

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, PRC**Report No:** NCR-000416**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 21-Sep-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0390**Type of problem:**

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

Reference Description: Missed MT indications at East Tower, Lift 3, Diagonal Stiffener weld**Description of Non-Conformance:**

During Magnetic Particle Testing (MT) of East Tower, Lift 3, CD corner diagonal stiffener weld ESTL3-4B/K-77, QA discovered one 10 mm linear indication and one 40 mm intermittent linear indication. Undercut of up to 2.5 mm in depth was also observed at weld ESTL3-4B/K-78 between the 99 m and 102.5 m Diaphragms. These welds have been previously tested and accepted by ZPMC Quality Control Personnel.

**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 D1.5-2002, Section 6.26.2 – “Welds that are subject to MT in addition to visual inspection shall have no cracks.”

AWS D1.5-2002, Section 6.26.1.5 - “In primary members, undercut shall be no more than 0.25mm deep when the weld is transverse to tensile stress under any design loading condition. Undercut shall be no more than

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

1mm deep for all other cases.”

Who discovered the problem: Larry Viars

Name of individual from Contractor notified: Zhang Qin Jiang

Time and method of notification: 9/20/2009, 21:30; Verbal

Name of Caltrans Engineer notified: Scott Kennedy

Time and method of notification: 9/21/2009, 12:00; Verbal

QC Inspector's Name: Peng Guo

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: 21-Sep-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: 05.03.06-000378

Subject: NCR No. ZPMC-0390

Reference Description: Missed Indications (MT) & Undercut (VT) / East Shaft Lift 3 / Diagonal Stiffener Weld

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 Magnetic Particle Testing (MT) of East Tower, Lift 3, CD corner diagonal stiffener weld ESTL3-4B/K-77, QA discovered one 10 mm linear indication and one 40 mm intermittent linear indication. Undercut of up to 2.5 mm in depth was also observed at weld ESTL3-4B/K-78 between the 99 m and 102.5 m Diaphragms. These welds have been previously tested and accepted by ZPMC Quality Control Personnel.

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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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 indications during magnetic particle testing of the welds and the undercut during visual inspection of the welds. Provide documentation of the steps/actions taken by the Quality Control Manager to prevent future occurrences.

In addition to the Quality Control non-conformance, address the material/workmanship for the identified non-conformance including documentation that the deficiencies have been brought into compliance with the contract requirements. Additionally address the probable causes for the indications and the actions that will be taken to limit future occurrences.

Recent failures by Quality Control to identify linear indications (MT) have resulted in the issuance of NCR ZPMC-0358, ZPMC-0359, ZPMC-0371, ZPMC-0372, ZPMC-0373, ZPMC-0375, ZPMC-0376, ZPMC-0377, ZPMC-383, ZPMC-0384, ZPMC 0386, ZPMC-0387, ZPMC-0388 and ZPMC-0389 related to Tower.

NCT

(*Continued Page 2 of 2*)

Transmitted by: Scott Kennedy Sr. Bridge Engineer

Attachments: ZPMC-0390

cc: Rick Morrow, Gary Pursell, Mark Woods, Doug Coe

File: 05.03.06

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000378

Subject: NCR No. ZPMC-0390

Dated: 16-Oct-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000385 **Rev:** 00

Contractor's Proposed Resolution:

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

ABF JV QCM has implemented training with ZPMC to improve the quality of inspections. ABF JV 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, ABF JV 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 of repairs and subsequent NDT specific to this report will be transmitted through Daily Welding Reports and will be available in the documentation data base. Based on this course of action, ZPMC is requesting that this proposed resolution be approved with action pending. Once training records are available to be transmitted, ZPMC will request closure of this NCR.

Submitted by:

Attachment(s): ABF-NPR-000385R00

Caltrans' comments:

Status: REJ

Date: 18-Oct-2009

Even though the course of action is acceptable, the department will not consider closure of this NCR (ZPMC-0390) until all the repair documents and training documents are submitted and reviewed.

Submitted by: Lee, Ken

Date: 18-Oct-2009

Attachment(s):

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000378

Subject: NCR No. ZPMC-0390

Dated: 24-Nov-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000385 **Rev:** 01

Contractor's Proposed Resolution:

Reference Resolution: Attached is documentation of the repair of the missed indications and subsequent NDT. ZPMC requests closure of this NCR.

Attached is documentation of the repair of the missed indications and subsequent NDT. The NDT documentation shows that the weld is acceptable. ABFJV's QCM has conducted training with ZPMC's MT inspectors and has previously submitted the training agenda and sign in sheet to the Department for verification to show the steps ABFJV is taking to address the missed indications. In addition, ABFJV has implemented NDT verification of welds to ensure that welds are acceptable prior to being inspected by the Engineer. On September 24, 2009 an exploration by ABFJV, ZPMC and the Department found that these indications were slag or porosities which were the result of insufficient interpass cleaning. ABFJV has reminded ZPMC of the importance of interpass cleaning of the welds and ZPMC acknowledges that interpass cleaning must be a focus. Based on these actions and the attached documentation, ZPMC requests closure of this NCR.

Submitted by:

Attachment(s): ABF-NPR-000385R01;

Caltrans' comments:

Status: CLO

Date: 10-Dec-2009

The proposed resolution is acceptable. The Department concurs that Non-conformance ZPMC-0390 is closed.

Submitted by: Lee, Ken

Date: 10-Dec-2009

Attachment(s):



No. T-089

LETTER OF RESPONSE

TO: American Bridge/Flour JV
DATE: 2009-11-24
REGARDING: NCR-000416 (ZPMC-0390)

We ZPMC acknowledge this problem , About this situation we ZPMC at the first time issued, the relative reports to do the repair work, when we finished the repair work ,the CT people confirmed that ,and accepted all the welds about the C/D corner diagonal stiffener. And Green tag was on the C/D corner diagonal stiffener.

As far as I am concerned ,CT should close this NCR.

ATTACHMENT:
NCR-000416 (ZPMC-0390)
CWR: T-CWR277
REPORT OF MAGNETIC PARTICLE: T787-MT-5946R1, T787-MT-7011,
T787-MT-7012
WR: T-WR2727, T-WR2728

Li Xuyang

25.11.24



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: 21-Sep-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-0390

Job Name: SAS Superstructure
 Document No: 05.03.06-000378

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- Recurring QC issue that constitutes a systematic problem in quality control.
- Non-Conformance Resolved.

Material Location: Tower

Lift: 03

Remarks:

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NCT

(Continued Page 2 of 2)

Transmitted by: Scott Kennedy Sr. Bridge Engineer

Attachments: ZPMC-0390

cc: Rick Morrow, Gary Pursell, Mark Woods, Doug Coc

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, PRC

Report No: NCR-000416

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 21-Sep-2009

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

NCR #: ZPMC-0390

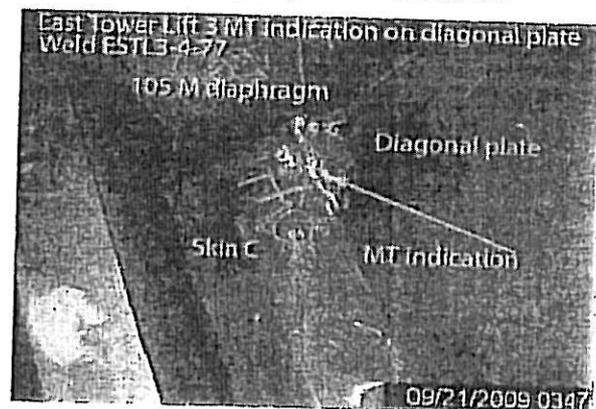
Type of problem:

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

Reference Description: Missed MT indications at East Tower, Lift 3, Diagonal Stiffener weld

Description of Non-Conformance:

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QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

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Time and method of notification: 9/20/2009, 21:30; Verbal

Name of Caltrans Engineer notified: Scott Kennedy

Time and method of notification: 9/21/2009, 12:00; Verbal

QC Inspector's Name: Peng Guo

Was QC Inspector aware of the problem: Yes No

Contractor's proposal to correct the problem:

Comments:

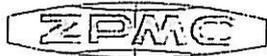
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Inspected By: Sinevod, Serge

ASMR

Reviewed By: Wahbeh, Mazen

SMR



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.:	ESTL3-4B/K	报告编号 Report No.:	T-CWR277
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	Tower(E) 3 rd lifting	NDT 报告编号 NDT Report No.:	T787-MT-5946
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

Description of Welding Discontinuity:

在对ESTL3-4B/K-77检测时, 发现1处纵向裂纹。L=50mm Y=50mm

Welder ID No. (焊工编号): 066673/070101/068206/066882/069043

Position:(位置): 1G

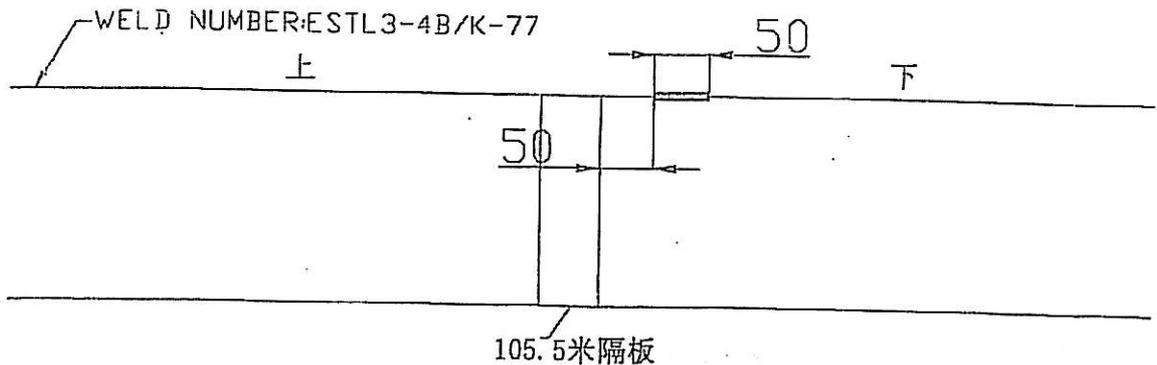
One longitudinal crack was found by use of MT on ESTL3-4B/K-77.

检验员 (Inspector): Cai Xinxin

日期 (Date): 2009.09.22

焊缝返修位置示意图:

Draft of Welding Discontinuity:



This document is APPROVED
State of California
DEPARTMENT OF TRANSPORTATION
Pursuant to Section 6-1.02 of the
Standard Specifications
Initial [Signature] Date: 2009.09.22



关键焊缝返修报告

Critical Welding Repair Report (CWR)

· 版本
Rev. No.:

0

项目名称 Project Name:	英国海湾大桥 SFOBB	部件图号 Drawing No.:	ESTL3-4B/K	报告编号 Report No.:	T-CWR277
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	Tower(E) 3 rd Ring	NDT 报告编号 NDT Report No.:	T787-MT-5946
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.

1. QC shall verify sufficient preheat has been applied, to remove moisture, prior to welding.

车间负责人 (Foreman):

L. Shiguan

日期 (Date):

07-05-23

参照的 WPS 编号 Repair WPS No.:	WPS-345-FCAW-1 G(1F)-Repair WPS-345-FCAW-2 G(2F)-Repair WPS-345-SMAW-1 G(1F)-Repair WPS-345-SMAW-2 G(2F)-Repair	工艺员 Technologist:	Shay Juey 7-9-24
返修 (碳刨) 前预热温度 Preheat Temperature Before Gouging:	75°	返修的缺陷 Description of Discontinuity:	裂纹 Crack
焊前处理检查 Inspection Before Welding:	AW	焊前预热温度 Preheat Temperature Before Welding:	170°
最大碳刨深度 Max. Depth of Gouge:	6mm	碳刨总长 Total Length of Gouge:	50mm
焊工 Welder:	048522	焊接类型 Welding Type:	SMAW
焊接电流 Current:	176	焊接电压 Voltage:	28.4
		焊接位置 Position:	2G
		焊接速度 Speed:	120

返修后检查

Inspection After Repair:

外观检查 VT Result:	AW	检验员 Inspector:	Andi Xiang	日期 Date:	2009. 10. 20
NDT 复检 NDT Result:	ACE	探伤员 NDT Person:	Lu Juey	日期 Date:	2009. 10. 28

见证:

Witness/Review:

备注:

Remark:

#R787-QCP-900

产生原因:

Cause:

1. 火焰加热时, 水汽没有完全的去除或者这个区域预热不够;
1. Moisture wasn't completely removed during drying operation (preheating) or the area wasn't preheated sufficiently.

车间负责人 (Foreman): *Lisuguan* 日期 (Date): *05.05.27*

处理意见

Disposition :

1. QC shall monitor and direct the welder and the grinder doing the repair operation.
 2. Preheat before gouging; the temperature shall be at least 65°C.
 3. Gouge the weld to remove identified defects.
 4. Joint details shall refer to the approved WPS repair.
 5. Grind the gouged areas to a smooth and shiny surface.
 6. Verify with VT and MT to ensure no defects remain in the weld joint prior to welding.
 7. QC shall monitor all welding passes being deposited.
 8. QC shall ensure all slag has been removed prior the deposition of next pass.
 9. Preheat and maintain interpass temperature control in accordance with the WPS.
 10. Blend the weld repaired areas into the adjacent weld or base metal by grinding.
 11. Perform VT, MT and UT NDT inspection to the repaired areas.
1. 在返修过程中, QC 应该监控和指导焊工和打磨工;
 2. 碳刨之前必须先进行预热, 温度不低于 65° C;
 3. 碳刨去除缺陷;
 4. 缺陷被完全消除后, 必须准备一个正确的接头型式, 具体接头型式请参见对应的修补焊接工艺规程(WPS);
 5. 将碳刨面打磨光滑;
 6. 在准备好焊接接头焊接前, 用 VT 和 MT 检测缺陷被完全消除;
 7. 在返修过程中, QC 确认焊道清理干净;
 8. 在进入下到焊缝前, QC 应该保证所有的缺陷已经去除;
 9. 根据 WPS 控制预热和焊道的温度;
 10. 打磨返修区域与临近焊缝和母材其平;
 11. VT, MT 和其它 NDT 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 *SFK* Date: *05/25/05*

工艺:

Technical Engineer: *Jeff Jinduy*

审核:

Approved By: *Lisuguan*

Lisuguan
for C. Brennan

日期:

Date: *05.05.27*



REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 T787-MT-5946R1 DATE日期 2009.10.28 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: ESTL3-4B/K Tower(E) 3rd lifting 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. 28ST, 2009

EQUIPMENT 设备: MT YOKE MANUFACTURER 制造商: PARKER MODEL NO. 样式编号: B310S SERIAL NO. 连续编号: 5620 5395 5617

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-345T2-Z 90/45mm

WELDING PROCESS 焊接方法: SMAW TYPE OF JOINT 焊缝类型: 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			
ESTL3-4B/K-77	1R1			ACC.		

AFTER T-CWR277

BLANK

EXAMINED BY 主操: Xu Bing Xu Bing 09.10.28 REVIEWED BY 审核: Cai Xinlin Cai Xinlin 09.10.28
 LEVEL-II SIGN 签名 / DATE日期 LEVEL-II SIGN / DATE日期
 质量经理 / QCM: [Signature] 用户CUSTOMER: [Signature]
 签字 SIGN / 日期 DATE: [Signature] 签字 SIGN / 日期 DATE: [Signature]

产生原因:
 Caused:
 1. 火焰加热时, 水汽没有完全的去除或者这个区域预热不够;
 1. Moisture wasn't completely removed during drying operation (preheating) or the area wa
 sn't preheated sufficiently.

车间负责人(Foreman): Li Shiqun
 日期(Date): 09.09.23

处理意见

Disposition:

1. Gouge off the defect weld;
2. Grind smoothly the gouged surface;
3. If User's request, check with VT or other NDT method to make sure the defect remove completely;
4. Preheat and the interpass temperature control according to the relative WPS-repair;
5. Check the welding according to the approved shop drawing.
1. 清除有缺陷的焊缝碳刨去除;
2. 将碳刨处打磨光滑;
3. 如用户要求, 用 VT 或其它的无损检测方法证实缺陷被完全清除;
4. 按批准后返修焊接工艺规程 WPS 要求进行预热和控制道间温度;
5. 按图纸要求检测焊缝。

Technical engineer
 工艺: Zhang Jindong
 审核: Lu Jinhua
 09.09.23
 Approved by

日期
 09.09.23
 Date

		焊缝返修报告 Welding Repair Report		版本 Rev. No. 0
		项目名称 美国海湾大桥 Project Name SFOBB	部件图号 ESTL3-4B/K-77 Drawing No.	
纠正措施: Correction 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。 1. QC shall verify sufficient preheat has been applied, to remove moisture, prior to welding.				
车间负责人(Foreman): <i>L. Shinguan</i> 日期(Date): <i>09.09.23</i>				
参照的WPS编号 WPS-345-FCAW-1 G (1F) -Repair WPS-345-FCAW-2 G (2F) -Repair WPS-345-SMAW-1 G(1F)-Repair WPS-345-SMAW-2 G(2F)-Repair		返修(碳刨) 前预热温度 NA Preheat temperature before gouging		
返修处理检查 AM Inspection before welding		焊前处理检查 AM Preheat temperature before welding		
最大碳刨深度 NA Max. depth of gouging		焊后检查 AM Inspection After repairing:		
焊工 155026 welder	焊接类型 SMAW welding type	焊接位置 H position	焊接电压 236 Voltage	焊接速度 110 Speed
外观检查 AM VT result	检验员 AM Inspector	日期 09.09.24 Date	探伤员 Cai Xinxin NDT person	日期 09.09.24 Date
见证: Witness/Review:		备注: Remark:		



REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 T787-MT-7012 DATE日期 2009.09.24 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: ESTL3-4B/K THE 3RD LIFT DIAGONAL STIFENER SKIN 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. 28ST, 2009

EQUIPMENT 设备: MT YOKE MANUFACTURER 制造商: PARKER MODEL NO. 样式编号: B310S SERIAL NO. 连续编号: 5620 5395 5617

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-345T2-Z 45/90 mm

WELDING PROCESS 焊接方法: SMAW TYPE OF JOINT 焊缝类型: 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			
ESTL3-4B/K-77				ACC.		100%MT

AFTER T-WR2727

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EXAMINED BY主探 Cai Xinxin <u>Cai Xin Xin</u> 09.09.24 LEVEL-II SIGN 签名 / DATE日期	REVIEWED BY 审核 <u>Wang We</u> 09.09.24 LEVEL-II SIGN / DATE日期
质量经理 / QCM <u>Lu Jian</u> 09.9.24 签字 SIGN / 日期 DATE	用户CUSTOMER _____ 签字 SIGN / 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	ESTL3-4B/K-78	报告编号 Report No.	T-WR2728
合同号 Contract No.:	04-0120F4	部件名称 Items Name	东塔第三吊装段 The 3 rd lifting Tower(E)	NDT报告编号 Report No.of NDT	NA
项目编号 Project No.:	ZP06-787				

缺陷描述

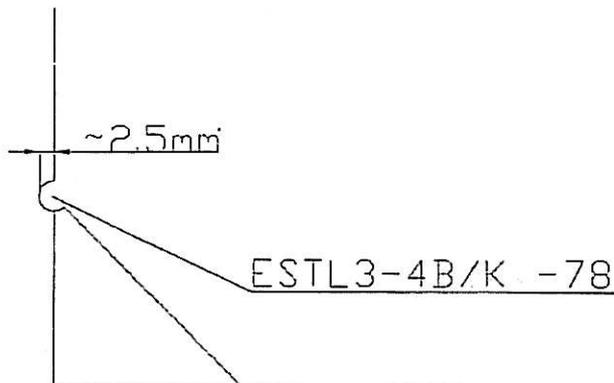
Description of welding discontinuity:

东塔第三吊装段斜筋板与面板焊缝(ESTL3-4B/K-78)发现一处咬边, 深度约为2.5MM, 如图:
The undercut was found at third lifting diagonal stiffener and skin (ESTL3-4B/K-78), 2.5mm in length, see draft.

检验员 (Inspector): An Qingxiang 日期(Date): 09.09.22

焊缝返修位置示意图:

Draft of welding discontinuity:



产生原因:

Caused:

烧焊时焊接电流偏大, 导致产生咬边.

Welding current too fast caused the undercut.

车间负责人(Foreman):

Li Shiqun

日期(Date):

09.09.23

处理意见

Disposition:

- 1、Grind the building-up area;
 - 2、Preheat and weld passes temperature according to the approved WPS, it should be 2-3mm than the theory size;
 - 3、Grind the weld area smoothly after repairing;
 - 4、Perform 100%MT and 100%UT to the repair area.
-
- 1、对需堆焊部分进行打磨;
 - 2、按批准后焊接工艺规程 WPS 要求进行预热和控制道间温度, 进行堆焊, 略高于理论值 2~3mm;
 - 3、施焊完毕后将施焊位置打磨平整;
 - 4、对修补区域做 100%MT+100%UT.

工艺: Zhang Jindong
Technical engineer

09.09.23

审核:
Approved by

Lu Jiaming

日期
Date

09.9.23

		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	ESTL3-4B/K-78	报告编号 Report No.	T-WR2728
合同号 Contract No.:	04-0120F4	部件名称 Items Name	东塔第三吊装段 The 3 rd lifting Tower(E)	NDT报告编号 Report No. of NDT	NA		
项目编号 Project No.:	ZP06-787						
纠正措施: Correction action to prevent re occurrence: 1. 严格按照规定的WPS参数进行焊接 2. 加强焊接时的质量监控。 1. Strictly weld in accordance with the requirements of WPS. 2. Improve monitoring of welding.							
车间负责人(Foreman): <i>Lishiquan</i> 日期(Date): <i>09.09.23</i>							
参照的WPS编号 Repair WPS No.	WPS-345-FCAW-1 G(1F)-Repair WPS-345-FCAW-2 G(2F)-Repair WPS-345-SMAW-1 G(1F)-Repair WPS-345-SMAW-2 G(2F)-Repair		工艺员 technologist	<i>zhongjindang</i> <i>09.11.23</i>			
返修(碳刨)前预热温度 Preheat temperature before gouging	<i>NA</i>		返修的缺陷 Description of discontinuity	<i>无</i>			
焊前处理检查 Inspection before welding	<i>Am</i>		焊前预热温度 Preheat temperature before welding	<i>190°C</i>			
最大碳刨深度 Max. depth of gouging	<i>NA</i>		碳刨总长 Total length of gouging	<i>NA</i>			
焊工 welder	<i>058026</i>		焊接类型 welding type	<i>Smjw</i>			
焊接电流 Current	<i>163</i>		焊接电压 Voltage	<i>23.2</i>			
焊接速度 Speed	<i>111</i>		焊接位置 position	<i>H</i>			
返修后检查 Inspection After repairing:							
外观检查 VT result	<i>Am</i>		检验员 Inspector	<i>07120651</i>		日期 Date	<i>07.09.24</i>
NDT复检 NDT result	<i>MT Au</i>		探伤员 NDT person	<i>Cai Xinxin</i>		日期 Date	<i>07.09.24</i>
见证: Witness/Review:							
备注: Remark:							

#R787-QCP-900

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-000335**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 23-Nov-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0390**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: 21-Sep-2009**Description of Non-Conformance:**

During Magnetic Particle Testing (MT) of East Tower, Lift 3, CD corner diagonal stiffener weld ESTL3-4B/K-77, QA discovered one 10 mm linear indication and one 40 mm intermittent linear indication. Undercut of up to 2.5 mm in depth was also observed at weld ESTL3-4B/K-78 between the 99 m and 102.5 m Diaphragms. These welds have been previously tested and accepted by ZPMC Quality Control Personnel.

Contractor's proposal to correct the problem:

Repair affected welds.

Corrective action taken:

The affected welds have been repaired, verified by QA, and green tagged. To resolve the recurring failure for QC to detect MT indications, ABFJV QCM has implemented training with ZPMC to improve quality of inspectors. Topics include: inspection of equipment prior to use, proper conditions for inspection, proper technique for MT & UT.

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

Reviewed By: Wahbeh, Mazen

QA Reviewer