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-000113
Prime Contractor: American Bridge/Fluor Enterprises, a JV **Date:** 09-Apr-2008
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0109

Type of problem:

Welding	☑	**Concrete**	☐	**Other**	☐	
Welding	☐	**Curing**	☐	**Procedural**	☐	**Bridge No:** 34-0006
Joint fit-up	☐	**Coating**	☐	**Other**	☐	**Component:** DP-166-001
Procedural	☑	**Procedural**	☐	**Descripton:**		OBG Deck Panel

Reference Description:

Description of Non-Conformance:

The Contractor performed welding of closed ribs to box shell plate using unapproved welding procedures. Due to a mechanical malfunction with the closed rib welding machine, the Contractor welded a closed rib to the deck plate by welding one stem of the rib at a time. This occurred on welds #005 and #006 of OBG deck panel DP-166-001.

Applicable reference:

Special Provisions, Section 10-1.59 Steel Structures, Subsection Welding of Closed Ribs to Box Shell Plate (page 328): "Closed ribs shall be clamped or tack welded in place, and both stems welded to the deck plate simultaneously."

Who discovered the problem: QA Inspector Tim McClendon
Name of individual from Contractor notified: ABFJV QC Inspector Art Peterson
Time and method of notification: 0930, 4/10/2008, via phone
Name of Caltrans Engineer notified: Stanley Ku
Time and method of notification: Verbal notification at 13:00 on 4/10/2008
QC Inspector's Name: ZPMC QC Inspector Sun Wei
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 Patrick Lowry, 916-227-5719, who represents the Office of Structural Materials for your project.

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

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 Enterprises, a JV 375 BURMA ROAD OAKLAND CA 95607	**Date:**	15-Apr-2008
		Contract No:	04-0120F4 04-SF-80-13.2 / 13.9
Dear:	Mr. Charles Kanapicki	**Job Name:**	SAS Superstructure
Attention:	Mr. Dave Williams Consultant	**Document No:**	05.03.06-000090
Subject:	NCR No. ZPMC-0109		

Reference Description: The Contractor performed welding of closed ribs to box shell plate using unapproved welding procedures.

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 - No Response Required.

Material Location: OBG **Lift:**

Remarks:

Due to a mechanical malfunction with the closed rib welding machine, the Contractor welded a closed rib to the deck plate by welding one stem of the rib at a time. This occurred on welds #005 and #006 of OBG deck panel DP-166-001.

Action Required and/or Action Taken:

This is a recurring issue, see NCR# ZPMC 0102. A response for the resolution of this issue is expected within 14 days.

Transmitted by: Stanley Ku Sr. Bridge Engineer

Attachments: ZPMC-0109

cc: Rick Morrow, Gary Pursell, Brian Boal, Jason Tom

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: 05.03.06-000090

Subject: NCR No. ZPMC-0109

Dated: **11-Sep-2008**
Contract No.: 04-0120F4
04-SF-80-13.2 / 13.9
Job Name: SAS Superstructure
Document No.: **ABF-NPR-000135 Rev: 00**

Contractor's Proposed Resolution:

Reference Resolution: ZPMC performed weld repair on in process root pass. Since this time a repair procedure has been submitted to CT

ZPMC performed weld repair on in process root pass. Since this time a repair procedure has been submitted to CT. The repair was performed, inspected and documented.

Submitted by:

Attachment(s): ABF-NPR-000135R00

Caltrans' comments:

Status: REJ

Date: 28-Sep-2008

This proposed resolution regarding repair welding of a root pass does not address the issue in the referenced Non-Conformance ZPMC-0109, which was issued for welding of closed ribs one stem at a time instead of simultaneously.

Please describe any actions taken to prevent recurrence of the issue. Also, provide documentation of repairs or unacceptable distortion that occurred, and confirm that the associated welds are otherwise in conformance to the contract specifications.

Submitted by: Wright, Doug

Date: 28-Sep-2008

Attachment(s):

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: 05.03.06-000090

Subject: NCR No. ZPMC-0109

Dated: **13-Nov-2008**

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

Job Name: SAS Superstructure

Document No.: **ABF-NPR-000135 Rev: 01**

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has attached supporting documents of inspection and requests closure of this NCR.

ZPMC has attached supporting documents of inspection and requests closure of this NCR.

Submitted by:

Attachment(s): ABF-NPR-000135R01; Supporting documents of inspection to close this NCR.

Caltrans' comments:

Status: CLO

Date: 18-Nov-2008

The proposed resolution is acceptable. An internal ZPMC NCR was written regarding increased supervision and maintenance of equipment. Also, the weld in question has been accepted as shown in the attached VT and MT reports. The Department concurs that Non-Conformance ZPMC-0109 is closed.

Submitted by: Wright, Doug

Date: 19-Nov-2008

Attachment(s):

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

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

Contract #: 04-0120F4
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-000113
Prime Contractor: American Bridge/Fluor Enterprises, a JV **Date:** 09-Apr-2008
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0109

Type of problem:

Welding	☑	Concrete	☐	Other	☐	
Welding	☐	Curing	☐	Procedural	☐	**Bridge No:** 34-0006
Joint fit-up	☐	Coating	☐	Other	☐	**Component:** DP-166-001
Procedural	☑	Procedural	☐	**Descripton:**		OBG Deck Panel

Reference Description:

Description of Non-Conformance:
The Contractor performed welding of closed ribs to box shell plate using unapproved welding procedures. Due to a mechanical malfunction with the closed rib welding machine, the Contractor welded a closed rib to the deck plate by welding one stem of the rib at a time. This occurred on welds #005 and #006 of OBG deck panel DP-166-001.

Applicable reference:
Special Provisions, Section 10-1.59 Steel Structures, Subsection Welding of Closed Ribs to Box Shell Plate (page 328): "Closed ribs shall be clamped or tack welded in place, and both stems welded to the deck plate simultaneously."

Who discovered the problem: QA Inspector Tim McClendon
Name of individual from Contractor notified: ABFJV QC Inspector Art Peterson
Time and method of notification: 0930, 4/10/2008, via phone
Name of Caltrans Engineer notified: Stanley Ku
Time and method of notification: Verbal notification at 13:00 on 4/10/2008
QC Inspector's Name: ZPMC QC Inspector Sun Wei
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 Patrick Lowry, 916-227-5719, who represents the Office of Structural Materials for your project.

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

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	DP166	报告编号 Report No.	B-WR218
合同号 Contract No.:	04-0120F4	部件名称 Items Name	Deck plate sub-assembly	NDT报告编号 Report No.of NDT	
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述：

Description of welding discontinuity:

6A-6B-W图号为DP166的顶板单元在进行SAW焊接时，焊剂管道突然堵塞，使焊接过程直接暴露在空气中，导致出现大量的密集气孔。现将缺陷打磨清除干净后，发现已伤及母材（长度为170mm，深4.5mm）。

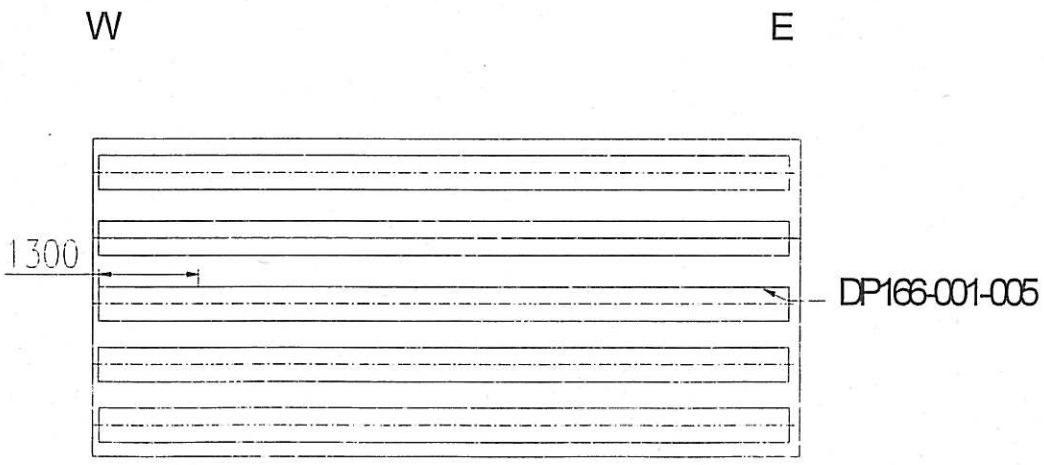
When welding the DP166, the flux pipe was jammed, so the welding process emerged in the air, Which leaded to a lot of porosity, the base material was gouged after grinding. The length is 170mm, the depth 4.5mm; the following shows the detail position.

Li Yanhua

检验员（Inspector）：li Yanhua 日期(Date)：2008.04.09

焊缝返修位置示意图：

Draft of welding discontinuity:



产生原因:

Caused:

1：因焊机管堵塞焊缝出现大量气孔,打磨去除时发现缺陷已陷入母材.从而打磨工进一步打磨去除母材上面缺陷导致伤及母材.

1. Per flux pipe was jammed causing porosity, it found defects was exceeded to base metal after grinding, and base metal was gouged by grinding.

车间负责人(Foreman): Liu Jiefei 日期(Date): 08.4.9

处理意见

Disposition：

1. 按照焊接返修工艺规程（WPS）打磨缺陷区域；
2. 准备正确的接头型式，具体参照返修焊接工艺规程（WPS）；
3. 对该区域作VT和100%MT检查，确保缺陷全部去除；
4. 根据批准的焊接返修工艺规程（WPS）进行预热及焊接；
5. 将焊接区域打磨至与母材平齐；
6. 对修补区域进行VT与100%MT检测；

1. Prepare excavation according to the approved repair WPS by meanings of and grinding.
2. Prepare excavation according to the approved repair WPS;
3. Perform VT and MT 100% of the excavation to insure removal of defects.
4. Preheat and weld according to the relevant WPS.
5. Grind the weld flush with base metal after welding.
6. Perform VT and 100% MT inspection of the repaired area.

工 艺：
Technical engineer : Niu Hefang

审核：
Approved by

日期
Date : 08.04.09

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.	DP0166	报告编号 Report No.	B-WR218
合同号 Contract No.:	04-0120F4	部件名称 Items Name	Deck plate sub-assembly	NDT报告编号 Report No.of NDT	
项目编号 Project No.:	ZP06-787				

纠正措施:

Correction action to prevent re occurrence;

1:加强对设备的维修和调试工作.

2:告知电焊工加强对焊接现场监控.

1. Enhance equipment maintenance and debugging.
2. Enhance welder's supervision and controlling.

车间负责人(Foreman): Liuaifei 日期(Date): 08.4.9

参照的WPS编号 Repair WPS No.	WPS-345-SMAW-1 G(1F)-Repair WPS-345-FCAW-1 G(1F)-Repair-1 WPS-345-SMAW-2 G(2F)-Repair WPS-345-FCAW-2 G(2F)-Repair-1	工艺员 technologist	Niu Zefeng 08.04.09
返修（碳刨）前预热温度 Preheat temperature before gouging	15°C	返修的缺陷 Description of discontinuity	伤再材
焊前处理检查 Inspection before welding	Acc	焊前预热温度 Preheat temperature before welding	20°C
最大碳刨深度 Max. depth of gouging	NA	碳刨总长 Total length of gouging	NA

焊工 welder: Xu GuoTin 059443	焊接类型 welding type: FCAW	焊接位置 position: 2G
焊接电流 Current: 260A	焊接电压 Voltage: 29V	焊接速度 Speed: 500 mm/min

返修后检查 **Inspection After repairing:**

外观检查 VT result: Acc	检验员 Inspector: Sun Wei 0705733	日期 Date: 2008.4.9
NDT复检 NDT result: ACC	探伤员 NDT person: Zhou Dong Yun	日期 Date: 2008.4.9

见证: Witness/Review:

备注: Remark:

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-050

Item: welding one stem at a time 名称描述: 门架焊机一次只焊接一条焊缝	**Item Number:** 件号: DP166-001	**Drawing Number:** 图号: DP166-001

Location: bay one 位置: U 肋生产车间	**Date:** 日期: 2008-4-9

Description of Nonconformance:

不符合项状态描述:

The contractor performed welding of closed ribs to box shell plate using unapproved welding procedures. Due to a mechanical malfunction with the closed rib welding machine, the contractor welded a closed rib to the deck plate by welding one stem of the rib at a time. This occurred on welds #005 and #006 of OBG deck panel DP166-001.

ZPMC 在 **U** 肋的生产过程中没有按照批准的工艺执行,因为焊机门架的故障,施工队一次只焊接一条焊缝,在顶板 **DP166-001** 上的 **005#**和 **006#**焊缝都是这样完成的,与标书要求的必须门架上几个焊枪同时进行不相符.

Work By: zhang yan jun **Prepared by:** [illegible] 2008 5.27 **Reviewed by QCE:** zhaoshuangbao 5.27

施工方: 准备: 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: ☑ **Use as is** 回用 ☐ **Repair** 返修 ☐ **Reject** 拒收

处理措施:

Recommendation:

建议 严格按照工艺流程施工,加强对作业人员的监控.

Comply with approved procedures and enhance supervision

Prepared by: zhang yan zhi **Approved by QCA:** HuGang 2008.5.28

准备 质量经理批准

Reason for Nonconformance:

不符合原因: 因焊机门架出现故障.

The mechanical malfunction with the closed rib welding machine caused this nonconformance.

预防措施:加强现场监控,严格按工艺流程施工, Enhance supervision and operate according to procedures.

2.定期检查设备维修及保养 Maintain the equipment periodically.

3. 加强作业人员的培训 Train the workers. **Approved by/批准:** zhang yan zhi

Technical Justification for Use-As-Is/Repair: ☐ **Attachment** 附件 ☑ **Non-attachment** 无附件

回用或返修的技术依据:

严格按工艺流程施工,加强设备维修及保养,对相关人员进行教育和培训.

Perform working strictly according to the procedure, intensify the maintainment of the facilities, and perform training and educating to the relevant personnel.

Reviewed /批准: Tang Yongbo 5.30 08

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

确认:

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

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 Enterprises, a JV 375 BURMA ROAD OAKLAND CA 95607	Date:	15-Apr-2008
		Contract No:	04-0120F4 04-SF-80-13.2 / 13.9
Dear:	Mr. Charles Kanapicki	Job Name:	SAS Superstructure
Attention:	Mr. Dave Williams Consultant	Document No:	05.03.06-000090
Subject:	NCR No. ZPMC-0109		

Reference Description: The Contractor performed welding of closed ribs to box shell plate using unapproved welding procedures.

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 - No Response Required.

Material Location: OBG **Lift:**

Remarks:

Due to a mechanical malfunction with the closed rib welding machine, the Contractor welded a closed rib to the deck plate by welding one stem of the rib at a time. This occurred on welds #005 and #006 of OBG deck panel DP-166-001.

Action Required and/or Action Taken:

This is a recurring issue, see NCR# ZPMC 0102. A response for the resolution of this issue is expected within 14 days.

Transmitted by: Stanley Ku Sr. Bridge Engineer

Attachments: ZPMC-0109

cc: Rick Morrow, Gary Pursell, Brian Boal, Jason Tom

File: 05.03.06

02.02.15.04 05.03.06-000090.NCT

Received
NCT-000090 15 Apr 08

ZPMC

		周数	23#
		日期	2008.4.09

Visual Weld Inspection Report
焊缝目视检查报告

		Girder/ 梁:	OBG Urib
		Tower/ 塔:	NA
Caltrans Contract No. 加州合同编号	04-0120F4	Representative: 质检代表:	
Project No.: 项目名称	San Francisco Oakland Bay Bridge 美国海湾大桥	C W I : 检验员:	Sun wei 0705733
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	Reject after repair 返修后接受或拒收
DP166-001-005	059443	2G	supercored71H	√	√	√	√	√	√	√	Acc	NA	NA

☐ After root weld ☐ After cover pass

☑ After CWR or WRR No.: R-WR218 ☐ 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-634	DATE日期 2008.04.09	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:	DP166 U-RIB TOP PLATE	CALTRANS CONTRACT NO.: 加州工程编号	04-0120F4
REFERENCING CODE 参考规范编码 AWS D1.5-2002	ACCEPTANCE STANDARD 接受标准 AWS D1.5-2002	PROCEDURE NO. 程序编号 ZPQC-MT-01	CALIBRATION DUE DATE 仪器校正有效期 Jan. 1ST ,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 5360 5362
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 12/14mm
WELDING PROCESS 焊接方法	N/A	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			
DP166-001-005				ACC.		
BLANK						

EXAMINED BY主探	REVIEWED BY 审核
Zhou Dongyun LEVEL - II SIGN 签名 / DATE日期 08.04.09	Cai Xin Xin 08.04.09 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)

D-V | 7840

ZPMC

周数	53
日期	2008.11.07

Visual Weld Inspection Report
焊缝目视检查报告

Girder/梁:	OBG Urib		
Tower/塔:	NA		
Caltrans Contract No. 加州合同编号	04-0120F4	Representative: 质检代表:	Fu Yinlong
Project No.: 项目名称	San Francisco Oakland Bay Bridge 美国 海湾大桥	CWI: 检验员:	Samuel 07051334
Project No.: 项目编号:	ZP06-787	Quality Assurance Manager ~Approval 质量控制经理:	Hu Tang

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
DP166-001-001	059378	2G	JW-3	√	√	√	√	√	√	√	Acc	NA	NA
DP166-001-002	059443	2G	JW-3	√	√	√	√	√	√	√	Acc	NA	NA
DP166-001-003	059371	2G	JW-3	√	√	√	√	√	√	√	Acc	NA	NA
DP166-001-004	059416	2G	JW-3	√	√	√	√	√	√	√	Acc	NA	NA
DP166-001-005	059371	2G	JW-3	√	√	√	√	√	√	√	Acc	NA	NA
DP166-001-006	059416	2G	JW-3	√	√	√	√	√	√	√	Acc	NA	NA
DP166-001-007	062265	2G	JW-3	√	√	√	√	√	√	√	Acc	NA	NA
DP166-001-008	059361	2G	JW-3	√	√	√	√	√	√	√	Acc	NA	NA
DP166-001-009	062265	2G	JW-3	√	√	√	√	√	√	√	Acc	NA	NA
DP166-001-010	059361	2G	JW-3	√	√	√	√	√	√	√	Acc	NA	NA

☐ After root weld ☑ After cover pass

☐ After CWR or WRR No.: ☐ 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-4502	DATE日期 2008.11.07	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:	DP166 OBG U-RIB	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 ,2008
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-S 12/14mm
WELDING PROCESS 焊接方法	GMAW+SAW	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			
DP166-001-001				ACC.		10%MT
DP166-001-002				ACC.		10%MT
DP166-001-003				ACC.		10%MT
DP166-001-004				ACC.		10%MT
DP166-001-005				ACC.		10%MT
DP166-001-006				ACC.		10%MT
DP166-001-007				ACC.		10%MT
DP166-001-008				ACC.		10%MT
DP166-001-009				ACC.		10%MT
DP166-001-010				ACC.		10%MT
BLANK						

EXAMINED BY主探 Bottom LEVEL - II SIGN 签名 / DATE日期 2008.11.	REVIEWED BY 审核 Wang Wei LEVEL-II SIGN / DATE日期 08.11.07
质量经理 / QCM Hu Cang 签字 SIGN / 日期 DATE 08.11.11	用户CUSTOMER 签字 SIGN / 日期 DATE

(FORM# ZPQC-MT01)

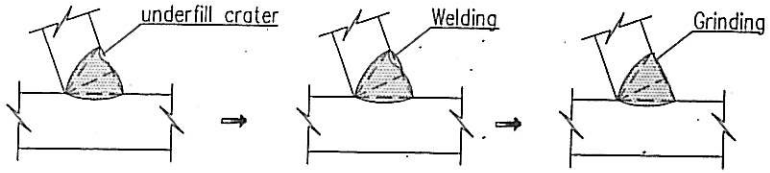
2.2.1 Prior to repair, remove all the weld slags, and clear the welds and adjacent base metal surface.

2.2.2 Lack of fusion will be removed by grinding. MT will be performed to ensure the removal of all defects.

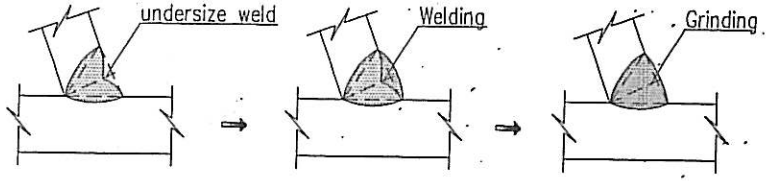
2.2.3 Choose either WPS (WPS-345-FCAW-2G(2F)-repair-1 or WPS-345-SMAW-2G(2F)-repair) to deposit the additional weld metal. Minimum deposit weld size shall follow the corresponding WPS.

2.2.4 Grind flush with the adjacent base metal or weld surface.

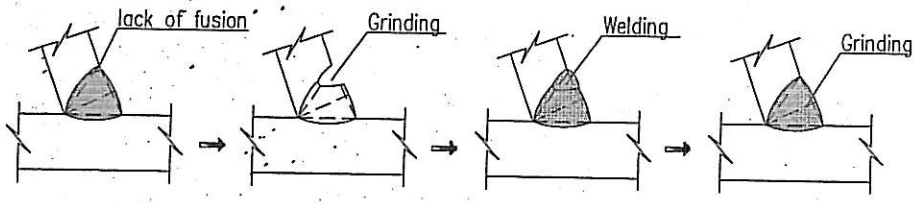
2.2.5 Perform MT to the repaired area.



underfill crater



undersize weld

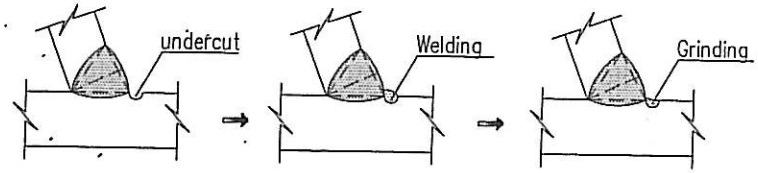


lack of fusion

2.3 If undercut defects are found, take actions as following:

2.3.1 When undercut value≤0.25mm, no actions are needed.

2.3.2 When undercut value>0.25mm, clear the weld surface to prepare for weld repair, and repair the welds according to step 2.2.



undercut

NO.	DATE	REMARKS	BY

REVISIONS

ZPMC SHANGHAI ZHENHUA PORT MACHINERY CO., LTD.

SAN FRANCISCO OAKLAND BAY BRIDGE, EAST SPAN SELF-ANCHORED SUSPENSION SPAN
ROUTE 80 EAST OF YERBA BUENA ISLAND, DISTRICT 04, SF COUNTY, CA.
BRIDGE Nos.: 34-0006L PM 8.2, KP 13.2 & 34-0006R PM 8.7, KP 13.9
STATE OF CALIFORNIA DEPT. OF TRANSPORTATION CONTRACT NO. 04-0120F4
ENGINEER: CALTRANS ---- T.Y.LIN / MOFFATT & NICHOL, JV.
CONTRACTOR: AMERICAN BRIDGE / FLUOR ENTERPRISES, JV.

repair procedure for closed rib welds

DRAWN				SHEET NO.	ORDER NO.
CHECKED				RP-002	

2.4 Repair for defects occurring during GMAW root welding process, such as pores, incomplete fusion and cracks, etc:

2.4.1 Remove all the weld slags, and clear the welds and adjacent base metal surface.

2.4.2 Remove the defects by grinding, and perform MT to ensure removal of all defects for pores or incomplete fusion, for crack locations, 50mm either side if applicable inline with WQCP.

2.4.3 Preheat and reweld the repaired area according to the approved repair procedure:
WPS-B-T-2342-U1(U-rib)-4 or
WPS-345-FCAW-2G(2F)-Repair-1(when the repair length is less than 300mm) minimum pre-heat to be 65°C.

2.4.4 Grind flush with the adjacent base metal or weld surface.

2.4.5 Perform MT to the repaired area.

2.4.6 Repaired area to be distinctly indentified on the closed rib for later NDT.

2.5 Repair of cracked tack welds prior to depositing the root run:

2.5.1 The extent of the crack to be determined by MT.

2.5.2 Carefully remove the crack by grinding in accordance with AWS D1.5 Section 3.7.2.4.

2.5.3 If the tack has to be reinstated check root gap to ensure that the gap is no greater than 0.5mm. Weld inline with 2.5.4.

2.5.4 Perform the tack weld according to the approved WPS:
WPS-B-T-2342-U2(U-rib).

2.5.5 Grind transition at each end of the tack weld.

2.5.6 VT/MT of the tack weld.

Note: If removal of crack causes root gaps exceeding 0.9 mm, refer Item 3.2 for repair.

NO.	DATE	REMARKS	BY
REVISIONS			

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CONTRACTOR: AMERICAN BRIDGE / FLUOR ENTERPRISES, JV.

repair procedure for closed Rib Welds

DRAWN				SHEET NO.	ORDER NO.
CHECKED				RP-003	

3、Interior weld defects:

3.1 For all interior defects and indications, perform the following procedure.

3.1.1 Prepare excavation (defect length + 50mm each side)

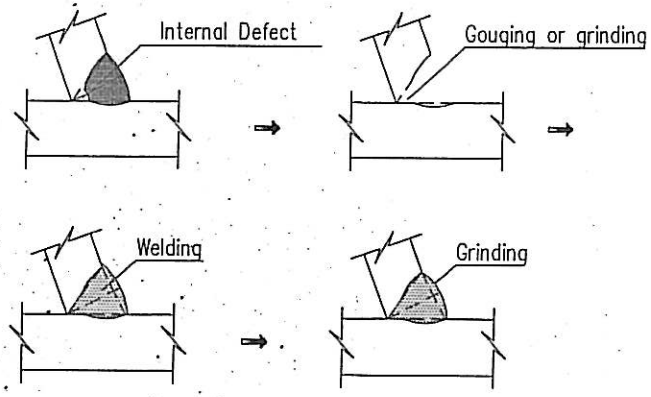
- Preheat to 65 °C and carbon-arc gouge (using a 6mm diameter carbon-arc rod) or grind the weld to a depth of 5 mm thru 8 mm (if ground no preheat required).
- Finish grind to bright metal surface to a depth of 9.6+1/-0mm. (Refer to Item 3.2 for repair of over grind areas)
- Measure excavation depth with a template.
- The contour and profile of excavation shall be suitable for welding.

3.1.2 Weld excavation

- Preheat to minimum of 100°C
- Weld the excavation according to repair procedure WPS-345-FCAW-2G(2F)-repair-1
- MT root pass

3.1.3 Grind repair flush with base metal or adjacent weld surface to a smooth transition no sharper than 1:10.

3.1.4 100% VT, MT and UT



All Internal Defect Repairs

NO.	DATE	REMARKS	BY

REVISIONS

ZPMC SHANGHAI ZHENHUA PORT MACHINERY CO., LTD.

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STATE OF CALIFORNIA DEPT. OF TRANSPORTATION CONTRACT NO. 04-0120F4
ENGINEER: CALTRANS ---- T.Y.LIN / MOFFATT & NICHOL, JV.
CONTRACTOR: AMERICAN BRIDGE / FLUOR ENTERPRISES, JV.

repair procedure for closed rib welds

DRAWN				SHEET NO.	ORDER NO.
CHECKED				RP-004	

3.2 Procedure for "Open Root" repair (3.5 mm gap maximum)

3.2.1 Prepare joint excavation according to approved SMAW WPS (WPS-345-SMAW-2G(F)-Repair-1)

3.2.2 Preheat to 60°C minimum.

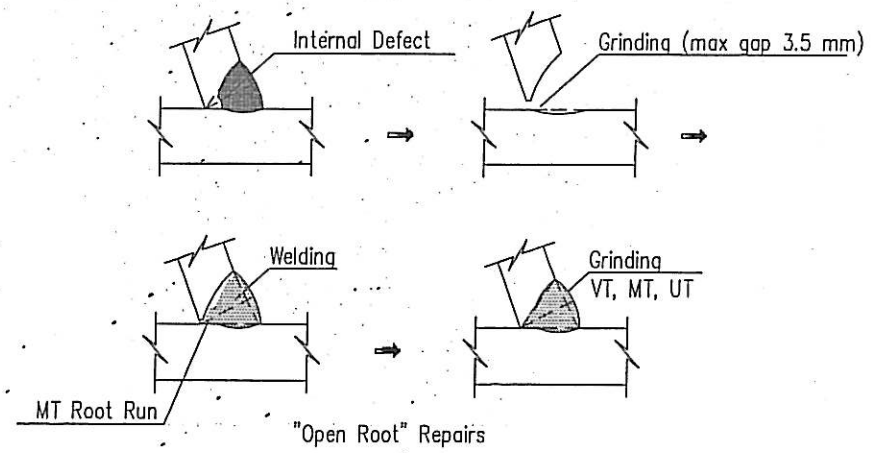
3.2.3 Weld Joint accoring to approved SMAW WPS.

3.2.4 After root run, grind, and perform 100% MT.

3.2.5 Continue welding according to WPS.

3.2.6 Grind repair flush with base metal or adjacent weld surface to a smooth transition no steeper than 1:10.

3.2.7 Perform 100% VT, MT, UT of repair.



"Open Root" Repairs

ZPMC SHANGHAI ZHENHUA PORT MACHINERY CO., LTD.

SAN FRANCISCO OAKLAND BAY BRIDGE, EAST SPAN SELF-ANCHORED SUSPENSION SPAN
ROUTE 80 EAST OF YERBA BUENA ISLAND, DISTRICT 04, SF COUNTY, CA.
BRIDGE Nos.: 34-0006L PM 8.2, KP 13.2 & 34-0006R PM 8.7, KP 13.9
STATE OF CALIFORNIA DEPT. OF TRANSPORTATION CONTRACT NO. 04-0120F4
ENGINEER: CALTRANS ---- T.Y.LIN / MOFFATT & NICHOL, JV.
CONTRACTOR: AMERICAN BRIDGE / FLUOR ENTERPRISES, JV.

repair procedure for closed rib welds

NO.	DATE	REMARKS	BY
REVISIONS			

DRAWN				SHEET NO.	ORDER NO.
CHECKED				RP-005	

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-000117
Prime Contractor: American Bridge/Fluor Enterprises, a JV **Date:** 19-Nov-2008
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0109

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: 09-Apr-2008

Description of Non-Conformance:
The Contractor performed welding of closed ribs to box shell plate using unapproved welding procedures. Due to a mechanical malfunction with the closed rib welding machine, the Contractor welded a closed rib to the deck plate by welding one stem of the rib at a time. This occurred on welds #005 and #006 of OBG deck panel DP-166-001.

Contractor's proposal to correct the problem:
The Contractor provided documentation of Internal NCR written regarding increased supervision and maintenance of equipment. Also VT and MT reports included for weld in question.

Corrective action taken:
Closed by Caltrans Construction. METS closed the NCR based on Construction's direction.

Did corrective action require Engineer's approval? ☑ **Yes** ☐ **No**
If so, name of Engineer providing approval: Stanley Ku and Doug Wright **Date:** 19-Nov-2008
Is Engineer's approval attached? ☑ **Yes** ☐ **No** Email of concurrence to close NCR is on file.

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 Sang Le, who represents the Office of Structural Materials for your project.

Inspected By:	Dautermann,Peter	Quality Assurance Inspector
Reviewed By:	Dautermann,Peter	QA Reviewer