

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
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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, PRC

Report No: NCR-000261

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 05-May-2009

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

NCR #: ZPMC-0235

Type of problem:

Welding	Concrete	Other	
Welding	Curing	Procedural	Bridge No: 34-0006
Joint fit-up	Coating	Other	Component: East Tower, Lift 3, Skin D
Procedural	Procedural	Description: East Tower, Lift 3, Skin D Longitudinal Stiffener	

Reference Description: Missed MT Indications on East Tower, Lift 3, Skin D Longitudinal Stiffener Weld

Description of Non-Conformance:

During random verification Magnetic Particle Testing (MT) of East Tower, Lift 3, Skin Plate D, longitudinal stiffener welds, QA discovered a 30 mm long indication on weld ESD1-FDSA3-2 B/C-22. This weld was previously tested and accepted by ZPMC QC MT Technicians.



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: Larry Viars

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Name of individual from Contractor notified: Steve Lawton

Time and method of notification: 5-6-2009, 11:00; E-mail

Name of Caltrans Engineer notified: Scott Kennedy

Time and method of notification: 5-6-2009, 11:00; Verbal

QC Inspector's Name: Luo Lai Quan

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 Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

Inspected By:	Sinevod,Serge	ASMR
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Reviewed By:	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: 06-May-2009

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

Dear: Mr. Charles Kanapicki

Job Name: SAS Superstructure

Attention: Mr. Thomas Nilsson Project/Fabrication Manager

Document No: 05.03.06-000227

Subject: NCR No. ZPMC-0235

Reference Description: Linear Indication (MT) / Quality Control / Tower East Shaft Lift 3 / Skin D

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:** 03

Remarks:

During random verification Magnetic Particle Testing (MT) of East Tower, Lift 3, Skin Plate D, longitudinal stiffener welds, QA discovered a 30 mm long indication on weld ESD1-FDSA3-2 B/C-22. This weld was previously tested and accepted by ZPMC QC MT Technicians.

Action Required and/or Action Taken:

Propose a resolution for this systematic non-conformance that addresses the failure of Quality Control to identify the linear indication (NDT). Provide documentation of the steps taken by the Quality Control Manager to prevent future occurrences.

In addition to the Quality Control failure, propose a resolution for the identified material/workmanship non-conformance, documenting that the repaired weld is in compliance with the contract requirements.

Recent failures by Quality Control to identify linear indications have resulted in the issuance of NCR ZPMC-0212, ZPMC-0216, ZPMC-0231, ZPMC-0223 and ZPMC-0234.

Transmitted by: Scott Kennedy Sr. Bridge Engineer

Attachments: ZPMC-0235

cc: Rick Morrow, Gary Pursell, Mark Woods, Jason Tom

File: 05.03.06

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000227

Subject: NCR No. ZPMC-0235

Dated: 20-May-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000231 Rev: 00

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has generated an internal NCR for this nonconformance, repaired and re-inspected the welds as required. ZPMC has generated an internal NCR for this nonconformance, repaired and re-inspected the welds as required. Attached is documentation of work performed regarding this NCR. ZPMC requests this NCR be closed

Submitted by:

Attachment(s): ABF-NPR-000231R00

Caltrans' comments:

Status: REJ

Date: 27-May-2009

The proposed resolution is not acceptable. There is no attached documentation of the work performed as stated in the NPR.

Provide documentation of the steps taken by the Quality Control Manager to prevent future occurrences of the recurring issues regarding magnetic particle testing. Also, provide documentation of the weld repairs that were performed and that the repairs were acceptable. The Department will review the Contractor's proposal to close Non-Conformance ZPMC-0235 at that time.

Submitted by: Wright, Doug

Date: 27-May-2009

Attachment(s):

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000227

Subject: NCR No. ZPMC-0235

Dated: 08-Jun-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000231 Rev: 01

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has included inspection documentation required to close this NCR.

ZPMC has included inspection documentation required to close this NCR.

Submitted by:

Attachment(s): ABF-NPR-000231R01;

Caltrans' comments:

Status: REJ

Date: 11-Jun-2009

The proposed resolution is not acceptable. The proposed resolution did not address what steps were taken by the Quality Control Manager (QCM) to prevent future occurrences of this recurring issue as requested in both the Non-Conformance Transmittal (NCT-227) and the response to NPR-0231R00.

Provide documentation of the steps taken by the QCM to prevent future occurrences of the recurring issues regarding magnetic particle testing. The Department will review the Contractor's proposal to close Non-Conformance ZPMC-0235 at that time.

Submitted by: Wright, Doug

Date: 11-Jun-2009

Attachment(s):



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-FDSA3 -2B/C	报告编号 Report No.:	T-CWR147
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	TOWER(E) 3 RD LIFTING SKIN D	NDT 报告编号 NDT Report No.:	T787-MT-3892
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

Description of Welding Discontinuity:

A longitudinal crack was detected by MT in weld ESD1-FDSA3-2B/C-22. Please see the detail position in the sketch below.

(MT探伤发现焊缝端头上有1处纵向裂纹。)

1. L=30mm;

Welder ID No. (焊工编号): 086695 066443

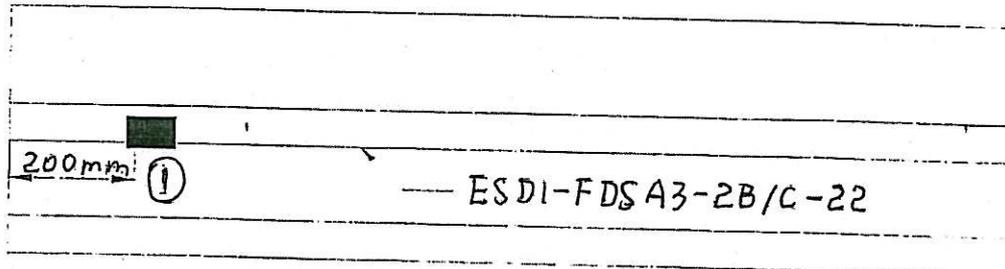
Position:(位置): 2G

检验员 (Inspector): Qi Xin Xin
Cal Xinxin

日期 (Date): 2009.05.06

焊缝返修位置示意图:

Draft of Welding Discontinuity:



ZPMC-0235

CWR + VT/MT
repairs

This document is APPROVED
State of California
DEPARTMENT OF TRANSPORTATION
Pursuant to Section 5-1.02 of the
Standard Specifications
Initial SFL Date: 05/11/09

产生原因:

Cause:

1. 火焰加热时, 水汽没有完全的去掉或者这个区域预热不够;
2. 翻身碳刨清根后, 打磨不到位。

1. Moisture wasn't completely removed during drying operation (preheating) or the area wasn't preheated sufficiently.
2. It didn't grind smoothly after backing gouging.

车间负责人 (Foreman):

Lu Yefei

日期 (Date):

09.05.07

处理意见

Disposition :

- 1、 Grind repair area smoothly
- 2、 Verify with VT and MT to ensure no defects remain in the weld joint prior to welding ;
- 3、 QC will monitor and direct welder and grinder doing repair;
- 4、 QC shall monitor all welding passes being deposited;
- 5、 QC shall ensure all slag has been removed prior the deposition of next pass
- 6、 Preheat and maintain interpass temperature control in accordance with the WPS ;
- 7、 Perform NDT in accordance with contract requirements.

- 1、 将返修区域进行打磨;
- 2、 用 VT 和 MT 检测缺陷被完全消除;
- 3、 在返修过程中, QC 要监控和指导焊工和打磨工;
- 4、 焊道的处理过程中, QC 将监控所有的焊道处理工作;
- 5、 在进入下道工序前, QC 保证所有的夹渣全部去除了;
- 6、 修补区域的预热温度和道间温度请见批准后的相应的 WPS;
- 7、 按照合同要求检测焊缝。

This document is APPROVED
State of California
DEPARTMENT OF TRANSPORTATION
Pursuant to Section 5-1.02 of the
Standard Specifications
Initial SFL Date: 05/11/09

工艺:

Technical Engineer:

Shay Jinday

审核:

Approved By:

Lu Jianhua
for Chenbin.

日期:

Date:

09.05.08

#R787-QCP-900

		<h2 style="margin: 0;">关键焊缝返修报告</h2> <h3 style="margin: 0;">Critical Welding Repair Report (CWR)</h3>			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-FDSA3 -2B/C	报告编号 Report No.:	T-CWR147
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	TOWER(E) 3 RD LIFTING SKIN D	NDT 报告编号 NDT Report No.:	T787-MT-3892
项目编号 Project No.:	ZP06-787				
纠正措施: Corrective Action to Prevent Re-occurrence:					
1. 返修前, QC确认有效的预热, 以将水汽全部去除。 2. 培训和教育打磨工, 提高打磨质量, 保证凹槽圆滑过度。					
1. QC shall verify sufficient preheat has been applied, to remove moisture, prior to welding. 2. Train and educate grinder to improve grinder quality to ensure exaction transils smoothly.					
车间负责人 (Foreman): <u>Lu Yefei</u> 日期 (Date): <u>09.05.07</u>					
参照的WPS编号 Repair WPS No.:	WPS-345-SMAW-1 G (1F) -Repair WPS-345-FCAW-1 G (1F) -Repair WPS-345-SMAW-2 G (2F) -Repair WPS-345-FCAW-2 G (2F) -Repair		工艺员 Technologist:	<u>Zhang Jindong</u> <u>09.05.08</u>	
返修 (碳刨) 前预热温度 Preheat Temperature Before Gouging:	<u>650</u>		返修的缺陷 Description of Discontinuity:	<u>裂纹</u>	
焊前处理检查 Inspection Before Welding:	<u>Auc</u>		焊前预热温度 Preheat Temperature Before Welding:	<u>175°C</u>	
最大碳刨深度 Max. Depth of Gouge:	<u>10mm</u>		碳刨总长 Total Length of Gouge:	<u>65mm</u>	
焊工 Welder:	<u>207254</u>	焊接类型 Welding Type:	<u>SMAW</u>	焊接位置 Position:	<u>2G</u>
焊接电流 Current:	<u>220</u>	焊接电压 Voltage:	<u>28-3</u>	焊接速度 Speed:	<u>141</u>
返修后检查 Inspection After Repair:					
外观检查 VT Result:	<u>Auc</u>	检验员 Inspector:	<u>Xudefeng</u>	日期 Date:	<u>09.5.11</u>
NDT复检 NDT Result:	<u>MT Auc</u>	探伤员 NDT Person:	<u>Cai Xinxin</u>	日期 Date:	<u>09.05.11</u>
见证: Witness/Review:					
备注: Remark:					

#R787-QCP-900

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000227

Subject: NCR No. ZPMC-0235

Dated: 15-Oct-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000231 Rev: 02

Contractor's Proposed Resolution:

Reference Resolution: ABFJV QCM has implemented training with ZPMC to improve the quality of inspections. ABFJV will provide documentation showing attendance by ZPMC QC inspectors and the subject of training

ABF-NPR-000231R01 requested steps taken by ABFJV QCM to prevent future occurrences of missed indications. ABFJV QCM has implemented training with ZPMC to improve the quality of inspections. ABFJV will provide documentation showing attendance by ZPMC QC inspectors and the subject of training. Topics to be covered during the instruction are: inspection of equipment prior to use, proper conditions for inspection, proper technique for MT, and UT. In addition, ABFJV has committed to perform overchecks in both the Tower and OBG. This will serve two purposes, first to monitor if the training is effective at reducing the number of missed indications and second to ensure missed indications are prevented.

Documentation supporting successful repair and NDT results of the repair specific to this non conformance (ZPMC-0235) was previously submitted with ABF-NPR-000231R00.

Submitted by:

Attachment(s): ABF-NPR-000231R02

Caltrans' comments:

Status: CLO

Date: 15-Oct-2009

The proposed resolution is acceptable. The Department concurs that Non-Conformance ZPMC-0235 is closed.

Submitted by: Lee, Ken

Date: 15-Oct-2009

Attachment(s):

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, PRC**Report No:** NCS-000236**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 05-Aug-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0235**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: 05-May-2009**Description of Non-Conformance:**

During random verification Magnetic Particle Testing (MT) of East Tower, Lift 3, Skin Plate D, longitudinal stiffener welds, QA discovered a 30 mm long indication on weld ESD1-FDSA3-2 B/C-22. This weld was previously tested and accepted by ZPMC QC MT Technicians.

Contractor's proposal to correct the problem:

Repair affected weld.

Corrective action taken:

The affected weld has been repaired and a NDT report indicating a sound weld has been submitted. The weld has been verified by QA and green tagged.

To resolve the recurring failure for QC to detect MT indications, ABF has held verbal interviews with ZPMC QC and MT technicians on several occasions. ABF has requested ZPMC to provide an analysis of missed indications to determine if they can be traced to a personnel trend, such as an inspector, welder, or weld location. ABF has also informed ZPMC to ensure adequate lighting is provided during inspections. Tests have also been administered to ZPMC MT technicians to demonstrate their ability to detect MT indications.

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 Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

Inspected By: Sinevod, Serge

Quality Assurance Inspector

QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

(Continued Page 2 of 2)

Reviewed By: Wahbeh,Mazen

QA Reviewer