

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

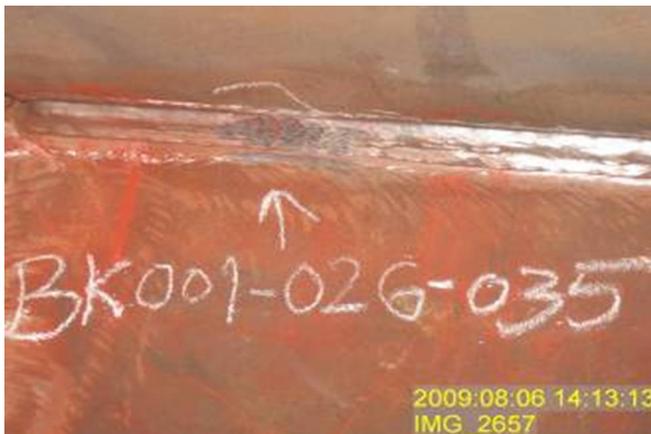
Quality Assurance and Source Inspection



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

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.25B**QUALITY ASSURANCE -- NON-CONFORMANCE REPORT****Location:** Changxing Island, Shanghai, P.R. China**Report No:** NCR-000381**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 06-Aug-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0355**Type of problem:****Welding****Concrete****Other****Welding****Curing****Procedural****Bridge No:** 34-0006**Joint fit-up****Coating****Other****Component:** OBG Cantilever Box Bracket**Procedural****Procedural****Description:****Reference Description:** Missed MT Transverse Indication by QC on Bikepath Cantilever Box Bracket**Description of Non-Conformance:**

During random verification Magnetic Particle Testing (MT) of OBG Cantilever Box Bracket of Bike Path weld BK001-026-035 located in ZPMC Shop Bay 5. Caltrans Quality Assurance (QA) Inspector discovered a transverse linear indication approximately 10~12mm in length. This area had been previously tested and accepted by ZPMC NDT personnel.

**Applicable reference:**

AWS D1.5 (02) Section 6.26.2 – “Welds that are subject to MT in addition to visual inspection shall have no cracks.”

Who discovered the problem: Umesh D. Gaikwad**Name of individual from Contractor notified:** Yu Kim**Time and method of notification:** 1415 hours, verbal**Name of Caltrans Engineer notified:** Bill Howe, Ching Chao**Time and method of notification:** 1330 hours, verbal

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

QC Inspector's Name: Xu Hongmin

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:	Tsang, Eric	SMR
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Reviewed By:	Wahbeh, Mazen	SMR
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DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge

333 Burma Road
Oakland CA 94607
Tel: Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

To: AMERICAN BRIDGE/FLUOR, A JV
375 BURMA ROAD
OAKLAND CA 95607

Date: 17-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: 05.03.06-000344

Subject: NCR No. ZPMC-0355

Reference Description: Missed MT Transverse Indication by QC on Bikepath Cantilever Box Bracket

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: Bike Path **Lift:** 01

Remarks:

During random verification Magnetic Particle Testing (MT) of OBG Cantilever Box Bracket of Bike Path weld BK001-026-035 located in ZPMC Shop Bay 5. Caltrans Quality Assurance (QA) Inspector discovered a transverse linear indication approximately 10-12mm in length. This area had been previously tested and accepted by ZPMC NDT personnel.

Action Required and/or Action Taken:

Submit repair procedure to engineer for approval.

Transmitted by: Bill Howe

Attachments: ZPMC-0355

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

File: 05.03.06

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000344

Subject: NCR No. ZPMC-0355

Dated: 24-Aug-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000304 Rev: 00

Contractor's Proposed Resolution:

Reference Resolution: ABF has notified ZPMC of the missed MT indications and ZPMC has completed the necessary repairs. ABF is also conducting an investigation of why ZPMC is experiencing cracking of welds.

ABF has notified ZPMC of the missed MT indications and ZPMC has completed the necessary repairs. ABF has taken action by hiring several MT technicians to perform overchecks of several types of welds due to the amount of missed indications. ABF is also conducting an investigation of why ZPMC is experiencing cracking of welds. This investigation is being performed by both onsite ABF personnel as well as welding experts hired by ABF for this purpose. Recently CT has brought in their own welding consultant to discuss ABF findings and preventive actions. Preventive actions such as increased preheats have been discussed with ZPMC. When the investigation is completed, ABF will submit the findings to ZPMC and CT. ABF will continue to perform overchecks until we are sure this issue is corrected and preventive actions are implemented. ZPMC has attached the necessary documents for closure of this NCR.

Submitted by:

Attachment(s): ABF-NPR-000304R00;

Caltrans' comments:

Status: CLO

Date: 31-Aug-2009

The proposed resolution is acceptable. All required documents have been submitted and accepted. The Department concurs that Non-Conformance ZPMC-0355 is closed.

Submitted by: Wright, Doug

Date: 31-Aug-2009

Attachment(s):

		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.:	BK1	报告编号 Report No.:	B-CWR654
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	CANTILEVER BOX BRACKET	NDT 报告编号 NDT Report No.:	B787-MT-12785
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

Description of Welding Discontinuity:

We found one transverse crack on the BK001-026-035

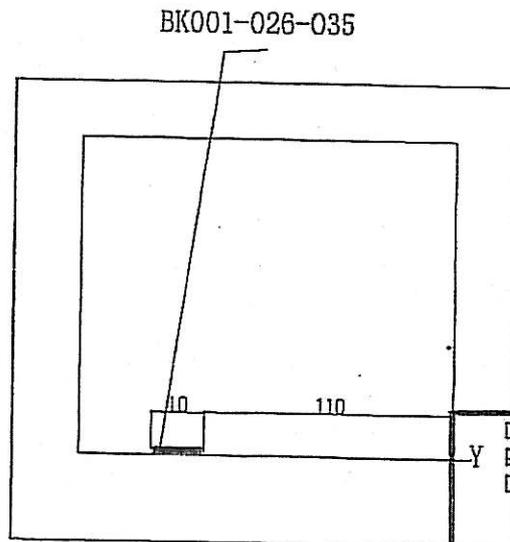
Welder ID No. (焊工编号): 217291 Position:(位置): 2F

检验员 (Inspector): Xu hua xiang

日期 (Date): 2009-08.05

焊缝返修位置示意图:

Draft of Welding Discontinuity:



<input type="checkbox"/>	APPROVED
<input checked="" type="checkbox"/>	APPROVED AS NOTED
<input type="checkbox"/>	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 Structure Representative	8/12/2009 Date

产生原因:

Cause:

1. 火焰加热时, 水汽没有完全的去掉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):

Lih Heng cheng 日期 (Date): 09.08.06

<input type="checkbox"/>	APPROVED
<input checked="" type="checkbox"/>	APPROVED AS NOTED
<input type="checkbox"/>	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 Bar RM	
Structure Representative	8/12/2006 Date

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. 对返修区域及靠近裂纹的母材进行硬度测试, 在做硬度测试前通知工程师, 并且在硬度测试后但在下一步修复工作前向加州代表递交测试结果;
6. 焊接前按照焊接返修工艺规程(WPS)准备焊接接头形式;
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;
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. 根据图纸要求进行NDT检测并按照合同10-1.59 "钢结构" 中 "检验与测试" 注释3特殊条款进行附加NDT检测.

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 ≥ 25 mm 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. Perform hardness testing across the transverse crack. Notify the Engineer prior to performing hardness testing, and submit hardness test results prior to performing repair work.
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;
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 NDT in accordance with approved Contract Drawings, and perform additional NDT in accordance with Section 10-1.59 of the Special Provisions 'Steel Structures', subsection 'Inspection & Testing' Note 3.

工艺:

Technical Engineer:

Niu Tiejun 审核:

Approved By: Lu Ronghua

日期:

Date: 09.08.06

NTI BASE METAL TO ENSURE CRACK DIDN'T PROPAGATE INTO BM. IF CRACK IS DISCOVERED IN BM SEPERATE CUR REQ'IS.



关键焊缝返修报告

版本
Rev. No.:

Critical Welding Repair Report (CWR)

0

项目名称 Project Name:	美国海湾大桥 SFOBB	部件图号 Drawing No.:	BK1	报告编号 Report No.:	B-CWR654
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	CANTILEVER BOX BRACKET	NDT 报告编号 NDT Report No.:	B787-MT-12785
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): Liu Hongdey 日期 (Date): 09.08.06

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:	<u>Niu Tiejun</u> <u>09.08.06</u>
返修(碳刨)前预热温度 Preheat Temperature Before Gouging:	<u>70°</u>	返修的缺陷 Description of Discontinuity:	<u>裂纹 Cracks</u>
焊前处理检查 Inspection Before Welding:	<u>ALL</u>	焊前预热温度 Preheat Temperature Before Welding:	<u>162°</u>
最大碳刨深度 Max. Depth of Gouge:	<u>5mm</u>	碳刨总长 Total Length of Gouge:	<u>110mm</u>
焊工 Welder:	<u>215248</u>	焊接类型 Welding Type:	<u>SMAW</u>
焊接电流 Current:	<u>110A</u>	焊接电压 Voltage:	<u>20V</u>
		焊接位置 Position:	<u>2F</u>
		焊接速度 Speed:	<u>79mm/min</u>

返修后检查

Inspection After Repair:

外观检查 VT Result:	<u>ACC</u>	检验员 Inspector:	<u>Li Yang</u> <u>Xu hongmin</u>	日期 Date:	<u>2009.8.17</u>
NDT复检 NDT Result:	<u>ACC</u>	探伤员 NDT Person:	<u>Jin Jian ping</u>	日期 Date:	<u>8/17</u>

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

SVE for RM 8/12/2009
 Structure Representative Date

#R787-QCP-900



REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 B787-MT-12785R1 DATE日期 2009.08.17 PAGE OF页码 1/1 Revision No: 0

PROJECT NO. 工程编号: ZP06-787 CONTRACTOR: 用户: CALTRANS

DRAWING NO. 图号: BK1 CANTILEVER BOX BRACKET 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 Material & thickness 母材, 厚度: A709M-345T2-X

WELDING PROCESS 焊接方法: SMAW TYPE OF JOINT 焊缝类型: T- JOINT

WELD I.D. 焊缝编号: BK001-026-035 DISCONTINUITY 不连续性: 1R1 ACCEPT 接受: ACC. REJECT 拒收: REMARKS 备注: 100%MT

AFTER B-CWR654
BLANK

EXAMINED BY 主探: Jin jian ting *Jin jian ting* REVIEWED BY 审核: Sun Gongchang *Sun Gongchang*
 LEVEL - II SIGN 签名 / DATE 日期: *9-08.11* LEVEL-II SIGN / DATE 日期: *9-08.11*
 质量经理 / QCM: _____ 用户 CUSTOMER: _____
 签字 SIGN / 日期 DATE: _____ 签字 SIGN / 日期 DATE: _____

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000344

Subject: NCR No. ZPMC-0355

Dated: 24-Aug-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000349 Rev: 00

Contractor's Proposed Resolution:

Reference Resolution: ABF has notified ZPMC of the missed MT indications and ZPMC has completed the necessary repairs. ABF is also conducting an investigation of why ZPMC is experiencing cracking of welds.

ABF has notified ZPMC of the missed MT indications and ZPMC has completed the necessary repairs. ABF has taken action by hiring several MT technicians to perform overchecks of several types of welds due to the amount of missed indications. ABF is also conducting an investigation of why ZPMC is experiencing cracking of welds. This investigation is being performed by both onsite ABF personnel as well as welding experts hired by ABF for this purpose. Recently CT has brought in their own welding consultant to discuss ABF findings and preventive actions. Preventive actions such as increased preheats have been discussed with ZPMC. When the investigation is completed, ABF will submit the findings to ZPMC and CT. ABF will continue to perform overchecks until we are sure this issue is corrected and preventive actions are implemented. ZPMC will submit the repair documents at a later date to close this NCR.

Submitted by:

Attachment(s): ABF-NPR-000349R00

Caltrans' comments:

Status: AAP

Date: 31-Aug-2009

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

Please provide documentation of the weld repairs that were performed and that the repairs were acceptable. The Department will review the Contractor's proposal to close Non-Conformance ZPMC-0355 at that time.

Submitted by: Wright, Doug

Date: 31-Aug-2009

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 #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: xx.25A**QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION****Location:** Changxing Island, Shanghai, P.R. China**Report No:** NCS-000363**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 30-Nov-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0355**Type of problem:**

Welding	Concrete	Other	
Welding	Curing	Procedural	Bridge No: 34-0006
Joint fit-up	Coating	Other	Component:
Procedural	Procedural	Descriptor:	

Date the Non-Conformance Report was written: 06-Aug-2009**Description of Non-Conformance:**

During random verification Magnetic Particle Testing (MT) of OBG Cantilever Box Bracket of Bike Path weld BK001-026-035 located in ZPMC Shop Bay 5. Caltrans Quality Assurance (QA) Inspector discovered a transverse linear indication approximately 10~12mm in length. This area had been previously tested and accepted by ZPMC NDT personnel.

Contractor's proposal to correct the problem:

Repair weld in question and perform required NDT.

Corrective action taken:

ZPMC has completed the necessary repair and performed the subsequent NDT assuring the weld is in conformance. ABF has hired on additional NDT technicians to perform testing as a result of the frequently missed indications. ABF is also performing an investigation to determine the cause of the cracks.

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