

**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-000890**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 11-Nov-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0852**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> Backfill Plates
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b>	

**Reference Description:** Remove 119m Backfill plate weld without Engineer's approval**Description of Non-Conformance:**

During the Caltrans Quality Assurance (QA) in-process observation on Lift-4 tower shafts, this QA Inspector discovered the following issues:

-After Ultrasonic Testing (UT) rejection of backfill plate welds by ZPMC quality control personnel, ZPMC fabrication personnel removed a total four (4) Non-SPCM welds in North, South and East shafts respectively without notifying the Engineer .

- The Non-SPCM welds are Butt-Joint Complete Joint Penetration (CJP) welds joining backfill plate to doubler plate.

- These welds measured to be approximately 330 mm in length.

- Backfill plate thickness is 50 mm.

1)North Shaft - NSD1-FASA4-1B/E#14

2)North Shaft - NSD1-FASA4-1B/E#17

3)East Shaft - ESD1-FASA4-2B/E#26

4)East Shaft - ESD1-FASA4-2B/E#27

- The whole length of the Non-SPCM welds has been removed.

- The components are located at 119m, Tower Heavy Dock.

For further information, please see the attached pictures below.

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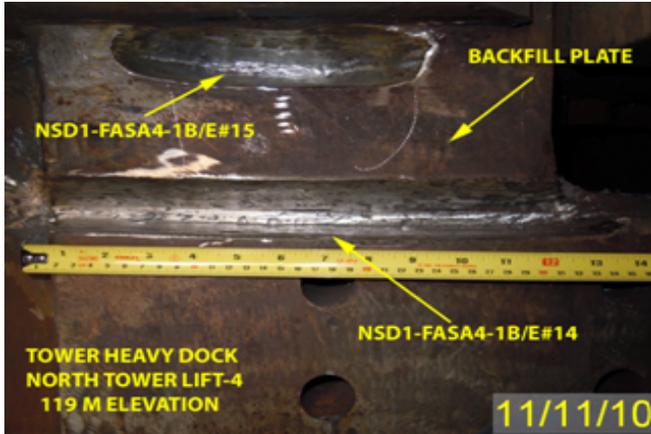
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# QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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### Applicable reference:

AWS D1.5 2002 Section 3.7.5: "The Engineer shall be notified before improperly fitted and welded members are cut apart".

Special Provision 8-3 Welding Section: " The Engineer shall be notified immediately in writing when welding problems, deficiencies, base metal repairs, or any other type of repairs not submitted in the WQCP are discovered and also of the proposed repair procedures to correct them."

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

**Name of individual from Contractor notified:** Bi Dewei

**Time and method of notification:** 0900 hours, 11/11/10, Verbal

**Name of Caltrans Engineer notified:** Sean Eagen

**Time and method of notification:** 0830, 11/12/10, Email

**QC Inspector's Name:** Sun Zi Wang

**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:** Ng,Michael

QA Inspector

**Reviewed By:** Devey,Jim

SMR



**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:** 15-Nov-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:** 05.03.06-000847

**Subject:** NCR No. ZPMC-0852

**Reference Description:** Remove 119m Backfill plate weld without Engineer's approval

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:** Tower **Lift:** 04

### Remarks:

During the Caltrans Quality Assurance (QA) in-process observation on Lift-4 tower shafts, this QA Inspector discovered the following issues:

- After Ultrasonic Testing (UT) rejection of backfill plate welds by ZPMC quality control personnel, ZPMC fabrication personnel removed a total four (4) Non-SPCM welds in North, South and East shafts respectively without notifying the Engineer .
- The Non-SPCM welds are Butt-Joint Complete Joint Penetration (CJP) welds joining backfill plate to doubler plate.
- These welds measured to be approximately 330 mm in length.
- Backfill plate thickness is 50 mm.
  - 1)North Shaft - NSD1-FASA4-1B/E#14
  - 2)North Shaft - NSD1-FASA4-1B/E#17
  - 3)East Shaft - ESD1-FASA4-2B/E#26
  - 4)East Shaft - ESD1-FASA4-2B/E#27
- The whole length of the Non-SPCM welds has been removed.
- The components are located at 119m, Tower Heavy Dock.

### Action Required and/or Action Taken:

Propose resolutions for the identified non-conformance items and document that the various deficiencies have been brought in compliance with contract requirements. Also propose a resolution that addresses the apparent failure of Quality Control to identify the non-conformance. Provide documentation of the steps taken by the Quality Control Manager to prevent future occurrences.

The response for the resolution of this issue is requested within 7 days.

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# NCT

( Continued Page 2 of 2 )

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**Transmitted by:** Sean Eagen      Transportation Engineer

**Attachments:**    ZPMC-0852

**cc:**    Rick Morrow, Peter Siegenthaler, Brian Boal, Mark Woods, Contract Files, Ching Chao, Bill Casey

**File:** 05.03.06

## NCR PROPOSED RESOLUTION

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

**Attention:** Siegenthaler, Peter  
Resident Engineer

**Ref:** 05.03.06-000847

**Subject:** NCR No. ZPMC-0852

**Dated:** 24-Nov-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000842 Rev: 00

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**Contractor's Proposed Resolution:**

**Reference Resolution:** See ZPMC's comments  
ZPMC-0852  
See ZPMC's comments

**Submitted by:** Ishibashi, Joshua  
**Attachment(s):** ABF-NPR-000842R00;

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**Caltrans' comments:**

**Status:** CLO

**Date:** 30-Nov-2010

This proposed resolution is acceptable. The documentation received is sufficient and the Department concurs that Non-Conformance ZPMC-0852 is closed.

**Submitted by:** Rizzardo, Gina  
**Attachment(s):**

**Date:** 30-Nov-2010



No. T-179

## LETTER OF RESPONSE

**TO: American Bridge/Flour JV**

**DATE: 2010-11-24**

**REGARDING: NCR-000890(ZPMC-0852),**

ZPMC received NCR-000890(ZPMC-0852), it mentioned that CT inspectors found ZPMC fabrication personnel removed a total four Non-SPCM welds without report.

After the investigation, we acknowledged that the WR was issued and accepted on 10<sup>th</sup> November (See T-WR3744/3745/3746/3747). But the foreman started the work after being informed the report was acceptable, but, without paper on site.

We have indicated to the sub-contractor that it was a wrong procedure for the fabrication. And the sub-contractor is required to make an education for his workers. QC department will also issue punishment list for the sub-contractor for that such thing will not happen again. Now, all these welds have passed NDT and are green tagged.

Here attached related NDT reports and Weld report, hope CT to take a review and close these NCRs.

**ATTACHMENT:**

**NCR-000890(ZPMC-0852)**

**T-WR3744**

**T-WR3745**

**T-WR3746**

**T-WR3747**

**T-WR3769**

**T-CWR708**

**T787-MT-11421**

**T787-MT-11422**

**T787-UT-3288R1**

**T787-UT-3290R2**

**T787-UT-3290R3**

*Zhao Feng*  
*2010.11.24*



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: 15-Nov-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-0852

Job Name: SAS Superstructure  
Document No: 05.03.06-000847

Reference Description: Remove 119m Backfill plate weld without Engineer's approval

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: Tower

Lift: 04

### Remarks:

During the Caltrans Quality Assurance (QA) in-process observation on Lift-4 tower shafts, this QA Inspector discovered the following issues:

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- The whole length of the Non-SPCM welds has been removed.

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### Action Required and/or Action Taken:

Propose resolutions for the identified non-conformance items and document that the various deficiencies have been brought in compliance with contract requirements. Also propose a resolution that addresses the apparent failure of Quality Control to identify the non-conformance. Provide documentation of the steps taken by the Quality Control Manager to prevent future occurrences.

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15.04  
05.03.06-000847,NCT

Received  
NCT-000847 15 Nov 10 Page 1 of 2

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NCT

( Continued Page 2 of 2 )

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Transmitted by: Sean Eagen      Transportation Engineer

Attachments:    ZPMC-0852

cc:    Rick Morrow, Peter Siegenthaler, Brian Boal, Mark Woods, Contract Files, Ching Chao, Bill Casey

File:    05.03.06

**DEPARTMENT OF TRANSPORTATION**  
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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

**Report No:** NCR-000890

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

**Date:** 11-Nov-2010

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

**NCR #:** ZPMC-0852

### Type of problem:

**Welding**  **Concrete**  **Other**

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

**Joint fit-up**  **Coating**  **Other**  **Component:** Backfill Plates

**Procedural**  **Procedural**  **Description:**

**Reference Description:** Remove 119m Backfill plate weld without Engineer's approval

### Description of Non-Conformance:

During the Caltrans Quality Assurance (QA) in-process observation on Lift-4 tower shafts, this QA Inspector discovered the following issues:

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3)East Shaft - ESD1-FASA4-2B/E#26

4)East Shaft - ESD1-FASA4-2B/E#27

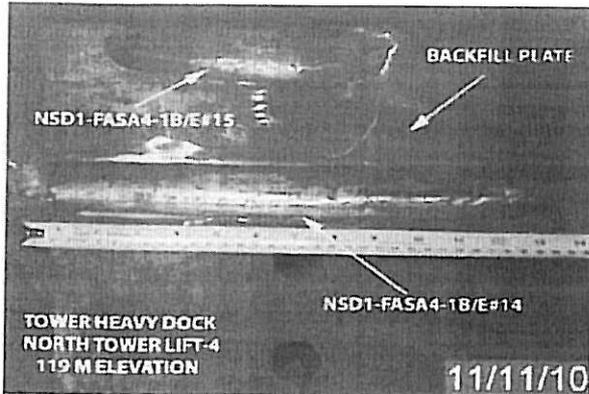
- The whole length of the Non-SPCM welds has been removed.

- The components are located at 119m, Tower Heavy Dock.

For further information, please see the attached pictures below.

## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )



**Applicable reference:**

AWS D1.5 2002 Section 3.7.5: "The Engineer shall be notified before improperly fitted and welded members are cut apart".

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

**Name of individual from Contractor notified:** Bi Dewei

**Time and method of notification:** 0900 hours, 11/11/10, Verbal

**Name of Caltrans Engineer notified:** Sean Eagen

**Time and method of notification:** 0830, 11/12/10, Email

**QC Inspector's Name:** Sun Zi Wang

**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:** Ng, Michael

QA Inspector

**Reviewed By:** Devey, Jim

SMR

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# 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	ESD1-FASA4-2B/E	报告编号 Report No.	T-WR3744
合同号 Contract No.:	04-0120F4	部件名称 Items Name	TOWER(E) CROSS B RACING PLATE	NDT报告编号 Report No.of NDT	T787-UT-3290
项目编号 Project No.:	ZP06-787				

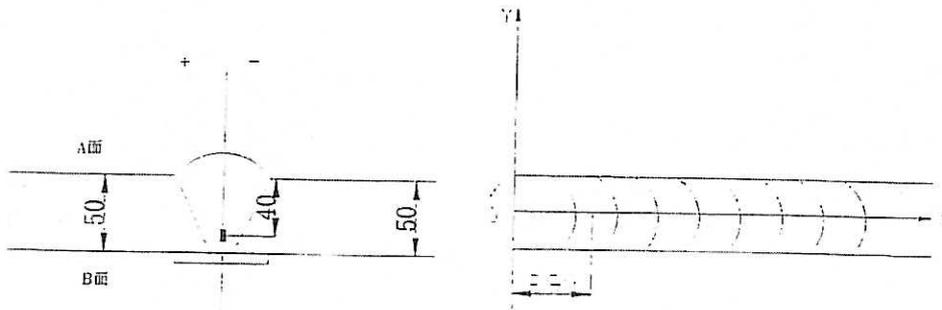
焊缝缺陷描述: (普通UT探伤发现的缺陷长度小于最大允许长度)

( Description of welding discontinuity )

Weld No. 焊缝编号为: ESD1-FASA4-2B/E-27Welder ID No. (焊工编号): 046769Position:(位置) : 1G检验员 (Inspector) : Dai Gengsheng日期(Date) : 2010.11.10

焊缝返修位置示意图:

Draft of welding discontinuity:



WELD NUMBER: ESD1-FASA4-2B/E-27

产生原因:

Caused:

1、焊缝未及时处理干净。

1. Did not clear the weld pass completely in time.

车间负责人(Foreman):

*Lu Jian Hua*

日期(Date): 2010-11-10

处理意见

Disposition:

1. 准备一个正确的接头形式, 具体参见返修的WPS;
2. 按照焊接返修工艺规程(WPS)打磨或碳刨缺陷区域至光滑;
3. 如果仍发现有缺陷, 通过打磨的方法去除所有缺陷以确认缺陷完全被消除;
4. 根据批准的焊接返修工艺规程(WPS)进行预热及焊接;
5. 将焊接区域打磨至与母材平齐;
6. 对返修区域作NDT检测。

1. Prepare the joint according to the approved WPS.
2. Grind or gouge the repair area to a smooth finish according to the approved repair WPS.
3. Remove all defects by grinding to ensure all defects are completely removed if defects still exist.
4. Preheat and weld according to the approved WPS.
5. Grind the weld flush after welding.
6. Perform NDT of the repair area.

工艺:  
Technical engineer

*Zhang Jin Dong*

审核:  
Approved by

*Lu Jian Hua*

日期  
Date



# 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	ESD1-FASA4-2B/E	报告编号 Report No.	T-WR3745
合同号 Contract No.:	04-0120F4	部件名称 Items Name	TOWER(E) CROSS B RACING PLATE	NDT报告编号 Report No.of NDT	T787-UT-3290
项目编号 Project No.:	ZP06-787				

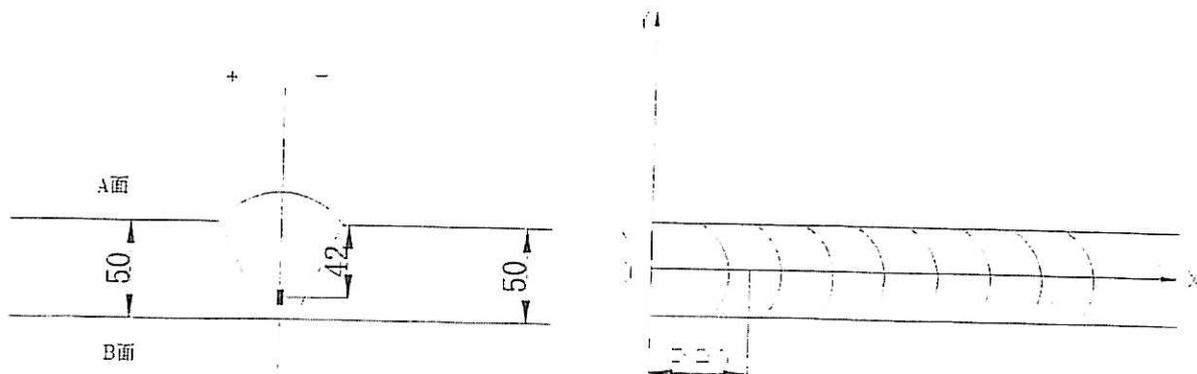
焊缝缺陷描述: (普通UT探伤发现的缺陷长度小于最大允许长度)

( Description of welding discontinuity )

Weld No. 焊缝编号为: ESD1-FASA4-2B/E-26Welder ID No. (焊工编号): 046769Position:(位置) : 1G检验员 (Inspector) : Dai Gengsheng日期(Date) : 2010.11.10

焊缝返修位置示意图:

Draft of welding discontinuity:



WELD NUMBER: ESD1-FASA4-2B/E-26

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 Jin Guan*

日期(Date):

*2010-11-10*

处理意见

Disposition:

1. 准备一个正确的接头形式，具体参见返修的WPS;
2. 按照焊接返修工艺规程（WPS）打磨或碳刨缺陷区域至光滑;
3. 如果仍发现有缺陷，通过打磨的方法去除所有缺陷以确认缺陷完全被清除;
4. 根据批准的焊接返修工艺规程（WPS）进行预热及焊接;
5. 将焊接区域打磨至与母材平齐;
6. 对返修区域作NDT检测。

1. Prepare the joint according to the approved WPS.
2. Grind or gouge the repair area to a smooth finish according to the approved repair WPS.
3. Remove all defects by grinding to ensure all defects are completely removed if defects still exist.
4. Preheat and weld according to the approved WPS.
5. Grind the weld flush after welding.
6. Perform NDT of the repair area.

工艺: *Zhang Jin Dong*  
Technical engineer

审核: *Lu Jin Hua*  
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	美国海湾大桥 SFOBB	部件图号 Drawing No	NSD1-FASA4-1B/E	报告编号 Report No.	T-WR3746
合同号 Contract No.:	04-0120F4	部件名称 Items Name	TOWER(N) CROSS B RACING PLATE	NDT报告编号 Report No.of NDT	T787-UT-3288
项目编号 Project No.:	ZP06-787				

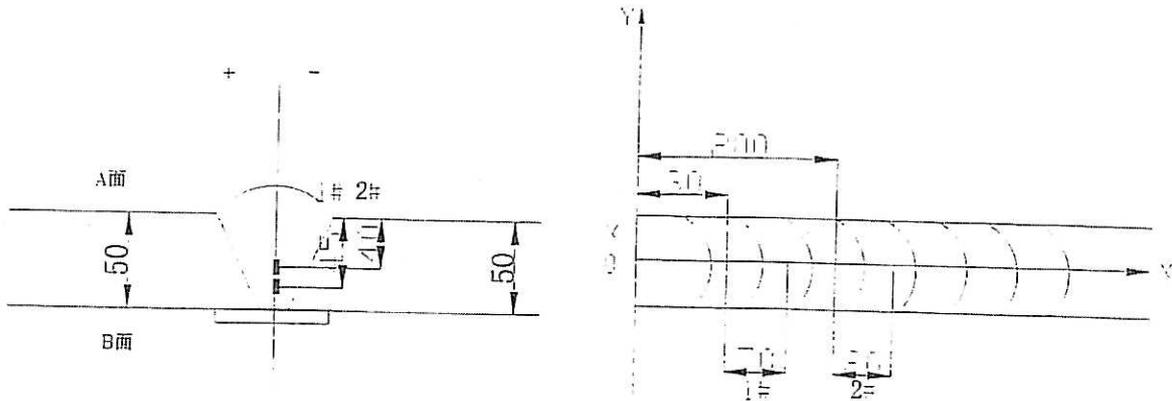
焊缝缺陷描述：(普通UT探伤发现的缺陷长度小于最大允许长度)  
( Description of welding discontinuity )

Weld No. 焊缝编号为： NSD1-FASA4-1B/E-17

Welder ID No. (焊工编号): 040582      Position:(位置) : 2G

检验员 (Inspector) : Lin Jian      日期(Date) : 2010.11.10  
*Lin Jian*

焊缝返修位置示意图：  
Draft of welding discontinuity:



WELD NUMBER: NSD1-FASA4-1B/E-17

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): *Wu Fei* 日期(Date): 2010.11.10

处理意见

Disposition :

1. 准备一个正确的接头形式, 具体参见返修的WPS;
  2. 按照焊接返修工艺规程 (WPS) 打磨或碳刨缺陷区域至光滑;
  3. 如果仍发现有缺陷, 通过打磨的方法去除所有缺陷以确认缺陷完全被消除;
  4. 根据批准的焊接返修工艺规程 (WPS) 进行预热及焊接;
  5. 将焊接区域打磨至与母材平齐;
  6. 对返修区域作NDT检测。
- 
1. Prepare the joint according to the approved WPS.
  2. Grind or gouge the repair area to a smooth finish according to the approved repair WPS.
  3. Remove all defects by grinding to ensure all defects are completely removed if defects still exist.
  4. Preheat and weld according to the approved WPS.
  5. Grind the weld flush after welding.
  6. Perform NDT of the repair area.

工艺: *Zhang Jun Dong*  
Technical engineer

审核: *Wu Fei*  
Approved by

日期  
Date



# 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	NSD1-FASA4-1B/E	报告编号 Report No.	T-WR3747
合同号 Contract No.:	04-0120F4	部件名称 Items Name	TOWER(N) CROSS B RACING PLATE	NDT报告编号 Report No.of NDT	T787-UT-3288
项目编号 Project No.:	ZP06-787				

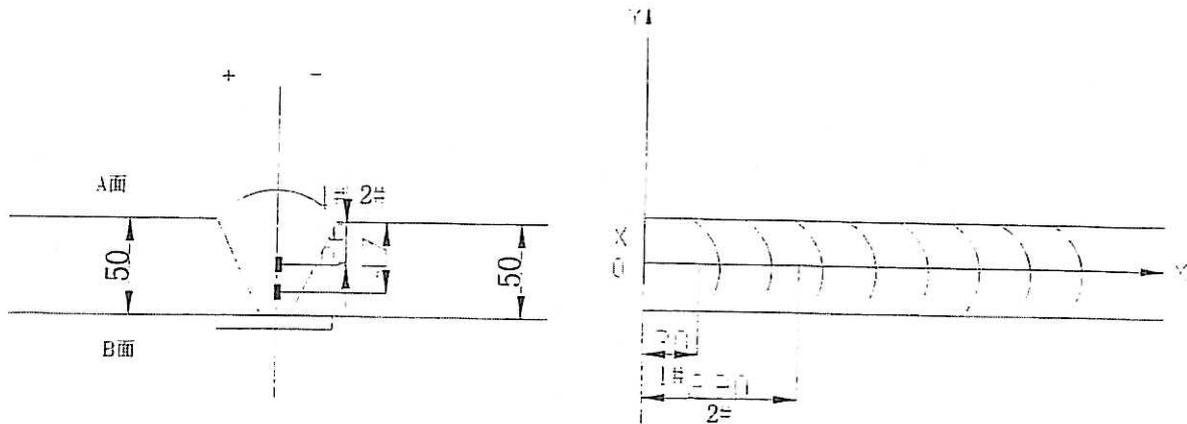
焊缝缺陷描述: (普通UT探伤发现的缺陷长度小于最大允许长度)

( Description of welding discontinuity )

Weld No. 焊缝编号为: NSD1-FASA4-1B/E-14Welder ID No. (焊工编号): 040582Position:(位置) : 2G*Lin Jian*检验员 (Inspector) : Lin Jian日期(Date) : 2010.11.10

焊缝返修位置示意图:

Draft of welding discontinuity:



WELD NUMBER: NSD1-FASA4-1B/E-14

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): *W. Ye Fei* 日期(Date): 2010.11.10

处理意见

Disposition:

1. 准备一个正确的接头形式，具体参见返修的WPS;
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3. 如果仍发现有缺陷，通过打磨的方法去除所有缺陷以确认缺陷完全被消除;
4. 根据批准的焊接返修工艺规程（WPS）进行预热及焊接;
5. 将焊接区域打磨至与母材平齐;
6. 对返修区域作NDT检测。

1. Prepare the joint according to the approved WPS.
2. Grind or gouge the repair area to a smooth finish according to the approved repair WPS.
3. Remove all defects by grinding to ensure all defects are completely removed if defects still exist.
4. Preheat and weld according to the approved WPS.
5. Grind the weld flush after welding.
6. Perform NDT of the repair area.

工艺:  
Technical engineer

*Zhang Jun Dong*

审核:  
Approved by

*Lu Jun Han*

日期  
Date



# 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	ESD1-FASA4-2B/E	报告编号 Report No.	T-WR3769
合同号 Contract No.:	04-0120F4	部件名称 Items Name	TOWER(E) CROSS B RACING PLATE	NDT报告编号 Report No. of NDT	T787-UT-3290R1
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述：(普通UT探伤发现的缺陷长度小于最大允许长度)  
( Description of welding discontinuity )

Weld No. 焊缝编号为: ESD1-FASA4-2B/E-27

Welder ID No. (焊工编号): 044541 054460

Position:(位置) : 2G

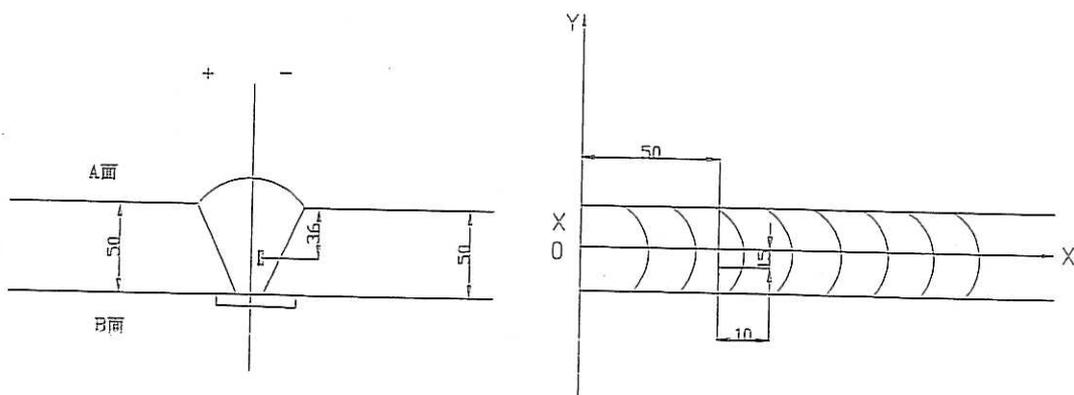
检验员 (Inspector) : Xu Ronggang

日期(Date) : 2010.11.14

*Xu Ronggang*

焊缝返修位置示意图:

Draft of welding discontinuity:



WELD NUMBER: ESD1-FASA4-2B/E-27

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):

*Lu Jiefu*

日期(Date):

*10/11/14*

处理意见

Disposition:

1. 准备一个正确的接头形式, 具体参见返修的WPS;
2. 按照焊接返修工艺规程(WPS)打磨或碳刨缺陷区域至光滑;
3. 如果仍发现有缺陷, 通过打磨的方法去除所有缺陷以确认缺陷完全被清除;
4. 根据批准的焊接返修工艺规程(WPS)进行预热及焊接;
5. 将焊接区域打磨至与母材平齐;
6. 对返修区域作NDT检测。

1. Prepare the joint according to the approved WPS.
2. Grind or gouge the repair area to a smooth finish according to the approved repair WPS.
3. Remove all defects by grinding to ensure all defects are completely removed if defects still exist.
4. Preheat and weld according to the approved WPS.
5. Grind the weld flush after welding.
6. Perform NDT of the repair area.

工艺:

Technical engineer

*Zhang Bin Dong*

审核:

Approved by

*Lu Jian Hua*

日期

Date

*10/11/14*



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

版本  
Rev. No.:  
0

项目名称 Project Name:	美国海湾大桥 SFOBB	部件图号 Drawing No.:	ESD1-FASA4-2B/E	报告编号 Report No.:	T-CWR708
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	TOWER(E) CR OSS BRACING PLATE	NDT 报告编号 NDT Report No.:	T787-UT-3290R2
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

Description of welding discontinuity:

超过二次以上UT缺陷返修  
over two times repair

weld No.(焊缝编号):

ESD1-FASA4-2B/E-26

Welder ID No. (焊工编号): 040723 044541

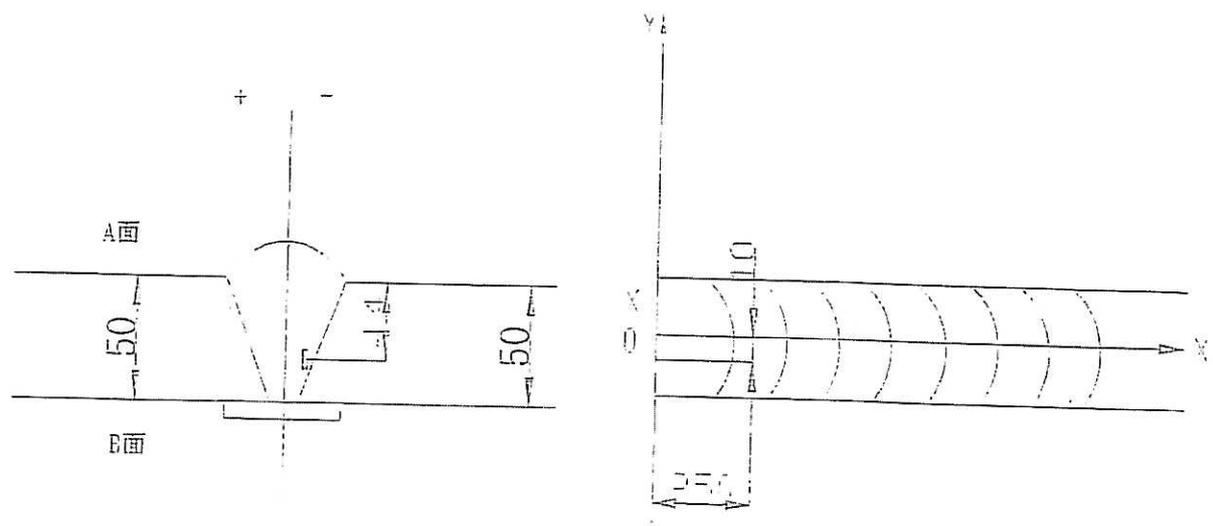
Welding Position(位置): 2G

检验员 (Inspector): Xu Ronqiang

日期(Date): 2010.11.16

焊缝返修位置示意图:

Draft of Welding Discontinuity:



WELD NUMBER: ESD1-FASA4-2B/E-26

主要原因:

Cause:

1. The weld defect location may not have been properly identified prior to grinding, i.e. the X and Y location was incorrect or the excavation was not centered on the defect, therefore the excavation did not encompass the whole defect.
1. 打磨前缺陷的位置没有标识清楚, 例如: XY的位置标的不正确, 或者没有将缺陷完全清除, 因此没有清楚所有的缺陷。

车间负责人 (Foreman):

L. Shiqun

日期 (Date):

2010.11.16

处理意见

Disposition:

1. QC /CWI shall monitor and direct all gouging, grinding and welding during the repair procedure.
  2. Remove defects by gouging and /or grinding. If gouging is used, preheat the repair area to a minimum temperature of 65°C.
  3. Prepare excavation according to the approved repair WPS.
  4. Grind the repair area to a smooth and shiny surface.
  5. Verify that no defects are present by VT and MT prior to welding.
  6. Clean excavation of all loose debris and MT powder.
  7. Weld according to the approved WPS.
  8. Preheat and maintain interpass temperature control in accordance to the approved WPS.
  9. QC shall ensure all slag has been removed prior to the deposition of the next pass.
  10. Blend the weld repaired areas into the adjacent weld or base metal by grinding.
  11. Perform VT, MT and UT inspection to the repaired areas.
- 
1. QC 和 CWI 应当监督和指导所有碳刨、打磨和焊接工作;
  2. 使用碳刨和打磨方式去除缺陷, 如果使用碳刨方式, 则在碳刨前须将返修区域预热到 65° C;
  3. 根据返修 WPS 准备合适的刨槽;
  4. 把返修区域打磨光滑;
  5. 在焊接前进行 VT、MT, 确保没有表面缺陷;
  6. 清理刨槽内的杂质和磨粉;
  7. 按照批准的 WPS 进行焊接;
  8. 根据批准的 WPS 进行焊接温度预热和道间温度控制;
  9. QC 应当确保在施焊下一道焊层前所有焊渣已被清理干净;
  10. 将返修区域与邻近焊缝或母材打磨至平滑过渡;
  11. 对返修区域进行 VT, MT 和 UT 检查。

工艺: Zhang Lindong  
Technical Engineer:

审核: Lu Jionghua  
Approved By:

日期: 2010.11.16  
Date:

Verified by: 3227

11/16/10



# REPORT OF MAGNETIC PARTICLE EXAMINATION

## 磁粉检测报告

REPORT NO. 报告编号 T787-MT-11421      DATE日期 2010.11.15      PAGE OF页码 1/1      Revision No: 0

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

DRAWING NO. 图号: NSD1-FASA4-1B/E CROSS BRACING PLATE      CALTRANS CONTRACT NO.: 加州工程编号 04-0120F4

REFERENCING CODE 参考规范编码: AWS D1.5-2002      ACCEPTANCE STANDARD 接受标准: AWS D1.5-2002      PROCEDURE NO. 程序编号: ZPQC-MT-01      CALIBRATION DUE DATE 仪器校正有效期: Dec. 28<sup>ST</sup>, 2010

EQUIPMENT 设备: MT YOKE      MANUFACTURER 制造商: PARKER      MODEL NO. 样式编号: B310S      SERIAL NO. 连续编号: 5945

MAGNETIZING METHOD 磁化方法: Continuous magnetic yoke 磁轭式连续法      CURRENT 电流: AC

PARTICLE TYPE 磁粉类型: Dry magnet powder 干磁粉      YOKE SPACING 磁轭间距: 70~150mm

MATERIAL TO BE EXAMINED 检测材料:  WELDING 焊接件  CASTING 铸件  FORGING 锻造      Material & thickness 母材, 厚度: A709M-HPS-485WT2-Z A709M-345F2-Z 50/90/40mm

WELDING PROCESS 焊接方法: SMAW      TYPE OF JOINT 焊缝类型: BUTT/T JOINT

WELD I.D. 焊缝编号	DISCONTINUITY不连续性			ACCEPT 接受	REJECT 拒收	REMARKS 备注
	INDICATION 指示	TYPE 类型	LENGTH IN mm 长度			
NSD1-FASA4-1B/E-17				ACC.		100%MT
NSD1-FASA4-1B/E-14				ACC.		100%MT
NSD1-FASA4-1B/E-15				ACC.		100%MT
NSD1-FASA4-1B/E-16				ACC.		100%MT
NSD1-FASA4-1B/E-29				ACC.		100%MT
NSD1-FASA4-1B/E-30				ACC.		100%MT

BLANK

EXAMINED BY 主探: Xie Genglin *Xie Geng Lin*      REVIEWED BY 审核: *Wang Mei*  
 LEVEL-II SIGN 签名 / DATE日期: 2010.11.15      LEVEL-II SIGN 签名 / DATE日期: 2010.11.15  
 质量经理 / QCM: *Lu Hanhua*      用户 CUSTOMER: \_\_\_\_\_  
 签字 SIGN / 日期 DATE: 2010.11.15      签字 SIGN / 日期 DATE: \_\_\_\_\_



# REPORT OF MAGNETIC PARTICLE EXAMINATION

## 磁粉检测报告

REPORT NO. 报告编号 T787-MT-11422      DATE日期 2010.11.18      PAGE OF页码 1/1      Revision No: 0

PROJECT NO. 工程编号: ZP06-787		CONTRACTOR: 用户: CALTRANS	
DRAWING NO. 图号: ESD1-FASA4-2B/E CROSS BRACING PLATE		CALTRANS CONTRACT NO.: 加州工程编号 04-0120F4	
REFERENCING CODE 参考规范编码 AWS D1.5-2002	ACCEPTANCE STANDARD 接受标准 AWS D1.5-2002	PROCEDURE NO. 程序编号 ZPQC-MT-01	CALIBRATION DUE DATE 仪器校正有效期 Dec. 28 <sup>ST</sup> , 2010
EQUIPMENT 设备 MT YOKE	MANUFACTURER 制造商 PARKER	MODEL NO. 样式编号 B310S	SERIAL NO. 连续编号 5945
MAGNETIZING METHOD 磁化方法	Continuous magnetic yoke 磁轭式连续法	CURRENT 电流	AC
PARTICLE TYPE 磁粉类型	Dry magnet powder 干磁粉	YOKE SPACING 磁轭间距	70~150mm
MATERIAL TO BE EXAMINED 检测材料	<input checked="" type="checkbox"/> WELDING 焊接件 <input type="checkbox"/> CASTING 铸件 <input type="checkbox"/> FORGING 锻造	Material & thickness 母材, 厚度	A709M-HPS-485WT2-Z A709M-345F2-Z 50/40/90mm
WELDING PROCESS 焊接方法	SMAW	TYPE OF JOINT 焊缝类型	BUTT/T JOINT

WELD I.D. 焊缝编号	DISCONTINUITY 不连续性			ACCEPT 接受	REJECT 拒收	REMARKS 备注
	INDICATION 指示	TYPE 类型	LENGTH IN mm 长度			
ESD1-FASA4-2B/E-27				ACC.		100%MT
ESD1-FASA4-2B/E-26				ACC.		100%MT
ESD1-FASA4-2B/E-5				ACC.		100%MT
ESD1-FASA4-2B/E-6				ACC.		100%MT
ESD1-FASA4-2B/E-28				ACC.		100%MT
ESD1-FASA4-2B/E-29				ACC.		100%MT
BLANK						

EXAMINED BY 主探 Xie Genglin <i>Xie Genglin</i>	REVIEWED BY 审核 <i>Wang Wei</i>
LEVEL - II SIGN 签名 / DATE日期 2010.11.18	LEVEL-II SIGN / DATE日期 2010.11.18
质量经理 / QCM <i>Zu Han Mei</i>	用户 CUSTOMER
签字 SIGN / 日期 DATE 2010.11.18	签字 SIGN / 日期 DATE

(FORM# ZPQC-MT01)





# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

REPORT NO. 报告编号 T787-UT-3288R1      DATE 2010.11.17      PAGE 1 OF 1      Revision No: 0

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

ITEMS NAME: TOWER(N) CROSS BRACING PLATE      DRAWING NO.: NSD1-FASA4-1B/E      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      AMERICA      EPOCH-4B      071565311

CALIBRATION BLOCK 试块      COUPLANT 耦合剂      MATERIAL/THICKNESS 材料厚度  
 AWS IIV BLOCK TYPE II      C.M.C      A709M-HPS-485WT2-Z/A709M-345F2-Z      50mm

### 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
AMERICA	70°	2.25MHz	0.75×0.625 in	AMERICA	60°	2.25MHz	0.75×0.625 in
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			
NSD1-FASA4-1B/E-17		70				45									ACC.	100%
	1R1	60				38									ACC.	100%
	2R1	60				38									ACC.	100%
NSD1-FASA4-1B/E-14		70				45									ACC.	100%
	1R1	60				38									ACC.	100%
	2R1	60				38									ACC.	100%

AFTER B-WR3746,3747

EXAMINED BY 主探 <i>Xu Donggang 2010.11.17</i> LEVEL - II SIGN / DATE	REVIEWED BY 审核 <i>Dai Gengsheng 2010.11.17</i> LEVEL - II SIGN / DATE
质量经理 / QCM <i>Lu Jianhua 2010.11.17</i> 签字 SIGN / 日期 DATE	用户 CUSTOMER _____ 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-000797**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 24-Nov-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0852**Type of problem:**

<b>Welding</b>	<b>Concrete</b>	<b>Other</b>	
<b>Welding</b>	<b>Curing</b>	<b>Procedural</b>	<b>Bridge No:</b> 34-0006
<b>Joint fit-up</b>	<b>Coating</b>	<b>Other</b>	<b>Component:</b>
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b>	

**Date the Non-Conformance Report was written:** 11-Nov-2010**Description of Non-Conformance:**

During the Caltrans Quality Assurance (QA) in-process observation on Lift-4 tower shafts, this QA Inspector discovered the following issues:

-After Ultrasonic Testing (UT) rejection of backfill plate welds by ZPMC quality control personnel, ZPMC fabrication personnel removed a total four (4) Non-SPCM welds in North, South and East shafts respectively without notifying the Engineer .

- The Non-SPCM welds are Butt-Joint Complete Joint Penetration (CJP) welds joining backfill plate to doubler plate.

- These welds measured to be approximately 330 mm in length.

- Backfill plate thickness is 50 mm.

1)North Shaft - NSD1-FASA4-1B/E#14

2)North Shaft - NSD1-FASA4-1B/E#17

3)East Shaft - ESD1-FASA4-2B/E#26

4)East Shaft - ESD1-FASA4-2B/E#27

- The whole length of the Non-SPCM welds has been removed.

- The components are located at 119m, Tower Heavy Dock.

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

Contractor to repair welds and perform NDT to prove welds are acceptable. Contractor will issue an internal NCR and discipline personnel involved to avoid future occurrences.

**Corrective action taken:**

Contractor performed and submitted the NDT reports to prove the welds are acceptable. Contractor also issued an internal NCR to make personnel aware that prior notification to the Engineer is required prior removing any improperly fitted and welded members are cut apart.

