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-000460
Prime Contractor: American Bridge/Fluor Enterprises, a JV **Date:** 05-Oct-2009
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0433

Type of problem:

Welding	☑	**Concrete**	☐	**Other**	☐	
Welding	☐	**Curing**	☐	**Procedural**	☐	**Bridge No:** 34-0006
Joint fit-up	☐	**Coating**	☐	**Other**	☐	**Component:** OBG Crossbeam 15 Floorbeam
Procedural	☑	**Procedural**	☐	**Description:**		

Reference Description: Third time repair without the Engineer's Approval

Description of Non-Conformance:

During a random visual inspection of OBG Cross Beam #15, the Caltrans Quality Assurance (QA) Inspector observed that ZPMC personnel performed the third time repair without the Engineer's approval. The following two joints FB205-045-013 and FB204-047-009 have been previously repaired three (3) times by ZPMC personal due to non-conforming indications found with ultrasonic testing (UT).

Applicable reference:

Special Provision Section 8.3: "In addition to the provisions in AWS D1.5, Section 3.7.4 and Section 12.17, third-time repairs of welds or base metal, regardless of NDT method, and all repairs of cracks require prior approval of the Engineer."

Who discovered the problem: Steve Hall
Name of individual from Contractor notified: Wang Wen Bin
Time and method of notification: 0945 hours, Verbal
Name of Caltrans Engineer notified: Ching Chao

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Time and method of notification: 1030 hours, Verbal

QC Inspector's Name: Tian Lei

Was QC Inspector aware of the problem: ☐ **Yes** ☑ **No**

Contractor's proposal to correct the problem:

N/A

Comments:

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, +(86) 134.7247.7571, who represents the Office of Structural Materials for your project.

Inspected By:	Carreon,Albert	Lead Reviewer/Task Leader
Reviewed By:	Wahbeh,Mazen	SMR

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge
333 Burma Road
Oakland CA 94607
Tel: Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

To:	AMERICAN BRIDGE/FLUOR, A JV 375 BURMA ROAD OAKLAND CA 95607	**Date:**	05-Nov-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:**	05.03.06-000428
Subject:	NCR No. ZPMC-0433		

Reference Description: Third time repair without the Engineer's Approval

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: Xbeam **Lift:** 11

Remarks:

During a random visual inspection of OBG Cross Beam #15, the Caltrans Quality Assurance (QA) Inspector observed that ZPMC personnel performed the third time repair without the Engineer's approval. The following two joints FB205-045-013 and FB204-047-009 have been previously repaired three (3) times by ZPMC personal due to non-conforming indications found with ultrasonic testing (UT).

Action Required and/or Action Taken:

Submit a repair plan to the engineer for approval.

Transmitted by: Bill Howe
Attachments: ZPMC-0433

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: 05.03.06-000428

Subject: NCR No. ZPMC-0433

Dated: **07-Dec-2009**

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

Job Name: SAS Superstructure

Document No.: **ABF-NPR-000441 Rev: 00**

Contractor's Proposed Resolution:

Reference Resolution: ZPMC concurs with the NCR. Enclosed is the approved CWR and NDT documentation showing that the weld is acceptable. Based on this ZPMC requests closure of this NCR.

ZPMC concurs with the NCR. Enclosed is the approved CWR and NDT documentation showing that the weld is acceptable. Based on this ZPMC requests closure of this NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000441R00;

Caltrans' comments:

Status: CLO

Date: 13-Dec-2009

The documentation submitted has been reviewed by the Engineer and is found to be acceptable.

Submitted by: Chao, Ching

Date: 13-Dec-2009

Attachment(s):

No. B-518

LETTER OF RESPONSE

TO: American Bridge/Flour
DATE: 2009-12-05
REGARDING: NCR-000460(ZPMC-0433)

With this letter of response, ZPMC requests closure for Caltrans NCR-000460(ZPMC-0433) what mentioned that QA discovered third time repair without Engineer's approval.
The worker used WWRs for these third time repair. ZPMC acknowledged this problem and issued interior NCR to warn this problem. And ZPMC has submitted the CWRs to Engineer and get approved. After that NDT was performed to warrant weld quality.
So ZPMC provided the interior NCR, WWRs, CWRs and NDT documentations, hoping Caltrans could take a review and consider close this NCR.

ATTACHMENT:
NCR-B-295(ZPMC-0433)
NCR-000460(ZPMC-0433)
B-WR8094
B-CWR852
B-VT-43391
B787-MT-15161
B-WR8098
B-CWR856
B-VT-43394
B787-MT-15159
B787-UT-8945R3

12/05/09

Nonconformance Report
不符合项报告

ZPMC

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-295(ZPMC-0433)

Item: not follow the WPS 名称描述: 未按照 WPS	Item Number: 件号: N/A	Drawing: CB15 图号:

Location: BAY 位置: 车间	Date: 日期: 2009-11-14

Description of Nonconformance:

不符合项状态描述:

During a random visual inspection of OBG Cross Beam #15, the Caltrans Quality Assurance (QA) Inspector observed that ZPMC personnel performed the third time repair without the Engineer's approval. The following two joints FB205-045-013 and FB204-047-009 have been previously repaired three (3) times by ZPMC personal due to non-conforming indications found with ultrasonic testing (UT).

在对 OBG CB15 随机检验过程中，加州检验员发现 ZPMC 人员在进行第三次返修过程中没有工程师正式批准。FB205-045-013 和 FB204-047-009 两条焊缝之前由于 UT 检测发现有缺陷而由 ZPMC 进行过三次返修。

Work By: 施工方: Ji hua

Prepared by: 准备: zhang Wei 2009.11.14

Reviewed by QCE: 质量工程师批准: xiaoshuangshui 2009.11.14

☐ 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:

Prepared by: ____________________ Approved by QCA: ____________________
准备 质量经理批准

Reason for Nonconformance:
不符合原因: 1. Repair report during third time repair, and worker didn't review report carefully before fabrication and didn't stope fabrication after aknowledge WR.

1. 第三次返修是一般返修报告，带班拿到报告后盲目施工，没有详查报告是不是关键返修报告，发现是一般返修后仍然返修，没有及时停止。

2. QC没有监督到位。 2. ~~Enhance~~ QC supervised unadequately.

Prevention of Re-occurrence:
预防措施:

1. QC现场不能脱岗，定人定岗。 1. QC shall present on site during repair.

2. 带班组进行教育，使他们认真负责。 2. Eudueate work team leader.

Approved by/批准: Hyushang

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

具体见焊缝返修报告 CWR-852, CWR-856
See CWR-852 and CWR-856 for detail disposition

Reviewed /批准: ~~MaoLi 11.20/09~~

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
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:	05-Nov-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:	05.03.06-000428
Subject:	NCR No. ZPMC-0433		

Reference Description: Third time repair without the Engineer's Approval

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- ☐ Non-Conformance Resolved.

Material Location: Xbeam **Lift:** 11

Remarks:

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Action Required and/or Action Taken:

Submit a repair plan to the engineer for approval.

Transmitted by: Bill Howe
Attachments: ZPMC-0433

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

STATE OF CALIFORNIA--BUSINESS,TRANSPORTACTION AND HOUSING AGENCY Arnold Schwarzenegger, Governor

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
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

Report No: NCR-000460
Date: 05-Oct-2009
NCR #: ZPMC-0433

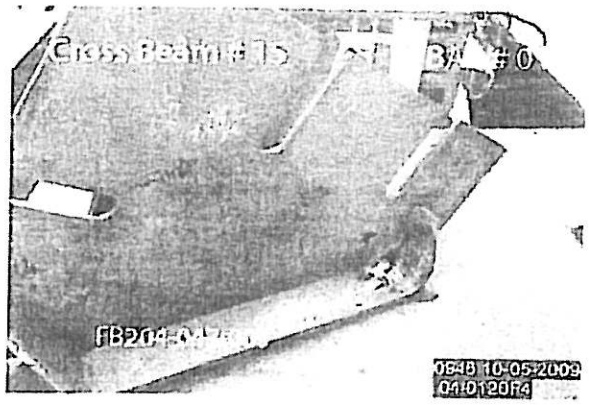
Type of problem:

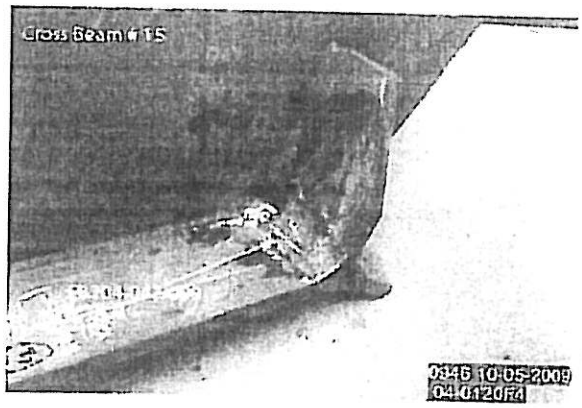
Welding	☑	**Concrete**	☐	**Other**	☐	
Welding	☐	**Curing**	☐	**Procedural**	☐	**Bridge No:** 34-0006
Joint fit-up	☐	**Coating**	☐	**Other**	☐	**Component:** OBG Crossbeam 15 Floorbeam
Procedural	☑	**Procedural**	☐	**Description:**		

Reference Description: Third time repair without the Engineer's Approval

Description of Non-Conformance:

During a random visual inspection of OBG Cross Beam #15, the Caltrans Quality Assurance (QA) Inspector observed that ZPMC personnel performed the third time repair without the Engineer's approval. The following two joints FB205-045-013 and FB204-047-009 have been previously repaired three (3) times by ZPMC personal due to non-conforming indications found with ultrasonic testing (UT).





Applicable reference:

Special Provision Section 8.3: "In addition to the provisions in AWS D1.5, Section 3.7.4 and Section 12.17, third-time repairs of welds or base metal, regardless of NDT method, and all repairs of cracks require prior approval of the Engineer."

Who discovered the problem: Steve Hall
Name of individual from Contractor notified: Wang Wen Bin
Time and method of notification: 0945 hours, Verbal
Name of Caltrans Engineer notified: Ching Chao

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Time and method of notification: 1030 hours, Verbal

QC Inspector's Name: Tian Lei

Was QC Inspector aware of the problem: ☐ Yes ☑ No

Contractor's proposal to correct the problem:

N/A

Comments:

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs,or remedial efforts please contact Mazen Wahbeh, +(86) 134.7247.7571, who represents the Office of Structural Materials for your project.

Inspected By:	Carreon,Albert	Lead Reviewer/Task Leader
Reviewed By:	Wahbeh,Mazen	SMR

焊缝返修报告
Welding Repair Report

				版本 Rev. No.	0
项目名称 Project Name	美国海湾大桥 SFOBB	部件图号 Drawing No	FB205	报告编号 Report No.	B-WR8094
合同号 Contract No.:	04-0120F4	部件名称 Items Name	CB15 CROSS BEAM	NDT报告编号 Report No.of NDT	B787-UT-8945R1
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述：

Description of welding discontinuity:

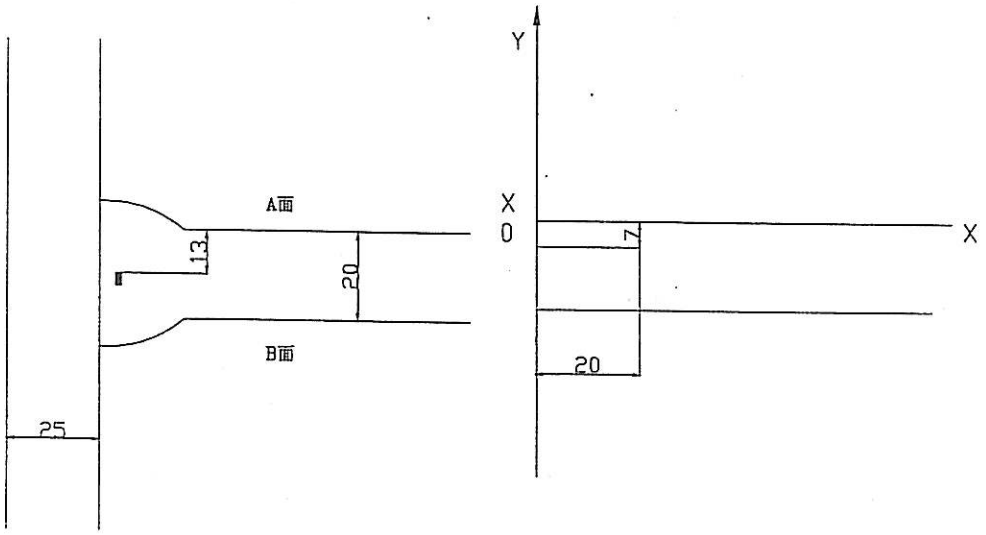
Rejected indication found by ultrasonic inspection is less than the maximum allowance aggregate length.

(UT探伤发现的缺陷总长度小于最大允许长度。) **FB205-045-013**

检验员 (Inspector)：Han feng 日期(Date)：09.10.07

焊缝返修位置示意图：

Draft of welding discontinuity:



WELD NUMBER: FB205-045-013

产生原因:

Caused:

1、焊道未及时处理干净。

1. Did not clear the weld pass completely in time.

车间负责人(Foreman): HuYuZhang 日期(Date): 09.10.08.

处理意见

Disposition :

1. 从缺陷距离端面较近一侧（D≤0.65T, D为缺陷深度，T为板厚）采用碳刨或打磨的方法去除焊缝缺陷;
2. 参照返修焊接工艺规程（WPS）准备正确的接头型式，预热和焊接;
3. 焊前对修补区域进行VT检测保证缺陷完全被清除;
4. 将修补区域打磨到与母材或邻近焊缝平齐;
5. 根据批准的车间图纸检查焊缝.

1. Gouge or grind from nearer side from metal edge （D≤0.65T, "D" is depth of defects, "T" is thickness of metal） to remove all defects;
2. Follow repair WPS for joint preparation, preheat, and weld deposit;
3. Verify with VT no defects remain in the weld joint prior to welding;
4. Grind the repaired area flush with base metal or the adjacent weld;
5. Check the welds according to the working drawings.

工 艺: HeXiaoLin 09.10.08.
Technical engineer

审核: WZhu 日期 09.10.08
Approved by Date

焊缝返修报告
Welding Repair Report

版本 Rev. No.
0

项目名称 Project Name	美国海湾大桥 SFOBB	部件图号 Drawing No	FB205	报告编号 Report No.	B-WR8094
合同号 Contract No.:	04-0120F4	部件名称 Items Name	CB15 CROSS BEAM	NDT报告编号 Report No.of NDT	B787-UT-8945R1
项目编号 Project No.:	ZP06-787				

纠正措施:

Correction action to prevent re occurrence:

1.加强焊接监控和道间清理。

1. Improve monitoring of welding and interpass cleaning.

车间负责人(Foreman): Hu Yuzhang 日期(Date): 09.10.08

参照的WPS编号 Repair WPS No.	WPS-345-SMAW-2 G(2F)-Repair WPS-345-FCAW-2 G(2F)-Repair-1 WPS-345-SMAW-3 G(3F)-Repair WPS-345-FCAW-3 G(3F)-Repair	工艺员 technologist	Hexiaolin 09.10.08.
返修（碳刨）前预热温度 Preheat temperature before gouging	60°C	返修的缺陷 Description of discontinuity	slag
焊前处理检查 Inspection before welding	Acc	焊前预热温度 Preheat temperature before welding	72°C
最大碳刨深度 Max. depth of gouging	8	碳刨总长 Total length of gouging	32

焊工 welder	Kang Fuzhi 21P188	焊接类型 welding type	FCAW	焊接位置 position	2G
焊接电流 Current	285	焊接电压 Voltage	28.1	焊接速度 Speed	5/1

返修后检查

Inspection After repairing:

外观检查 VT result	Acc	检验员 Inspector	chen xi	日期 Date	2009. 10. 13.
NDT复检 NDT result	RO	探伤员 NDT person	Lantang	日期 Date	2009.10.15

见证：
Witness/Review:

备注：
Remark：

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.:	FB205	报告编号 Report No.:	B-CWR852
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	CB15 CROSS BEAM	NDT 报告编号 NDT Report No.:	B787-UT-8945R2
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述：

Description of Welding Discontinuity:

A Rejectable indication was found by Ultrasonic Inspection for a third repair.

(UT三次缺陷) FB205-045-013

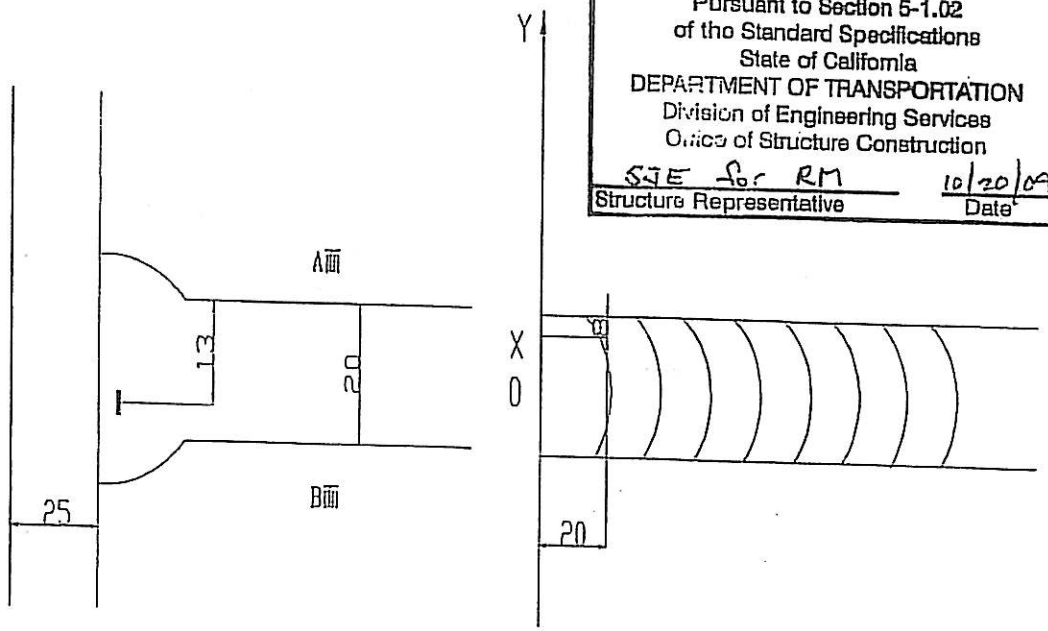
Welder ID No. (焊工编号): 219188 Position:(位置): 2G

检验员 (Inspector)：Han Feng 日期 (Date)：2009.10.15

焊缝返修位置示意图：

Draft of Welding Discontinuity:

☐ APPROVED
☑ APPROVED AS NOTED
☐ RETURNED FOR CORRECTION
Pursuant to Section 5-1.02
of the Standard Specifications
State of California
DEPARTMENT OF TRANSPORTATION
Division of Engineering Services
Office of Structure Construction
SJE for RM 10/20/09
Structure Representative Date



WELD NUMBER: FB205-045-013

产生原因:

Cause:

1. 焊工在第一次反面清根时，没有注意，导致焊接缺陷没有全部去除；
2. 在焊返修前，QC没有确认所有的焊接缺陷已经去除。
1. The welder was not observant during the first backgouging operation resulting in the Indications not being completely removed.
2. QC did not verify the indications had been removed prior to re-welding.

车间负责人 (Foreman): Li Zhigang 日期 (Date): 09.10.15

处理意见

Disposition :

1. 在整个的返修过程中，QC和Leader CWI必须在现场监控所有的碳刨，打磨和焊接操作；
2. 在返修时，QC必须有有效的CWR，以保证返修按照要求进行；
3. 如果碳刨，按照返修的WPS进行预热；
4. 从A面采用碳刨或打磨的方法去除焊缝缺陷；
5. 准备一个正确得接头型式，具体参照相应的返修WPS；
6. 将缺陷区域打磨平滑；
7. 采用MT和VT检测方法保证缺陷完全被清除；
8. 预热及焊接要求参照已批准的返修WPS执行；
9. 返修后,VT,MT,UT检测焊缝；
10. 将焊缝打磨与相邻焊缝平齐；
11. 根据批准的车间图纸检查焊缝；

☐ APPROVED
☑ APPROVED AS NOTED
☐ RETURNED FOR CORRECTION
Pursuant to Section 5-1.02
of the Standard Specifications
State of California
DEPARTMENT OF TRANSPORTATION
Division of Engineering Services
Office of Structure Construction
SJE for RM — 10/20/09
Structure Representative — Date

1. QC and a Lead CWI shall be present and monitor all gouging, grinding and welding operations during this repair.
2. QC shall have a copy of the CWR available to ensure the repair is per the disposition requirements.
3. If gouging is performed, preheat per the repair WPS minimum requirements.
4. Gouge and/or grind to remove all the defects from the Face A.
5. Prepare the repair joint according to the relevant repair WPS.
6. Grind area smooth to a shiny finish.
7. Perform VT and MT to ensure the defects have been removed.
8. Preheat and weld according to the relevant repair WPS.
9. Perform VT, MT and UT to the repair areas.
10. Grind the weld flush with the adjacent weld.
11. ~~Check the weld according to the working drawings.~~ REMOVE

PERFORM NAT AFTER GRINDING FLUSH

10-19-09

工 艺: Technical Engineer: Nie Tiefang 审核: Approved By: 日期: Date: 09.10.15

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.:	FB205	报告编号 Report No.:	B-CWR852
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	CB15 CROSS BEAM	NDT 报告编号 NDT Report No.:	B787-UT-8945R2
项目编号 Project No.:	ZP06-787				

纠正措施:

Corrective Action to Prevent Re-occurrence:

1、返修前，QC必须VT和MT确认所有的缺陷已经去除;
2. 教导在挠熔透焊缝和焊道清理时，焊工必须负责任;
3. QC指导碳刨工将所有的缺陷去除;
4. 关键焊缝返修时，主要的QC负责人要在现场;

1. QC to verify VT and MT has been performed and all the defects have been removed prior to the repair.
2. QC to instruct the welder that it is his responsibility to produce sound welds and perform interpass cleaning.
3. QC to instruct the grinder all defects shall be removed.
4. Greater QC presence during critical welding operations.

车间负责人 (Foreman): Li Zhiqing 日期 (Date): 09.10.15

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:	Niu Tiefeng 09.10.15
返修（碳刨）前预热温度 Preheat Temperature Before Gouging:	65°C	返修的缺陷 Description of Discontinuity:	Slag
焊前处理检查 Inspection Before Welding:	Acc	焊前预热温度 Preheat Temperature Before Welding:	140
最大碳刨深度 Max. Depth of Gouge:	8	碳刨总长 Total Length of Gouge:	30

焊工 Welder:	YangFuzhi 219188	焊接类型 Welding Type:	FCAW	焊接位置 Position:	2G
焊接电流 Current:	285	焊接电压 Voltage:	28.1	焊接速度 Speed:	511

返修后检查 Inspection After Repair: keep temperature time 1h.

外观检查 VT Result:	Acc	检验员 Inspector:	chen xi	日期 Date:	2009.10.24
NDT复检 NDT Result:	Acc	探伤员 NDT Person:		日期 Date:	09.10.25
见证： Witness/Review:					
备注： Remark：					

☑ APPROVED
☑ APPROVED AS NOTED
☐ RETURNED FOR CORRECTION
Pursuant to Section 5-1.02
of the Standard Specifications
State of California
DEPARTMENT OF TRANSPORTATION
Division of Engineering Services
Office of Structure Construction
SSE Sor RM 10/20/09
Structure Representative Date

B-VT 43391

ZPMC

		周数	103#
		日期	2009.10.24

Visual Weld Inspection Report
焊缝目视检查报告

		Girder/梁:	OBG Cross Beam
		Tower/塔:	NA
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 07072021
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
FB205-045-013	219188	2G	supercordø1.4	√	√	√	√	√	√	√	ACC	NA	NA

☐ After root weld
☑ After CWR or WRR No.: B-CWR 852
☐ After cover pass
☐ After HSR No.:
☐ Others

#R787-QCP-603

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

REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 B787-MT-15161	DATE日期 2009.10.29	PAGE OF页码 1/4	Revision No: 0

PROJECT NO. 工程编号: ZP06-787		CONTRACTOR: 用 户: CALTRANS	
DRAWING NO. 图号: FB205 CB15 CROSS BEAM		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 25/14/18/20mm
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			
FB205-045-014				ACC.		100%MT
FB205-045-015				ACC.		100%MT
FB205-045-017				ACC.		100%MT
FB205-045-018				ACC.		100%MT
FB205-045-020				ACC.		100%MT
FB205-045-021				ACC.		100%MT
FB205-045-023				ACC.		100%MT
FB205-045-024				ACC.		100%MT
FB205-045-033				ACC.		100%MT
FB205-045-034				ACC.		100%MT
FB205-045-013				ACC.		100%MT
FB205-045-016				ACC.		100%MT
FB205-045-019				ACC.		100%MT
FB205-045-022				ACC.		100%MT
FB205-045-001				ACC.		100%MT
FB205-045-002				ACC.		100%MT

EXAMINED BY主探 Jin jian ting LEVEL - II SIGN 签名 / DATE日期 09.10.29	REVIEWED BY 审核 LEVEL-II SIGN DATE日期 09.10.29
质量经理 / QCM 签字 SIGN / 日期 DATE 10/29/09	用户CUSTOMER 签字 SIGN / 日期 DATE

(FORM# ZPQC-MT01)

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	FB204	报告编号 Report No.	B-WR8098
合同号 Contract No.:	04-0120F4	部件名称 Items Name	CB15 CROSS BEAM	NDT报告编号 Report No.of NDT	B787-UT-8945R1
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述：

Description of welding discontinuity:

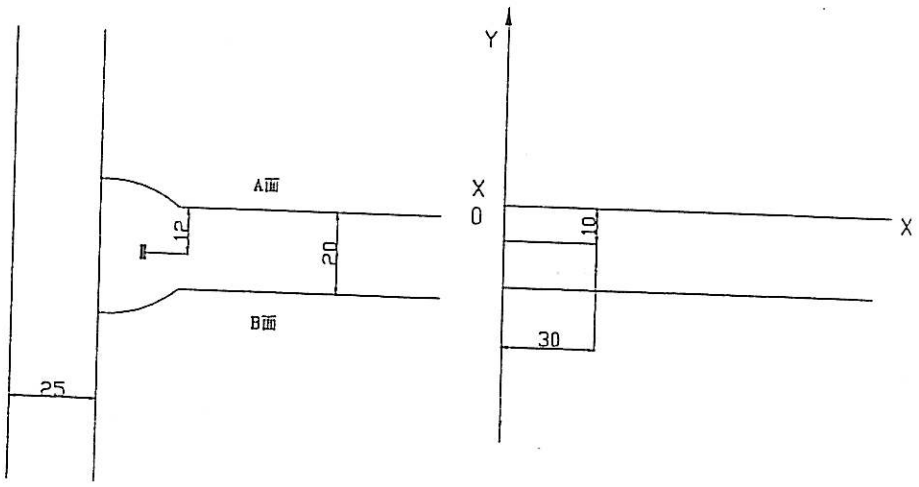
Rejected indication found by ultrasonic inspection is less than the maximum allowance aggregate length.

(UT探伤发现的缺陷总长度小于最大允许长度。) FB204-047-009

检验员（Inspector）：Han feng 日期(Date)：09.10.07

焊缝返修位置示意图：

Draft of welding discontinuity:



WELD NUMBER: FB204-047-009

产生原因:

Caused:

1、焊道未及时处理干净。

1. Did not clear the weld pass completely in time.

车间负责人(Foreman): Hu Yuzhang 日期(Date): 09.10.08

处理意见

Disposition :

1. 从缺陷距离端面较近一侧（D≤0.65T, D为缺陷深度，T为板厚）采用碳刨或打磨的方法去除焊缝缺陷;
2. 参照返修焊接工艺规程（WPS）准备正确的接头型式，预热和焊接;
3. 焊前对修补区域进行VT检测保证缺陷完全被清除;
4. 将修补区域打磨到与母材或邻近焊缝平齐;
5. 根据批准的车间图纸检查焊缝.

1. Gouge or grind from nearer side from metal edge （D≤0.65T, "D" is depth of defects, "T" is thickness of metal） to remove all defects;
2. Follow repair WPS for joint preparation, preheat, and weld deposit;
3. Verify with VT no defects remain in the weld joint prior to welding;
4. Grind the repaired area flush with base metal or the adjacent weld;
5. Check the welds according to the working drawings.

工 艺: Hexiao Gu 09.10.08
Technical engineer

审核:
Approved by

日期
Date

09.10.10

焊縫返修报告
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	FB204	报告编号 Report No.	B-WR8098
合同号 Contract No.:	04-0120F4	部件名称 Items Name	CB15 CROSS BEAM	NDT报告编号 Report No.of NDT	B787-UT-8945R1
项目编号 Project No.:	ZP06-787				

纠正措施:

Correction action to prevent re occurrence:

1.加强焊接监控和道间清理。

1. Improve monitoring of welding and interpass cleaning.

车间负责人(Foreman): Hu Yuzhang 日期(Date): 09.10.08

参照的WPS编号 Repair WPS No.	WPS-345-SMAW-2 G(2F)-Repair WPS-345-FCAW-2 G(2F)-Repair-1 WPS-345-SMAW-3 G(3F)-Repair WPS-345-FCAW-3 G(3F)-Repair	工艺员 technologist	Hexiaolin 09.10.08
返修（碳刨）前预热温度 Preheat temperature before gouging	67°C	返修的缺陷 Description of discontinuity	slag
焊前处理检查 Inspection before welding	Acc	焊前预热温度 Preheat temperature before welding	78°C
最大碳刨深度 Max. depth of gouging	10	碳刨总长 Total length of gouging	40

焊工 welder Kang Fu zhi 21458	焊接类型 welding type FCAW	焊接位置 position 2G
焊接电流 Current 285	焊接电压 Voltage 28.1	焊接速度 Speed 5/10

返修后检查

Inspection After repairing:

外观检查 VT result Acc	检验员 Inspector chen xi	日 期 Date 2009.10.13.
NDT复检 NDT result RTJ	探伤员 NDT person Lanfeng	日 期 Date 09.10.15
见证： Witness/Review:		
备注： Remark：		

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.:	FB204	报告编号 Report No.:	B-CWR856
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	CB15 CROSS BEAM	NDT 报告编号 NDT Report No.:	B787-UT-8945R2
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述：

Description of Welding Discontinuity:

A Rejectable indication was found by Ultrasonic Inspection for a third repair. (UT三次缺陷) FB204-047-009

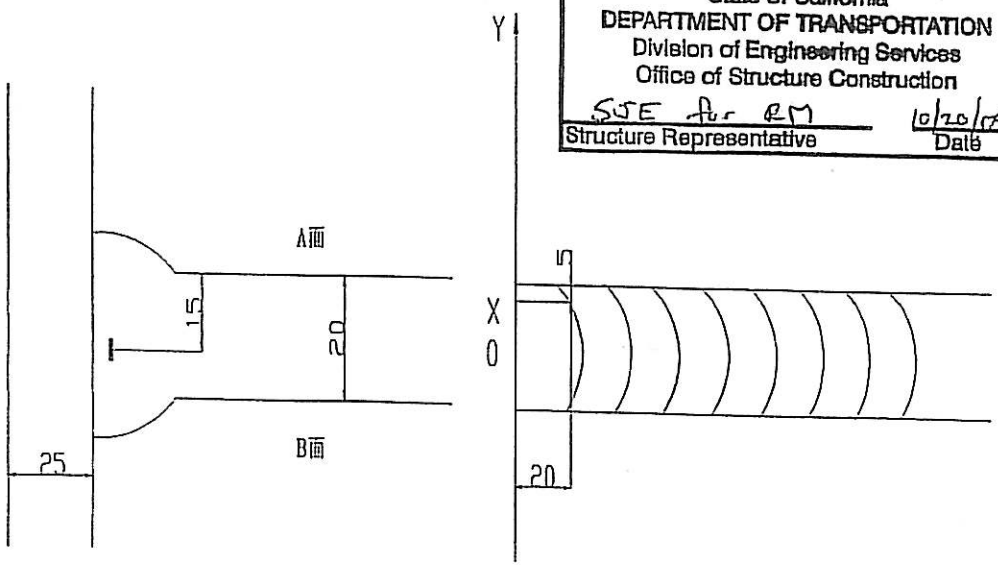
Welder ID No. (焊工编号): 219188 Position:(位置): 2G

检验员 (Inspector): Han Feng Han Feng 日期 (Date): 2009.10.15

焊缝返修位置示意图：

Draft of Welding Discontinuity:

☐ APPROVED
☑ APPROVED AS NOTED
☐ RETURNED FOR CORRECTION
Pursuant to Section 5-1.02
of the Standard Specifications
State of California
DEPARTMENT OF TRANSPORTATION
Division of Engineering Services
Office of Structure Construction
SJE for RM 10/20/09
Structure Representative Date



WELD NUMBER: FB204-047-009

产生原因：

Cause:

1. 焊工在第一次反面清根时，没有注意，导致焊接缺陷没有全部去除；
2. 在焊返修前，QC没有确认所有的焊接缺陷已经去除。

1. The welder was not observant during the first backgouging operation resulting in the Indications not being completely removed.
2. QC did not verify the indications had been removed prior to re-welding.

车间负责人 (Foreman): Li Zhigang 日期 (Date): 09.10.15

处理意见

Disposition：

1. 在整个的返修过程中，QC和Leader CWI必须在现场监控所有的碳刨，打磨和焊接操作；
2. 在返修时，QC必须有有效的CWR，以保证返修按照要求进行；
3. 如果碳刨，按照返修的WPS进行预热；
4. 从A面采用碳刨或打磨的方法去除焊缝缺陷；
5. 准备一个正确得接头型式，具体参照相应的返修WPS；
6. 将缺陷区域打磨平滑；
7. 采用MT和VT检测方法保证缺陷完全被清除；
8. 预热及焊接要求参照已批准的返修WPS执行；
9. 返修后,VT,MT,UT检测焊缝；
10. 将焊缝打磨与相邻焊缝平齐；
11. 根据批准的车间图纸检查焊缝；

☐ APPROVED
☑ APPROVED AS NOTED
☐ RETURNED FOR CORRECTION
Pursuant to Section 5-1.02
of the Standard Specifications
State of California
DEPARTMENT OF TRANSPORTATION
Division of Engineering Services
Office of Structure Construction
SJE for RM 10/20/09
Structure Representative Date

1. QC and a Lead CWI shall be present and monitor all gouging, grinding and welding operations during this repair.
2. QC shall have a copy of the CWR available to ensure the repair is per the disposition requirements.
3. If gouging is performed, preheat per the repair WPS minimum requirements.
4. Gouge and/or grind to remove all the defects from the Face A.
5. Prepare the repair joint according to the relevant repair WPS.
6. Grind area smooth to a shiny finish.
7. Perform VT and MT to ensure the defects have been removed.
8. Preheat and weld according to the relevant repair WPS.
9. Perform VT, MT and UT to the repair areas.
10. Grind the weld flush with the adjacent weld.
11. ~~Check the weld according to the working drawings.~~ REMOVE

PERFORM MT AFTER GRINDING FLUSH

10-19-09

工艺：
Technical Engineer: [signature] 审核：Approved By: [signature] 日期：Date: 09.10.15

#R787-QCP-900

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.:	FB204	报告编号 Report No.:	B-CWR856
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	CB15 CROSS BEAM	NDT 报告编号 NDT Report No.:	B787-UT-8945R2
项目编号 Project No.:	ZP06-787				

纠正措施:

Corrective Action to Prevent Re-occurrence:

1、返修前，QC必须VT和MT确认所有的缺陷已经去除；
2. 教导在挠搭透焊缝和焊道清理时，焊工必须负责任；
3. QC指导碳刨工将所有的缺陷去除；
4. 关键焊缝返修时，主要的QC负责人要在现场；

1. QC to verify VT and MT has been performed and all the defects have been removed prior to the repair.
2. QC to instruct the welder that it is his responsibility to produce sound welds and perform interpass cleaning.
3. QC to instruct the grinder all defects shall be removed.
4. Greater QC presence during critical welding operations.

车间负责人 (Foreman): Li zhigang 日期 (Date): 09.10.15

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:		Nin Tiefang 09.10.15
返修（碳刨）前预热温度 Preheat Temperature Before Gouging:	65°C		返修的缺陷 Description of Discontinuity:		Slag
焊前处理检查 Inspection Before Welding:	Acc		焊前预热温度 Preheat Temperature Before Welding:		132°C
最大碳刨深度 Max. Depth of Gouge:	8		碳刨总长 Total Length of Gouge:		40
焊工 Welder:	Yang Fu zhi 219188	焊接类型 Welding Type:	FCAW	焊接位置 Position:	2G
焊接电流 Current:	282	焊接电压 Voltage:	28.1	焊接速度 Speed:	511
返修后检查 Inspection After Repair:	keep temperature time 1h				
外观检查 VT Result:	Acc	检验员 Inspector:	chen xi	日期 Date:	2009.10.24.
NDT复检 NDT Result:		探伤员 NDT Person:		日期 Date:	09.10.25
见证： Witness/Review:					
备注： Remark：					

☑ APPROVED
☑ APPROVED AS NOTED
☐ RETURNED FOR CORRECTION
Pursuant to Section 5-1.02
of the Standard Specifications
State of California
DEPARTMENT OF TRANSPORTATION
Division of Engineering Services
Office of Structure Construction
STE for RM 10/20/09
Structure Representative Date

B-VT 43394

ZPMC

周数	103#
日期	2009.10.24

Visual Weld Inspection Report
焊缝目视检查报告

Girder/梁:	OBG Cross Beam
Tower/塔:	NA
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 07072021
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
FB 204-047-00P	219188	2G	supercordø1.4	√	√	√	√	√	√	√	ACC	NA	NA

☐ After root weld
☑ After CWR or WRR No.: B-CWR856
☐ After cover pass
☐ 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-15159	DATE日期 2009.10.29	PAGE OF页码 5/11	Revision No: 0

PROJECT NO. 工程编号:	ZP06-787	CONTRACTOR: 用 户:	CALTRANS
DRAWING NO. 图号:	FB204 CB15 CROSS BEAM	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 18/14/25/20mm
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			
FB204-047-051				ACC.		100%MT
FB204-047-052				ACC.		100%MT
FB204-047-005				ACC.		100%MT
FB204-047-006				ACC.		100%MT
FB204-047-009				ACC.		100%MT
FB204-047-012				ACC.		100%MT
FB204-047-038				ACC.		100%MT
FB204-047-039				ACC.		100%MT
FB204-047-041				ACC.		100%MT
FB204-047-042				ACC.		100%MT
FB204-047-044				ACC.		100%MT
FB204-047-045				ACC.		100%MT
FB204-047-047				ACC.		100%MT
FB204-047-048				ACC.		100%MT
FB204-047-067				ACC.		100%MT
FB204-047-068				ACC.		100%MT

EXAMINED BY主探 Jin jian ting LEVEL - II SIGN 签名 / DATE日期 05.10.21	REVIEWED BY 审核 LEVEL-II SIGN / DATE日期 05.10.21
质量经理 / QCM 10/29/09 签字 SIGN / 日期 DATE	用户CUSTOMER 签字 SIGN / 日期 DATE

(FORM# ZPQC-MT01)

REPORT OF ULTRASONIC EXAMINATION
UT探伤报告

REPORT NO. 报告编号 B787-UT-8945R3	DATE 2009.10.25	PAGE 1 OF 2	Revision No: 0

PROJECT NO. :工程编号 ZP06-787		CONTRACTOR : CALTRANS
ITEMS NAME: 部件名称 OBG CB15 CROSS BEAM	DRAWING NO.: 图号 FB204/FB205	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 FCAW	JOINT TYPE 焊缝类型 T-JOINT	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 20/25mm

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		
FB205-045-006	1R3	70	A	1	41	33	2	+6	20	50	16	-5	10	REJ.	100%
FB205-045-013	1R3	70				33								ACC.	100%
FB205-045-016	1R3	70	A	1	44	33	3	+8	20	57	22	-7	5	REJ.	100%
FB204-045-021	1R3	70				33								ACC.	100%
FB204-046-021	1R3	70				33								ACC.	100%
FB204-047-009	1R3	70				33								ACC.	100%
FB204-047-025	1R3	70				33								ACC.	100%
FB204-048-046	1R3	70				33								ACC.	100%

EXAMINED BY 主探 Han Fei
LEVEL - II SIGN / DATE 09.10.25

REVIEWED BY 审核 Huey Jr
LEVEL - II SIGN / DATE 09.10.25

质量经理 / QCM Lu Jianhua
签字 SIGN / 日期 DATE 09.10.29

用户CUSTOMER
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-8945R3 DATE 2009.10.25 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		
AFTER B-CWR851~858															
BLANK															

EXAMINED BY主探 Nan Fay
LEVEL - II SIGN / DATE 09.10.25

REVIEWED BY 审核 Hua Yi
LEVEL - II SIGN / DATE 09.10.25

质量经理 / QCM Lu Jianhua
签字 SIGN / 日期 DATE 09.10.25

用户CUSTOMER
签字 SIGN / 日期 DATE

(FORM# ZPQC-UT01)

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-000442
Prime Contractor: American Bridge/Fluor Enterprises, a JV **Date:** 13-Jan-2010
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0433

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: 05-Oct-2009

Description of Non-Conformance:
During a random visual inspection of OBG Cross Beam #15, the Caltrans Quality Assurance (QA) Inspector observed that ZPMC personnel performed the third time repair without the Engineer's approval. The following two joints FB205-045-013 and FB204-047-009 have been previously repaired three (3) times by ZPMC personal due to non-conforming indications found with ultrasonic testing (UT).

Contractor's proposal to correct the problem:
Submit CWR and perform required NDT.

Corrective action taken:
Contractor submitted CWR and NDT documentation verifying the repair is in conformance with Contract specifications. An internal NCR was also issued.

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 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