DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.25B

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

Location: Changxing Island, Shanghai, P.R. China **Report No:** NCR-000271
Prime Contractor: American Bridge/Fluor Enterprises, a JV **Date:** 16-May-2009
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0245

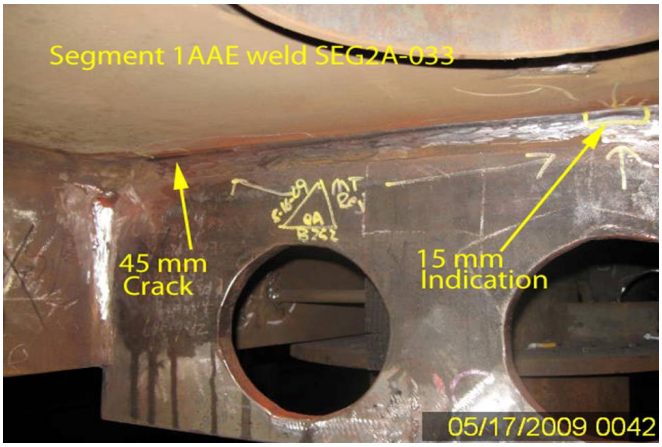
Type of problem:

Welding	☐	**Concrete**	☐	**Other**	☑	
Welding	☐	**Curing**	☐	**Procedural**	☑	**Bridge No:** 34-0006
Joint fit-up	☐	**Coating**	☐	**Other**	☐	**Component:** OBG Segment 1AAE
Procedural	☐	**Procedural**	☐	**Description:**		

Reference Description: Missed MT Indications by QC, Welds SEG2A-033 and 034

Description of Non-Conformance:

During Final Magnetic Particle Testing (MT) Inspection of OBG Segment 1AAE, Caltrans Quality Assurance (QA) Inspector performed tests on complete joint penetration welds SEG2A-033 and 034. Two linear indications were found on weld 033, a 45 mm crack and a 15 mm indication. One linear indication 15 mm in length was found on weld 034. Prior to QA MT, ZPMC Quality Control (QC) stated that 100% MT and Visual inspection had been performed on the above mentioned welds.



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"

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Who discovered the problem: Larry Viars
Name of individual from Contractor notified: No ABF QC Present
Time and method of notification: NA
Name of Caltrans Engineer notified: Stanley Ku, Ching Chao
Time and method of notification: 05/17/09, 11:30, Email
QC Inspector's Name: Wang Lu
Was QC Inspector aware of the problem: ☐ **Yes** ☑ **No**
Contractor's proposal to correct the problem:

Comments:
This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang, +(86) 1500.042.2372, who represents the Office of Structural Materials for your project.

Inspected By:	Guest,Skyler	SMR
Reviewed By:	Wahbeh,Mazen	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:**	22-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:**	05.03.06-000236
Subject:	NCR No. ZPMC-0245		

Reference Description: Missed MT Indications by QC, Welds SEG2A-033 and 034

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:**

Remarks:

During Final Magnetic Particle Testing (MT) Inspection of OBG Segment 1AAE, Caltrans Quality Assurance (QA) Inspector performed tests on complete joint penetration welds SEG2A-033 and 034. Two linear indications were found on weld 033, a 45 mm crack and a 15 mm indication. One linear indication 15 mm in length was found on weld 034. Prior to QA MT, ZPMC Quality Control (QC) stated that 100% MT and Visual inspection had been performed on the above mentioned welds.

Action Required and/or Action Taken:

A response for the resolution of this issue is expected within 14 days.

Transmitted by: Stanley Ku Sr. Bridge Engineer

Attachments: ZPMC-0245

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Brian Boal, Doug Coe, Jason Tom, Ching Chao

File: 05.03.06

AMERICAN BRIDGE/FLUOR ENTERPRISES, a JV

P.O. BOX 23223 Oakland, CA 94623

Phone (510) 419-0120 / Fax (510) 839-0666

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000236

Subject: NCR No. ZPMC-0245

Dated: **27-May-2009**

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

Job Name: SAS Superstructure

Document No.: **ABF-NPR-000240 Rev: 00**

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has again been notified of missed NDT indications. ABF have recently transmitted a letter to ZPMC upper management to further elevate this issue within the ZPMC organization.

ZPMC has again been notified of missed NDT indications. ABF have recently transmitted a letter to ZPMC upper management to further elevate this issue within the ZPMC organization. ZPMC will submit weld repair and inspection documents at a later date.

Submitted by:

Attachment(s): ABF-NPR-000240R00

Caltrans' comments:

Status: AAP

Date: 04-Jun-2009

The response is acceptable, but the Non-Conformance is not closed.

Please 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-0245 at that time.

Submitted by: Wright, Doug

Date: 04-Jun-2009

Attachment(s): NPR CT Comments

AMERICAN BRIDGE/FLUOR ENTERPRISES, a JV

P.O. BOX 23223 Oakland, CA 94623

Phone (510) 419-0120 / Fax (510) 839-0666

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000236

Subject: NCR No. ZPMC-0245

Dated: **13-Jul-2009**

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

Job Name: SAS Superstructure

Document No.: **ABF-NPR-000240 Rev: 01**

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has responded to the NCR and has attached the necessary documents for closure. ZPMC requests closure of this NCR.

ZPMC has responded to the NCR and has attached the necessary documents for closure. ZPMC requests closure of this NCR.

Submitted by:

Attachment(s): ABF-NPR-000240R01;

Caltrans' comments:

Status: AAP

Date: 15-Jul-2009

The response is acceptable, but the Non-Conformance is not closed. The attached documentation did not include all of the welds listed in the Non-Conformance.

Please provide the inspection documentation of all of the welds listed in the Non-Conformance. The Department will review the Contractor's proposal to close Non-Conformance ZPMC-0245 at that time.

Submitted by: Wright, Doug

Date: 15-Jul-2009

Attachment(s):

No. B-368

LETTER OF RESPONSE

TO: American Bridge/Flour

DATE: 2009-6-11

REGARDING: NCR-00270/271(ZPMC-0244/245)

With this letter of response, ZPMC requests closure for Caltrans **NCR-00270/271(ZPMC-0244/245).** According with the NPR response from the caltrans, we provide the documentation of the weld repairs the were performed and that the repairs were acceptable.

So base on the above explanation and attached documentations, ZPMC applies to close the caltrans's report **NCR-00270/271(ZPMC-0244/245).**

Please reference attached documentation for acceptance and closure the **NCR-00270/271(ZPMC-0244/245).**

ATTACHMENT:
NCR-00270/271(ZPMC-0244/245)
The critical welding repair report
The final NDT inspection reports

Zhaoshuangbao

2009. 6. 11

ZPMC – 0244
CWR
final UT/MT

ZPMC

关键焊
Critical Welding

项目名称 Project Name:	美国海湾大桥 SFOBB	部件图号 Drawing No.:			
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	1AAW	NDT 报告编号 NDT Report No.:	B787-MT-11112
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述：

Description of Welding Discontinuity:

吊耳铲除后母材上发现有10处横向裂纹。1、L=10mm；2、L=8mm；3、L=12mm；4、L=14mm；5、L=6mm；6、L=6mm；7、L=8mm；8、L=12mm；9、L=10mm；10、L=14mm；

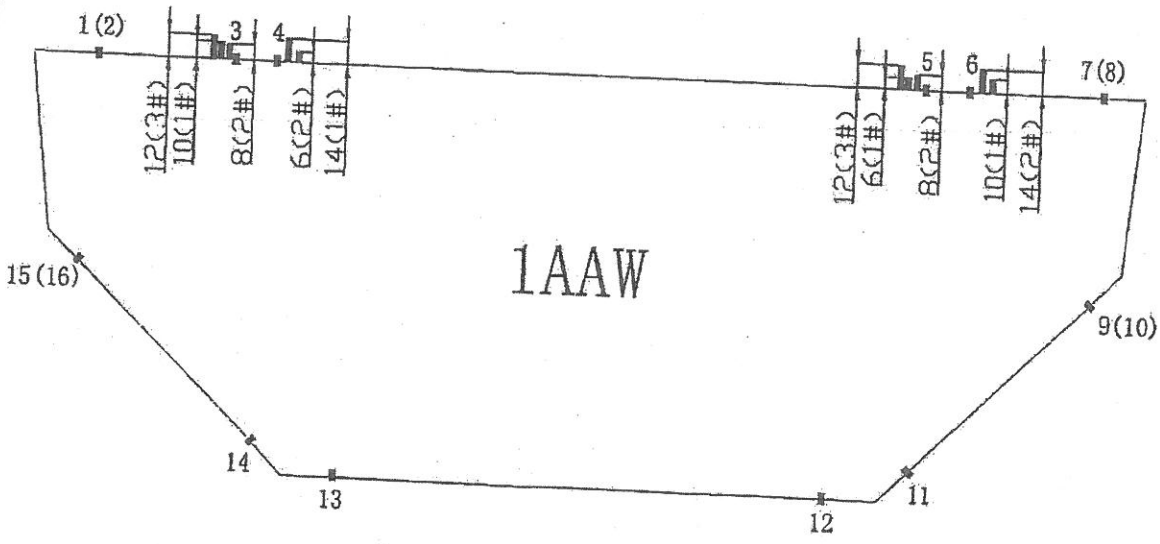
Ten transverse cracks were found by use of MT in material after removing lifting.
1、L=10mm；2、L=8mm；3、L=12mm；4、L=14mm；5、L=6mm；6、L=6mm；7、L=8mm；8、L=12mm；9、L=10mm；10、L=14mm；

检验员 (Inspector)：Sun Gongchang

日期 (Date)：2009-05-23

焊缝返修位置示意图：

Draft of Welding Discontinuity:



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DEPARTMENT OF TRANSPORTATION
Pursuant to Section 5-1.02 of the
Standard Specifications
Initial: [illegible] Date: 5/25/09

产生原因:

Cause:

1.在装配吊耳时，产生点焊裂纹，去除吊耳后，裂纹延伸至母材。

2.由于焊后应力集中或未能控制好后热温度导致裂纹出现

1. The tack crack was caused during assembly lifting, and cracks extended to base metal after removing lifting.
2. Welding contraction stresses and insufficient preheat and post heat control caused the crack.

车间负责人 (Foreman): Li zhigang 日期 (Date): 09.05.23

处理意见

Disposition :

1. 采用打磨的方式去除裂纹；
2. 准备一个正确的接头型式，具体参照相应的返修WPS；
3. VT和MT检测确认返修区域没有裂纹；
4. 根据批准的返修焊接工艺规程
5. 预热温度应不小于100℃，
6. 预热范围在修补区域周围不应小于150mm；
7. 将修补区域打磨与母材或相邻焊缝平齐；
8. 对修补区域做VT与MT检测。

1. Remove the crack by means of grinding.
2. Prepare excavation according to the approved repair WPS.
3. Verify with VT and MT repair areas are crack free.
4. Preheat and weld according to the approved repair WPS.
5. Preheat prior to welding to a minimum temperature of 100℃
6. The preheat area shall be a minimum of 150mm in all directions around the repair area.
7. Grind the repaired area flush with base metal or the adjacent weld.
8. Perform VT and MT of the repair areas.

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Pursuant to Section 5-1.02 of the
Standard Specifications
Initial Date: 5/25/09

工 艺:
Technical Engineer: Xin Tiefang

审核:
Approved By: for chenbin

日期:
Date: 09.5.23

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

ZPMC					版本 Rev. No.:
					0
项目名称 Project Name:	美国海湾大桥 SFOBB	部件图号 Drawing No.:	SEG001	报告编号 Report No.:	B-CWR540
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	1AAW	NDT 报告编号 NDT Report No.:	B787-MT-11112
项目编号 Project No.:	ZP06-787				

纠正措施:

Corrective Action to Prevent Re-occurrence:

1.加强装配和焊接时监控和控制，减少点焊裂纹;

2.在焊后严格控制其后热程序,避免裂纹现象发生。

1. Enhance supervision and controlling during assembly and welding to reduce tack welding cracks.

2. Enhance supervision during the post heating operation to avoid cracks.

WPS-345-FCAW-2G(2F)-Repair-2 Niu Tiepeng 09.5.29

车间负责人 (Foreman): Li zhigang 日期 (Date): 09.05.23

参照的WPS编号 Repair WPS No.:	WPS-345-SMAW-1 G(1F)-Repair WPS-345-FCAW-1 G(1F)-Repair-1	工艺员 Technologist:	Niu Tiefang 09.05.23
返修（碳刨）前预热温度 Preheat Temperature Before Gouging:	110℃	返修的缺陷 Description of Discontinuity:	cracks
焊前处理检查 Inspection Before Welding:	Acc	焊前预热温度 Preheat Temperature Before Welding:	124℃
最大碳刨深度 Max. Depth of Gouge:	7.5mm	碳刨总长 Total Length of Gouge:	130mm

焊工 Welder:	06270B	焊接类型 Welding Type:	FCAW	焊接位置 Position:	2G
焊接电流 Current:	287	焊接电压 Voltage:	29.5	焊接速度 Speed:	4.29

返修后检查 Inspection After Repair:

外观检查 VT Result:	Acc	检验员 Inspector:	chenxi	日 期 Date:	2009.05.29
NDT复检 NDT Result:	Acc	探伤员 NDT Person:	Sunyong chun	日 期 Date:	09.05.29

见证： Witness/Review:

备注： Remark :

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DEPARTMENT OF TRANSPORTATION
Pursuant to Section 5-1.02 of the
Standard Specifications
Initial FW Date: 5/5/09

ZPMC

周数 82#

日期 2009-5-29

Visual Weld Inspection Report
焊缝目视检查报告

Caltrans Contract No. 加州合同编号	04-0120F4	Girder/梁:	OBG Floor Beam
Project No.: 项目名称	San Francisco Oakland Bay Bridge 美国海湾大桥	Tower/塔:	
Project No.: 项目编号:	ZP06-787	Quality Control Representative: 质检代表:	
		CWI: 检验员:	Chen Xi 07072021
		Quality Assurance Manager ~Approval 质量控制经理:	

Weld No. 焊缝编号	Welder I.D.# 焊工识别号	Location 位置	Welding consumables 焊接材料	Undercut 咬边	Porosity 气孔	Overlap 焊瘤	Crater 弧坑	Arc strike 电弧擦伤	Spatters 飞溅	Crack 裂纹	Accept or Reject 接受或拒收	Repair 返修	Accept or Reject after repair 返修后接受或拒收
SEG001	062708	1G	supercored71H Φ1.4	√	√	√	√	√	√	√	ACC	NA	NA

☐ After root weld ☐ After cover pass

☑ After CWR or WRR No. :B-CWR540 ☐ After HSR No. : ☐ Others

#R787-QCP-603

" √ " is no defects. " X " is defects. "NA" is not applicable.

ZPMC

REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 B787-MT-11112R1	DATE日期 2009.05.29	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: SEG001 1AAW		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 5395 5617 5620
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-X 30 mm
WELDING PROCESS 焊接方法	FCAW	TYPE OF JOINT 焊缝类型	NA

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			
3	1R1			ACC.		
	2R1			ACC.		
	3R1			ACC.		
4	1R1			ACC.		
	2R1			ACC.		
5	1R1			ACC.		
	2R1			ACC.		
	3R1			ACC.		
6	1R1			ACC.		
	2R1			ACC.		
AFTER B-CWR540						
BLANK						

EXAMINED BY主探 Sun Gongchang Sun gongchang LEVEL - II SIGN 签名 / DATE日期 09.5.29	REVIEWED BY 审核 Ding Acheng LEVEL-II SIGN / DATE日期 09.5.29
质量经理 / QCM 签字 SIGN / 日期 DATE	用户CUSTOMER 签字 SIGN / 日期 DATE

(FORM# ZPQC-MT01)

ZPMC

关键焊缝返修报告
Critical Welding

版本 Rev. No.:

项目名称 Project Name:	美国海湾大桥 SFOBB	部件图号 Drawing No.:	
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	
项目编号 Project No.:	ZP06-787		

ZPMC-0245

CWR final VT/MT

焊缝缺陷描述:

Description of Welding Discontinuity:

在对SEG2A-033检测时，发现2处纵向裂纹。1、L=60mm; 2、L=6mm.

Welder ID No. (焊工编号):066912 Position:(位置): 2G

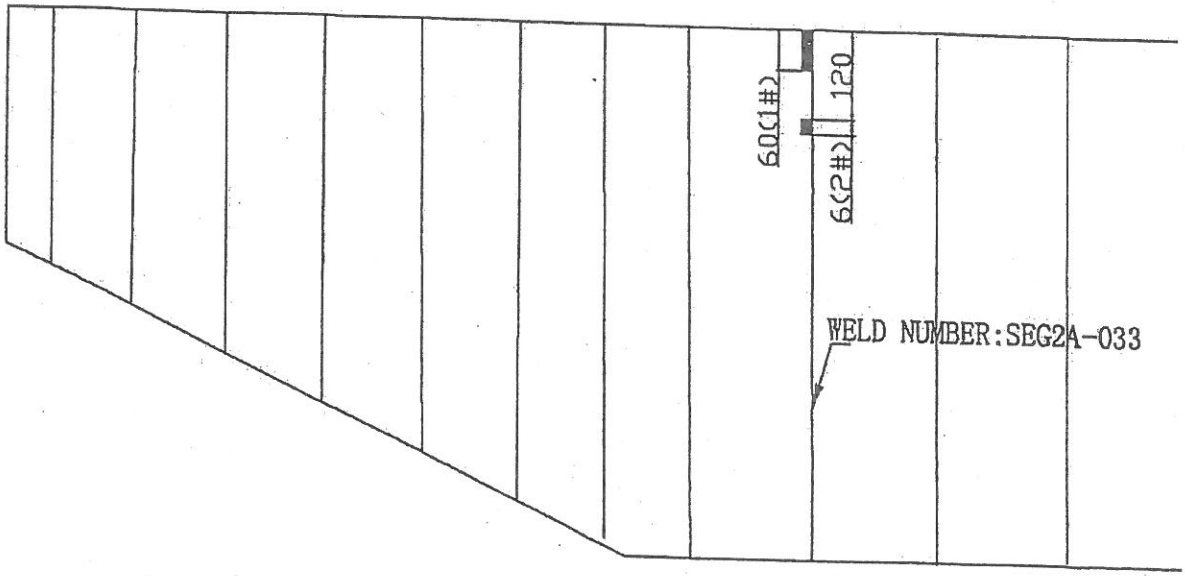
We found two longitudinal cracks in SEG2A-033.

检验员 (Inspector): Sun Gongchang Sun Gongchang

日期 (Date): 2009-05-17

焊缝返修位置示意图:

Draft of Welding Discontinuity:



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Pursuant to Section 5-1.02 of the
Standard Specifications
Initial Date: 5/21/9

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): Lizhigang 日期 (Date): 2009. 5. 19

处理意见

Disposition :

1.采用打磨的方式去除裂纹；
2. 准备一个正确的接头型式，具体参照相应的返修WPS；
3. VT和MT检测确认返修区域没有裂纹；
4. 根据批准的返修焊接工艺规程
5.预热温度应不小于100℃；
6.预热范围在修补区域周围不应小于150mm；
7. 将修补区域打磨与母材或相邻焊缝平齐；
8. 对修补区域做VT与MT检测。

1. Remove the crack by means of grinding.
2. Prepare excavation according to the approved repair WPS.
3. Verify with VT and MT repair areas are crack free.
4. Preheat and weld according to the approved repair WPS.
5. Preheat prior to welding to a minimum temperature of 100℃
6. The preheat area shall be a minimum of 150mm in all directions around the repair area.
7. Grind the repaired area flush with base metal or the adjacent weld.
8. Perform VT and MT of the repair areas.

[illegible] is APPROVED
State of California
DEPARTMENT OF TRANSPORTATION
Pursuant to Section 5-1.02 of the
Standard Specifications
Initial: [illegible] Date: 5/21/19

工 艺: Niutiefeng 2009.5.19 审核: Liyanhua for Chenbin 日期: 5.19
Technical Engineer: Approved By: Date:

#R787-QCP-900

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

ZPMC				版本 Rev. No.:
				0

项目名称 Project Name:	美国海湾大桥 SFOBB	部件图号 Drawing No.:	1AAE	报告编号 Report No.:	B-CWR533
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	SEG2A	NDT 报告编号 NDT Report No.:	B787-MT-10936
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): Lizhigang 日期 (Date): 2009.5.19

参照的WPS编号 Repair WPS No.:	WPS-345-SMAW-2 G(2F)-Repair WPS-345-FCAW-2 G(2F)-Repair-1	工艺员 Technologist:	Niutiefeng 5/19/09
返修（碳刨）前预热温度 Preheat Temperature Before Gouging:	97d	返修的缺陷 Description of Discontinuity:	crackle
焊前处理检查 Inspection Before Welding:	Acc	焊前预热温度 Preheat Temperature Before Welding:	116d
最大碳刨深度 Max. Depth of Gouge:	9mm	碳刨总长 Total Length of Gouge:	100mm

焊工 Welder:	20059	焊接类型 Welding Type:	FCAW	焊接位置 Position:	2G
焊接电流 Current:	290	焊接电压 Voltage:	30	焊接速度 Speed:	526

返修后检查 Inspection After Repair:

外观检查 VT Result:	Acc	检验员 Inspector:	Chenxi	日 期 Date:	2009.05.24.
NDT复检 NDT Result:	Acc	探伤员 NDT Person:	Sungongcheng	日 期 Date:	05.24

见证：
Witness/Review:

备注：
Remark :

#R787-QCP-900

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State of California
DEPARTMENT OF TRANSPORTATION
Pursuant to Section 5-1.02 of the
Standard Specifications
Initial [illegible] Date: 5/21/9

ZPMC

周数 81#

日期 2009-05-24

Visual Weld Inspection Report 焊缝目视检查报告		Girder/梁:	OBG Floor Beam
		Tower/塔:	
Caltrans Contract No. 加州合同编号	04-0120F4	Quality Control Representative: 质检代表:	
Project No.: 项目名称	San Francisco Oakland Bay Bridge 美国海湾大桥	CWI: 检验员:	Chen xi 07/07/2021
Project No.: 项目编号:	ZP06-787	Quality Assurance Manager ~Approval 质量控制经理:	

Weld No. 焊缝编号	Welder I.D.# 焊工识别号	Location 位置	Welding consumables 焊接材料	Undercut 咬边	Porosity 气孔	Over lap 焊瘤	Crater 弧坑	Arc strike 电弧擦伤	Spatters 飞溅	Crack 裂纹	Accept or Reject 接受或拒收	Repair 返修	Accept or Reject after repair 返修后接受或拒收
SEG2A-033	200569	2G	supercored71H Φ1.4	√	√	√	√	√	√	√	ACC	NA	NA

☐ After root weld ☐ After cover pass

☑ After CWR or WRR No.:B-CWR533 ☐ After HSR No.: ☐ Others

#R787-QCP-603

" √ " is no defects. " X " is defects. "NA" is not applicable.

ZPMC

REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 B787-MT-10936R1	DATE日期 2009.05.24	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:	1AAE SEG2A	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 5395 5617 5620
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-345 20/38mm
WELDING PROCESS 焊接方法	FCAW	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			
SEG2A-033	1R1			ACC.		
	2R1			ACC.		
AFTER B-CWR533						
BLANK						

EXAMINED BY主探 Sun Gongchang Sun Gong chang LEVEL - II SIGN 签名 / DATE日期 05-25-09	REVIEWED BY 审核 Ding A cheng LEVEL-II SIGN / DATE日期 05-25-09
质量经理 / QCM 签字 SIGN / 日期 DATE	用户CUSTOMER 签字 SIGN / 日期 DATE

(FORM# ZPQC-MT01)

AMERICAN BRIDGE/FLUOR ENTERPRISES, a JV

P.O. BOX 23223 Oakland, CA 94623

Phone (510) 419-0120 / Fax (510) 839-0666

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000236

Subject: NCR No. ZPMC-0245

Dated: **15-Jul-2009**

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

Job Name: SAS Superstructure

Document No.: **ABF-NPR-000240 Rev: 02**

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has responded to the NCR as stated in the attachment. ZPMC requests closure of this NCR.

ZPMC has responded to the NCR as stated in the attachment. ZPMC requests closure of this NCR.

Submitted by:

Attachment(s): ABF-NPR-000240R02;

Caltrans' comments:

Status: CLO

Date: 04-Aug-2009

The proposed resolution is acceptable. The inspection documents requested in Rev 1 have been provided. The Department concurs that Non-Conformance ZPMC-0245 is closed.

Submitted by: Wright, Doug

Date: 04-Aug-2009

Attachment(s):

No. B-395

LETTER OF RESPONSE

TO: American Bridge/Flour

DATE: 2009-7-14

REGARDING: NCR-00271 (ZPMC-0245)

With this letter of response, ZPMC requests closure for Caltrans **NCR-00271 (ZPMC-0245).** As the comments of the NPR we provided the CWR and final MT inspection report to support the weld repairs that were performed and that the repairs were acceptable, But we should reminded here that the indication on the surface of SEG2A-034 was removed onsite by grinding and no necessary to prepared the weld repair report. By the way all final MT inspections had been completed by ZPMC and verified by CT.

So base on the above explanation and attached documentations, ZPMC applies to close the caltrans's report **NCR-00271 (ZPMC-0245).**

Please reference attached documentation for acceptance and closure the **NCR-00271 (ZPMC-0245).**

ATTACHMENT:
NCR-00271(ZPMC-0245)
ZPMC internal NCR
The critical welding repair report
The final MT inspection reports

Zhao Shuangbao

2009. 7. 14

Nonconformance Report
不符合项报告

Project Name: S.F.O.B.B 项目名称: 美国加州海湾大桥	NCR Number: NCR 编号: NCR-B-163 (ZPMC-0245)
Item: Missed MT Indications by Quality Control 名称描述: MT 探伤漏检	Item Number: 件号: OBG 1AAE
Drawing: 图号: SEG2	
Location: OBG 1AAE 位置:	Date: 日期: 2009-06-03

Description of Nonconformance:

During Final Magnetic Particle Testing(MT) Inspection of OBG Segment 1AAE, Caltrans Quality Assurance(QA) Inspector tests on complete joint penetration welds SEG2A-033 & 034. Two linear indications were found on weld 033, a 45mm crack and a 15mm indication. One linear indication 15mm in length was found on weld 034. Prior to QA MT, ZPMC QC stated that 100% MT and Visual inspection had been performed on the above mentioned welds.

加洲检验员在对 1AAE 箱体做 MT 检验时，发现焊缝 SEG2A-033 上分别发现 45mm 和 15mm 的裂纹，在焊缝 SEG2A-034 上发现 15mm 长的线性缺陷（裂纹）。之前，ZPMC 的检验员对这两条焊缝已经完成了 100%的 VT 和 MT 并验收。

Work By: LiLiming 09.06.29 施工方:
Prepared by: ShenXuejun 2009.6.3 准备:
Reviewed by QCE: 陈建华 6/6/09 质量工程师批准:

☐ Drawing Error 图纸错误 ☐ Material Defect 材料缺陷 ■ Fabrication Error 制作错误 ☑ Other 其他原因

Disposition: 处理措施:
☐ Use as is 回用 ☐ Repair 返修 ☐ Reject 拒收

Recommendation:
建议:

该部位重新检测返修

Re-inspection and repair.

Prepared by: LiLiming 09.06.29 准备
Approved by QCA: _____ 质量经理批准

Reason for Nonconformance:
不符合原因:

裂纹没有检测出

Linear indication didn't find.

Prevention of Re-occurrence:
预防措施:

按照操作，加强复检
Enhance re-inspection and perform according to procedure

Approved by/批准: Li Liming 06.29

Technical Justification for Use-As-Is/Repair: ☐ **Attachment** ☐ **Non-attachment**
回用或返修的技术依据: **附件** **无附件**

Reviewed /批准: _____

Verification: ☐ **Acceptable** ☐ **Unacceptable**
确认: **可接受** **不可接受**

Verified by QCI/质检确认: _____ **Reviewed by QCA/质检主任审核:** _____

#R787-QCP-1300

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: 22-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: 05.03.06-000236

Subject: NCR No. ZPMC-0245

Reference Description: Missed MT Indications by QC, Welds SEG2A-033 and 034

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:**

Remarks:

During Final Magnetic Particle Testing (MT) Inspection of OBG Segment 1AAE, Caltrans Quality Assurance (QA) Inspector performed tests on complete joint penetration welds SEG2A-033 and 034. Two linear indications were found on weld 033, a 45 mm crack and a 15 mm indication. One linear indication 15 mm in length was found on weld 034. Prior to QA MT, ZPMC Quality Control (QC) stated that 100% MT and Visual inspection had been performed on the above mentioned welds.

Action Required and/or Action Taken:

A response for the resolution of this issue is expected within 14 days.

Transmitted by: Stanley Ku Sr. Bridge Engineer
Attachments: ZPMC-0245

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Brian Boal, Doug Coe, Jason Tom, Ching Chao
File: 05.03.06

DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.25B

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

Location: Changxing Island, Shanghai, P.R. China **Report No:** NCR-000271
Prime Contractor: American Bridge/Fluor Enterprises, a JV **Date:** 16-May-2009
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0245

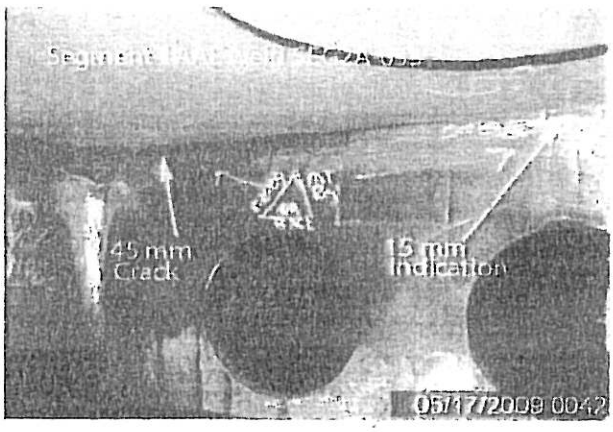
Type of problem:

Welding	☐	**Concrete**	☐	**Other**	☑	
Welding	☐	**Curing**	☐	**Procedural**	☑	**Bridge No:** 34-0006
Joint fit-up	☐	**Coating**	☐	**Other**	☐	**Component:** OBG Segment 1AAE
Procedural	☐	**Procedural**	☐	**Description:**		

Reference Description: Missed MT Indications by QC, Welds SEG2A-033 and 034

Description of Non-Conformance:

During Final Magnetic Particle Testing (MT) Inspection of OBG Segment 1AAE, Caltrans Quality Assurance (QA) Inspector performed tests on complete joint penetration welds SEG2A-033 and 034. Two linear indications were found on weld 033, a 45 mm crack and a 15 mm indication. One linear indication 15 mm in length was found on weld 034. Prior to QA MT, ZPMC Quality Control (QC) stated that 100% MT and Visual inspection had been performed on the above mentioned welds.



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"

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Who discovered the problem: Larry Viars
Name of individual from Contractor notified: No ABF QC Present
Time and method of notification: NA
Name of Caltrans Engineer notified: Stanley Ku, Ching Chao
Time and method of notification: 05/17/09, 11:30, Email
QC Inspector's Name: Wang Lu
Was QC Inspector aware of the problem: ☐ Yes ☑ No
Contractor's proposal to correct the problem:

Comments:
This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang, +(86) 1500.042.2372, who represents the Office of Structural Materials for your project.

Inspected By:	Guest,Skyler	SMR
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.:	1AAE	报告编号 Report No.:	B-CWR533
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	SEG2A	NDT 报告编号 NDT Report No.:	B787-MT-10936
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述：

Description of Welding Discontinuity:

在对SEG2A-033检测时，发现2处纵向裂纹。1、L=60mm； 2、L=6mm.

Welder ID No. (焊工编号):066912 **Position:(位置)：2G**

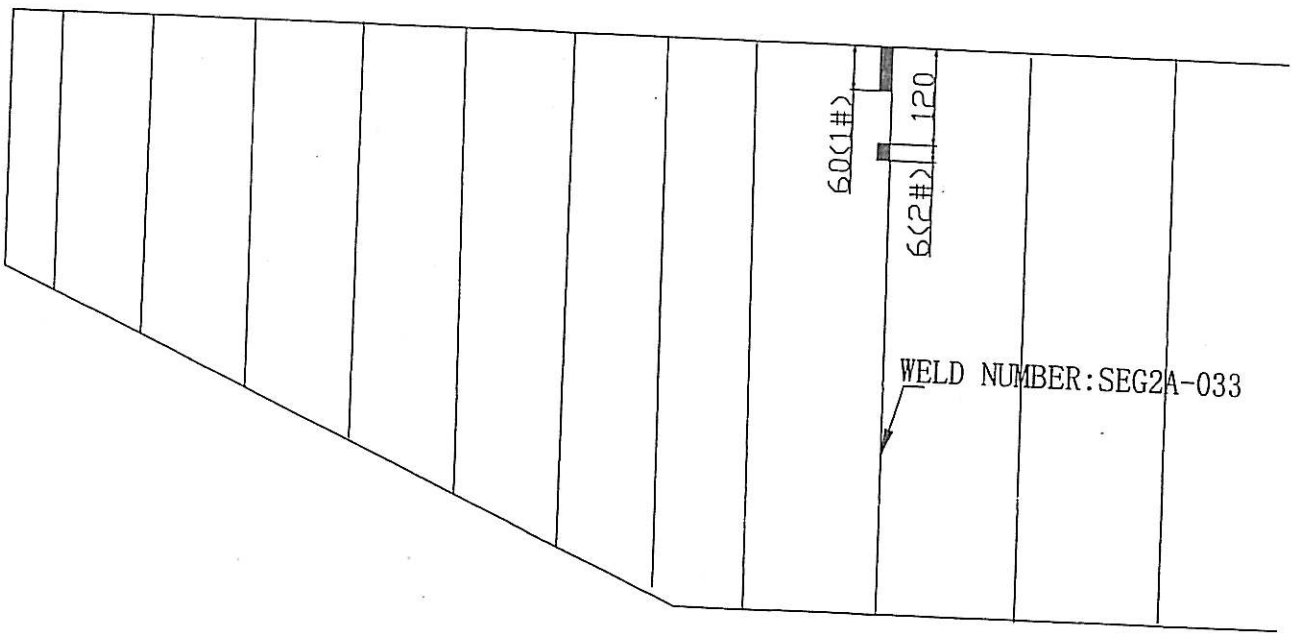
We found two longitudinal cracks in SEG2A-033.

检验员 (Inspector)：Sun Gongchang

日期 (Date)：2009-05-17

焊缝返修位置示意图：

Draft of Welding Discontinuity:



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):** Lizhigang 日期 **(Date):** 2009.5.19

处理意见

Disposition :

1.采用打磨的方式去除裂纹；
2. 准备一个正确的接头型式，具体参照相应的返修WPS；
3. VT和MT检测确认返修区域没有裂纹；
4. 根据批准的返修焊接工艺规程
5.预热温度应不小于100℃，
6.预热范围在修补区域周围不应小于150mm；
7. 将修补区域打磨与母材或相邻焊缝平齐；
8. 对修补区域做VT与MT检测。

1. Remove the crack by means of grinding.
2. Prepare excavation according to the approved repair WPS.
3. Verify with VT and MT repair areas are crack free.
4. Preheat and weld according to the approved repair WPS.
5. Preheat prior to welding to a minimum temperature of 100℃
6. The preheat area shall be a minimum of 150mm in all directions around the repair area.
7. Grind the repaired area flush with base metal or the adjacent weld.
8. Perform VT and MT of the repair areas.

工 艺: Niutiefeng 2009.5.19 **Technical Engineer:**

审核: Liyizhuang for Chenbin **Approved By:**

日期: 5.19 **Date:**

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.:	1AAE	报告编号 Report No.:	B-CWR533
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	SEG2A	NDT 报告编号 NDT Report No.:	B787-MT-10936
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): Lizhigang 日期 (Date): 2009.5.19

参照的WPS编号 Repair WPS No.:	WPS-345-SMAW-2 G(2F)-Repair WPS-345-FCAW-2 G(2F)-Repair-1	工艺员 Technologist:	Niutiefeng 5/19/09
返修（碳刨）前预热温度 Preheat Temperature Before Gouging:	97℃	返修的缺陷 Description of Discontinuity:	Crackle
焊前处理检查 Inspection Before Welding:	Acc	焊前预热温度 Preheat Temperature Before Welding:	116℃
最大碳刨深度 Max. Depth of Gouge:	9mm	碳刨总长 Total Length of Gouge:	100mm

焊工 Welder:	200569	焊接类型 Welding Type:	FCAW	焊接位置 Position:	2G
焊接电流 Current:	290	焊接电压 Voltage:	30	焊接速度 Speed:	526

返修后检查 Inspection After Repair:

外观检查 VT Result:	Acc	检验员 Inspector:	Chenxi	日期 Date:	2009.05.24.
NDT复检 NDT Result:	Acc	探伤员 NDT Person:	Sungongcheng	日期 Date:	05.24

见证： Witness/Review:

备注： Remark :

#R787-QCP-900

This document is APPROVED
State of California
DEPARTMENT OF TRANSPORTATION
Pursuant to Section 5-1.02 of the
Standard Specifications
Initial [illegible] Date: 5/21/9

ZPMC

REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 B787-MT-10936	DATE日期 2009.05.17	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:	1AAE SEG2A	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 5395 5617 5620
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-345 20/38mm
WELDING PROCESS 焊接方法	SAW/FCAW	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			
SEG2A-032				ACC.		100%MT
SEG2A-033	1	CRACK	60		REJ.	100%MT
	2	CRACK	6		REJ.	100%MT
SEG2A-034				ACC.		100%MT
SEG2A-030				ACC.		100%MT
BLANK						

EXAMINED BY主探 Sun Yongchang LEVEL - II SIGN 签名 / DATE日期 9.5.11	REVIEWED BY 审核 Zhang Shouchen LEVEL-II SIGN / DATE日期 9.5.11
质量经理 / QCM 签字 SIGN / 日期 DATE	用户CUSTOMER 签字 SIGN / 日期 DATE

(FORM# ZPQC-MT01)

ZPMC

REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 B787-MT-10936R1	DATE日期 2009.05.24	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: 1AAE SEG2A		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 5395 5617 5620
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-345 20/38mm
WELDING PROCESS 焊接方法	FCAW	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			
SEG2A-033	1R1			ACC.		
	2R1			ACC.		
AFTER B-CWR533						
BLANK						

EXAMINED BY主探 Sun Gongchang LEVEL - II SIGN 签名 / DATE日期 Sun Gongchang 5.25.09	REVIEWED BY 审核 Zhang Shaochen 5.25.09 LEVEL-II SIGN / DATE日期
质量经理 / QCM 签字 SIGN / 日期 DATE	用户CUSTOMER 签字 SIGN / 日期 DATE

(FORM# ZPQC-MT01)

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 #: xx.25A

QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

Location: Changxing Island, Shanghai, P.R. China **Report No:** NCS-000228
Prime Contractor: American Bridge/Fluor Enterprises, a JV **Date:** 29-Jul-2009
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0245

Type of problem:

Welding	☐	**Concrete**	☐	**Other**	☑	
Welding	☐	**Curing**	☐	**Procedural**	☑	**Bridge No:** 34-0006
Joint fit-up	☐	**Coating**	☐	**Other**	☐	**Component:**
Procedural	☐	**Procedural**	☐	**Descripton:**		

Date the Non-Conformance Report was written: 16-May-2009

Description of Non-Conformance:
During Final Magnetic Particle Testing (MT) Inspection of OBG Segment 1AAE, Caltrans Quality Assurance (QA) Inspector performed tests on complete joint penetration welds SEG2A-033 and 034. Two linear indications were found on weld 033, a 45 mm crack and a 15 mm indication. One linear indication 15 mm in length was found on weld 034. Prior to QA MT, ZPMC Quality Control (QC) stated that 100% MT and Visual inspection had been performed on the above mentioned welds.

Contractor's proposal to correct the problem:
Contractor shall perform proper repair and NDT to verify that the repair is acceptable.

Corrective action taken:
ABF provided NDT documentation to verify that the repair is acceptable.

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 Mazen Wahbeh, +(86) 134.7247.7571, who represents the Office of Structural Materials for your project.

Inspected By:	Lowry,Patrick	Quality Assurance Inspector
Reviewed By:	Wahbeh,Mazen	QA Reviewer