: Jim Simonis

Date: Dec-08-2009

Construction Concurrence: STE Initial 12/9/09 Date

Received by (ABFJV): Date: 12/9/09 Time: 9:00



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.:	FB3006	报告编号 Report No.:	B-CWR956
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	OBG FLOOR BEAM 12 LIFTING	NDT 报告编号 NDT Report No.:	B787-UT-9900R1
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

Description of Welding Discontinuity:

Rejectable indications were found by ultrasonic inspection for a second repair on the SPCM plate.

(UT探伤返修第二次, 并且该板为SPCM板) FB3006-001-148

Welder ID No. (焊工编号): 045276

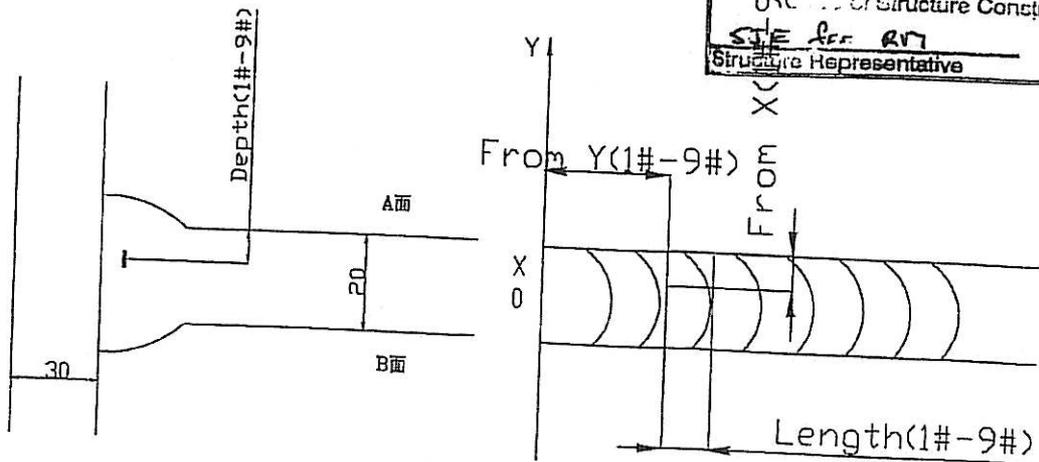
Position:(位置): 2G

检验员 (Inspector): Han Feng

日期 (Date): 2009.12.03

焊缝返修位置示意图:

Draft of Welding Discontinuity:



<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	
<u>STJ</u>	<u>Per R17</u>
Structure Representative	Date
	<u>12/9/09</u>

WELD NUMBER: FB3006-001-148  
Please see the detail data from UT report!

产生原因:

Cause:

1. The weld defect location may not have been properly identified prior to grinding, i.e. the X and Y location was incorrect or the excavation was not centered on the defect, therefore the excavation did not encompass the whole defect.

1. 打磨前缺陷的位置没有标识清楚, 例如: XY的位置标的不正确, 或者没有将缺陷完全清除, 因此没有清楚所有的缺陷。

车间负责人 (Foreman): Hu Yuzhai

日期 (Date): 09.12.03

处理意见

Disposition:

1. 整个返修过程中, QC和Leader CWI检测所有的碳刨, 打磨和焊接;
2. 在返修前, QC和Leader CWI应该有有效的CWR;
3. QC和Leader CWI应该指导返修, 以保证按照返修要求进行;
4. 碳刨前, 将杂物以及UT检测遗留的残留物清理干净, 并且按照新的返修工艺中表1进行预热, 如果打磨, 预热没有要求;
5. 从离缺陷近的一侧碳刨或打磨的方法去除焊缝缺陷 ( $D \leq 0.65T$ , D为缺陷深度, T为母材厚度);
6. 根据批准的返修WPS准备焊接接头;
7. 将要返修的区域打磨干净, 焊接接头开始和结束的地方交错布置, 并用MT和VT检测方法保证缺陷完全被清除;
8. 将杂物以及MT和UT检测遗留的残留物清理干净。
9. QC和Leader CWI确认报告上的缺陷已经全部去除;
10. 预热及焊接要求参照新的返修工艺中表1执行;
11. 在进入下道工序前, QC目检时, 要加强对焊道的清理的监控;
12. 焊接后根据新的返修工艺中表1要求进行后热;
13. 后热后将焊缝逐渐冷却到周围环境温度。将修补区域打磨与母材或相邻焊缝平齐;
14. 在焊缝冷却至环境温度等48小时以后进行NDT检查。
15. 根据批准的车间图纸VT, MT, UT检测返修后的焊缝。附加NDT检测按照合同10-1.59 “钢结构” 中的 “检测和试验” 进行。

<input type="checkbox"/>	APPROVED	
<input checked="" type="checkbox"/>	APPROVED AS NOTED	
	RETAINED 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	SR	12/19/03
Structure Representative		Date

1. QC and a Lead CWI shall be present and direct all gouging, grinding and welding operations during this repair.
2. QC and a Lead CWI shall have a copy of the CWR in hand and shall be at the repair location prior to the repair.
3. QC and the Lead CWI shall direct the repair to ensure the repair is per the disposition requirements.
4. Clean excavation area of all loose debris including UT powder, and preheat according to the Table 1 of the New Repair Procedure prior to gouging. ~~No preheating is required if grinding is only being used.~~ PREHEAT TO 650
5. Gouge and/or grind accurately from nearer side from metal edge ( $D \leq 0.65T$ , "D" is depth of defects, "T" is thickness of metal) to remove all defects. PREHEAT TO 650
6. Prepare a right joint according to approved WPS.
7. Grind repair area smooth to a shiny finish with tapered ends to ensure staggered stops and starts, and perform VT and MT to ensure the defects have been removed.
8. Clean the excavation area of all loose debris including MT powder and UT gel.
9. QC and a Lead CWI shall verify and document all defects have been removed prior to repair welding.
10. Preheat and weld according to the Table 1 of the New Repair Procedure.
11. QC and a CWI shall enforce interpass cleaning by performing a visual inspection prior to the disposal of each pass.
12. Perform post weld heating according to the Table 1 of the New Repair Procedure.
13. Allow the weld to cool to ambient temperature gradually. Grind the repaired area flush with base metal or the adjacent weld after post weld heating.
14. Wait 48 hours after the repair area has cooled to ambient temperature before performing NDT.
15. Check the weld by performing VT, MT and UT to the repair area according to the drawings. Additional NDT in accordance with the applicable notes in Special Provisions Section 10-1.59 'Steel Structure', subsection 'Inspection and Testing'.

工艺:

Technical Engineer: N. H. Tefef

审核:

Approved By: [Signature]

日期:

Date: 09.12.03



# 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.:	FB3006	报告编号 Report No.:	B-CWR956
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	OBG FLOOR BEAM 12 LIFTING	NDT 报告编号 NDT Report No.:	B787-UT-9900R1
项目编号 Project No.:	ZP06-787				

纠正措施:

Corrective Action to Prevent Re-occurrence:

- QC and production to properly lay out the UT defect, mark the X,Y,D on the base metal and the location on the surface of weld by use of rectangle or circle, by doing this, UT operator will verify the exact location of the defect prior to excavation.
  - The UT operator and or CWI will take the responsibility to verify the excavation has completely removed the defect
- QC和生产部门应该正确的标出缺陷的位置, 在母材上标出缺陷X, Y, D的值, 在焊缝上, 用长方形和圆圈标出缺陷的位置, 这样, 在碳刨前, 能够准确的确认缺陷的位置;
  - UT检验员和CWI必须确认缺陷已经完全刨除。

车间负责人 (Foreman):

Hu Yuxia

日期 (Date):

9.12.03

参照的WPS编号 Repair WPS No.:	WPS-345-SMAW-2G(2F)-FCM- Repair WPS-345-FCAW-2G(2F)-FCM- Repair	工艺员 Technologist:	Nin Trefaj 9.12.03
返修(碳刨)前预热温度 Preheat Temperature Before Gouging:		返修的缺陷 Description of Discontinuity:	
焊前处理检查 Inspection Before Welding:		焊前预热温度 Preheat Temperature Before Welding:	
最大碳刨深度 Max. Depth of Gouge:		碳刨总长 Total Length of Gouge:	
焊工 Welder:	焊接类型 Welding Type:	焊接位置 Position:	
焊接电流 Current:	焊接电压 Voltage:	焊接速度 Speed:	

返修后检查  
Inspection After Repair:

外观检查 VT Result:	检验员 Inspector:	日期 Date:
NDT复检 NDT Result:	探伤员 NDT Person:	日期 Date:

见证:  
Witness/Review:

备注:  
Remark:

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 G. RM 12/9/03  
 Structure Representative Date





# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

REPORT NO. 报告编号 B787-UT-9900R1      DATE 2009.12.03      PAGE 1 OF 2      Revision No: 0

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

ITEMS NAME: OBG FLOOR BEAM 12 LIFTING      DRAWING NO.: FB3006      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  
 FCAW      T-JOINT      Dec. 28<sup>ST</sup>, 2009

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 IIV BLOCK TYPE II      C.M.C      A709M-345F2-X      30/20mm

### 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		
FB3006-001-148	1R1	70	A	1	42	34	1	+7	20	38	23	+5	40	REJ.	100%
	2R1	70	A	1	43	34	1	+8	20	37	19	+3	65	REJ.	100%
	3R1	70	A	1	41	34	1	+6	20	39	22	+4	140	REJ.	100%
	4R1	70	A	1	42	34	1	+7	20	39	19	+3	190	REJ.	100%
	5R1	70	A	1	41	34	1	+6	50	38	19	+3	450	REJ.	100%
	6R1	70	A	1	42	34	1	+7	30	37	23	+2	40	REJ.	100%
	7R1	70	A	1	42	34	1	+7	20	37	24	+4	100	REJ.	100%
	8R1	70	A	1	42	34	1	+7	50	37	23	+3	300	REJ.	100%

EXAMINED BY 主探: Han Feng      REVIEWED BY 审核: Jin Feng  
 LEVEL - II SIGN / DATE: 8.12.03      LEVEL - II SIGN / DATE: 8.12.03  
 质量经理 / QCM: [Signature]      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**QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION****Location:** Changxing Island, Shanghai, P.R. China**Report No:** NCS-000530**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 11-Mar-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0498**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>Description:</b>	

**Date the Non-Conformance Report was written:** 04-Dec-2009**Description of Non-Conformance:**

During random in process visual inspection at Bay #2, the Quality Assurance Inspector (QA) observed an OBG FL3 lift 12 Floor Beam web plate-X3003C had been arc-gouged approximately 15 mm in depth into the base material and 670 mm in length during the excavation of complete joint penetration (CJP) web to flange T-weld joint. The excavation was supposed to be for the weld reject that was found by ZPMC Ultrasonic Testing (UT) technician.

The affected Floor Beam and weld joint details are as follow:

FB3006-001-148 (Web to flange)

Complete Joint Penetration (CJP) T- joint

Web Plate – X3003C, SPCM

Flange – X3014B

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

Submit CWR for Engineer's review, repair said damage in accordance with approved CWR, and perform NDT required to verify weld quality.

**Corrective action taken:**

Contractor has submitted CWR along with subsequent NDT report verifying the weld is now in conformance with Contract specifications.

**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 152. 1675.3703, who represents the Office of Structural Materials for your project.

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# QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

( Continued Page 2 of 2 )

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**Inspected By:** Simonis,Jim

Quality Assurance Inspector

**Reviewed By:** Wahbeh,Mazen

QA Reviewer