

**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-000671**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 02-Feb-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0639**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> Segment 9AE Side Panel
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b> Missed UT Indication by QC	

**Reference Description:** Missed UT indication by QC on Segment 9AE, Side Panel Welds**Description of Non-Conformance:**

During the Quality Assurance (QA) Ultrasonic Testing (UT) review of welds located on OBG Segment 9AE, this QA Inspector discovered the following issues:

- One (1) longitudinal indication measuring approximately 15mm in length.
- The depth of the indication is 12mm.
- The db rating is +7.
- The material thickness is 16mm.
- For additional information please see the UT report for this date.
- The weld is identified as: SEG-050A-003.
- The Weld is a Complete Joint Penetration (CJP) butt weld joining SP582A & SP622A.
- The "Y" location of the indication is 1700mm.
- The indication is clearly marked on the weld.
- SEG 9AE is located in Outside Yard north end of the blast shop.

The Notice of Witness Inspection Number (NWIT) is 005165. The indication is located inside the area that has been previously tested and accepted by ZPMC Quality Control (QC) personnel. As per the contract documents, ZPMC's QC personnel are required to perform one hundred (100%) percent UT inspection of this weld.

**Applicable reference:**

AWS D1.5-2002, Section 6, Table 6.3. specifies a class "A" indication as having a dBs rating of +10 and lower for weld thicknesses 8mm through 20mm.

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."

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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**Who discovered the problem:** Shailesh V Wadkar  
**Name of individual from Contractor notified:** Wang Chau  
**Time and method of notification:** 15:00, 02/02/10, Verbal  
**Name of Caltrans Engineer notified:** Bill Howe, Ching Chao  
**Time and method of notification:** 10:00, 02/03/10, Verbal  
**QC Inspector's Name:** Zhong Wei  
**Was QC Inspector aware of the problem:** Yes No  
**Contractor's proposal to correct the problem:**

N/A

**Comments:**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, +(86) 134.7247.7571, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Tsang, Eric	SMR
<b>Reviewed By:</b>	Wahbeh, Mazen	SMR

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

**NON-CONFORMANCE REPORT TRANSMITTAL**

<b>To:</b>	AMERICAN BRIDGE/FLUOR, A JV 375 BURMA ROAD OAKLAND CA 95607	<b>Date:</b>	03-Feb-2010
<b>Dear:</b>	Mr. Charles Kanapicki	<b>Contract No:</b>	04-0120F4 04-SF-80-13.2 / 13.9
<b>Attention:</b>	Mr. Thomas Nilsson Project/Fabrication Manager	<b>Job Name:</b>	SAS Superstructure
<b>Subject:</b>	NCR No. ZPMC-0639	<b>Document No:</b>	05.03.06-000630

**Reference Description:** Missed UT indication by QC on Segment 9AE, Side Panel Welds

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:** 09

**Remarks:**

During the Quality Assurance (QA) Ultrasonic Testing (UT) review of welds located on OBG Segment 9AE, this QA Inspector discovered the following issues:

- One (1) longitudinal indication measuring approximately 15mm in length.
- The depth of the indication is 12mm.
- The db rating is +7.
- The material thickness is 16mm.
- For additional information please see the UT report for this date.
- The weld is identified as: SEG-050A-003.
- The Weld is a Complete Joint Penetration (CJP) butt weld joining SP582A & SP622A.
- The "Y" location of the indication is 1700mm.
- The indication is clearly marked on the weld.
- SEG 9AE is located in Outside Yard north end of the blast shop.

The Notice of Witness Inspection Number (NWIT) is 005165. The indication is located inside the area that has been previously tested and accepted by ZPMC Quality Control (QC) personnel. As per the contract documents, ZPMC's QC personnel are required to perform one hundred (100%) percent UT inspection of this weld.

**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 Sr. Transportation Engineer

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# NCT

( Continued Page 2 of 2 )

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**Attachments:** ZPMC-0639

**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:** 05.03.06-000630

**Subject:** NCR No. ZPMC-0639

**Dated:** 08-Feb-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000566 Rev: 00

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### Contractor's Proposed Resolution:

**Reference Resolution:** The ABFJV QCM has instituted training sessions for ZPMC inspectors. In addition to training, ABF has purchased new equipment to standardize both ABF and ZPMC with the equipment used by Caltrans.

ZPMC and ABFJV have taken steps to reduce the number of both MT and UT missed indications. The ABFJV QCM has instituted training sessions for ZPMC inspectors to reinforce key points of performing UT and MT, the most recent was held in December 2009. The ZPMC Level III has conducted training with the inspectors as well. In addition to training, ABF has purchased new equipment to standardize both ABF and ZPMC with the equipment used by Caltrans. Examples of this are the powder bulbs with magnetic caps, and the same transducers used by Caltrans. Documents of the acceptable NDT will be provided when they are available at a later date. Based on this ZPMC requests that this NCR be approved with actions pending.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000566R00;

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### Caltrans' comments:

**Status:** AAP

**Date:** 08-Feb-2010

AAP approved.

**Submitted by:** Howe, Bill

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

**Date:** 08-Feb-2010

# Tool Box Training Agenda

**Subject:** MT Techniques

**Reason for Training:** Several CT NCR's of indications missed during ZPMC NDT inspection.

## 1. Safety

- a. Safety Glasses
- b. Gloves (if required)
- c. Knee Pads
- d. Electrical shock

## 2. Tools

- a. Lighting
- b. MT Powder.                      Red for ambient,      Yellow for High Temperature.
- c. Powder Bulb
- d. Powder Blower
- e. MT Yoke                      Adequate working condition
- f. Pie Gage

## 3. Inspection Techniques

- a. Lighting
- b. Position of body (distance of eyes to the weld surface)
- c. Application of Powder      removal of Powder
- d. Continuous method
- e. Two directions
- f. Both sides of weld
- g. Clean and dry surface



教育培训纪录

培训编号: MT-22-Dec-09

培训内容:	MT Techniques
培训对象:	项目质检
授课人员:	Steve Lawton
培训类型:	内部培训
培训时间:	22-Dec-09 5:00 PM
计划培训地点:	ZPMC QC office

人员签到:

姓名	部门	姓名	部门
孙力杰 Sunlei	钢桥	狄坤伦 Di Kunlun	钢桥
孙广强 Sun Guangqiang	钢桥	蔡新鑫 Cai Xinxin	钢桥
徐海 Xu Hai	钢桥	傅春强 Fu Chunqiang	钢桥
卞源源 Bian Yuanyuan	钢桥	顾云武 Gu Yunwu	钢桥
许兵 Xu Bing	钢桥	金建廷 Jin Jianting	钢桥 MT
李振华 Li Zhenhua	钢桥	常方杰 Chang Fangjie	钢桥
李坤阳 Li Xunyang	QA	袁俊 Yuan Jun	钢桥
王威 Wang Wei	钢桥	刘章敏 Liu Zhangmin	
孙林 Sun Lin	钢桥 MT	徐华祥 Xu Huaxiang	钢桥
丁阿成 Ding A Cheng	钢桥 MT	周东超 Zhou Dongchao	钢桥
贺佳佳 He Jiajia	钢桥	赵成功 Zhao Cheng Gong	钢桥
黄瑞 Huang Rui	钢桥	孙广强 Sun Guangqiang	钢桥
李黎明 Li Liming	钢桥	徐辉 Xu Hui	钢桥
李昌涛 Li Changtao		刘宏斌 Liu Hongbin	



教育培训纪录

培训编号:

培训内容:	UT复习培训教程 UT Techniques
培训对象:	ZPMC UT GUYS
授课人员:	STEVE LAWTON
培训类型:	UT Refresher Training Agenda
培训时间:	2009. 12. 24. 16:30
计划培训地点:	ZPMC NDT OFFICE

人员签到:

姓名	部门	姓名	部门
戴建 dai jian	江江 Jiang Jiang		
薛宇 xuellanyong	黄廷 Huang Ting		
马志长 majizhang	黄廷 Huang Ting		
谭善 tan xingshan	李黎明 Li Liming		
马健 majian	李黎明 Li Liming		
王福 wang fu	徐军 Xu Jun		
沈健 shen jian	李黎明 Li Liming		
黄宇 Huang Yu			
金峰 Jin Feng			
吴文 Wu Wen			
解建 jie jian			
周海周 Zhou Hai Zhou			
徐峰 Xu Feng			

# UT Refresher Training Agenda

**Subject:** UT Techniques

**Reason for Training:** Several CT NCR's for missed UT indications

1. **Safety**
  - a. Safety Glasses
  - b. Gloves (if required)
  - c. Knee Pads
  - d. Electrical Shock
  
2. **Tools**
  - a. Calibrated UT Machine      condition of machine
  - b. Coaxial cable                      condition of cable
  - c. Transducer                          condition of transducer
  - d. IIW Block
  - e. Scraper
  - f. UT couplant
  
3. **Inspection Techniques**
  - a. Surface preparation
  - b. Location of weld                      UT from beveled plate
  - c. Scanning patterns
  - d. Correct choice of Angles
  - e. Calibration                              per ZPMC procedure at regular intervals
  - f. Scanning speed
  - g. Know where your sound is at.... First leg, second leg etc...
  
4. **Inspection Criteria**
  - a. Table 6.3 or Table 6.4
  - b. Are surface inspections complete    VT and or MT should always occur before UT
  - c. Scanning Levels
  - d. Criteria dictated by the thinner of the two members
  - e. Planar flaws

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000630

**Subject:** NCR No. ZPMC-0639

**Dated:** 12-Apr-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000566 Rev: 01

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**Contractor's Proposed Resolution:**

**Reference Resolution:** Please refer to ZPMC's Letter of Response for closure information.

Please refer to ZPMC's Letter of Response for closure information.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000566R01;

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**Caltrans' comments:**

**Status:** CLO

**Date:** 20-Apr-2010

This proposed resolution is acceptable. The documentation received is sufficient and the Department concurs that Non-Conformance ZPMC-0639 is closed

**Submitted by:** Ku, Stanley

**Date:** 20-Apr-2010

**Attachment(s):**



No. B-725

## LETTER OF RESPONSE

**TO: American Bridge/Flour**

**DATE: 2010-4-6**

**REGARDING: NCR-000655(ZPMC-0626) NCR-000664(ZPMC-0634)  
NCR-000671 (ZPMC-0639)**

ZPMC acknowledged that these indications were missed and has written internal NCRs. Attached WRRs were written reflecting to these indications. ZPMC is providing the NDT records which show that these welds are now acceptable after repair and is requesting closure of these NCRs.

**ATTACHMENT:**

NCR-000655(ZPMC-0626)

NCR-B-434(ZPMC-0626)

B-WR10528

B787-UT-11103R1

NCR-000664(ZPMC-0634)

NCR-B-442(ZPMC-0634)

B-WR10609

B787-UT-11125R1

NCR-000671(ZPMC-0639)

NCR-B-443(ZPMC-0639)

B-WR10997

B-WR11115

B787-UT-11557R2

A handwritten signature in black ink, appearing to be 'L. M. W.' with a flourish at the end.

4/8/10



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: 27-Jan-2010

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

Dear: Mr. Charles Kanapicki  
Attention: Mr. Thomas Nilsson Project/Fabrication Manager  
Subject: NCR No. ZPMC-0626

Job Name: SAS Superstructure  
Document No: 05.03.06-000616

Reference Description: Missed UT indication by QC on Side Plate to Bottom Plate Joint on Segment 12BE

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 the Quality Assurance (QA) Ultrasonic Testing (UT) review of welds located on Orthotropic Box Girder (OBG) Segment 12BE, this QA Inspector discovered the following issues:

- One (1) longitudinal linear indication measuring approximately 10mm in length.
- The indication dBs rating is a +6.
- Material thickness is 28mm.
- The depth of the indication is approximately 18mm.
- The weld is identified as SEG3002A-001 at Cross Beam Side.
- The weld is designated as Non Seismic Performance Critical Material (Non SPCM).
- The indication is clearly marked on or near the weld.
- The Y distance for this indication is 1160 mm from PP113.
- The weld is a Complete Joint Penetration (CJP) Butt joint joining Side Plate PL3056A (Non SPCM) to Bottom Plate PL3043A (Non SPCM).
- Segment 12BE is located at inside of Bay#14 Work Shop.
- The Notice of Witness Inspection (NWIT) No. is 005142. The indication is located in an area previously tested and accepted by ZPMC Quality Control (QC) personnel. As per the contract documents, ZPMC's QC personnel are required to perform hundred (100%) percent UT inspection of this weld.

Please see attached NCR ZPMC-626 for details.

### Action Required and/or Action Taken:

Propose a resolution for the identified recurring non-conformance which constitutes a systematic problem on both materials/workmanship and quality control issues with revised procedures to remedy the defected work and to prevent future occurrences. A response for the resolution of this issue is expected within 14 days.

2.02:15.04  
05.03.06-000616.NCT

Received  
NCT-000616 28 Jan 10 Page 1 of 2

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# NCT

*( Continued Page 2 of 2 )*

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**Transmitted by:** Ching Chao

**Attachments:** ZPMC-0626

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

**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, P.R. China

**Report No:** NCR-000655

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

**Date:** 26-Jan-2010

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

**NCR #:** ZPMC-0626

### Type of problem:

Welding  Concrete  Other

Welding  Curing  Procedural  Bridge No: 34-0006

Joint fit-up  Coating  Other  Component: Segment 12BE SP to BP Joint

Procedural  Procedural  Description: Missed UT Indication by QC

**Reference Description:** Missed UT indication by QC on Side Plate to Bottom Plate Joint on Segment 12BE

### Description of Non-Conformance:

During the Quality Assurance (QA) Ultrasonic Testing (UT) review of welds located on Orthotropic Box Girder (OBG) Segment 12BE, this QA Inspector discovered the following issues:

-One (1) longitudinal linear indication measuring approximately 10mm in length.

-The indication dBs rating is a +6.

-Material thickness is 28mm.

-The depth of the indication is approximately 18mm.

-The weld is identified as SEG3002A-001 at Cross Beam Side.

-The weld is designated as Non Seismic Performance Critical Material (Non SPCM).

-The indication is clearly marked on or near the weld.

-The Y distance for this indication is 1160 mm from PP113.

-The weld is a Complete Joint Penetration (CJP) Butt joint joining Side Plate PL3056A (Non SPCM) to Bottom Plate PL3043A (Non SPCM).

-Segment 12BE is located at inside of Bay#14 Work Shop.

-The Notice of Witness Inspection (NWIT) No. is 005142. The indication is located in an area previously tested and accepted by ZPMC Quality Control (QC) personnel. As per the contract documents, ZPMC's QC personnel are required to perform hundred (100%) percent UT inspection of this weld.

### Applicable reference:

AWS D1.5-02 Section 6; Table 6.3 specifies a class "A" indication as having a rating of 8dBs and under for material thicknesses 20mm through 38mm.

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."

**Who discovered the problem:** Subhasis Bera

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

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( Continued Page 2 of 2 )

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**Name of individual from Contractor notified:** Wang Wei Nan

**Time and method of notification:** 15:30\_01-26-10\_Verbal

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

**Time and method of notification:** 14:30\_01-27-10\_Verbal

**QC Inspector's Name:** Guo Xing Hui

**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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**Inspected By:** Tsang, Eric

SMR

**Reviewed By:** Wahbeh, Mazen

SMR

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3/10

WR 105,28 UT 11103



# 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-434(ZPMC-0626)
Item: <del>unapproved cutting</del> 名称描述: <del>违规切割</del> 丁字焊缝	Item Number: 件号:	Drawing: 图号: 12BE
Location: 位置: BAY 14		Date: 日期: 2010-02-09

**Description of Nonconformance:**

During the Quality Assurance (QA) Ultrasonic Testing (UT) review of welds located on Orthotropic Box Girder (OBG) Segment 12BE, this QA Inspector discovered the following issues:

- One (1) longitudinal linear indication measuring approximately 10mm in length.
- The indication dBs rating is a +6.
- Material thickness is 28mm.
- The depth of the indication is approximately 18mm.
- The weld is identified as SEG3002A-001 at Cross Beam Side.
- The weld is designated as Non Seismic Performance Critical Material (Non SPCM).
- The indication is clearly marked on or near the weld.
- The Y distance for this indication is 1160 mm from PP113.
- The weld is a Complete Joint Penetration (CJP) Butt joint joining Side Plate PL3056A (Non SPCM) to Bottom Plate PL3043A (Non SPCM).
- Segment 12BE is located at inside of Bay#14 Work Shop.
- The Notice of Witness Inspection (NWIT) No. is 005142. The indication is located in an area previously tested and accepted by ZPMC Quality Control (QC) personnel. As per the contract documents, ZPMC's QC personnel are required to perform hundred (100%) percent UT inspection of this weld.

在对 OBG 12BE 进行 UT 检验的过程中, 加州工程师发现以下问题:  
 一条纵向线性缺陷长度将近 10mm。dB 值是+6, 深度是接近 18mm。焊缝号是 SEG3002A-001 在联系梁侧。Y 值是从 PP113 起 1160mm 位置。该焊缝 CJP 焊缝, 连接 PL3056A(非 SPCM)至 PL3043A (非 SPCM), 12BE 在十四车间中。缺陷所在位置之前已经被 ZPMC UT 检验人员所检验并接收。

Work By: <u>Lilaming</u> 施工方: <u>2010.04.05</u>	Prepared by: <u>Zhangwei</u> 准备: <u>02/09/10</u>	Reviewed by QCE: <u>Lupzhen</u> 质量工程师批准: <u>2/9/10</u>
<input type="checkbox"/> Drawing Error 图纸错误	<input type="checkbox"/> Material Defect 材料缺陷	<input type="checkbox"/> Fabrication Error 制作错误
<input type="checkbox"/> Other 其他原因		

Disposition:  Use as is  Repair  Reject  
 处理措施:  回用  返修  拒收

**Recommendation:**  
 建议:  
确认, 依报告返修.  
Confirm and issue repair report.

Prepared by: Lilaming 2010.04.05 Approved by QCA: \_\_\_\_\_  
 准备 质量经理批准

Reason for Nonconformance:

不符合原因:

漏检.

Discover defect.

Prevention of Re-occurrence:

预防措施:

校正仪器. 规范操作

Correction equipment and standard operation.

Approved by/批准:

Li Liming 2012.07.05

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: \_\_\_\_\_



# 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	SEG3002A	报告编号 Report No.	B-WR10528
合同号 Contract No.	04-0120F4	部件名称 Items Name	12BE BOTTOM PLATE SPLICED	NDT报告编号 Report No. of NDT	B787-UT-11103
项目编号 Project No.	ZP06-787				

焊缝缺陷描述:

Description of welding discontinuity:

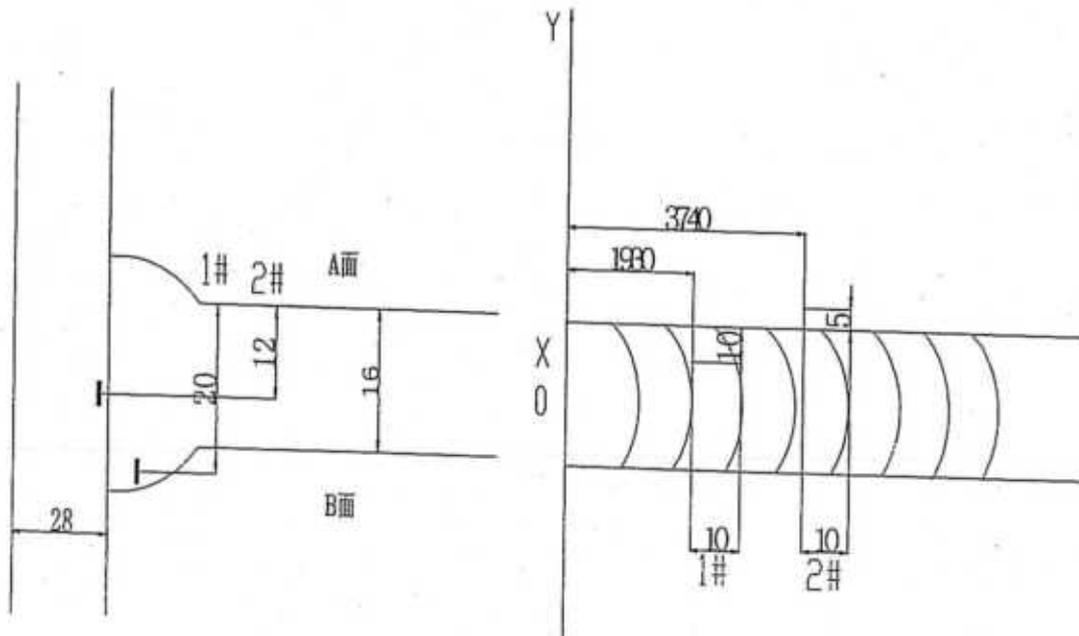
Rejected indication found by ultrasonic inspection is less than the maximum allowance aggregate length.

(UT探伤发现的缺陷总长度小于最大允许长度。) SEG3002A-001

检验员 (Inspector): Sun Yin 日期(Date): 2010.01.26

焊缝返修位置示意图:

Draft of welding discontinuity:



WELD NUMBER: SEG3002A-001

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):

*Handwritten signature*

日期(Date):

10.1.30

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. 对焊缝进行UT检测, 检测范围为返修区域以及其两端各延长50mm.

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. Perform UT inspection to the weld along with 50mm on each end of the repair area;

工艺: *Hexianlin*  
Technical engineer

10.1.30

审核:  
Approved by

日期  
Date



# 焊缝返修报告

## Welding Repair Report

版本 Rev. No.

0

项目名称 Project Name	英国海湾大桥 SFOBB	部件图号 Drawing No	LD18K	报告编号 Report No.	B-WR10528
合同号 Contract No.:	04-0120F4	部件名称 Items Name	OBG LONGITUDINA L DIAPHRAGM	NDT报告编号 Report No. of NDT	B787-UT-11082
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):

Marshi Gunn

日期(Date):

10.1.30

参照的WPS编号 Repair WPS No.	WPS-345-SMAW-1 G(1F)-Repair WPS-345-FCAW-1 G(1F)-Repair-1 WPS-345-SMAW-4 G(4F)-Repair	工艺员 technologist	1207200 Vic 11.1.30
返修(碳刨)前预热温度 Preheat temperature before gouging	76	返修的缺陷 Description of discontinuity	ZF
焊前处理检查 Inspection before welding	ALL	焊前预热温度 Preheat temperature before welding	114
最大碳刨深度 Max. depth of gouging	7	碳刨总长 Total length of gouging	200
焊工 welder	044795	焊接类型 welding type	FLAW
焊接电流 Current	236	焊接电压 Voltage	28.1
		焊接位置 position	16
		焊接速度 Speed	165
返修后检查 Inspection After repairing:			
外观检查 VT result	ALL	检验员 Inspector	zhuzhonghai 0727261
		日期 Date	2010.3.9
NDT复检 NDT result	ALL	探伤员 NDT person	Zhanhan jian
		日期 Date	2010.03.18
见证: Witness/Review:			
备注: Remark:			





# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

REPORT NO. 报告编号 B787-UT-11103R1      DATE 2010.03.18      PAGE 1 OF 1      Revision No: 0

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

ITEMS NAME: 12BE BOTTOM PLATE SPLICE      DRAWING NO.: SEG3002A      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>, 2010

EQUIPMENT 设备      MANUFACTURER 制造商      MODEL NO. 样式编号      SERIAL NO. 序列编号  
 UT SCOPE      PANAMETRICS      EPOCH-4B      071565311, 061488510, 061495811, 070152011,

CALIBRATION BLOCK 试块      COUPLANT 耦合剂      MATERIAL/THICKNESS 材料厚度  
 AWS IIV BLOCK TYPE II      C.M.C      A709M-345T2-X      28/16mm

### TRANSDUCER 探头

MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸	MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸
Changchao	70°	2.5MHz	18×18mm				
Changchao	0°	2.5MHz	20mm	Reference Level 参考灵敏度		20dB	

Base metal inspected per AWS D1.5-2002 Section 6.19.5      0° UT OK.

WELD IDENTIFICATION 焊缝部件编号	INDICATION NO. 指示号	PROBE ANGLE 探测角度	FROM FACE 检测面	LEG (次数)	DECIBELS 分贝				DISCONTINUITY 不连续性					Discontinuity Evaluation 缺陷估计	Remark 备注	
					Indication Level	Reference Level	Attenuation Factor	Indication Rating	LOCATION OF DISCONTINUITY 不连续位置(mm)							
									a	b	c	d	Length 长度			Sound Path 声程
SEG3002A-001	1R1	70				32									ACC.	100%
	2R1	70				32									ACC.	100%

AFTER B-WR10528

BLANK


EXAMINED BY 主操 <i>Zhou Hai jun</i> LEVEL - II SIGN / DATE 10.3.18 质量经理 / QCM 签字 SIGN / 日期 DATE	REVIEWED BY 审核 <i>Wu Chao</i> LEVEL - II SIGN / DATE 10.3.18 用户 CUSTOMER 签字 SIGN / 日期 DATE
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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:** 01-Feb-2010

**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:** 05.03.06-000627

**Subject:** NCR No. ZPMC-0634

**Reference Description:** Missed Class A UT indication on Deck Panel Splice, 8CE

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:** 08

### Remarks:

During the Quality Assurance Ultrasonic Testing (UT) review of weld located on Segment 8CE, this Quality Assurance Inspector (QA) discovered the following issue:

- One (1) Class "A" indication measuring approximately 60 mm in length.
- The decibel rating of the indication is +9.
- The Thickness of the diaphragm plate is 14mm.
- The weld is identified as SEG048\*-008.
- The weld is a Complete Joint Penetration (CJP) butt weld joining Deck Panel XI-diaphragm plate DP337A to Deck panel XI-diaphragm plate DP364A.
- The "Y" location is approximately 470mm from Floor beam flange at Panel Point 071.
- The indication is clearly marked by QA on/near the weld.
- OBG Segment 8CE is located in Repair yard (In north end of Blast shop 1).
- This QA generated a TL-6027 UT report for this weld on this date.

The Notice of Witness Inspection Number (NWIT) is 005144. The indication is located inside the area that has been previously tested and accepted by ZPMC Quality Control (QC) personnel. As per the contract documents, ZPMC's QC personnel are required to perform 100% UT inspection of this weld.

Please see attached NCR ZPMC-634 for details.

### Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences and provide documentation to show that the indication has been repaired properly to meet the contract requirements. A response for the resolution of this issue is expected within 14 days.

**Transmitted by:** Ching Chao

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**NCT**

*( Continued Page 2 of 2 )*

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**Attachments:** ZPMC-0634

**cc:** Rick Morrow, Gary Pursell, Contract Files, Ching Chao, Bill Howe

**File:** 05.03.06

**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF ENGINEERING SERVICES**Office of Structural Materials  
Quality Assurance and Source InspectionBay 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: 13.2/13.9File #: 69.25B**QUALITY ASSURANCE -- NON-CONFORMANCE REPORT****Location:** Changxing Island, Shanghai, P.R. China**Report No:** NCR-000664**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 29-Jan-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0634**Type of problem:**Welding  Concrete  Other Welding  Curing  Procedural **Bridge No:** 34-0006Joint fit-up  Coating  Other **Component:** Segment 8CEProcedural  Procedural  Description:**Reference Description:** Missed Class A UT indication on Deck Panel Splice, 8CE**Description of Non-Conformance:**

During the Quality Assurance Ultrasonic Testing (UT) review of weld located on Segment 8CE, this Quality Assurance Inspector (QA) discovered the following issue:

-One (1) Class "A" indication measuring approximately 60 mm in length.

-The decibel rating of the indication is +9.

-The Thickness of the diaphragm plate is 14mm.

-The weld is identified as SEG048\*-008.

-The weld is a Complete Joint Penetration (CJP) butt weld joining Deck Panel X1-diaphragm plate DP337A to Deck panel X1-diaphragm plate DP364A.

-The "Y" location is approximately 470mm from Floor beam flange at Panel Point 071.

-The indication is clearly marked by QA on/near the weld.

-OBG Segment 8CE is located in Repair yard (In north end of Blast shop 1).

-This QA generated a TL-6027 UT report for this weld on this date.

The Notice of Witness Inspection Number (NWIT) is 005144. The indication is located inside the area that has been previously tested and accepted by ZPMC Quality Control (QC) personnel. As per the contract documents, ZPMC's QC personnel are required to perform 100% UT inspection of this weld.

**Applicable reference:**

AWS D1.5-2002, Section 6, Table 6.3. specifies a class A indication as having a decibel rating of +10 and lower for weld thicknesses 8mm through 20mm.

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."

**Who discovered the problem:** Chandra Sudalaimuthu**Name of individual from Contractor notified:** Wang Weiming

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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**Time and method of notification:** 1700 hours, 01/29/10, Verbal

**Name of Caltrans Engineer notified:** Bill Howe

**Time and method of notification:** 1530 hours, 02/01/10, e-mail

**QC Inspector's Name:** Wang Chao

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

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**Inspected By:** Simonis,Jim

QA Inspector

**Reviewed By:** Wahbeh,Mazen

SMR

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WR10609



# 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-442(ZPMC-0634)
Item: Miss UT Indication 名称描述: UT 漏检	Item Number: 件号:	Drawing: 图号: SCE
Location: 位置: 外场		Date: 日期: 2010-02-09

**Description of Nonconformance:**

During the Quality Assurance Ultrasonic Testing (UT) review of weld located on Segment 8CE, this Quality Assurance Inspector (QA) discovered the following issue:

- One (1) Class "A" indication measuring approximately 60 mm in length.
- The decibel rating of the indication is +9.
- The Thickness of the diaphragm plate is 14mm.
- The weld is identified as SEG048\*-008.
- The weld is a Complete Joint Penetration (CJP) butt weld joining Deck Panel X1-diaphragm plate DP337A to Deck panel X1-diaphragm plate DP364A.
- The "Y" location is approximately 470mm from Floor beam flange at Panel Point 071.
- The indication is clearly marked by QA on/near the weld.
- OBG Segment 8CE is located in Repair yard (In north end of Blast shop 1).
- This QA generated a TL-6027 UT report for this weld on this date.

The Notice of Witness Inspection Number (NWIT) is 005144. The indication is located inside the area that has been previously tested and accepted by ZPMC Quality Control (QC) personnel. As per the contract documents, ZPMC's QC personnel are required to perform 100% UT inspection of this weld.

在对 8CE 进行 UT 随节检验的过程中, 加州检验员发现以下问题:

一条 "A" 级缺陷长度将近 60mm, dB 值是 +9, 横隔板厚度是 14mm。焊缝号是 SEG048-008, 该焊缝是 CJP 焊缝连接顶板 X1 横隔板 DP337A 至顶板 X1 横隔板 DP364A。Y 值从 PP071 隔板翼缘板将近 470mm。该缺陷位置之前已经被 ZPMC UT 人员所检验并接收。

Work By: Lit Ming Prepared by: Zhangwei Reviewed by QCE: Luping  
 施工方: Lit Ming 准备: 02/09/10 质量工程师批准: 2/9/10

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:  
确认. 依报告返修  
Confirm and issue repair report.

Prepared by: Lit Ming Approved by QCA: \_\_\_\_\_  
 准备    质量经理批准

Reason for Nonconformance:

不符合原因:

漏检

Discover defect.

Prevention of Re-occurrence:

预防措施:

A面检验不合格时, 需从B面确认

Confirm from face B if it rejected from face A.

Approved by/批准: \_\_\_\_\_

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: \_\_\_\_\_



# 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	SEG048*	报告编号 Report No.	B-WR10609
合同号 Contract No.	04-0120F4	部件名称 Items Name	BCE DECK PLATE	NDT报告编号 Report No.of NDT	B787-UT-11125
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

Description of welding discontinuity:

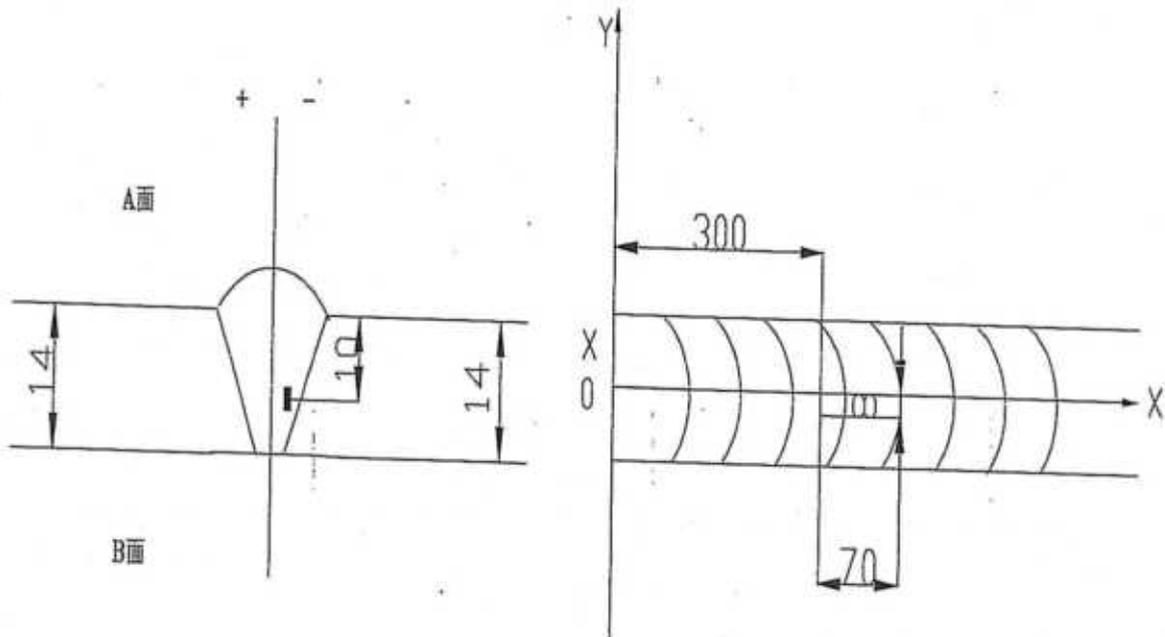
Rejected indication found by ultrasonic inspection is less than the maximum allowance aggregate length.

(UT探伤发现的缺陷总长度小于最大允许长度。) SEG048\*-008

检验员 (Inspector): Zhou Haijun 日期(Date): 2010.01.29

焊缝返修位置示意图:

Draft of welding discontinuity:



WELD NUMBER: SEG048\*-008

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):

Mashi Guan

日期(Date): 10.1.30

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. 对焊缝进行UT检测, 检测范围为返修区域以及其两端各延长50mm.

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. Perform UT inspection to the weld along with 50mm on each end of the repair area;

工艺:  
Technical engineer

H. Xiaolin

10.1.30

审核:  
Approved by

W. Frank

日期  
Date 10.1.30



# 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	SEG048*	报告编号 Report No.	B-WR10609
合同号 Contract No.:	04-0120F4	部件名称 Items Name	8CE DECK PLATE	NDT报告编号 Report No.of NDT	B787-UT-11125
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):

kashi Guan

日期(Date):

10.1.30

参照的WPS编号 Repair WPS No.	WPS-345-SMAW-3 G(3F)-Repair WPS-345-FCAW-3 G(3F)-Repair	工艺员 technologist	10.1.30 10.1.30
返修(碳刨)前预热温度 Preheat temperature before gouging	N/A	返修的缺陷 Description of discontinuity	slag
焊前处理检查 Inspection before welding	Acc	焊前预热温度 Preheat temperature before welding	160°C
最大碳刨深度 Max. depth of gouging	N/A	碳刨总长 Total length of gouging	N/A
焊工 welder	043661	焊接类型 welding type	SMAW
焊接电流 Current	145	焊接电压 Voltage	245
		焊接位置 position	3G
		焊接速度 Speed	113

返修后检查

Inspection After repairing:

外观检查 VT result	Acc	检验员 Inspector	Li Jianhua	日期 Date	2010.02.07
NDT复检 NDT result	Acc	探伤员 NDT person	Huang Jing	日期 Date	10.30

见证:

Witness/Review:

备注:

Remark:



# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

REPORT NO. 报告编号 B787-UT-11125      DATE 2010.01.29      PAGE 1 OF 1      Revision No: 0

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

ITEMS NAME: 8CE DECK PLATE      DRAWING NO.: SEG048\*      CALTRANS CONTRACT NO.: 04-0120F4  
 部件名称      图号      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 BUTT      CALIBRATION DUE DATE 仪器校正有效期 Dec. 28<sup>ST</sup>, 2010

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 IIW BLOCK TYPE II      COUPLANT 耦合剂 C.M.C      MATERIAL/THICKNESS 材料厚度 A709M-345T2-X 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 探测角度	FROM FACE 检测面	LEG (次数)	DECIBELS 分贝				DISCONTINUITY 不连续性					Discontinuity Evaluation 缺陷估计	Remark 备注	
					Indication Level	Reference Level	Attenuation Factor	Indication Rating	LOCATION OF DISCONTINUITY 不连续位置(mm)							
									a	b	c	d	Length 长度			Sound Path 声程
SEG048*-008	1	70	A	1	41	32	0	+9	70	30	10	-5	300	REJ.	100%	
BLANK																

EXAMINED BY 主探  
*Zhou Haijun* 2010.01.29  
 LEVEL - II SIGN / DATE

REVIEWED BY 审核  
*Wu Chao* 2010.01.29  
 LEVEL - II SIGN / DATE

质量经理 / QCM  
 \_\_\_\_\_  
 签字 SIGN / 日期 DATE

用户 CUSTOMER  
 \_\_\_\_\_  
 签字 SIGN / 日期 DATE





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: 03-Feb-2010

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: 05.03.06-000630

Subject: NCR No. ZPMC-0639

Reference Description: Missed UT indication by QC on Segment 9AE, Side Panel Welds

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: 09

### Remarks:

During the Quality Assurance (QA) Ultrasonic Testing (UT) review of welds located on OBG Segment 9AE, this QA Inspector discovered the following issues:

- One (1) longitudinal indication measuring approximately 15mm in length.
- The depth of the indication is 12mm.
- The db rating is +7.
- The material thickness is 16mm.
- For additional information please see the UT report for this date.
- The weld is identified as: SEG-050A-003.
- The Weld is a Complete Joint Penetration (CJP) butt weld joining SP582A & SP622A.
- The "Y" location of the indication is 1700mm.
- The indication is clearly marked on the weld.
- SEG 9AE is located in Outside Yard north end of the blast shop.

The Notice of Witness Inspection Number (NWIT) is 005165. The indication is located inside the area that has been previously tested and accepted by ZPMC Quality Control (QC) personnel. As per the contract documents, ZPMC's QC personnel are required to perform one hundred (100%) percent UT inspection of this weld.

### 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 Sr. Transportation Engineer

 05.03.06-000630,NCT

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NCT

( Continued Page 2 of 2 )

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Attachments: ZPMC-0639

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Jason Tom, Contract Files, Ching Chao

File: 05.03.06

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection

Bay Area Branch

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(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-000671**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 02-Feb-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0639**Type of problem:**Welding  Concrete  Other Welding  Curing  Procedural  Bridge No: 34-0006Joint fit-up  Coating  Other  Component: Segment 9AE Side PanelProcedural  Procedural  Description: Missed UT Indication by QC**Reference Description:** Missed UT indication by QC on Segment 9AE, Side Panel Welds**Description of Non-Conformance:**

During the Quality Assurance (QA) Ultrasonic Testing (UT) review of welds located on OBG Segment 9AE, this QA Inspector discovered the following issues:

- One (1) longitudinal indication measuring approximately 15mm in length.
- The depth of the indication is 12mm.
- The db rating is +7.
- The material thickness is 16mm.
- For additional information please see the UT report for this date.
- The weld is identified as: SEG-050A-003.
- The Weld is a Complete Joint Penetration (CJP) butt weld joining SP582A & SP622A.
- The "Y" location of the indication is 1700mm.
- The indication is clearly marked on the weld.
- SEG 9AE is located in Outside Yard north end of the blast shop.

The Notice of Witness Inspection Number (NWIT) is 005165. The indication is located inside the area that has been previously tested and accepted by ZPMC Quality Control (QC) personnel. As per the contract documents, ZPMC's QC personnel are required to perform one hundred (100%) percent UT inspection of this weld.

**Applicable reference:**

AWS D1.5-2002, Section 6, Table 6.3. specifies a class "A" indication as having a dBs rating of +10 and lower for weld thicknesses 8mm through 20mm.

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."



Prevention of Re-occurrence:

预防措施:

提高扫描灵敏度及检出

Enhance scanning sensitivity inspection.

Approved by/批准:

L. Liming 2010.04.01

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

## 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	SEG050A	报告编号 Report No.	B-WR10997
合同号 Contract No.	04-0120F4	部件名称 Items Name	9AE BOTTOM PLATE SPLICE	NDT报告编号 Report No. of NDT	B787-UT-11557
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

Description of welding discontinuity:

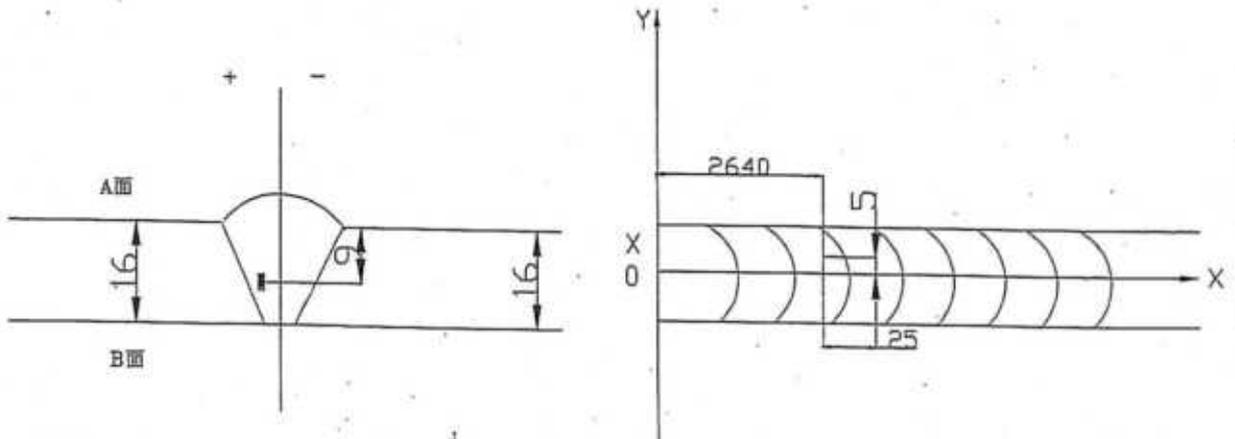
Rejected indication found by ultrasonic inspection is less than the maximum allowance aggregate length.

(UT探伤发现的缺陷总长度小于最大允许长度。) SEG050A-003

检验员 (Inspector) *Sun Yin* 日期(Date): 2010.03.10

焊缝返修位置示意图:

Draft of welding discontinuity:



WELD NUMBER: SEG050A-003

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): *Li Zhigang* 日期(Date): 3.12

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: *Tang Yong bo*  
Technical engineer

审核:  
Approved by

*Lu Jian hua*

日期 10.3.12  
Date



# 焊缝返修报告

## Welding Repair Report

版本 Rev. No.

**0**

项目名称 Project Name	美国海湾大桥 SFOBB	部件图号 Drawing No	SEG050A	报告编号 Report No.	B-WR10997
合同号 Contract No.:	04-0120F4	部件名称 Items Name	9AE BOTTOM PLATE SPLICE	NDT报告编号 Report No. of NDT	B787-UT-11557
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): *Li Zhigang* 日期(Date): 3.12

参照的WPS编号 Repair WPS No.	WPS-345-SMAW-2 G(2F)-Repair WPS-345-SMAW-4 G(4F)-Repair WPS-345-SMAW-2 G(2F)-FCM-Repair WPS-345-SMAW-4 G(4F)-FCM-Repair	工艺员 technologist	<i>Tang Yong bo</i> <i>10.3.12</i>
返修(碳刨)前预热温度 Preheat temperature before gouging	<i>940</i>	返修的缺陷 Description of discontinuity	<i>IF</i>
焊前处理检查 Inspection before welding	<i>Acc</i>	焊前预热温度 Preheat temperature before welding	<i>1040</i>
最大碳刨深度 Max. depth of gouging	<i>5mm</i>	碳刨总长 Total length of gouging	<i>125mm</i>
焊工 welder <i>054013</i>	焊接类型 welding type <i>SMAW</i>	焊接位置 position <i>2G</i>	
焊接电流 Current <i>144</i>	焊接电压 Voltage <i>24</i>	焊接速度 Speed <i>102</i>	
返修后检查 Inspection After repairing:			
外观检查 VT result <i>Acc</i>	检验员 Inspector <i>07120701</i> <i>Li Yan hua</i>	日期 Date <i>2010.3.12</i>	
NDT复检 NDT result <i>REJ</i>	探伤员 NDT person <i>Sun Ya</i>	日期 Date <i>2010.3.15</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-11557      DATE 2010.03.10      PAGE 1 OF 1      Revision No: 0

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

ITEMS NAME: 9AE BOTTOM PLATE SPlice      DRAWING NO.: SEG050A      CALTRANS CONTRACT NO.: 04-0120F4  
 部件名称      图号      加州工程编号

REFERENCING CODE 参考规范      ACCEPTANCE STANDARD 接受标准      PROCEDURE NO. 程序编号  
 AWS D1.5-2002      AWS D1.5-2002(Table 6.3)      ZPQC-UT-01

WELDING PROCESS 焊接方法      JOINT TYPE 焊缝类型      CALIBRATION DUE DATE 仪器校正有效期  
 SAW FCAW      BUTT      Dec. 28<sup>ST</sup>, 2010

EQUIPMENT 设备      MANUFACTURER 制造商      MODEL NO. 样式编号      SERIAL NO. 序列编号  
 UT SCOPE      PANAMETRICS      EPOCH-4B      071565311, 061488510, 061495811, 070152011,

CALIBRATION BLOCK 试块      COUPLANT 耦合剂      MATERIAL/THICKNESS 材料厚度  
 AWS IIV BLOCK TYPE II      C.M.C      A709M-345T2-X      16mm

### TRANSDUCER 探头

MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸	MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸
Changchao	70°	2.5MHz	18×18mm				
Changchao	0°	2.5MHz	20mm	Reference Level 参考灵敏度		20dB	

Base metal inspected per AWS D1.5-2002 Section 6.19.5      0° UT OK.

WELD IDENTIFICATION 焊缝部件编号	INDICATION NO. 指示号	PROBE ANGLE 探测角度	FROM FACE 检测面	LEG (次数)	DECIBELS分贝				DISCONTINUITY 不连续性					Discontinuity Evaluation 缺陷估计	Remark 备注
					Indication Level	Reference Level	Attenuation Factor	Indication Rating	LOCATION OF DISCONTINUITY 不连续位置(mm)						
					a	b	c	d	Length 长度	Sound Path 声程	Depth from Surface 距表面深度	From X 距X	From Y 距Y		
SEG050A-003	1	70	A	2	44	33	3	+8	25	63	9	+5	2640	REJ.	100%

### BLANK


EXAMINED BY 主探	REVIEWED BY 审核
LEVEL - II SIGN / DATE	LEVEL - II SIGN / DATE
质量经理 / QCM	用户 CUSTOMER
签字 SIGN / 日期 DATE	签字 SIGN / 日期 DATE



# 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	SEG050A	报告编号 Report No.	B-WR11115
合同号 Contract No.	04-0120F4	部件名称 Items Name	9AE BOTTOM PLATE SPLICE	NDT报告编号 Report No.of NDT	B787-UT-11557 1
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

Description of welding discontinuity:

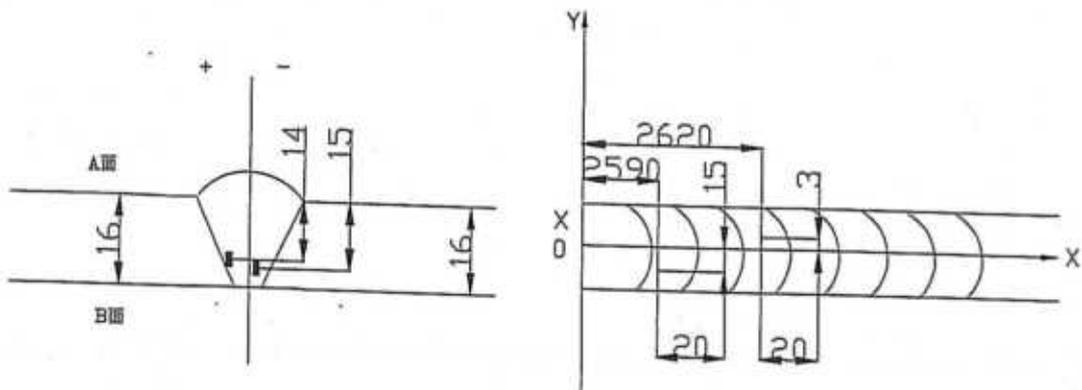
Rejected indication found by ultrasonic inspection is less than the maximum allowance aggregate length.

(UT探伤发现的缺陷总长度小于最大允许长度。) SEG050A-003

检验员 (Inspector) *Sun Yin* 日期(Date): *10.03.15* 2010.03.15

焊缝返修位置示意图:

Draft of welding discontinuity:



WELD NUMBER: SEG050A-003

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): *Li Zhigang* 日期(Date): 3.18

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: *Hexiaoshin*  
Technical engineer

审核:  
Approved by

日期 10-3.18  
Date



# 焊缝返修报告

## Welding Repair Report

版本 Rev. No.

**0**

项目名称 Project Name	美国海湾大桥 SFOBB	部件图号 Drawing No	SEG050A	报告编号 Report No.	B-WR11115
合同号 Contract No.:	04-0120F4	部件名称 Items Name	9AE BOTTOM PLATE SPLICE	NDT报告编号 Report No. of NDT	B787-UT-11557R 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): *Lizhigang* 日期(Date): 3.18

参照的WPS编号 Repair WPS No.	WPS-345-SMAW-1 G(1F)-Repair WPS-345-FCAW-1 G(1F)-Repair-1 WPS-345-SMAW-4 G(4F)-Repair	工艺员 technologist	<i>Hexisolin</i> 3.18
返修(碳刨)前预热温度 Preheat temperature before gouging	<i>91%</i>	返修的缺陷 Description of discontinuity	<i>IF</i>
焊前处理检查 Inspection before welding	<i>ACC</i>	焊前预热温度 Preheat temperature before welding	<i>100%</i>
最大碳刨深度 Max. depth of gouging	<i>7</i>	碳刨总长 Total length of gouging	<i>26</i>
焊工 welder <i>054013</i>	焊接类型 welding type <i>SMAW</i>	焊接位置 position	<i>26</i>
焊接电流 Current <i>152</i>	焊接电压 Voltage <i>24.6</i>	焊接速度 Speed	<i>102</i>

返修后检查  
Inspection After repairing:

外观检查 VT result <i>ACC</i>	检验员 Inspector <i>Li Yanhua</i> <i>07120701</i>	日期 Date <i>2010.3.20</i>
NDT复检 NDT result <i>ACC</i>	探伤员 NDT person <i>Sun Yin</i>	日期 Date <i>2010.3.25</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-11557R2      DATE 2010.03.25      PAGE 1 OF 1      Revision No: 0

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

ITEMS NAME: 9AE BOTTOM PLATE      DRAWING NO.: SEG050A      CALTRANS CONTRACT NO.: 04-0120F4  
 部件名称 SPLICE      图号      加州工程编号

REFERENCING CODE 参考规范      ACCEPTANCE STANDARD 接受标准      PROCEDURE NO. 程序编号  
 AWS D1.5-2002      AWS D1.5-2002(Table 6.3)      ZPQC-UT-01

WELDING PROCESS 焊接方法      JOINT TYPE 焊缝类型      CALIBRATION DUE DATE 仪器校正有效期  
 SMAW      BUTT      Dec. 28<sup>ST</sup>, 2010

EQUIPMENT 设备      MANUFACTURER 制造商      MODEL NO. 样式编号      SERIAL NO. 序列编号  
 UT SCOPE      PANAMETRICS      EPOCH-4B      071565311, 061488510, 061495811, 070152011,

CALIBRATION BLOCK 试块      COUPLANT 耦合剂      MATERIAL/THICKNESS 材料厚度  
 AWS IIV BLOCK TYPE II      C.M.C      A709M-345T2-X      16mm

### TRANSDUCER 探头

MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸	MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸
Changchao	70°	2.5MHz	18×18mm				
Changchao	0°	2.5MHz	20mm	Reference Level 参考灵敏度			20dB

Base metal inspected per AWS D1.5-2002 Section 6.19.5      0° UT OK.

WELD IDENTIFICATION 焊缝部件编号	INDICATION NO. 指示号	PROBE ANGLE 探测角度	FROM FACE 检测面	LEG (次数)	DECIBELS 分贝				DISCONTINUITY 不连续性					Discontinuity Evaluation 缺陷估计	Remark 备注
					Indication Level	Reference Level	Attenuation Factor	Indication Rating	LOCATION OF DISCONTINUITY 不连续位置(mm)						
									a	b	c	d	Length 长度		
SEG050A-003	1R2	70				33								ACC.	100%
	2R2	70				33								ACC.	100%

AFTER B-WR11115

BLANK

EXAMINED BY 主探 Sam Ym / 1003.25      REVIEWED BY 审核, Sam Ym / 1003.25.  
 LEVEL - II SIGN / DATE      LEVEL - II SIGN / DATE

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

**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-000628**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 16-Apr-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0639**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:** 02-Feb-2010**Description of Non-Conformance:**

During the Quality Assurance (QA) Ultrasonic Testing (UT) review of welds located on OBG Segment 9AE, this QA Inspector discovered the following issues:

- One (1) longitudinal indication measuring approximately 15mm in length.
- The depth of the indication is 12mm.
- The db rating is +7.
- The material thickness is 16mm.
- For additional information please see the UT report for this date.
- The weld is identified as: SEG-050A-003.
- The Weld is a Complete Joint Penetration (CJP) butt weld joining SP582A & SP622A.
- The "Y" location of the indication is 1700mm.
- The indication is clearly marked on the weld.
- SEG 9AE is located in Outside Yard north end of the blast shop.

The Notice of Witness Inspection Number (NWIT) is 005165. The indication is located inside the area that has been previously tested and accepted by ZPMC Quality Control (QC) personnel. As per the contract documents, ZPMC's QC personnel are required to perform one hundred (100%) percent UT inspection of this weld.

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

Repair said indication and perform NDT required to verify weld quality.

**Corrective action taken:**

Contractor supplied WRR used during weld repair along with subsequent NDT documentation verifying weld is now in conformance with Contract weld quality requirements. Supplemental training was provided to NDT Technicians by the Contractor's QCM in regards to this issue as a means of enhancing inspection techniques and preventing future occurrences.

