

**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-000547  
**Prime Contractor:** American Bridge/Fluor Enterprises, a JV **Date:** 15-Dec-2009  
**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0520

**Type of problem:**

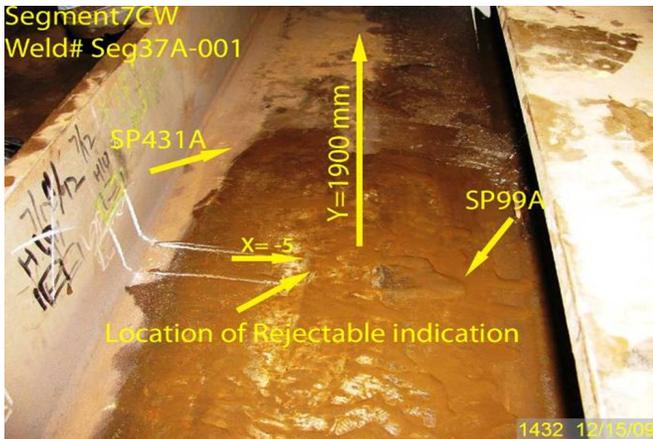
|                     |                   |                     |                                   |
|---------------------|-------------------|---------------------|-----------------------------------|
| <b>Welding</b>      | <b>Concrete</b>   | <b>Other</b>        |                                   |
| <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> OBG Segment 7CW |
| <b>Procedural</b>   | <b>Procedural</b> | <b>Description:</b> |                                   |

**Reference Description:** Missed UT Indication by QC, Segment 7CW

**Description of Non-Conformance:**

During the Quality Assurance Ultrasonic Testing (UT) review of weld located on OBG Segment 7CW, this Quality Assurance Inspector (QA) discovered the following issue:

- A total of one (1) rejectable Class "A" indication measuring approximately 25mm in length.
  - The Weld is a complete joint penetration (CJP) Butt Weld joining Side Plate SP99A to SP431A and is identified as SEG37A-001.
  - The Segment is located in the repair yard north of the blast shop.
- The Notice of Witness Inspection Number (NWIT) is 004866. 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 splice weld.



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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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**Applicable reference:**

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 Section 6.26.3.1; “Welds that are subject to UT in addition to visual inspection shall be acceptable if they meet the following requirements:...(1) Welds subject to tensile stress under any condition of loading shall conform to the requirements of Table 6.3...(2) Welds subject to compressive stress shall conform to the requirements of Table 6.4.”

**Who discovered the problem:** Hiranch Patel

**Name of individual from Contractor notified:** Peter Shaw

**Time and method of notification:** 1700 hours, 12/15/09, Verbal

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

**Time and method of notification:** 1330 hours, 12/17/09, Verbal

**QC Inspector's Name:** Zhang Wei

**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 Eric Tsang, 15000422372, who represents the Office of Structural Materials for your project.

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|                      |              |     |
|----------------------|--------------|-----|
| <b>Inspected By:</b> | Guest,Skylar | SMR |
|----------------------|--------------|-----|

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|                     |              |     |
|---------------------|--------------|-----|
| <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  
**Attention:** Mr. Thomas Nilsson Project/Fabrication Manager  
**Subject:** NCR No. ZPMC-0520

**Job Name:** SAS Superstructure  
**Document No:** 05.03.06-000508

**Reference Description:** Missed UT Indication by QC, Segment 7CW

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:** 07

**Remarks:**

During the Quality Assurance Ultrasonic Testing (UT) review of weld located on OBG Segment 7CW, this Quality Assurance Inspector (QA) discovered the following issue:

- A total of one (1) rejectable Class "A" indication measuring approximately 25mm in length.
  - The Weld is a complete joint penetration (CJP) Butt Weld joining Side Plate SP99A to SP431A and is identified as SEG37A-001.
  - The Segment is located in the repair yard north of the blast shop.
- The Notice of Witness Inspection Number (NWT) is 004866. 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 splice weld.

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

Submit a repair plan to the engineer for approval. A response for the resolution of this issue is expected within 7 days.

**Transmitted by:** Bill Howe

**Attachments:** ZPMC-0520

**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:** 05.03.06-000508

**Subject:** NCR No. ZPMC-0520

**Dated:** 18-Jan-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000517 Rev: 00

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### Contractor's Proposed Resolution:

**Reference Resolution:** As a means of preventing future occurrences, the ABF QCM has performed refresher UT training. See attached UT training agenda and attendance roster.

As it is necessary to respond to the NCR with a proposed plan of action, ABF is doing so without all of the repair documentation at this time. As a means of preventing future occurrences, the ABF QCM has performed refresher UT training. See attached UT training agenda and attendance roster. The ABF QCM has been discussing missed UT indications with the ZPMC QCM and related NDT supervisory personnel. The ZPMC level III is in the process of assessing personnel, techniques and equipment. ABF has purchased GE Technology transducers to distribute to both ZPMC and ABF UT personnel in a cooperative effort to match the equipment of CT. These transducers will arrive to the job site approximately the end of January 10 at which time they will be put into immediate use. ZPMC requests this NCR be placed in the Approved Action Pending status category until such time that all the repair documents have been assembled and submitted.

**Submitted by:** Lawton, Steve

**Attachment(s):** ABF-NPR-000517R00;

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### Caltrans' comments:

**Status:** AAP

**Date:** 25-Jan-2010

The preventative measures taken by the QCM and the proposed resolution for closing NCR submitted by the contractor are acceptable. The NCR will be closed upon completion of the repair and review of the repair documents by the Engineer when submitted by the contractor.

**Submitted by:** Chao, Ching

**Attachment(s):**

**Date:** 25-Jan-2010

# 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



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 xue yu         | 黄廷 Huang Ting  |    |    |
| 马志长 ma zhi chang  | 黄廷 Huang Ting  |    |    |
| 谭善 tan shan       | 李黎明 Li Liming  |    |    |
| 马健 ma jian        | 李黎明 Li Liming  |    |    |
| 王福 wang fu        | 徐坤 Xu Kun      |    |    |
| 沈健 shen jian      | 李黎明 Li Liming  |    |    |
| 黄宇 Huang Yu       |                |    |    |
| 金峰 Jin Feng       |                |    |    |
| 吴文 Wu Wen         |                |    |    |
| 解文 jie wen        |                |    |    |
| 周海周 Zhou Hai Zhou |                |    |    |
| 徐峰 Xu Feng        |                |    |    |

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000508

**Subject:** NCR No. ZPMC-0520

**Dated:** 24-May-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000517 Rev: 01

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**Contractor's Proposed Resolution:**

**Reference Resolution:** ZPMC has repaired the missed indications and is providing the NDT records to show that the weld is acceptable. Based on this ZPMC requests closure of this NCR.

ZPMC has repaired the missed indications and is providing the NDT records to show that the weld is acceptable. Based on this ZPMC requests closure of this NCR.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000517R01;

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**Caltrans' comments:**

**Status:** CLO

**Date:** 30-May-2010

This proposed resolution is acceptable. The documentation received is sufficient and the Department concurs that Non-Conformance ZPMC-0520 is closed.

**Submitted by:** Eagen, Sean

**Attachment(s):**

**Date:** 30-May-2010



No. B-741

## LETTER OF RESPONSE

**TO: American Bridge/Flour**

**DATE: 2010-5-1**

**REGARDING: NCR-000547(ZPMC-0520), NCR-000581(ZPMC-0554)  
NCR-000588(ZPMC-0561), NCR-000653 (ZPMC-0624)**

**NCR-000547(ZPMC-0520) & NCR-000581(ZPMC-0554)**

ZPMC is providing the WRRs and NDT records show these missed indications have been repaired and retest to be acceptable. ZPMC is requesting closure of these NCRs.

**NCR-000588(ZPMC-0561)**

ZPMC is providing the NDT record shows these missed indications have been repaired and retest to be acceptable. Please be noticed the corrected weld IDs should be CSD5-PP67-025 & CSD5-PP67-051. For detail please look at B-CWR1035. ZPMC is requesting closure of this NCR.

**NCR-000653 (ZPMC-0624)**

ZPMC is providing the NDT record shows this missed indication has been repaired and retest to be acceptable. Please be noticed the corrected weld IDs should be CA051-008. For detail please look at B-CWR1036. ZPMC is requesting closure of this NCR.

**ATTACHMENT:**

NCR-000547(ZPMC-0520)

B-WR12122

B787-UT-12336 R1

NCR-000581(ZPMC-0554)

B-WR12123

B787-UT-12337 R1

NCR-000588(ZPMC-0561)

B787-MT-16598 R1

NCR-000653 (ZPMC-0624)

B787-MT-16620 R1

A handwritten signature in black ink, appearing to be 'J. W.' or similar, written in a cursive style.

5/1/10



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

Contract No: 04-0120F4  
 04-SF-80-13.2 / 13.9  
 Job Name: SAS Superstructure  
 Document No: 05.03.06-000508

Dear: Mr. Charles Kanapicki  
 Attention: Mr. Thomas Nilsson Project/Fabrication Manager  
 Subject: NCR No. ZPMC-0520

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Material Location: OBG

**Remarks:**

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Attachments: ZPMC-0520

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Jason Tom, Contract Files, Ching Chao  
 File: 05.03.06

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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  
**Prime Contractor:** American Bridge/Fluor Enterprises, a JV  
**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island  
**Report No:** NCR-000547  
**Date:** 15-Dec-2009  
**NCR #:** ZPMC-0520

**Type of problem:**

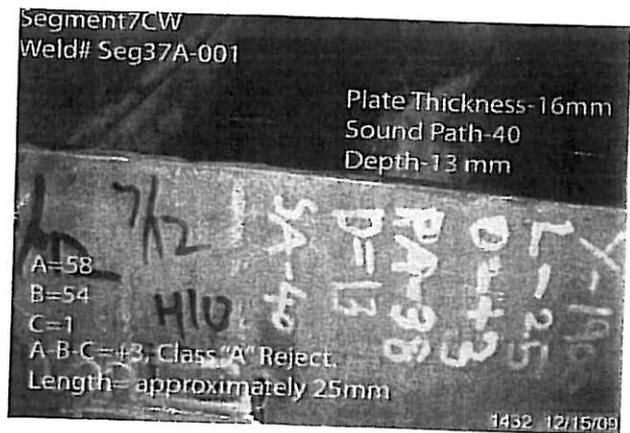
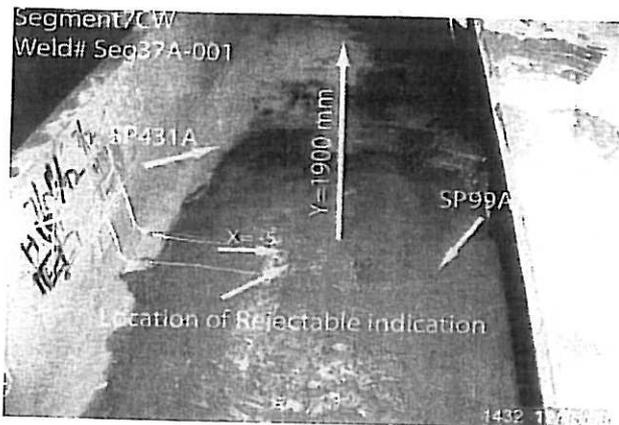
- Welding  Concrete  Other   
 Welding  Curing  Procedural  **Bridge No:** 34-0006  
 Joint fit-up  Coating  Other  **Component:** OBG Segment 7CW  
 Procedural  Procedural  Description:

**Reference Description:** Missed UT Indication by QC, Segment 7CW

**Description of Non-Conformance:**

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

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( 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."

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**Who discovered the problem:** Hiranah Patel

**Name of individual from Contractor notified:** Peter Shaw

**Time and method of notification:** 1700 hours, 12/15/09, Verbal

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

**Time and method of notification:** 1330 hours, 12/17/09, Verbal

**QC Inspector's Name:** Zhang Wei

**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 Eric Tsang, 15000422372, who represents the Office of Structural Materials for your project.

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**Inspected By:** Guest, Skyler

SMR

**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<br>Project Name | 美国海湾大桥<br>SFOBB | 部件图号<br>Drawing No | SEG037A                                  | 报告编号<br>Report No.           | B-WR12122     |
| 合同号<br>Contract No.  | 04-0120F4       | 部件名称<br>Items Name | 7CW BOTTOM AND SIDE PLATE<br>LATE SPLICE | NDT报告编号<br>Report No. of NDT | B787-UT-12336 |
| 项目编号<br>Project No.: | ZP06-787        |                    |  |                              |               |

焊缝缺陷描述:

Description of welding discontinuity:

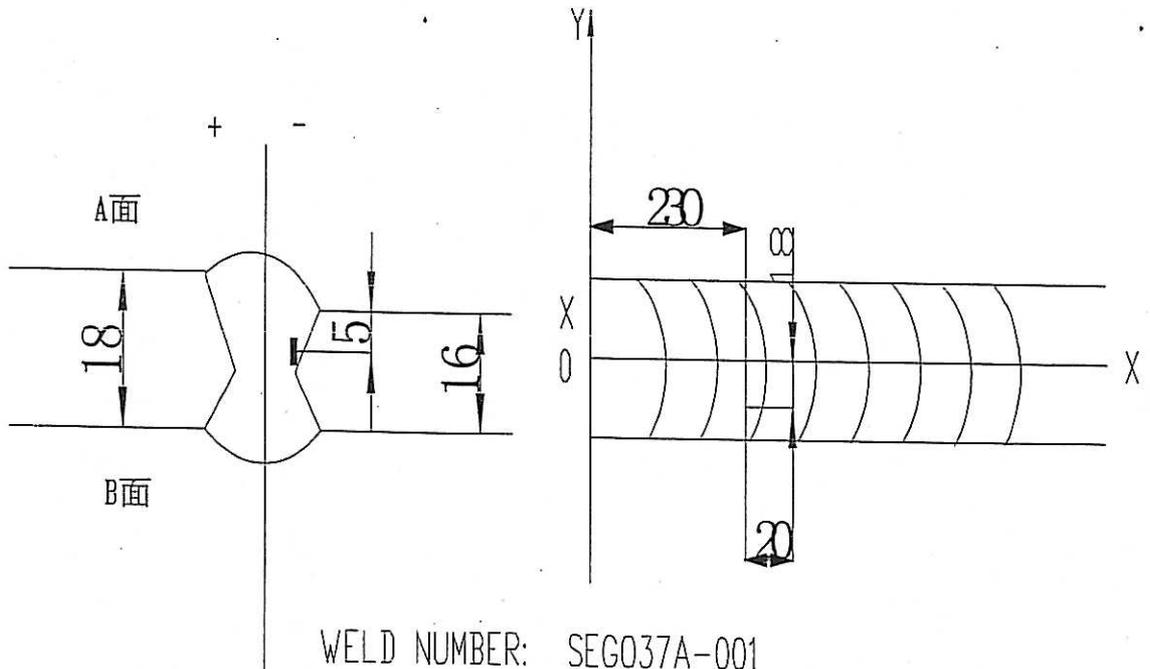
Rejected indication found by ultrasonic inspection is less than the maximum allowance aggregate length.

(UT探伤发现的缺陷总长度小于最大允许长度。) SEG037A-001

检验员 (Inspector) Jin Feng 日期(Date): 2010.04.15

焊缝返修位置示意图:

Draft of welding discontinuity:



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): 4. 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. 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: *hexiaolin*  
Technical engineer

审核:  
Approved by

日期 10-4.18  
Date



# 焊缝返修报告

## Welding Repair Report

版本 Rev. No.

**0**

|                      |                 |                    |                                  |                              |               |
|----------------------|-----------------|--------------------|----------------------------------|------------------------------|---------------|
| 项目名称<br>Project Name | 美国海湾大桥<br>SFOBB | 部件图号<br>Drawing No | SEG037A                          | 报告编号<br>Report No.           | B-WR12122     |
| 合同号<br>Contract No.: | 04-0120F4       | 部件名称<br>Items Name | 7CW BOTTOM AND SIDE PLATE SPLICE | NDT报告编号<br>Report No. of NDT | B787-UT-12336 |
| 项目编号<br>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): *4.18*

|   |  |  |                                 |
|---|--|--|---------------------------------|
| 参照的WPS编号<br>Repair WPS No.                        | WPS-345-SMAW-1<br>G(1F)-Repair<br>WPS-345-FCAW-1<br>G(1F)-Repair-1<br>WPS-345-SMAW-4<br>G(4F)-Repair | 工艺员<br>technologist                          | <i>Hexinshun</i><br><i>4.18</i> |
| 返修(碳刨)前预热温度<br>Preheat temperature before gouging | <i>850°C</i>   | 返修的缺陷<br>Description of discontinuity        | <i>Z-F</i>                      |
| 焊前处理检查<br>Inspection before welding               | <i>Acc</i>   | 焊前预热温度<br>Preheat temperature before welding | <i>126°C</i>                    |
| 最大碳刨深度<br>Max. depth of gouging                   | <i>7mm</i>   | 碳刨总长<br>Total length of gouging              | <i>120mm</i>                    |
| 焊工<br>welder                                      | <i>045133</i>  | 焊接类型<br>welding type                         | <i>SMAW</i>                     |
| 焊接电流<br>Current                                   | <i>168</i>   | 焊接电压<br>Voltage                              | <i>25-3</i>                     |
|   |  | 焊接位置<br>position                             | <i>1G</i>                       |
|   |  | 焊接速度<br>Speed                                | <i>152</i>                      |
| <b>返修后检查</b><br>Inspection After repairing:       |  |  |                                 |
| 外观检查<br>VT result                                 | <i>Acc</i>   | 检验员<br>Inspector                             | <i>0710701</i>                  |
|   |  | 日期<br>Date                                   | <i>2010.4.22</i>                |
| NDT复检<br>NDT result                               | <i>Acc</i>   | 探伤员<br>NDT person                            | <i>6-panhua</i>                 |
|   |  | 日期<br>Date                                   | <i>10.4.27</i>                  |
| 见证:<br>Witness/Review:                            |  |  |                                 |
| 备注:<br>Remark:                                    |  |  |                                 |



# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

|  |  |  |   |                |
|--|--|--|---|----------------|
| REPORT NO. 报告编号 B787-UT-12336                              |  | DATE 2010.04.15  | PAGE 1 OF 1   | Revision No: 0 |
| PROJECT NO.: 工程编号 ZP06-787                                 |  |  | CONTRACTOR: CALTRANS  |                |
| ITEMS NAME: 7CW BOTTOM PLATE AND SIDE PLATE SPLICE<br>部件名称 | DRAWING NO.: SEG037A<br>图号                           | CALTRANS CONTRACT NO.: 04-0120F4<br>加州工程编号                   |   |                |
| REFERENCING CODE 参考规范<br>AWS D1.5-2002                     | ACCEPTANCE STANDARD 接受标准<br>AWS D1.5-2002(Table 6.3) | PROCEDURE NO. 程序编号<br>ZPQC-UT-01                             |   |                |
| WELDING PROCESS 焊接方法<br>SMAW                               | JOINT TYPE 焊缝类型<br>BUTT                              | CALIBRATION DUE DATE 仪器校正有效期<br>Dec. 28 <sup>ST</sup> , 2010 |   |                |
| EQUIPMENT 设备<br>UT SCOPE                                   | MANUFACTURER 制造商<br>PANAMETRICS                      | MODEL NO. 样式编号<br>EPOCH-4B                                   | SERIAL NO. 序列编号<br>071565311, 061488510,<br>061495811, 070152011, |                |
| CALIBRATION BLOCK 试块<br>AWS IIV BLOCK TYPE II              | COUPLANT 耦合剂<br>C.M.C                                | MATERIAL/THICKNESS 材料厚度<br>A709M-345T2-X<br>16/18mm          |   |                |

### 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<br>焊缝部件编号 | INDICATION NO.<br>指示号 | PROBE ANGLE<br>探测角度 | FROM FACE<br>检测面 | LEG (次数) | DECIBELS 分贝      |                 |                    |                   | DISCONTINUITY 不连续性                     |    |   |     |              | Discontinuity Evaluation<br>缺陷估计 | Remark<br>备注 |                  |
|-------------------------------|-----------------------|---------------------|------------------|----------|------------------|-----------------|--------------------|-------------------|--|----|---|-----|--------------|----------------------------------|--------------|------------------|
|                               |                       |                     |                  |          | Indication Level | Reference Level | Attenuation Factor | Indication Rating | LOCATION OF DISCONTINUITY<br>不连续位置(mm) |    |   |     |              |                                  |              |                  |
|                               |                       |                     |                  |          |                  |                 |                    |                   | a                                      | b  | c | d'  | Length<br>长度 |                                  |              | Sound Path<br>声程 |
| SEG037A-001                   | 1                     | 70                  | A                | 2        | 44               | 32              | 5                  | +7                | 20                                     | 86 | 5 | -18 | 230          | REJ.                             | 100%         |                  |
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|                               |                       |                     |                  |          |                  |                 |                    |                   |  |    |   |     |              |                                  |              |                  |
|                               |                       |                     |                  |          |                  |                 |                    |                   |  |    |   |     |              |                                  |              |                  |
|                               |                       |                     |                  |          |                  |                 |                    |                   |  |    |   |     |              |                                  |              |                  |
|                               |                       |                     |                  |          |                  |                 |                    |                   |  |    |   |     |              |                                  |              |                  |
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|---|--|
| EXAMINED BY 主探<br><i>Jinfeng 10.04.15</i> | REVIEWED BY 审核<br><i>Hanben 10.04.15</i> |
| 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                        |



# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

REPORT NO. 报告编号 B787-UT-12336R1      DATE 2010.04.27      PAGE 1 OF 1      Revision No: 0

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

ITEMS NAME: 7CW BOTTOM PLATE AND SIDE PLATE SPLICE      DRAWING NO.: SEG037A      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  
 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      16/18mm

### TRANSDUCER 探头

| MANUFACTURER<br>制造商 | ANGLE<br>角度 | FREQUENCY<br>频率 | SIZE<br>尺寸 | MANUFACTURER<br>制造商   | ANGLE<br>角度 | FREQUENCY<br>频率 | SIZE<br>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<br>焊缝部件编号 | INDICATION NO.<br>指示号 | PROBE ANGLE<br>探测角度 | FROM FACE<br>检测面 | LEG (次数) | DECIBELS分贝       |                 |                    |                   | DISCONTINUITY 不连续性                     |                  |                             |              |              | Discontinuity Evaluation<br>缺陷估计 | Remark<br>备注 |
|-------------------------------|-----------------------|---------------------|------------------|----------|------------------|-----------------|--------------------|-------------------|--|------------------|-----------------------------|--------------|--------------|----------------------------------|--------------|
|                               |                       |                     |                  |          | Indication Level | Reference Level | Attenuation Factor | Indication Rating | LOCATION OF DISCONTINUITY<br>不连续位置(mm) |                  |                             |              |              |                                  |              |
|                               |                       |                     |                  |          | a                | b               | c                  | d                 | Length<br>长度                           | Sound Path<br>声程 | Depth from Surface<br>距表面深度 | From X<br>距X | From Y<br>距Y |                                  |              |
| SEG037A-001                   | 1R1                   | 70                  |                  |          |                  | 32              |                    |                   |  |                  |                             |              |              | ACC.                             | 100%         |

AFTER B-WR12122

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| EXAMINED BY 主探<br>LEVEL - II SIGN / DATE 10.04.27<br>质量经理 / QCM<br>签字 SIGN / 日期 DATE | REVIEWED BY 审核<br>LEVEL - II SIGN / DATE 10.04.27<br>用户 CUSTOMER<br>签字 SIGN / 日期 DATE |
|--|---|



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:** 26-Jan-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:** 05.03.06-000612

**Subject:** NCR No. ZPMC-0624

**Reference Description:** An UT indication (in 7EW FB to LD Weld) found by QA verification at the location where the contractor has tested and accepted

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:** 07

### Remarks:

During the Quality Assurance Ultrasonic Testing (UT) review of welds located on Orthotropic Box Girder (OBG) segment 7EW, this Quality Assurance Inspector (QA) discovered the following issues:

- One (1) longitudinal linear indication measuring approximately 25mm in length.
- The indication dBs rating is a +7.
- Material thickness is 14mm.
- The depth of the indication is approximately 5mm.
- The weld is identified as SEG041C-013 and located at Panel Point PP59 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 230mm from top.
- The weld is a Complete Joint Penetration (CJP) "T" joint joining Longitudinal diaphragm plate (Non SPCM) to Floor Beam Plate X48B (Non SPCM).
- The Notice of Witness Inspection (NWIT) No. is 005120. 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 twenty five (25%) percent UT inspection of this weld.

Please see attached NCR ZPMC-624 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.

**Transmitted by:** Ching Chao

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# NCT

( Continued Page 2 of 2 )

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Attachments: ZPMC-0624

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  
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-000653**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 25-Jan-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0624**Type of problem:**Welding  Concrete  Other Welding  Curing  Procedural  Bridge No: 34-0006Joint fit-up  Coating  Other  Component: OBG Segment 7EW FB to LD WeldProcedural  Procedural  Description: Missed UT Indication by QC

**Reference Description:** An UT indication (in 7EW FB to LD Weld) found by QA verification at the location where the contractor has tested and accepted

**Description of Non-Conformance:**

During the Quality Assurance Ultrasonic Testing (UT) review of welds located on Orthotropic Box Girder (OBG) segment 7EW, this Quality Assurance Inspector (QA) discovered the following issues:

- One (1) longitudinal linear indication measuring approximately 25mm in length.
- The indication dBs rating is a +7.
- Material thickness is 14mm.
- The depth of the indication is approximately 5mm.
- The weld is identified as SEG041C-013 and located at Panel Point PP59 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 230mm from top.
- The weld is a Complete Joint Penetration (CJP) "T" joint joining Longitudinal diaphragm plate (Non SPCM) to Floor Beam Plate X48B (Non SPCM).
- The Notice of Witness Inspection (NWIT) No. is 005120. 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 twenty five (25%) 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 10dBs and under for material 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:** Subhasis Bera  
**Name of individual from Contractor notified:** Peter Shaw  
**Time and method of notification:** 1830 hours, 01-25-10, Email  
**Name of Caltrans Engineer notified:** Bill Howe, Ching Chao  
**Time and method of notification:** 1330 hours, 01-26-10, 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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# 焊缝返修报告

版本 Rev. No.

## Welding Repair Report

**0**

|                      |                 |                    |                                |                             |               |
|----------------------|-----------------|--------------------|--------------------------------|-----------------------------|---------------|
| 项目名称<br>Project Name | 美国海湾大桥<br>SFOBB | 部件图号<br>Drawing No | SEG041C                        | 报告编号<br>Report No.          | B-WR12123     |
| 合同号<br>Contract No.  | 04-0120F4       | 部件名称<br>Items Name | 7EW LONGITUDINAL DIAPH<br>RAGM | NDT报告编号<br>Report No.of NDT | B787-UT-12337 |
| 项目编号<br>Project No.: | ZP06-787        |                    |                                |                             |               |

### 焊缝缺陷描述:

#### Description of welding discontinuity:

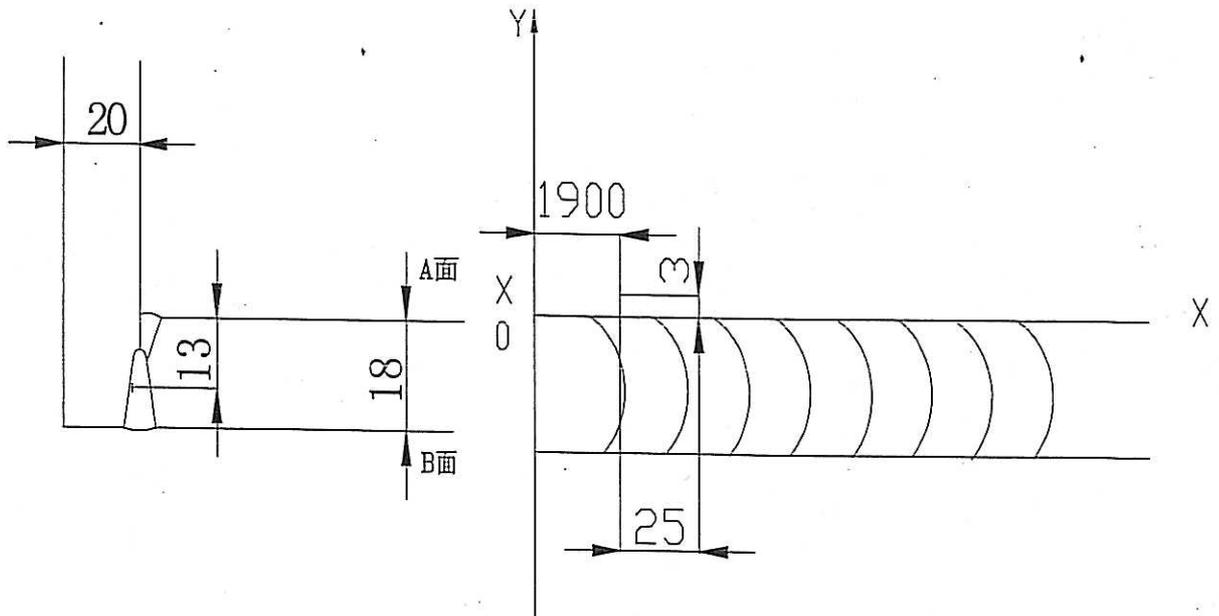
Rejected indication found by ultrasonic inspection is less than the maximum allowance aggregate length.

(UT探伤发现的缺陷总长度小于最大允许长度。) SEG041C-013

检验员 (Inspector) Jin Feng 日期(Date): 2010.04.15

### 焊缝返修位置示意图:

#### Draft of welding discontinuity:



WELD NUMBER: SEG041C-013

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): *Lizhiqiang* 日期(Date): *4.18*

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. 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: *hexiao*  
Technical engineer

审核:  
Approved by

日期 *10-7-18*  
Date



# 焊缝返修报告

## Welding Repair Report

版本 Rev. No.

**0**

|                      |                 |                    |                                |                              |               |
|----------------------|-----------------|--------------------|--------------------------------|------------------------------|---------------|
| 项目名称<br>Project Name | 美国海湾大桥<br>SFOBB | 部件图号<br>Drawing No | SEG041C                        | 报告编号<br>Report No.           | B-WR12123     |
| 合同号<br>Contract No.: | 04-0120F4       | 部件名称<br>Items Name | 7EW LONGITUDINAL DIA<br>PHRAGM | NDT报告编号<br>Report No. of NDT | B787-UT-12337 |
| 项目编号<br>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): *L. Zhang* 日期(Date): 4.18

|   |  |  |                                    |
|---|--|--|------------------------------------|
| 参照的WPS编号<br>Repair WPS No.                        | WPS-345-SMAW-1<br>G(1F)-Repair<br>WPS-345-FCAW-1<br>G(1F)-Repair-1<br>WPS-345-SMAW-2<br>G(2F)-Repair<br>WPS-345-FCAW-2<br>G(2F)-Repair-1 | 工艺员<br>technologist                          | <i>Maxiao Lin</i><br>4.18          |
| 返修(碳刨)前预热温度<br>Preheat temperature before gouging | <i>720</i>   | 返修的缺陷<br>Description of discontinuity        | <i>Z-F</i>                         |
| 焊前处理检查<br>Inspection before welding               | <i>Acc</i>   | 焊前预热温度<br>Preheat temperature before welding | <i>1090</i>                        |
| 最大碳刨深度<br>Max. depth of gouging                   | <i>7mm</i>   | 碳刨总长<br>Total length of gouging              | <i>125mm</i>                       |
| 焊工<br>welder                                      | <i>045138</i>  | 焊接类型<br>welding type                         | <i>Smaw</i>                        |
| 焊接电流<br>Current                                   | <i>172</i>   | 焊接电压<br>Voltage                              | <i>25-3</i>                        |
|   |  | 焊接位置<br>position                             | <i>ZG</i>                          |
|   |  | 焊接速度<br>Speed                                | <i>159</i>                         |
| <b>返修后检查</b><br>Inspection After repairing:       |  |  |                                    |
| 外观检查<br>VT result                                 | <i>Acc</i>   | 检验员<br>Inspector                             | <i>07120701</i><br><i>L. Zhang</i> |
| NDT复检<br>NDT result                               | <i>Acc</i>   | 探伤员<br>NDT person                            | <i>Forney</i>                      |
| 日期<br>Date  |  | 日期<br>Date                                   | <i>2010.4.23</i><br><i>10.4.27</i> |
| 见证:<br>Witness/Review:                            |  |  |                                    |
| 备注:<br>Remark:                                    |  |  |                                    |





# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

REPORT NO. 报告编号 B787-UT-12337R1      DATE 2010.04.27      PAGE 1 OF 1      Revision No: 0

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

ITEMS NAME: 7EW LONGITUDINAL DIAPHRAGM      DRAWING NO.: SEG041C      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  
 SMAW      CORNER-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 IIW BLOCK TYPE II      C.M.C      A709M-345T2/F2-X      18/20mm

### 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 |                               |           | Sound Path 声程 |
| SEG041C-013                | 1R1                | 70               |               |          |                  | 32              |                    |                   |                                     |   |   |   |           |                               | ACC.      | 100%          |

AFTER B-WR12123

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| EXAMINED BY 主探 <u>Jing Feng</u><br>LEVEL - II SIGN / DATE <u>10.04.27</u> | REVIEWED BY 审核 <u>Huang Jing</u><br>LEVEL - II SIGN / DATE <u>10.04.27</u> |
| 质量经理 / QCM _____<br>签字 SIGN / 日期 DATE _____                               | 用户 CUSTOMER _____<br>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:** 05-Jan-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:** 05.03.06-000551

**Subject:** NCR No. ZPMC-0561

**Reference Description:** MT indications discovered after ZPMC had tested and accepted welds on Segment 8BE Corner Assembly

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 Magnetic Particle Testing (MT) review of welds located on Segment 8BE, this Quality Assurance Inspector (QA) discovered the following issues:

- Two (2) Longitudinal linear indication measuring approximately 22mm and 35mm in length.
- The welds are identified as: CSD5-PP67-052 (22 mm) and CSD5-PP67-026 (35 mm).
- The welds are a Fillet Weld type joining the Side Plate (SP467A) and Edge Plate (EP95A) stiffeners to Corner Assembly (CA52A) web plates.
- The OBG 8BE segment is located outside in front of the Blast Shop.

The Notice of Witness Inspection Number (NWIT) is 004978. The indication is located inside the area that has been previously tested and accepted by ZPMC Quality Control (QC) personnel. ZPMC's QC personnel are required to perform twenty five (25%) percent MT 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. Missed MT indications are a chronic issue on the project. Provide the training and equipment required to the ZPMC MT technician to ensure this type of indication is not missed in the future. A response for the resolution of this issue is expected within 7 days.

**Transmitted by:** Bill Howe Sr. Transportation Engineer

**Attachments:** ZPMC-0561

**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  
 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-000588

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

**Date:** 03-Jan-2010

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

**NCR #:** ZPMC-0561

**Type of problem:**

Welding  Concrete  Other

Welding  Curing  Procedural  **Bridge No:** 34-0006

Joint fit-up  Coating  Other  **Component:** OBG Segment 8BE Corner Assembly

Procedural  Procedural  **Description:** Missed MT indication by QC

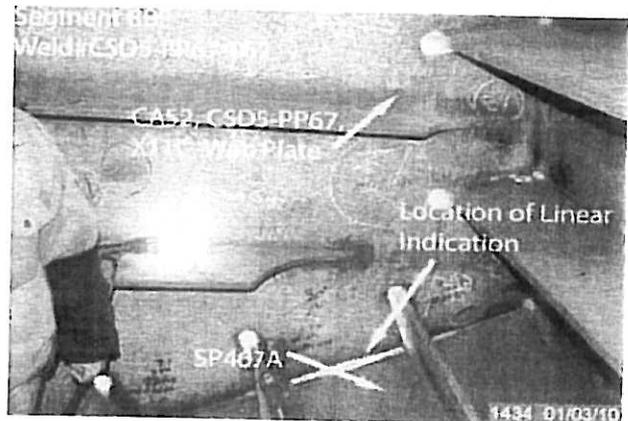
**Reference Description:** MT indications discovered after ZPMC had tested and accepted welds on Segment 8BE Corner Assembly

**Description of Non-Conformance:**

During the Quality Assurance Magnetic Particle Testing (MT) review of welds located on Segment 8BE, this Quality Assurance Inspector (QA) discovered the following issues:

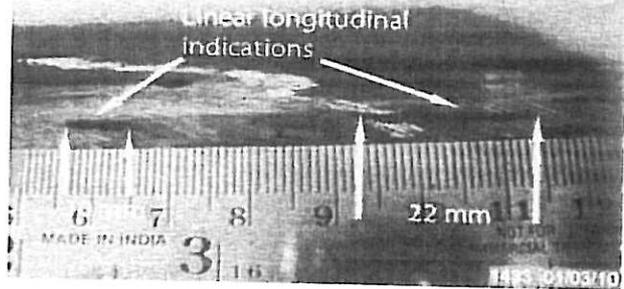
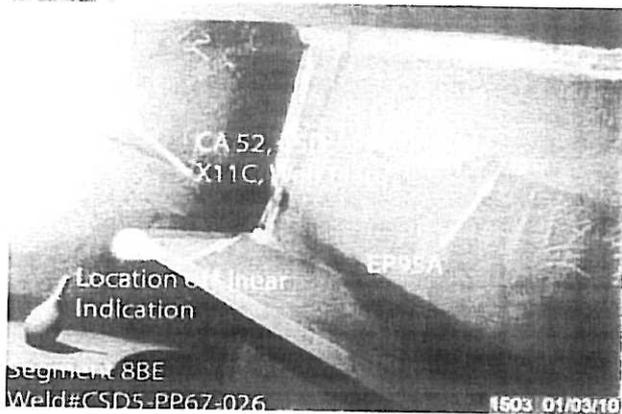
- Two (2) Longitudinal linear indication measuring approximately 22mm and 35mm in length.
- The welds are identified as: CSD5-PP67-052 (22 mm) and CSD5-PP67-026 (35 mm).
- The welds are a Fillet Weld type joining the Side Plate (SP467A) and Edge Plate (EP95A) stiffeners to Corner Assembly (CA52A) web plates.
- The OBG 8BE segment is located outside in front of the Blast Shop.

The Notice of Witness Inspection Number (NWIT) is 004978. The indication is located inside the area that has been previously tested and accepted by ZPMC Quality Control (QC) personnel. ZPMC's QC personnel are required to perform twenty five (25%) percent MT inspection of this weld.



## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



### Applicable reference:

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 (02) Section 6.26.2 – “Welds that are subject to MT in addition to visual inspection shall have no cracks.

**Who discovered the problem:** Hiranch Patel

**Name of individual from Contractor notified:** Man Lee Kit

**Time and method of notification:** 1700 hours, 01/03/10, Verbal

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

**Time and method of notification:** 2230 hours, 01/03/10, Email

**QC Inspector's Name:** Wang Xian Pin

**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.

**Inspected By:** Carreon, Albert

Lead Reviewer/Task Leader

**Reviewed By:** Wahbeh, Mazen

SMR





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-Jan-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:** 05.03.06-000544

**Subject:** NCR No. ZPMC-0554

**Reference Description:** Missed MT transverse indication by QC for Segment 8CE Corner Assembly

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 Magnetic Particle Testing (MT) review of welds located on OBG Corner Assembly, this Quality Assurance Inspector (QA) discovered the following issue:

- One (1) Transverse linear indication that measured approximately 8mm in length.
- The weld is identified as CA051-010 at panel point (PP64.5 in Segment 8BE).
- The weld is a fillet weld joining the Vertical Longitudinal Truss (X74H) to the Side Plate (SP458A)
- The Side Panel plate is identified as: PL1353A.
- The OBG Corner Assembly is located in the outside repair yard, south side of the Bay14.

The Notice of Witness Inspection Number (NWIT) is 004978. 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% Magnetic Particle 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. Provide training and equipment as required to the ZPMC MT technician in order to pick up these indications in the future. A response for the resolution of this issue is expected within 7 days.

**Transmitted by:** Bill Howe Sr. Transportation Engineer

**Attachments:** ZPMC-0554

**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  
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-000581**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 02-Jan-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0554**Type of problem:**Welding  Concrete  Other Welding  Curing  Procedural  **Bridge No:** 34-0006Joint fit-up  Coating  Other  **Component:** Segment 8CE Corner AssemblyProcedural  Procedural  **Description:** Missed MT transverse indication by QC**Reference Description:** Missed MT transverse indication by QC for Segment 8CE Corner Assembly**Description of Non-Conformance:**

During the Quality Assurance Magnetic Particle Testing (MT) review of welds located on OBG Corner Assembly, this Quality Assurance Inspector (QA) discovered the following issue:

-One (1) Transverse linear indication that measured approximately 8mm in length.

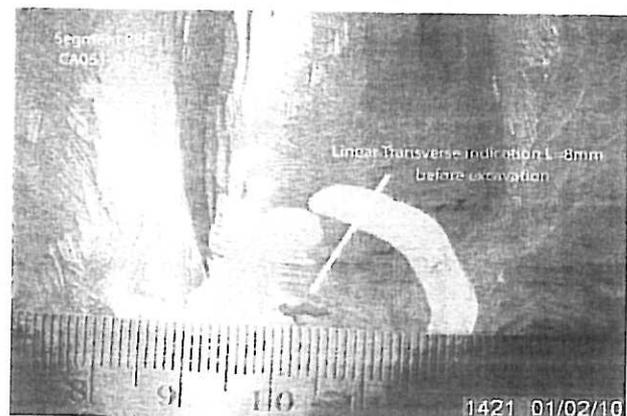
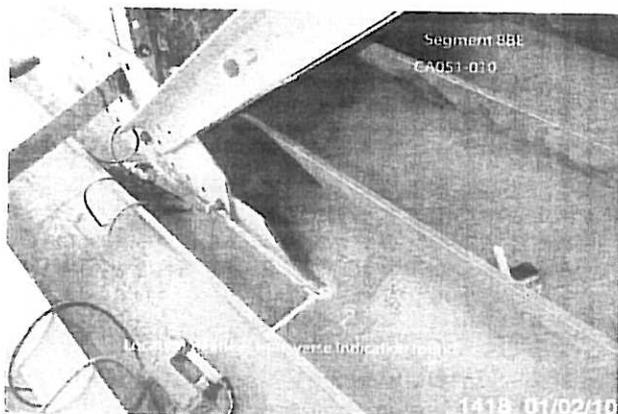
-The weld is identified as CA051-010 at panel point (PP64.5 in Segment 8BE).

-The weld is a fillet weld joining the Vertical Longitudinal Truss (X74H) to the Side Plate (SP458A)

-The Side Panel plate is identified as: PL1353A.

-The OBG Corner Assembly is located in the outside repair yard, south side of the Bay14.

The Notice of Witness Inspection Number (NWIT) is 004978. 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% Magnetic Particle inspection of this weld.

**Applicable reference:**

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

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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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 (02) Section 6.26.2 – “Welds that are subject to MT in addition to visual inspection shall have no cracks.

**Who discovered the problem:** Chandra Sudalaimuthu

**Name of individual from Contractor notified:** Peter Shaw

**Time and method of notification:** 1430 hours, 01/02/10, Verbal

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

**Time and method of notification:** 2300 hours, 01/02/10, Email

**QC Inspector's Name:** Wang Xian Pin

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

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**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-000644**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 30-May-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0520**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:** 15-Dec-2009**Description of Non-Conformance:**

During the Quality Assurance Ultrasonic Testing (UT) review of weld located on OBG Segment 7CW, this Quality Assurance Inspector (QA) discovered the following issue:

-A total of one (1) rejectable Class "A" indication measuring approximately 25mm in length.

-The Weld is a complete joint penetration (CJP) Butt Weld joining Side Plate SP99A to SP431A and is identified as SEG37A-001.

-The Segment is located in the repair yard north of the blast shop.

The Notice of Witness Inspection Number (NWIT) is 004866. 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 splice weld.

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

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

**Corrective action taken:**

Contractor submitted NDT documentation verifying weld was repaired and is in conformance with Contract specifications. Supplemental training was also supplied to NDT technicians.

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

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

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# QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

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**Inspected By:** Simonis,Jim

Quality Assurance Inspector

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**Reviewed By:** Wahbeh,Mazen

QA Reviewer