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-000359
Prime Contractor: American Bridge/Fluor Enterprises, a JV **Date:** 11-Jul-2009
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0333

Type of problem:

Welding	☐	**Concrete**	☐	**Other**	☑	
Welding	☐	**Curing**	☐	**Procedural**	☑	**Bridge No:** 34-0006
Joint fit-up	☐	**Coating**	☐	**Other**	☐	**Component:** 4AE & 4BE
Procedural	☐	**Procedural**	☐	**Description:**		

Reference Description: CWR Not Followed Durring Repair

Description of Non-Conformance:

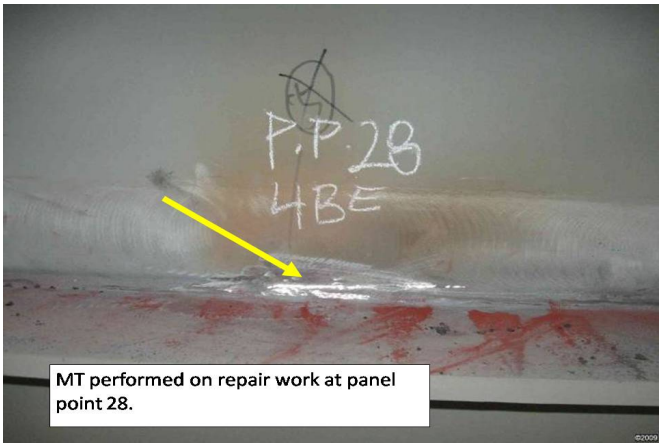
Caltrans Quality Assurance (QA) Inspector observed Critical Welding Repair (CWR) work was performed on Floor Beam to Diaphragm welds (SSD19-PP024-004/005, SSD20-PP025-004/005, SSD16A-PP026-003/004, SSD17A-PP027-003/004, SSD18A-PP028-004/005) located at Panel Points 24~28 of Segment 4AE and 4BE. The CWR is associated with the removal of transverse cracks observed by Magnetic Particle Testing (MT) performed by ZPMC. The below listed observations do not comply with the approved Critical Weld Repair procedure (B-CWR-595 R1).

1. ZPMC did not provide a written or verbal notification to the Engineer prior to performing Hardness Testing and facilitate the Engineer to witness the testing. Hardness Testing was only performed after the repair work was complete with no prior Engineer Notification provided by ZPMC.
2. The results of the Hardness Testing were not provided to the Engineer for review prior to repair.
3. A separate CWR is needed if cracks are found in the base metal HAZ.
4. If excessive root gap (5mm or more) is found during grinding of the repair area. The contractor shall seek Engineers approval.
5. Gouging shall not be used for this repair.

For further information, please see the attached pictures below.

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



Applicable reference:
Approved CWR; B-CWR-595 revision 1
Who discovered the problem: Joe Alaniz
Name of individual from Contractor notified: Steve Lawton
Time and method of notification: 1130 hours, Verbal
Name of Caltrans Engineer notified: Stanley Ku
Time and method of notification: 1230 hours, Verbal
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 Mazen Wahbeh,(818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Simonis,Jim	QA Inspector
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:**	04-Aug-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:**	05.03.06-000312
Subject:	NCR No. ZPMC-0333		

Reference Description: CWR Not Followed Durring Repair

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:** 04

Remarks:

Caltrans Quality Assurance (QA) Inspector observed Critical Welding Repair (CWR) work was performed on Floor Beam to Diaphragm welds (SSD19-PP024-004/005, SSD20-PP025-004/005, SSD16A-PP026-003/004, SSD17A-PP027-003/004, SSD18A-PP028-004/005) located at Panel Points 24~28 of Segment 4AE and 4BE. The CWR is associated with the removal of transverse cracks observed by Magnetic Particle Testing (MT) performed by ZPMC. The below listed observations do not comply with the approved Critical Weld Repair procedure (B-CWR-595 R1).

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5. Gouging shall not be used for this repair.

See attached NCR No. ZPMC-0333 for details.

Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to remedy defect work, resolve QC issue and prevent future occurrences.

Transmitted by: Ching Chao

Attachments: ZPMC-0333

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Doug Coe, Jason Tom, Contract Files, 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: 05.03.06-000312

Subject: NCR No. ZPMC-0333

Dated: **14-Aug-2009**

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

Job Name: SAS Superstructure

Document No.: **ABF-NPR-000297 Rev: 00**

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has provided a letter of response as well as providing all relative inspection documentation. ZPMC requests closure of this NCR.

ZPMC has provided a letter of response as well as providing all relative inspection documentation. ZPMC requests closure of this NCR.

Submitted by:

Attachment(s): ABF-NPR-000297R00;

Caltrans' comments:

Status: CLO

Date: 20-Aug-2009

The proposed resolution is acceptable. The hardness testing results mentioned in the attached documents have been received in China. Also, the welds in question have been accepted by MT and UT as shown in the attached documents. The Department concurs that Non-Conformance ZPMC-0333 is closed.

Submitted by: Wright, Doug

Date: 20-Aug-2009

Attachment(s):

No. B-445

LETTER OF RESPONSE

TO: American Bridge/Flour

DATE: 2009-8-12

REGARDING: NCR-000359 (ZPMC-333)

With this letter of response, ZPMC requests closure for Caltrans **NCR-000359 (ZPMC-333).** Zpmc submitted the CWR 595 for the engineer approval prior the crack welding repair, but the report was refused some times and each time the comments not mentioned in the before time rejected or turned back directly by hand. Even we looking for the information before weekend (Friday), the engineer also informed us that CWR will be rejected on next Monday. Therefore as the pressure of the fabrication schedule, we start to perform the repair as not received the response from engineer. For the comments of the CWR we provide the answers as follow:

1). we have perform the hardness test only include the both side of the base metal, for the fillet weld size not enough with the hardness test machine torch, and witness the process with the engineer after the weld repair.

2). we have submitted the hardness test report to engineer with the transmittal letter.

3). We have submitted a separate CWR640 which the crack extend to the base metal and got the approval from caltrans.

4). The PP24 and PP25 have been changed the CJP weld with the require of the ABF'S formal letter to ZPMC, and the final UT and MT inspection all complete.

5). Some areas for example the cope hole we use the gouging method instead of the grinding for the limited location that not enough to the baby grind head.

By the way we have done the 100% MT for 4E all PP points on the weld, and do the 100% UT for the PP24/25 about the drawing changed to CJP weld. That should be all can support the good quality and can accepted by all parties.

so base on the above explanation and attached documentations, ZPMC applies to close the caltrans's report **NCR-000359 (ZPMC-333)**。

Please reference attached document for acceptance and closure the **NCR-000359 (ZPMC-333)**。

ATTACHMENT:

NCR-000359 (ZPMC-333)
The approved CWR595/629/640
The process and final UT/MT reports

Liu Shuangbao

2009. 8. 12

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

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Attention:	Mr. Thomas Nilsson Project/Fabrication Manager	**Document No:**	05.03.06-000312
Subject:	NCR No. ZPMC-0333		
Reference Description:	CWR Not Followed Durring Repair		

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Transmitted by: Ching Chao

Attachments: ZPMC-0333

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

File: 05.03.06

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Welding	☐	**Concrete**	☐	**Other**	☑	
Welding	☐	**Curing**	☐	**Procedural**	☑	**Bridge No:** 34-0006
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QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

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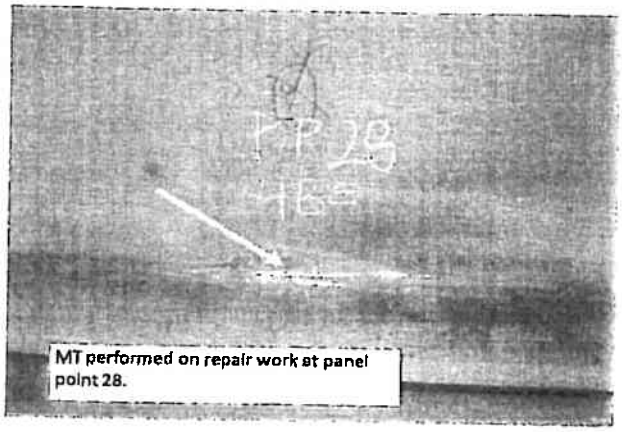

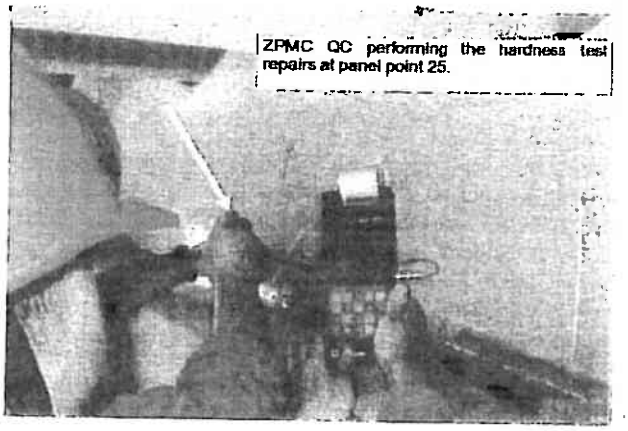

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Contractor's proposal to correct the problem:

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 Mazen Wahbeh,(818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Simonis,Jim	QA Inspector
Reviewed By:	Wahbeh,Mazen	SMR

ZPMC	关键焊缝返修报告 Critical Welding Repair Report (CWR)	版本 Rev. No.: 1

项目名称 Project Name:	美国海湾大桥 SFOBB	部件图号 Drawing No.:	SEG018 SEG020	报告编号 Report No.:	B-CWR595
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	4AE PLATE PANEL SPLICE	NDT 报告编号 NDT Report No.:	B787-MT-11921
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

Description of Welding Discontinuity:

Eighteen cracks were found by use of MT on weld SSD18-PP024-004 Welder ID No.058551 **Position:2F** Y1=40;Y2=3175;Y3=7100;Y4=10950;Y5=12280;Y6=14920;Y7=15900;Y8=15970;Y9=16080;Y10=16150;Y11=16520;Y12=17450;Y13=17660;Y14=18400;Y15=18680;Y16=18750;Y17=18800;Y18=19000;

Five cracks were found by use of MT on weld SSD19-PP024-005 Welder ID No.050242 **Position:2F** Y1=1750;Y2=2530;Y3=5540;Y4=6350;Y5=6570;

Twelve cracks were found by use of MT on weld SSD20-PP025-004 Welder ID No.058551 **Position:2F** Y1=500;Y2=560;Y3=1100;Y4=8900;Y5=9700;Y6=11860;Y7=12000;Y8=12160;Y9=12480;Y10=15130;Y11=15460; Y12=15520;

Fourteen cracks were found by use of MT on weld SSD20-PP025-005 Welder ID No.050242 **Position:2F** Y1=1700;Y2=3540;Y3=5000;Y4=7090;Y5=7140;Y6=14600;Y7=14880;Y8=15110;Y9=16200;Y10=17930;Y11=19200; Y12=20320; Y13=20400;Y14=20560;

One transverse crack was found by use of MT on weld SSD16A-PP026-003 Welder ID No.058551 **Position:2F** Y1=16100;

Three cracks were found by use of MT on weld SSD16A-PP026-004 Welder ID No.050242 **Position:2F** Y1=7100; Y2=7170;Y3=14430;

Four cracks were found by use of MT on weld SSD17A-PP027-003 Welder ID No.058551 **Position:2F** Y1=25; Y2=6420;Y3=18880;Y4=22250;

Four cracks were found by use of MT on weld SSD17A-PP027-004 Welder ID No. 050242 **Position:2F** Y1=1730; Y2=9080;Y3=17470;Y4=19220;

Seven cracks were found by use of MT on weld SSD18A-PP028-004 Welder ID No.058551 **Position:2F** Y1=7400; Y2=7500;Y3=7520;Y4=7735; Y5=14545;Y6=18630;Y7=17400;

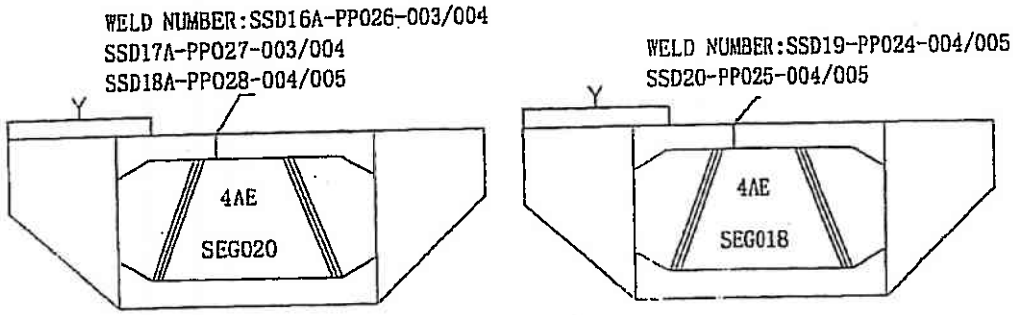
Six cracks were found by use of MT on weld SSD18A-PP028-005 Welder ID No.050242 **Position:2F** Y1=7400; Y2=7460;Y3=13030;Y4=14250; Y5=16150;Y6=23200;

The detail length see the attached MT report.

检验员 (Inspector) : Bo tin rui 日期 (Date) : 2009-06-29

焊缝返修位置示意图:

Draft of Welding Discontinuity:



This document is APPROVED as noted
State of California
DEPARTMENT OF TRANSPORTATION
Pursuant to Section 5-1.02 of the
Standard Specifications
Initial [illegible] Date: 7/6/09

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.

- Hardness testing is req'd at every location where the trans. cracks found
- The readings of the test shall be done along the weld and adj. base metal (Ref. TC-20 for further remarks)

车间负责人 (Foreman): Li Zhigang 日期 (Date): 09.07.02

处理意见

Disposition:

- Provide written & verbal notification to the engr. prior to the hardness testing for engr. to witness the testing.
- The results of the hardness testing shall be submitted to CT for review prior to repairing.
- Separate CWR approval is needed if cracks are found in the base metal HAZ
- If excessive root gap (5mm or more) is found during grinding of the repair area, the contractor shall seek engr's approval (see TC-20 for further remarks)

1. 工程师通知到现场,缺陷返修按照角焊缝返修程序;
2. 这次返修时，QC和Leader CWI到现场指导打磨，焊接和监控的指导工作;
3. 整个返修的过程，QC和Leader CWI应该有批准CWR的复印件;
4. QC和Leader CWI指导返修，以保证返修按照处理意见进行;
5. 在要求做MT的区域去除油漆;
6. 采用打磨的方式去除裂纹;
7. 准备一个正确的接头型式，具体参照相应的返修WPS;
8. 返修前，VT和MT检测确认返修区域没有裂纹,同时靠近横向裂纹的母材也要做MT，也保证没有裂纹延伸到母材;
9. 根据批准的返修焊接工艺规程预热及焊接。
10. 将修补区域打磨与母材或相邻焊缝平齐;
11. VT检测焊缝，按照标书10-1.59中的备注3的额外DNT要求进行检测;
12. 返修后对所有的焊缝进行100%的MT检测，包括返修的反面，以前没有返修的区域。

1. The Engineer shall be notified and present during this repair. Indicate repair procedure, fillet weld;
   Gouging shall not be used for this repair
2. QC and a Lead CWI shall be present and direct all ~~gouging~~, grinding and welding operations during this repair.
3. QC and a Lead CWI shall have an approved copy of the CWR in hand prior to the repair.
4. QC and a Lead CWI shall direct the repair to ensure the repair is per the disposition requirements.
5. Paint shall be removed in the area requiring MT;
6. Remove the crack by means of grinding.
7. Prepare excavation according to the approved repair WPS.
8. Before this repair, Verify with VT and MT repair areas are crack free, and also MT shall be perform on the base metal nearby transverse cracks to ensure that no cracks were propagated in to the base metal;
9. Preheat and weld according to the approved repair WPS.
10. Grind the repaired area flush with base metal or the adjacent weld.
11. Perform VT after repair and additional% NDT requirement stated in special provision 10-1.59 "inspection testing" note 3;
12. 100%MT all these welds after the weld repair, including the opposite side of the repaired weld that didn't require repair previously.

- ET. 2009. 7.4.

工艺: Technical Engineer: Nin Tofey 审核: Approved By: [signature] for chenbin 日期: Date: 09.07.03

#R787-QCP-900

This document is APPROVED as noted
State of California
DEPARTMENT OF TRANSPORTATION
Pursuant to Section 5-1.02 of the Standard Specifications
Initial [initials] Date: 7/6/09

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

版本 Rev. No.:
1

项目名称 Project Name:	美国海湾大桥 SFOBB	部件图号 Drawing No.:	SEG018 SEG020	报告编号 Report No.:	B-CWR595
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	4AE PLATE PANEL SPLICE	NDT 报告编号 NDT Report No.:	B787-MT-11921
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): Li Zhigang 日期 (Date): 09.07.02

参照的WPS编号 Repair WPS No.:	WPS-SMAW-345-2G(2F)-Repair WPS-FCAW-345-2G(2F)-Repai-1	工艺员 Technologist:	Nin Tiefeng 09.07.05
返修（碳刨）前预热温度 Preheat Temperature Before Gouging:	N/A	返修的缺陷 Description of Discontinuity:	Crack
焊前处理检查 Inspection Before Welding:	Acc	焊前预热温度 Preheat Temperature Before Welding:	85°C
最大碳刨深度 Max. Depth of Gouge:	6	碳刨总长 Total Length of Gouge:	8000mm

焊工 Welder:	200114	焊接类型 Welding Type:	SMAW	焊接位置 Position:	2G
焊接电流 Current:	156	焊接电压 Voltage:	22.4	焊接速度 Speed:	113

返修后检查 Inspection After Repair:

外观检查 VT Result:	Acc	检验员 Inspector:	LI Yanhua 71207 01	日 期 Date:	2009.8.7
NDT复检 NDT Result:	Acc	探伤员 NDT Person:		日 期 Date:	2009.08.07

见证： Witness/Review:

备注： Remark :

#R787-QCP-900

This document is APPROVED as noted
State of California
DEPARTMENT OF TRANSPORTATION
Pursuant to Section 5-1.02 of the
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Initial Date: 7/6/09

ZPMC

REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 B787-MT-11921R1	DATE日期 2009.08.09	PAGE OF页码 1/2	Revision No: 0

PROJECT NO. 工程编号:	ZP06-787	CONTRACTOR: 用 户:	CALTRANS
DRAWING NO. 图号:	SEG018/20 OBG 2AW PLATE PANEL SPLICE	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 14/20 mm
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 长度			
SSD16A-PP026-003	1R1			ACC.		
SSD16A-PP026-004	1R1			ACC.		
	2R1			ACC.		
	3R1			ACC.		
SSD17A-PP027-003	1R1			ACC.		
	2R1			ACC.		
	3R1			ACC.		
	4R1			ACC.		
SSD17A-PP027-004	1R1			ACC.		
	2R1			ACC.		
	3R1			ACC.		
	4R1			ACC.		
SSD18A-PP028-004	1R1			ACC.		
	2R1			ACC.		
	3R1			ACC.		
	4R1			ACC.		

EXAMINED BY主探 Gu Yunwu LEVEL - II SIGN 签名 / DATE日期 09.08.09	REVIEWED BY 审核 Wang Wei LEVEL-II SIGN / DATE日期 09.08.09
质量经理 / QCM 8/9/09 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-11921R1	DATE日期 2009.08.09	PAGE OF页码 2/2	Revision No: 0

PROJECT NO. 工程编号:	ZP06-787	CONTRACTOR: 用 户:	CALTRANS
DRAWING NO. 图号:	SEG018/20 OBG 2AW PLATE PANEL SPLICE	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 14/20 mm
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 长度			
	5R1			ACC.		
	6R1			ACC.		
	7R1			ACC.		
SSD18A-PP028-005	1R1			ACC.		
	2R1			ACC.		
	3R1			ACC.		
	4R1			ACC.		
	5R1			ACC.		
	6R1			ACC.		
AFTER B-CWR595						
BLANK						

EXAMINED BY主探 Gu Yunwu LEVEL - II SIGN 签名 / DATE日期 08.08.09	REVIEWED BY 审核 Wang Wei LEVEL-II SIGN / DATE日期 08.08.09
质量经理 / QCM 8/9/09 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 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.:	PP21/22/25/24	报告编号 Report No.:	B-CWR629
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	PLATE PANEL SPLICE 3E/4E	NDT 报告编号 NDT Report No.:	NA
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

Description of Welding Discontinuity:

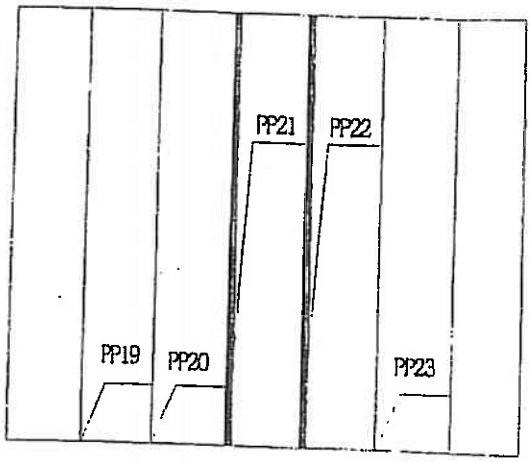
应ABF的要求3E的PP21/PP22全部、4E的PP25全部、PP24上从CWR595R1 上第一个点开始15000mm的长度；要求对焊缝的正反面采用碳刨的形式全部去除干净,将上述位置全部更改为CJP焊缝。

According to the ABF requirement that PP21/PP22 of 3E and PP25 of 4E、PP24 from first Y point of CWR595R1 to 15000 mm ,gouging welds both sides and change the weld joints to CJP.

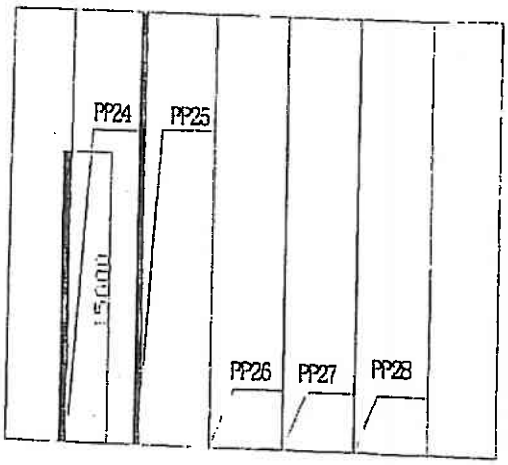
检验员 (Inspector)：lilming　　日期 (Date)：2009-07-19

焊缝返修位置示意图：

Draft of Welding Discontinuity:



3E



4E

产生原因:

Cause:

1. 机构设计拘束应力大,
2. .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. The inner stress restrained by the component design,
2. Moisture wasn't completely removed during drying operation (preheating) or the area wasn't preheated sufficiently.

车间负责人 (Foreman): Gao Jun 日期 (Date): 09.07.19

处理意见

Disposition :

1.采用碳刨的方式去除一侧焊缝，在原来CJP（间隙大于5mm改为CJP位置）和角焊缝接头部位，要打磨出斜势过度1：2.5,碳刨前预热65～100℃;
2.将碳刨位置打磨光滑，露出金属光泽
3. 打磨后，MT检测确认裂纹消除干净，并且没有延伸到母材;
4.进行预热65-100℃;
5.焊接时采用分段焊接，每段长度约600mm，注意每段焊缝搭接长度约50mm，第一道焊缝通条烧焊结束后，第二道焊缝同样采用分段焊缝搭接的形式焊接直至单侧焊缝焊接完毕;
6.采用碳刨的方式，对焊缝反面进行碳刨清跟和打磨;
7.反面清跟MT检测;
8.预热65-100℃;
9. 同返修程序5;
10.进行VT和MT检测。

- REMOVE CRACKS BY GRINDING PRIOR TO GOUGING
- IF BASE METAL CRACKS EXIST, SEEK FURTHER APPROVAL PRIOR TO COMPLETING REPAIR.

1. Remove weld by gouging entire length. For Segment 4E panel point 24. the transition from CJP to Fillet shall be a 2-1/2 to 1 taper.
2. Grind weld prep to bright metal.
3. MT weld preparations to verify cracks are completely removed and do not exist in the Base Metal.
4. Pre-heat base metal to 65-100℃;
5. Progressive welding. each weld pass is about 600mm, and and each pass end should be covered with the next pass initial 50mm. after welding total first weld pass, use progressive weld to finish second weld pass to finish single side weld;
6. Backgouging second side welds as required by grinding or gouging.
7. MT backgouge.
8. Pre-heat weld to65-100℃;
9. Progressive welding, each weld pass is about 600mm, and and each pass end should be covered with the next pass initial 50mm. after welding total first weld pass, use progressive weld to finish second weld pass to finish welding of second side.
10. Perform VT and MT weld after cooling to ambient temperature.

- PERFORM UT ON ALL CJP REPAIRS.
- MT FILLET WELD ON BOTTOM SIDE OF FLANGE.
- IF ENTIRE WELD IS REMOVED BY GOUGING, REMOVE CRACKS BY GRINDING PRIOR TO PERFORMING GOUGING.

工艺:
Technical Engineer: Nin Tiefang

审核:
Approved By: Lufanhua

日期:
Date: 09.07.19

#R787-QCP-900

This document is APPROVED as noted
State of California
DEPARTMENT OF TRANSPORTATION
Pursuant to Section 5-1.02 of the Standard Specifications
Initial: [illegible] Date: 7/23/09

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.:	PP21/22/25/24	报告编号 Report No.:	B-CWR629
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	PLATE PANEL SPLICE 3E/4E	NDT 报告编号 NDT Report No.:	NA
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): Gao Jun 日期 (Date): 09.08.19

参照的WPS编号 Repair WPS No.:	WPS-345-SMAW-2G(2F)-Repair WPS-345-FCAW-2G(2F)-Repair-1 WPS-345-FCAW-2G(2F)-Repair-2	工艺员 Technologist:	Wu Tiefeng 09.08.19
返修（碳刨）前预热温度 Preheat Temperature Before Gouging:	69°C 69°C	返修的缺陷 Description of Discontinuity:	crack
焊前处理检查 Inspection Before Welding:	Acc	焊前预热温度 Preheat Temperature Before Welding:	105
最大碳刨深度 Max. Depth of Gouge:	8mm	碳刨总长 Total Length of Gouge:	23260 mm

焊工 Welder:	0447446 0447795	焊接类型 Welding Type:	FCAW	焊接位置 Position:	2G
焊接电流 Current:	310	焊接电压 Voltage:	31	焊接速度 Speed:	350

返修后检查
Inspection After Repair:

外观检查 VT Result:	Acc	检验员 Inspector:	Li Yanhua 07125201	日期 Date:	2009.8.3
NDT复检 NDT Result:	UT Acc MT Acc	探伤员 NDT Person:	Gu Junwei	日期 Date:	09.08.01 09.08.04

见证：
Witness/Review:

备注：
Remark:

This document is APPROVED
State of California
DEPARTMENT OF TRANSPORTATION
Pursuant to Section 6-1.02 of the
Standard Specifications
Initial: Date: 7/23/09

REPORT OF ULTRASONIC EXAMINATION
UT探伤报告

REPORT NO. 报告编号 B787-UT-7861R1	DATE 2009.07.29	PAGE 1 OF 1	Revision No: 0

PROJECT NO. :工程编号 ZP06-787		CONTRACTOR : CALTRANS
ITEMS NAME: 部件名称 OBG PLATE PANEL SPLICE	DRAWING NO.: 图号 SSD20	CALTRANS CONTRACT NO.: 04-0120F4 加州工程编号

REFERENCING CODE 参考规范	ACCEPTANCE STANDARD接受标准	PROCEDURE NO. 程序编号
AWS D1.5-2002	AWS D1.5-2002(Table 6.3)	ZPQC-UT-01
WELDING PROCESS 焊接方法	JOINT TYPE 焊缝类型	CALIBRATION DUE DATE 仪器校正有效期
SMAW	T-JOINT	Dec. 28ST ,2009

EQUIPMENT 设备	MANUFACTURER 制造商	MODEL NO. 样式编号	SERIAL NO. 序列编号
UT SCOPE	PANAMETRICS	EPOCH-4B	071565311, 061488510, 061495811, 070152011,

CALIBRATION BLOCK 试块	COUPLANT 耦合剂	MATERIAL/THICKNESS 材料厚度
AWS IIW BLOCK TYPE II	C.M.C	A709M-345T2-X 14/20mm

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	Sound Path 声程	Depth from Surface 距表面深度	From'X 距X	From'Y 距Y		
SSD20-PP025-004	1R1	70				32								ACC.	100%
	2R1	70				32								ACC.	100%
	3R1	70				32								ACC.	100%
	4R1	70				32								ACC.	100%
	5R1	70				32								ACC.	100%
	6R1	70				32								ACC.	100%
	7R1	70				32								ACC.	100%
	6R1	70				32								ACC.	100%

AFTER B-WR6575

EXAMINED BY主探	REVIEWED BY 审核
LEVEL - II SIGN / DATE 2009.07.29	LEVEL - II SIGN / DATE 09.07.29
质量经理 / QCM	用户CUSTOMER
签字 SIGN / 日期 DATE 09.08.03	签字 SIGN / 日期 DATE

(FORM# ZPQC-UT01)

REPORT OF ULTRASONIC EXAMINATION
UT探伤报告

REPORT NO. 报告编号 B787-UT-7870R2	DATE 2009.08.01	PAGE 1 OF 2	Revision No: 0

PROJECT NO. :工程编号 ZP06-787		CONTRACTOR : CALTRANS	
ITEMS NAME: 部件名称 OBG PLATE PANEL SPLLICE	DRAWING NO.: 图号 SSD19	CALTRANS CONTRACT NO.: 04-0120F4 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 BUTT	CALIBRATION DUE DATE仪器校正有效期 Dec. 28ST ,2009	

EQUIPMENT 设备	MANUFACTURER 制造商	MODEL NO. 样式编号	SERIAL NO. 序列编号
UT SCOPE	PANAMETRICS	EPOCH-4B	071565311, 061488510, 061495811, 070152011,

CALIBRATION BLOCK 试块	COUPLANT 耦合剂	MATERIAL/THICKNESS 材料厚度
AWS IIW BLOCK TYPE II	C.M.C	A709M-345T2-X 14/20mm

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	Sound Path 声程	Depth from Surface 距表面深度	From'X 距X	From'Y 距Y		
SSD19-PP24-004	1R2	70				32								ACC.	100%
	2R2	70				32								ACC.	100%
	3R1	70				34								ACC.	100%
	4R1	70				34								ACC.	100%
	5R1	70				34								ACC.	100%
	6R1	70				34								ACC.	100%
	7R1	70				34								ACC.	100%
	8R1	70				34								ACC.	100%
	9R1	70				34								ACC.	100%

EXAMINED BY主探	REVIEWED BY 审核
LEVEL - II SIGN / DATE 08.01	LEVEL - II SIGN / DATE 08-08-31
质量经理 / QCM	用户CUSTOMER
签字 SIGN / 日期 DATE 08.07	签字 SIGN / 日期 DATE

(FORM# ZPQC-UT01)

REPORT OF ULTRASONIC EXAMINATION
UT探伤报告

REPORT NO. 报告编号 B787-UT-7870R2 DATE 2009.08.01 PAGE 2 OF 2 Revision No: 0

WELD IDENTIFICATION 焊缝部件编号	INDICATION NO. 指示号	PROBE ANGLE 探测角度	FROM FACE 检测面	LEG（次数）	DECIBELS分贝				DISCONTINUITY 不连续性					Discontinuity Evaluation 缺陷估计	Remark 备注
					Indication Level	Reference Level	Attenuation Factor	Indication Rating	LOCATION OF DISCONTINUITY 不连续位置(mm)						
					a	b	c	d	Length 长度	Sound Path 声程	Depth from Surface 距表面深度	From'X 距X	From'Y 距Y		
	10R1	70				34								ACC.	100%
	11R1	70				34								ACC.	100%
	12R1	70				34								ACC.	100%
	13R1	70				34								ACC.	100%
	14R1	70				34								ACC.	100%
	15R1	70				34								ACC.	100%

AFTER B-WR6635

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EXAMINED BY主探

Ma Jidong 09.08.01

LEVEL - II SIGN / DATE

REVIEWED BY 审核

Tang Liangchan 09.08.01

LEVEL - II SIGN / DATE

质量经理 / QCM

签字 SIGN / 日期 DATE

用户CUSTOMER

签字 SIGN / 日期 DATE

(FORM# ZPQC-UT01)

ZPMC

REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 B787-MT-12845	DATE日期 2009.07.21	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:	SEG018/20 OBG 2AW PLATE PANEL SPLICE	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 14/20 mm
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 INDICATION 指示	TYPE 类型	LENGTH IN 长度	ACCEPT 接受	REJECT 拒收	REMARKS 备注
SSD16A-PP026-003				ACC.		after excavation
SSD19-PP024-004				ACC.		after excavation
SSD19-PP024-005				ACC.		after excavation
SSD20-PP025-004				ACC.		after excavation
SSD20-PP025-005				ACC.		after excavation
SSD16A-PP026-004				ACC.		after excavation
SSD17A-PP027-003				ACC.		after excavation
SSD17A-PP027-004				ACC.		after excavation
SSD18A-PP028-004				ACC.		after excavation
SSD18A-PP028-005				ACC.		after excavation
BLANK						

EXAMINED BY主探 Gu Yunwu Gu Yunwu LEVEL - II SIGN 签名 / DATE日期 09.07.21	REVIEWED BY 审核 Wang Wei LEVEL-II / SIGN / DATE日期 09.07.21
质量经理 / QCM Liu Jianhua 7/21/09 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-12706	DATE日期 2009.08.02	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:	SSD19 4AE PLATE PANEL SPLICE	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 20/14mm
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			
SSD19-PP024-004				ACC.		AFTER REPAIRED
SSD19-PP024-005				ACC.		AFTER REPAIRED
AFTER B-CWR629						
BLANK						

EXAMINED BY主探 Cai xin xin LEVEL - II SIGN 签名 / DATE日期	REVIEWED BY 审核 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)

	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.:	SSD20	报告编号 Report No.:	B-CWR640
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	4AE顶板连接板板 4AE PLATE PANEL SPLICE	NDT 报告编号 NDT Report No.:	B787-MT-12571
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述：

Description of Welding Discontinuity:

在对SSD20-PP025-004检测时，发现2处纵向裂纹，6处横向裂纹。

Two longitudinal cracks and Six transverse cracks were found by use of MT on SSD20-PP025-004

Welder ID No. (焊工编号):050242 051356 044801 Position:(位置)：2G

在对SSD20-PP025-005检测时，发现6处纵向裂纹，8处横向裂纹。

Six longitudinal cracks and eight transverse cracks were found by use of MT on SSD20-PP025-005

Welder ID No. (焊工编号):044795 044774 Position:(位置)：2G

Please see the detail data from MT report!

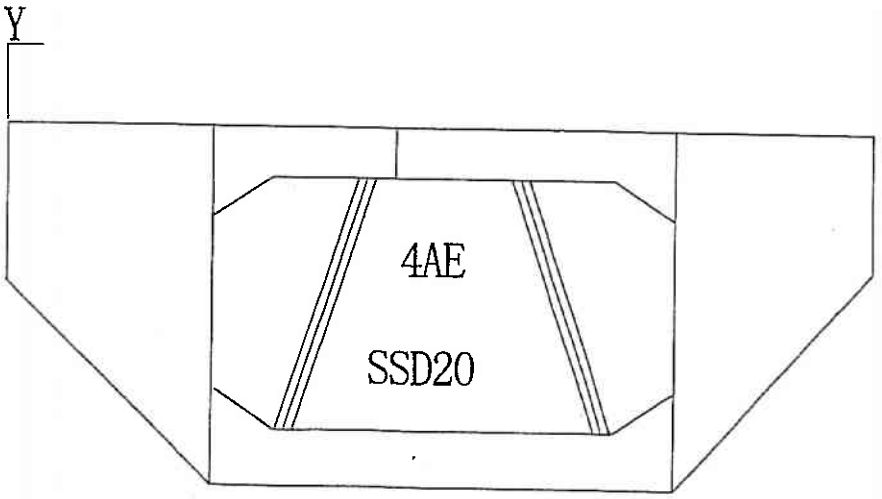
检验员 (Inspector)：Cai Xin Xin
Cai xin xin

日期 (Date)：2009-07-31

焊缝返修位置示意图：

Draft of Welding Discontinuity:

WELD NUMBER:SSD20-PP025-004/005



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): Gao Jun 日期 (Date): 09.07.31

处理意见

Disposition :

1. 这次返修时，QC和Leader CWI到现场对打磨，焊接进行指导和监控工作以保证返修按照处理意见进行；
2. 整个返修的过程，QC和Leader CWI应该有批准CWR的复印件；
3. 去除热影响区域上在各个方向上不小于25mm范围内的油漆；
4. 采用打磨的方法去除裂纹，对于单个裂纹返修，打磨返修范围为沿缺陷焊缝每一端加50mm，对于多个裂纹的返修，打磨返修范围为多个裂纹最外端的返修加长50mm。
5. 如果打磨时母材损伤，则在返修前将损伤区域打磨干净。如果打磨时或打磨后根部间隙大于5mm，那么在这个位置的焊缝采用CJP焊缝，并在打磨去除焊缝后对其及进行MT检测；
6. 焊接前按照焊接返修工艺规程(WPS)准备焊缝接头形式；
7. 返修前，VT和MT检测确认返修区域没有裂纹及其他缺陷存在，同时靠近裂纹的母材也要做MT，保证没有裂纹延伸到母材。如果在母材上发现裂纹，则另外需CWR；
8. 按照批准的焊缝返修工艺规程(WPS)进行预热和焊接；
9. 将修补区域打磨与母材或相邻焊缝平齐；
10. 返修后按照合同10-1.59“钢结构”中的“检测和试验”注释3进行附加MT检测，检测范围包括修补区域（包括沿缺陷焊缝每一端加50mm）的正面及反面焊缝以及修补区域的翼缘板底部的正面及反面焊缝，其中对于CJP焊缝，NDT方法为UT和MT。

1. QC and a Lead CWI shall be present, direct and supervise all grinding and welding operations during this repair to ensure the repair is per the disposition requirements
2. QC and a Lead CWI shall have an approved copy of the CWR in hand prior to the repair.
3. Remove paint≥25mm in all direction of HAZ prior to MT.
4. Remove cracks by grinding, repair area shall extend a minimum of 50mm beyond each end of single crack repairs, and 50mm beyond the outermost cracks for multiple crack repairs.
5. If base metal is damaged by grinding, the damaged area shall be ground clean prior to performing weld repair. If gap>5mm is found during or after grinding, a CJP weld is required in that location, and perform MT after performing grinding the defects away.
6. Prepare excavation in accordance with an approved repair WPS prior to welding.
7. Before this repair, Verify with VT and MT repair areas are defects free, and also MT shall be performed on the base metal laying abroad cracks to ensure that no cracks were propagated to the base metal. Separate CWR approval is needed if cracks are found in the base metal.
8. Preheat and weld according to the approved repair WPS.
9. Grind the repaired area flush with base metal or the adjacent weld.
10. Perform MT inspection to all repaired welds (along with an additional 50mm at each end of the weld repair) which include the near side and far side on the upper and bottom side of flange in the same area where the repair was performed according to additional NDT requirement stated in special provision 10-1.59 "inspection testing" note 3. Perform UT and MT inspection to CJP weld.

工 艺：
Technical Engineer: Niu Tiefeng

审核：
Approved By: Lu Jianhua

日期：
Date: 09.07.31

ZPMC

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.:	SSD20	报告编号 Report No.:	B-CWR640
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	4AE顶板连接板板 4AE PLATE PANEL SPLICE	NDT 报告编号 NDT Report No.:	B787-MT-12571
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): Gao Tun 日期 (Date): 09.07.31

参照的WPS编号 Repair WPS No.:	~~WPS-345-SMAW-2G(2F)-Repair~~ WPS-345-FCAW-2G(2F)-Repair-1 WPS-345-SMAW-4G(4F)-Repair WPS-B-P-2212-TC-U4b WPS-B-T-2232-TC-U4b-F-1 WPS-B-P-2214-TC-U4b-F	工艺员 Technologist:	Niu Tiefeng 09.07.31
返修（碳刨）前预热温度 Preheat Temperature Before Gouging:	Grinding NA	返修的缺陷 Description of Discontinuity:	crack
焊前处理检查 Inspection Before Welding:	Acc.	焊前预热温度 Preheat Temperature Before Welding:	95°
最大碳刨深度 Max. Depth of Gouge:	NA. (Grinding)	碳刨总长 Total Length of Gouge:	Grind 2200 mm. NA.

焊工 Welder:	204339	焊接类型 Welding Type:	SMAW	焊接位置 Position:	2G
焊接电流 Current:	170	焊接电压 Voltage:	24	焊接速度 Speed:	125

返修后检查 Inspection After Repair:

外观检查 VT Result:	Acc.	检验员 Inspector:	Shenfujun 08072741	日期 Date:	09.08.04.
NDT复检 NDT Result:	MT Acc	探伤员 NDT Person:	Cai Zhixin	日期 Date:	09.08.04

见证： Witness/Review:

备注： Remark：

ZPMC

REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 B787-MT-12571R1	DATE日期 2009.08.04	PAGE OF页码 1/2	Revision No: 0

PROJECT NO. 工程编号:	ZP06-787	CONTRACTOR: 用 户:	CALTRANS
DRAWING NO. 图号:	SSD20 4AE PLATE PANEL SPLICE	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 14/20 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			
SSD20-PP025-004	1R1			ACC.		
	2R1			ACC.		
	3R1			ACC.		
	4R1			ACC.		
	5R1			ACC.		
	6R1			ACC.		
	7R1			ACC.		
	8R1			ACC.		
SSD20-PP025-005	1R1			ACC.		
	2R1			ACC.		
	3R1			ACC.		
	4R1			ACC.		
	5R1			ACC.		
	6R1			ACC.		
	7R1			ACC.		
	8R1			ACC.		
	9R1			ACC.		

EXAMINED BY主探 Cai xin xin LEVEL - II SIGN 签名 / DATE日期	REVIEWED BY 审核 LEVEL-II SIGN / DATE日期
质量经理 / QCM 签字 SIGN / 日期 DATE 8/4/09	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-12571R1	DATE日期 2009.08.04	PAGE OF页码 2/2	Revision No: 0

PROJECT NO. 工程编号:	ZP06-787	CONTRACTOR: 用 户:	CALTRANS
DRAWING NO. 图号:	SSD20 4AE PLATE PANEL SPLICE	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 14/20 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			
	10R1			ACC.		
	11R1			ACC.		
	12R1			ACC.		
	13R1			ACC.		
	14R1			ACC.		
AFTER B-CWR640						
BLANK						

EXAMINED BY主探 Cai xin xin Caixinxin LEVEL - II SIGN 签名 / DATE日期 09.8.14	REVIEWED BY 审核 Wang wei LEVEL-II SIGN / DATE日期 09.8.14
质量经理 / QCM Longzhenhua 8/4/09 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, PRC **Report No:** NCS-000258
Prime Contractor: American Bridge/Fluor Enterprises, a JV **Date:** 25-Aug-2009
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0333

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: 11-Jul-2009

Description of Non-Conformance:

Caltrans Quality Assurance (QA) Inspector observed Critical Welding Repair (CWR) work was performed on Floor Beam to Diaphragm welds (SSD19-PP024-004/005, SSD20-PP025-004/005, SSD16A-PP026-003/004, SSD17A-PP027-003/004, SSD18A-PP028-004/005) located at Panel Points 24~28 of Segment 4AE and 4BE. The CWR is associated with the removal of transverse cracks observed by Magnetic Particle Testing (MT) performed by ZPMC. The below listed observations do not comply with the approved Critical Weld Repair procedure (B-CWR-595 R1).

1. ZPMC did not provide a written or verbal notification to the Engineer prior to performing Hardness Testing and facilitate the Engineer to witness the testing. Hardness Testing was only performed after the repair work was complete with no prior Engineer Notification provided by ZPMC.
2. The results of the Hardness Testing were not provided to the Engineer for review prior to repair.
3. A separate CWR is needed if cracks are found in the base metal HAZ.
4. If excessive root gap (5mm or more) is found during grinding of the repair area. The contractor shall seek Engineers approval.
5. Gouging shall not be used for this repair.

For further information, please see the attached pictures below.

Contractor's proposal to correct the problem:

Repair area in question and submit subsequent NDT.

Corrective action taken:

Contractor submitted CWR as well as MT and UT reports verifying repair was performed in conformance with Contract specifications.

Did corrective action require Engineer's approval?

QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

(Continued Page 2 of 2)

☐ **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 Jim Simonis, who represents the Office of Structural Materials for your project.

Inspected By:	Simonis,Jim	Quality Assurance Inspector
Reviewed By:	Wahbeh,Mazen	QA Reviewer