

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-000832**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 02-Sep-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0794**Type of problem:**

Welding	Concrete	Other	
Welding	Curing	Procedural	Bridge No: 34-0006
Joint fit-up	Coating	Other	Component: Segment 11DE
Procedural	Procedural	Description: Missed MT crack and UT indications by QC	

Reference Description: QA found some missed UT indications and a MT crack after ZPMC had tested and accepted these weld in Segment 11DE

Description of Non-Conformance:

During the Quality Assurance (QA) Ultrasonic Testing (UT) review of welds located on Orthotropic Box Girder (OBG) segment 11DE, this QA Inspector discovered the following issues:

- A total of four (4) longitudinal class "A" rejectable indications measuring approximately 15mm~25mm in length.
- The welds are identified as SEG072A-002, SEG072A-008, SEG072B-055 and EP160-001-028.
- Material thickness for joints SEG072A-002, 008 is 16mm.
- Material thickness for joint SEG072B-055 is 18mm.
- Material thickness for joint EP160-001-028 is 12mm.
- The indication dB rating for joint SEG072A-002 is a +9 and for joint SEG072A-008 is a +4.
- The indication dB rating for joint SEG072B-055 is +9.
- The indication dB rating for joint EP160-001-028 is +3.
- The depth of the indications are approximately 9mm~15mm.
- Welds SEG072A-002, SEG072A-008 are joining Side Plate to Side plate and EP160-001-028 is at PP106, joining Edge Plate stiffener to corner assembly Diaphragm.
- Weld SEG072B-055 is at panel point PP105 joining Floor beam FB24A to Longitudinal diaphragm stiffener.
- Welds SEG072A-002 and SEG072A-008 are Complete Joint Penetration (CJP) butt joints.
- Weld SEG072B-055 and EP160-001-028 are Complete Joint Penetration (CJP) "T" joints.
- The Y distance for joint SEG072A-002 is 2100 from panel point PP106.
- The Y distance for joint SEG072A-008 is 1370mm from panel point PP106.
- The Y distance for joint SEG072B-055 is 10mm from cope hole.
- The Y distance for joint EP160-001-028 is 35mm from cope hole.
- These welds are designated as Seismic Performance Critical Members (SPCM).
- The indications are clearly marked on or near the weld.
- Segment 11DE is located north of fabrication Bay#14.

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

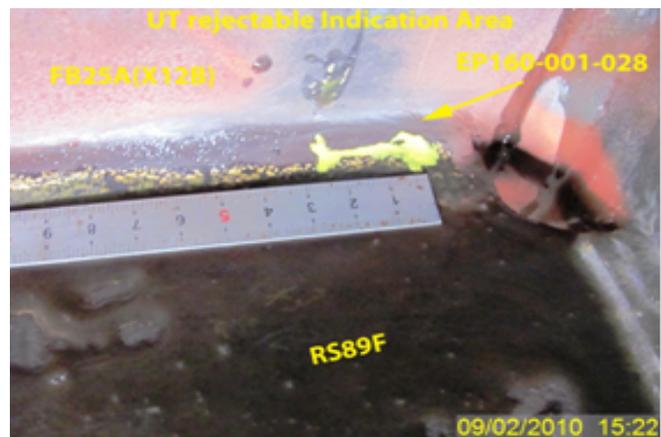
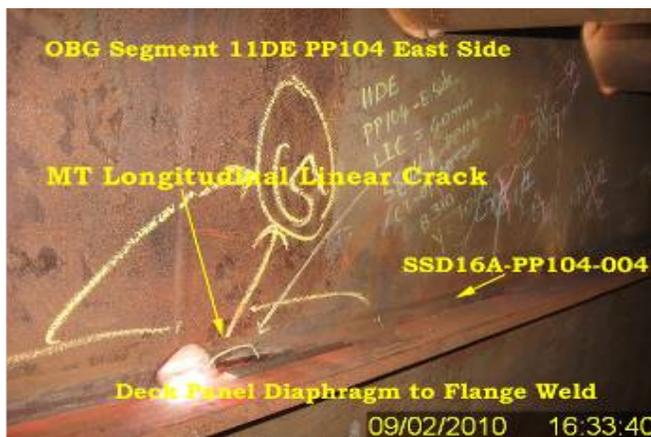
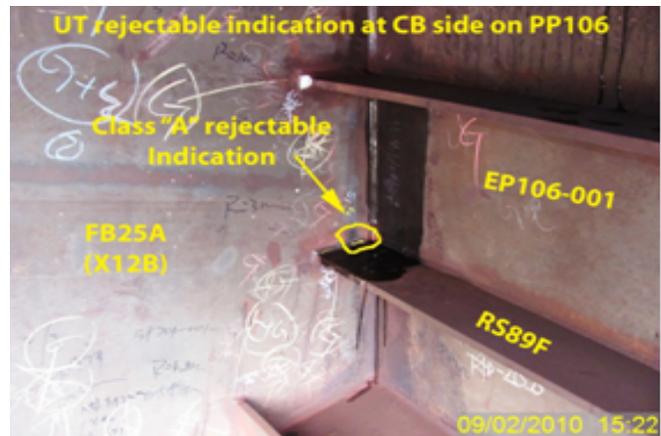
(Continued Page 2 of 3)

The Notice of Witness Inspection (NWIT) No. is 006556. All indications found are located within an area previously tested and accepted by ZPMC Quality Control (QC) personnel with exception of weld SEG072A-002.

During the Quality Assurance (QA) Magnetic Particle Testing (MT) review of welds located on Segment 11DE, this QA Inspector discovered the following issue:

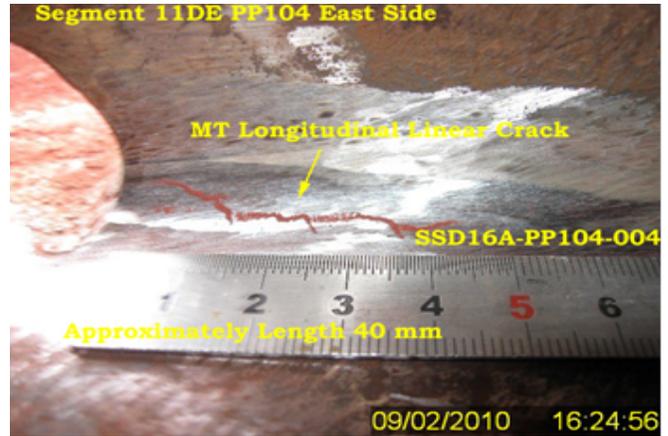
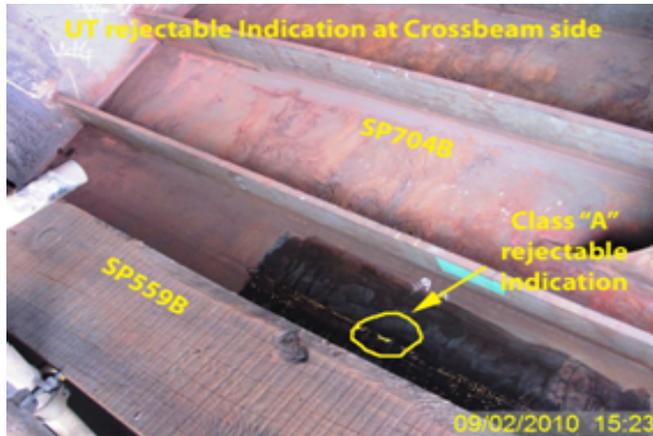
- One (1) MT Longitudinal Linear Crack measuring approximately 40 mm in length.
- The weld is identified as SSD16A-PP104-004 and is located at panel point (PP) 104 East side.
- This weld is a fillet weld that joins the Deck Panel Diaphragm to the Web flange.
- Y location is 7040mm measured from the termination of the weld on the Cross Beam side.
- The Linear Crack is clearly marked on the material near the weld.
- The Deck Panel Diaphragm and Flange weld are identified as Non Seismic Performance Critical Members (Non-SPCM).
- OBG segment 11DE is located outside at the north end of Bay 14.

The Notice of Witness Inspection Number (NWIT) is 006556. This Linear Crack is located within an area that has been previously tested by ZPMC Quality Control (QC) personnel. As per contract documents ZPMC is required to perform 100% Magnetic Particle Testing (MT) of this weld.



QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 3 of 3)



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; Table 6.3 specifies a class "A" indication as having a rating of 10dBs and under for material thicknesses 8mm through 20mm.

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: Subhasis Bera, Vibin Kumar , and Santhosh Ramakrishna

Name of individual from Contractor notified: Wang Heng, Peter Shaw

Time and method of notification: 1630 hours, 09-02-10, Verbal

Name of Caltrans Engineer notified: Laraine Woo

Time and method of notification: 0800 hours, 09-03-10, Verbal

QC Inspector's Name: Wu Shi Gao, 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, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Tsang, Eric	SMR
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-Sep-2010
Dear:	Mr. Charles Kanapicki	Contract No:	04-0120F4 04-SF-80-13.2 / 13.9
Attention:	Mr. Thomas Nilsson Project/Fabrication Manager	Job Name:	SAS Superstructure
Subject:	NCR No. ZPMC-0794	Document No:	05.03.06-000789

Reference Description: QA found some missed UT indications and a MT crack after ZPMC had tested and accepted these weld in Segment 11DE

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:** 11

Remarks:

During the Quality Assurance (QA) Ultrasonic Testing (UT) review of welds located on Orthotropic Box Girder (OBG) segment 11DE, Caltrans QA Inspector discovered the following issues:

- A total of four (4) longitudinal class "A" rejectable indications measuring approximately 15mm~25mm in length.
- The welds are identified as SEG072A-002, SEG072A-008, SEG072B-055 and EP160-001-028.
- Material thickness for joints SEG072A-002, 008 is 16mm.
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- Weld SEG072B-055 and EP160-001-028 are Complete Joint Penetration (CJP) "T" joints.
- The Y distance for joint SEG072A-002 is 2100 from panel point PP106.
- The Y distance for joint SEG072A-008 is 1370mm from panel point PP106.
- The Y distance for joint SEG072B-055 is 10mm from cope hole.
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- These welds are designated as Seismic Performance Critical Members (SPCM).
- The indications are clearly marked on or near the weld.
- Segment 11DE is located north of fabrication Bay#14.

The Notice of Witness Inspection (NWIT) No. is 006556. All indications found are located within an area previously tested and accepted by ZPMC Quality Control (QC) personnel with exception of weld

NCT

(Continued Page 2 of 2)

SEG072A-002.

During the Quality Assurance (QA) Magnetic Particle Testing (MT) review of welds located on Segment 11DE, Caltrans QA Inspector discovered the following issue:

- One (1) MT Longitudinal Linear Crack measuring approximately 40 mm in length.
- The weld is identified as SSD16A-PP104-004 and is located at panel point (PP) 104 East side.
- This weld is a fillet weld that joins the Deck Panel Diaphragm to the Web flange.
- Y location is 7040mm measured from the termination of the weld on the Cross Beam side.
- The Linear Crack is clearly marked on the material near the weld.
- The Deck Panel Diaphragm and Flange weld are identified as Non Seismic Performance Critical Members (Non-SPCM).
- OBG segment 11DE is located outside at the north end of Bay 14.

The Notice of Witness Inspection Number (NWIT) is 006556. This Linear Crack is located within an area that has been previously tested by ZPMC Quality Control (QC) personnel. As per contract documents ZPMC is required to perform 100% Magnetic Particle Testing (MT) of this weld.

Action Required and/or Action Taken:

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

Transmitted by: Laraine Woo Transportation Engineer

Attachments: ZPMC-0794

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Jason Tom, 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: 05.03.06-000789

Subject: NCR No. ZPMC-0794

Dated: 27-Sep-2010

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000799 Rev: 00

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has repaired the missed indications and is providing the WRRs and NDT performed after the repair to show the welds are acceptable.

ZPMC has repaired the missed indications and is providing the WRRs and NDT performed after the repair to show the welds are acceptable. To deal with the number of missed indications ABFJV tracks inspector performance to determine which inspector is responsible for missed indications, a pattern of continued missed indications will result in disciplinary action and potential removal. ZPMC has written an internal NCR to document this incident as well. Based on these actions and acceptable results after repair, ZPMC requests closure of this NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000799R00;

Caltrans' comments:

Status: CLO

Date: 07-Oct-2010

The proposed resolution is acceptable. This NCR is considered closed.

Submitted by: Woo, Laraine

Date: 07-Oct-2010

Attachment(s):



No. B-895

LETTER OF RESPONSE

TO: American Bridge/Flour

DATE: 2010-9-25

REGARDING: NCR-000832 (ZPMC-0794)

ZPMC has issued an internal NCR to address this problem. These indications have been removed, repaired and were tested to be acceptable. ZPMC is providing the repair reports and NDT records to show the acceptance of these welds. Based on this, please consider closure of this NCR.

ATTACHMENT:

NCR-000832 (ZPMC-0794)

B-WR15235

B-WR15236

B-WR15237

B-WR15238

B787-UT-15385

B787-UT-15385 R1

B787-MT-27170 R1

Handwritten signature
9/25/10



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: 03-Sep-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: 05.03.06-000789

Subject: NCR No. ZPMC-0794

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Lift: 11

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(Continued Page 2 of 2)

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Transmitted by: Laraine Woo Transportation Engineer

Attachments: ZPMC-0794

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Jason Tom, 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

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QUALITY ASSURANCE – NON-CONFORMANCE REPORT

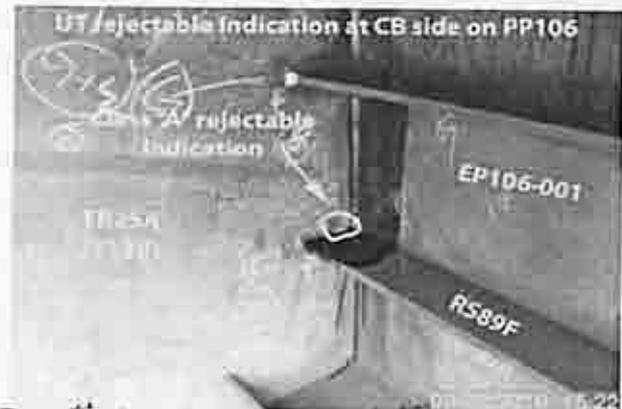
(Continued Page 2 of 3)

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- This weld is a fillet weld that joins the Deck Panel Diaphragm to the Web flange.
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QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 3 of 3)



Applicable reference:

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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: Subhasis Bera, Vibin Kumar, and Santbosh Ramakrishna

Name of individual from Contractor notified: Wang Heng, Peter Shaw

Time and method of notification: 1630 hours, 09-02-10, Verbal

Name of Caltrans Engineer notified: Laraine Woo

Time and method of notification: 0800 hours, 09-03-10, Verbal

QC Inspector's Name: Wu Shi Gao, 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, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By: Tsang, Eric

SMR

Reviewed By: Wahbeh, Mazen

SMR



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	SEG072A	报告编号 Report No.	B-WR15235
合同号 Contract No	04-0120F4	部件名称 Items Name	11DE bottom plate splice g	NDT报告编号 Report No. of NDT	B787-UT-15385
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): Rejected indication found by ultrasonic inspection is less than the maximum allowance aggregate length.

焊缝编号为： SEG072A-008

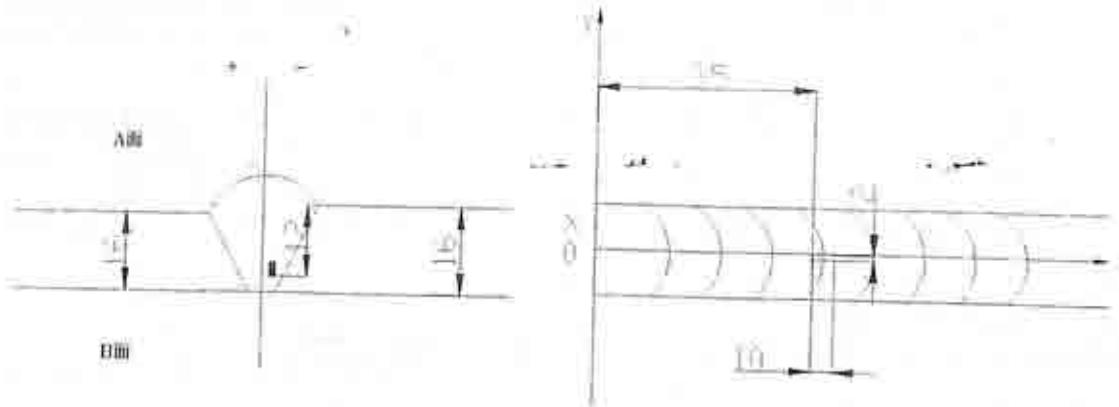
检验员 (Inspector) :

Xue Hairong
Xue Hairong

日期(Date) : 2010.09.22

焊缝返修位置示意图：

Draft of welding discontinuity:



WELD NUMBER: SEG072A-008

产生原因:

Caused:

1. 焊道未及时处理干净。
1. Did not clear the weld pass completely in time.

车间负责人(Foreman): *Lizhiqiang* 日期(Date): *10/07/22*

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. 将修补区域打磨到与母材或邻近焊缝平齐;
 4. 根据批准的车间图纸检查焊缝.
-
1. Gouge or grind from nearer side from metal edge. ($D \leq 0.65T$, "D" is depth of defects, "T" is thickness of metal) to remove all defects;
 2. Follow repair WPS for joint preparation, preheat, and weld deposit;
 3. Grind the repaired area flush with base metal or the adjacent weld;
 4. Check the welds according to the working drawings.

工艺: *Xu Dinghai*
Technical engineer

审核:
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	SEG072A	报告编号 Report No.	B-WR15235
合同号 Contract No.:	04-0120F4	部件名称 Items Name	11DE bottom plate splice	NDT报告编号 Report No. of NDT	B787-UT-15385
项目编号 Project No.:	ZP06-787				

纠正措施:

Correction action to prevent re occurrence:

1. 加强焊接监控和道间清理。

1. Improve monitoring of welding and interpass cleaning.

车间负责人(Foreman): *Li Shiqing* 日期(Date): 2010.09.22参照的WPS编号
Repair WPS No.

- WPS-345-SMAW-1G(1F)- Repair
- WPS-345-FCAW-1G(1F)- Repair-1
- WPS-345-SMAW-2G(2F)-Repair
- WPS-345-FCAW-2G(2F)-Repair-1
- WPS-345-SMAW-3G(3F)- Repair
- WPS-345-SMAW-4G(4F)- Repair
- WPS-345-SMAW-1G(1F)-FCM-Repair
- WPS-345-SMAW-2G(2F)-FCM-Repair
- WPS-345-SMAW-3G(3F)-FCM-Repair
- WPS-345-SMAW-4G(4F)-FCM-Repair
- 其他

工艺员
technologist返修(碳刨)前预热温度
Preheat temperature before gouging

680

返修的缺陷
Description of discontinuity

-IF

焊前处理检查
Inspection before welding

Acc

焊前预热温度
Preheat temperature before welding

190

最大碳刨深度
Max. depth of gouging

5mm

碳刨总长
Total length of gouging

110mm

焊工
welder 043661焊接类型
welding type SMAW焊接位置
position 4G焊接电流
Current 163焊接电压
Voltage 23.9焊接速度
Speed 124

返修后检查

Inspection After repairing:外观检查
VT result Acc检验员
Inspector Liyanhua日期
Date 2010.09.23NDT复检
NDT result Acc探伤员
NDT person Xuehuang日期
Date 2010.09.23

见证:

Witness/Review:

备注:

Remark:



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	SEG072A	报告编号 Report No.	B-WR15236
合同号 Contract No	04-0120F4	部件名称 Items Name	11DE bottom plate splice e	NDT报告编号 Report No. of NDT	B787-UT-15385
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): Rejected indication found by ultrasonic inspection is less than the maximum allowance aggregate length.

焊缝编号为： SEG072A-002

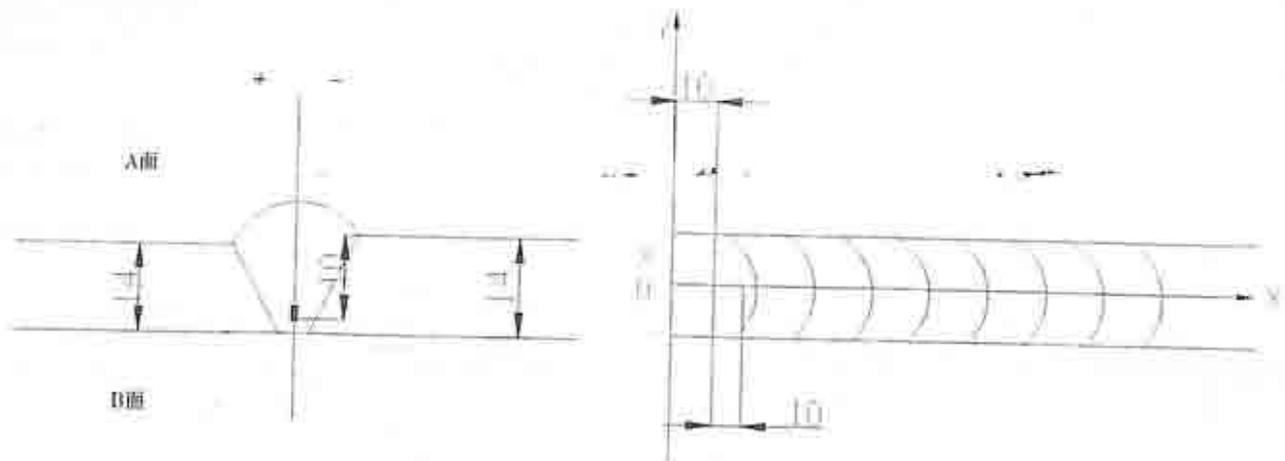
检验员 (Inspector) :

Xue Hairong
Xue Hairong

日期(Date) : 2010.09.22

焊缝返修位置示意图：

Draft of welding discontinuity:



WELD NUMBER: SEG072A-002

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 Zhiqiang* 日期(Date): *20/07.22*

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. 将修补区域打磨到与母材或邻近焊缝平齐;
4. 根据批准的车间图纸检查焊缝.

1. Gouge or grind from nearer side from metal edge ($D \leq 0.65T$, "D" is depth of defects, "T" is thickness of metal) to remove all defects;
2. Follow repair WPS for joint preparation, preheat, and weld deposit;
3. Grind the repaired area flush with base metal or the adjacent weld;
4. Check the welds according to the working drawings.

工艺: *Xu Donghai* *20/07.22*
Technical engineer

审核:
Approved by

日期
Date



焊缝返修报告

Welding Repair Report

版本 Rev. No.

-0-

项目名称 Project Name	美国海湾大桥 SFOBB	部件图号 Drawing No	SEG072A	报告编号 Report No.	B-WR15236
合同号 Contract No.:	04-0120F4	部件名称 Items Name	11DE bottom plate splice	NDT报告编号 Report No.of NDT	B787-UT-15385
项目编号 Project No.:	ZP06-787				

纠正措施:

Correction action to prevent re occurrence:

1. 加强焊接监控和道间清理。

1. Improve monitoring of welding and interpass cleaning.

车间负责人(Foreman):

日期(Date):

参照的WPS编号
Repair WPS No.

- WPS-345-SMAW-1G(1F)- Repair
- WPS-345-FCAW-1G(1F)- Repair-1
- WPS-345-SMAW-2G(2F)-Repair
- WPS-345-FCAW-2G(2F)-Repair-1
- WPS-345-SMAW-3G(3F)- Repair
- WPS-345-SMAW-4G(4F)- Repair
- WPS-345-SMAW-1G(1F)-FCM-Repair
- WPS-345-SMAW-2G(2F)-FCM-Repair
- WPS-345-SMAW-3G(3F)-FCM-Repair
- WPS-345-SMAW-4G(4F)-FCM-Repair
- 其他

工艺员
technologist

返修(碳刨)前预热温度 Preheat temperature before gouging	68°C	返修的缺陷 Description of discontinuity	—I—F
焊前处理检查 Inspection before welding	Acc	焊前预热温度 Preheat temperature before welding	93°C
最大碳刨深度 Max. depth of gouging	5mm	碳刨总长 Total length of gouging	110mm
焊工 welder	049339	焊接类型 welding type	SMAW
焊接电流 Current	145	焊接电压 Voltage	243
		焊接位置 position	4G
		焊接速度 Speed	128

返修后检查

Inspection After repairing:

外观检查 VT result	Acc	检验员 Inspector	Liyanhua	日期 Date	2010.09.23
NDT复检 NDT result	Acc	探伤员 NDT person	Xuehdong	日期 Date	2010.09.23

见证:

Witness/Review:

备注:

Remark:

#R787-QCP-900



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	SEG072A	报告编号 Report No.	B-WR15237
合同号 Contract No.	04-0120F4	部件名称 Items Name	11DE bottom plate splice	NDT报告编号 Report No. of NDT	B787-UT-15385
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): Rejected indication found by ultrasonic inspection is less than the maximum allowance aggregate length.

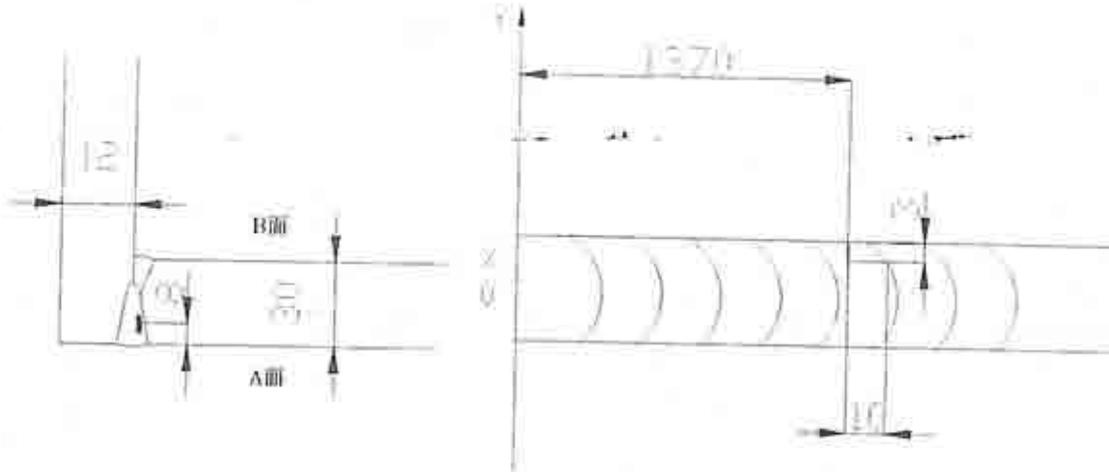
焊缝编号为: SEG072B-055

检验员 (Inspector): Xue Hairong

日期(Date): 2010.09.22

焊缝返修位置示意图:

Draft of welding discontinuity:



WELD NUMBER: SEG072B-055

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 Chiqing* 日期(Date): 7/0.09.02

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. 将修补区域打磨到与母材或邻近焊缝平齐;
 4. 根据批准的车间图纸检查焊缝.
-
1. Gouge or grind from nearer side from metal edge ($D \leq 0.65T$; "D" is depth of defects, "T" is thickness of metal) to remove all defects;
 2. Follow repair WPS for joint preparation, preheat, and weld deposit;
 3. Grind the repaired area flush with base metal or the adjacent weld;
 4. Check the welds according to the working drawings.

工艺: *Xu Donghai*
Technical engineer

审核:
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	SEG072A	报告编号 Report No.	B-WR15237
合同号 Contract No.:	04-0120F4	部件名称 Items Name	11DE bottom plate splice	NDT报告编号 Report No. of NDT	B787-UT-15385
项目编号 Project No.:	ZP06-787				

纠正措施:

Correction action to prevent re occurrence:

1. 加强焊接监控和道间清理。

1. Improve monitoring of welding and interpass cleaning.

车间负责人(Foreman): *Lizhiqiang* 日期(Date): *20/0.09.22*

参照的WPS编号 Repair WPS No.	<input type="checkbox"/> WPS-345-SMAW-1G(1F)- Repair <input type="checkbox"/> WPS-345-FCAW-1G(1F)- Repair-1 <input type="checkbox"/> WPS-345-SMAW-2G(2F)-Repair <input type="checkbox"/> WPS-345-FCAW-2G(2F)-Repair-1 <input type="checkbox"/> WPS-345-SMAW-3G(3F)- Repair <input checked="" type="checkbox"/> WPS-345-SMAW-4G(4F)- Repair <input type="checkbox"/> WPS-345-SMAW-1G(1F)-FCM-Repair <input type="checkbox"/> WPS-345-SMAW-2G(2F)-FCM-Repair <input type="checkbox"/> WPS-345-SMAW-3G(3F)-FCM-Repair <input type="checkbox"/> WPS-345-SMAW-4G(4F)-FCM-Repair <input type="checkbox"/> 其他	工艺员 technologist
----------------------------	--	---------------------

返修(碳刨)前预热温度 Preheat temperature before gouging	730	返修的缺陷 Description of discontinuity	-- IF
焊前处理检查 Inspection before welding	Acc	焊前预热温度 Preheat temperature before welding	900
最大碳刨深度 Max. depth of gouging	10mm	碳刨总长 Total length of gouging	110mm
焊工 welder	054013	焊接类型 welding type	SMAW
焊接电流 Current	138	焊接电压 Voltage	23.6
		焊接位置 position	4G
		焊接速度 Speed	121

返修后检查

Inspection After repairing:

外观检查 VT result	Acc	检验员 Inspector	<i>Liyantao</i>	日期 Date	20/0.09.23
NDT复检 NDT result	Acc	探伤员 NDT person	<i>Xu...</i>	日期 Date	20/0.09.23

见证:

Witness/Review:

备注:

Remark:



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.	SEG072A	报告编号 Report No.	B-WR15238
合同号 Contract No.	04-0120F4	部件名称 Items Name	11DE bottom plate splice	NDT报告编号 Report No. of NDT	B787-UT-15385
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): Rejected indication found by ultrasonic inspection is less than the maximum allowance aggregate length.

焊缝编号为： EP160-001-028

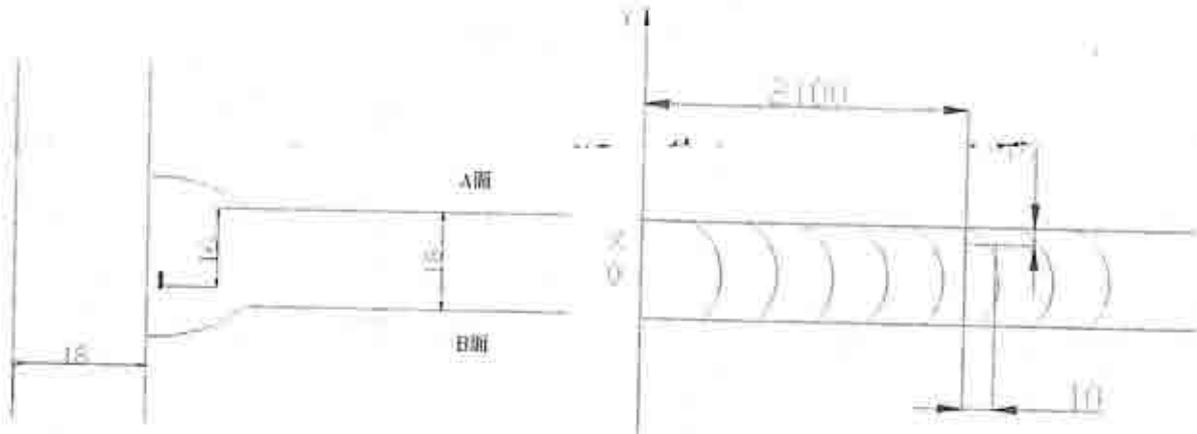
检验员 (Inspector) :

Xue Hairong
Xue Hairong

日期(Date) : 2010.09.22

焊缝返修位置示意图：

Draft of welding discontinuity:



WELD NUMBER: EP160-001-028

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): *Li Zhiqiang* 日期(Date): 20/0.09.22

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. 将修补区域打磨到与母材或邻近焊缝平齐;
4. 根据批准的车间图纸检查焊缝.

1. Gouge or grind from nearer side from metal edge ($D \leq 0.65T$, "D" is depth of defects, "T" is thickness of metal) to remove all defects;
2. Follow repair WPS for joint preparation, preheat, and weld deposit;
3. Grind the repaired area flush with base metal or the adjacent weld;
4. Check the welds according to the working drawings.

工艺: *Xu Songhai*
Technical engineer

20/0.09.22

审核:
Approved by

日期
Date



焊缝返修报告

Welding Repair Report

版本 Rev. No

-0-

项目名称 Project Name	美国海湾大桥 SFOBB	部件图号 Drawing No	SEG072A	报告编号 Report No.	B-WR15238
合同号 Contract No.:	04-0120F4	部件名称 Items Name	11DE bottom plate splice	NDT报告编号 Report No. of NDT	B787-UT-15385
项目编号 Project No.:	ZP06-787				

纠正措施:

Correction action to prevent re occurrence:

1. 加强焊接监控和道间清理。

1. Improve monitoring of welding and interpass cleaning.

车间负责人(Foreman): *Li Chigang* 日期(Date): *20/09/02*参照的WPS编号
Repair WPS No.

- WPS-345-SMAW-1G(1F)- Repair
- WPS-345-FCAW-1G(1F)- Repair-1
- WPS-345-SMAW-2G(2F)-Repair
- WPS-345-FCAW-2G(2F)-Repair-1
- WPS-345-SMAW-3G(3F)- Repair
- WPS-345-SMAW-4G(4F)- Repair
- WPS-345-SMAW-1G(1F)-FCM-Repair
- WPS-345-SMAW-2G(2F)-FCM-Repair
- WPS-345-SMAW-3G(3F)-FCM-Repair
- WPS-345-SMAW-4G(4F)-FCM-Repair
- 其他

工艺员
technologist返修(破刨)前预热温度
Preheat temperature before gouging

75°C

返修的缺陷
Description of discontinuity

-2F

焊前处理检查
Inspection before welding

Acc

焊前预热温度
Preheat temperature before welding

87°C

最大破刨深度
Max. depth of gouging

5mm

破刨总长
Total length of gouging

110mm

焊工
welder

043661

焊接类型
welding type

SMAW

焊接位置
position

4G

焊接电流
Current

146

焊接电压
Voltage

24.4

焊接速度
Speed

129

返修后检查

Inspection After repairing:

外观检查
VT result

Acc

检验员
Inspector

Li Yanhua

日期
Date

20/09/23

NDT复检
NDT result

Aw

探伤员
NDT person

Xuehaiming

日期
Date

20/09/23

见证:

Witness/Review:

备注:

Remark:

#R787-QCP-900



REPORT OF ULTRASONIC EXAMINATION

UT探伤报告

REPORT NO. 报告编号 B787-UT-15385 DATE 2010.09.22 PAGE 1 OF 1 Revision No: 0

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

ITEMS NAME: 11DE BOTTOM PLATE SPLICE DRAWING NO.: SEG072A CALTRANS CONTRACT NO.: 04-0120F4
 部件名称 图号 加州工程编号:

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

WELDING PROCESS 焊接方法 JOINT TYPE 焊缝类型 CALIBRATION DUE DATE 仪器校正有效期
 FCAW SAW T-JOINT CORNER JOINT BUTT Dec. 28ST, 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 71565511

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 14/16/18/12/30mm

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		
SEG072A-008	1	70	A	1	43	39	1	+3	10	37	12	-2	35	REJ.	100%
SEG072A-002	1	70	A	1	50	39	2	+9	10	54	10	0	10	REJ.	100%
SEG072B-055	1	70	A	1	50	39	2	+9	10	49	8	-3	1370	REJ.	100%
EP160-001-028	1	70	A	1	44	39	2	+3	10	48	16	-3	2100	REJ.	100%

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EXAMINED BY 主探
Xuelian
 LEVEL - II SIGN / DATE 20/0.09.22

REVIEWED BY 审核
Kilim
 LEVEL - II SIGN / DATE 20/0.09.22

质量经理 / QCM
Li Jianhua
 签字 SIGN / 日期 DATE 20/0.09.22

用户 CUSTOMER
 签字 SIGN / 日期 DATE



REPORT OF ULTRASONIC EXAMINATION

UT探伤报告

REPORT NO. 报告编号: B787-UT-15385R1 DATE: 2010.09.23 PAGE: 1 OF 1 Revision No.: 0

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

ITEMS NAME: 11DE BOTTOM PLATE SPLICE DRAWING NO.: SEG072A CALTRANS CONTRACT NO.: 04-0120F4
 部件名称: 图号: 加州工程编号:

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

WELDING PROCESS 焊接方法: SMAW JOINT TYPE 焊缝类型: T-JOINT CORNER JOINT BUTT CALIBRATION DUE DATE 仪器校正有效期: Dec. 28ST, 2010

EQUIPMENT 设备: MANUFACTURER 制造商: PANAMETRICS MODEL NO. 样式编号: EPOCH-4B SERIAL NO. 序列编号: 71565511

CALIBRATION BLOCK 试块: AWS IIW BLOCK TYPE II COUPLANT 耦合剂: C.M.C MATERIAL/THICKNESS 材料厚度: A709M-345T2-X 14/16/18/12/30mm

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		
SEG072A-008	1R1	70												ACC.	100%
SEG072A-002	1R1	70												ACC.	100%
SEG072B-055	1R1	70												ACC.	100%
EP160-001-028	1R1	70												ACC.	100%

AFTER B-WR15235-15238

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EXAMINED BY 主探: <u>Xuehaipeng</u> LEVEL - II SIGN / DATE: 7/0.09.23	REVIEWED BY 审核: <u>Li Liming</u> LEVEL - II SIGN / DATE: 20/0.09.23
质量经理 / QCM: <u>Lu Jianhua</u> 签字 SIGN / 日期 DATE: 20/0.09.22	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-000814**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 27-Sep-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0794**Type of problem:**

Welding	Concrete	Other	
Welding	Curing	Procedural	Bridge No: 34-0006
Joint fit-up	Coating	Other	Component:
Procedural	Procedural	Descriptor:	

Date the Non-Conformance Report was written: 02-Sep-2010**Description of Non-Conformance:**

During the Quality Assurance (QA) Ultrasonic Testing (UT) review of welds located on Orthotropic Box Girder (OBG) segment 11DE, this QA Inspector discovered the following issues:

-A total of four (4) longitudinal class "A" rejectable indications measuring approximately 15mm~25mm in length.

-The welds are identified as SEG072A-002, SEG072A-008, SEG072B-055 and EP160-001-028.

-Material thickness for joints SEG072A-002, 008 is 16mm.

-Material thickness for joint SEG072B-055 is 18mm.

-Material thickness for joint EP160-001-028 is 12mm.

-The indication dB rating for joint SEG072A-002 is a +9 and for joint SEG072A-008 is a +4.

-The indication dB rating for joint SEG072B-055 is +9.

-The indication dB rating for joint EP160-001-028 is +3.

-The depth of the indications are approximately 9mm~15mm.

-Welds SEG072A-002, SEG072A-008 are joining Side Plate to Side plate and EP160-001-028 is at PP106, joining Edge Plate stiffener to corner assembly Diaphragm.

-Weld SEG072B-055 is at panel point PP105 joining Floor beam FB24A to Longitudinal diaphragm stiffener.

-Welds SEG072A-002 and SEG072A-008 are Complete Joint Penetration (CJP) butt joints.

-Weld SEG072B-055 and EP160-001-028 are Complete Joint Penetration (CJP) "T" joints.

-The Y distance for joint SEG072A-002 is 2100 from panel point PP106.

-The Y distance for joint SEG072A-008 is 1370mm from panel point PP106.

-The Y distance for joint SEG072B-055 is 10mm from cope hole.

-The Y distance for joint EP160-001-028 is 35mm from cope hole.

-These welds are designated as Seismic Performance Critical Members (SPCM).

-The indications are clearly marked on or near the weld.

-Segment 11DE is located north of fabrication Bay#14.

The Notice of Witness Inspection (NWIT) No. is 006556. All indications found are located within an area

