

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-000339

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 27-Jun-2009

Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

NCR #: ZPMC-0313

Type of problem:

Welding **Concrete** **Other**
Welding **Curing** **Procedural**
Joint fit-up **Coating** **Other**
Procedural **Procedural** **Description:**

Bridge No: 34-0006

Component: Crossbeam 10

Reference Description: Excessive Root Opening

Description of Non-Conformance:

During random in-process visual inspection of Crossbeam CB10 Deck panel in Bay # 3, Caltrans Quality Assurance (QA) Inspector observed the root opening of weld CB202B010-003 to measure from 7mm to 9mm. This joint has been tack welded into position. This root opening exceeds the tolerances specified in the specified WPS and AWS D1.5 2002 requirement.



Applicable reference:

WPS-B-T-2231-B-U2-F

AWS D1.5 2002 section 3, paragraph 3.3.2.1 "The root opening between part shall not exceed 5mm except in cases involving rolled shapes or plate 75mm or greater in thickness if after straightening and in assembly, the root opening cannot be closed sufficiently to meet this tolerance. In such cases, a maximum root opening of 8mm may be used with backing weld and the final weld meet the requirement for the size.

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Who discovered the problem: Shrikant Utekar
Name of individual from Contractor notified: Peter Ferguson
Time and method of notification: 1500 hours, Verbal
Name of Caltrans Engineer notified: Stanley Ku
Time and method of notification: 1600 hours, Verbal
QC Inspector's Name: Liu Wei 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 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: 05-Jul-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: 05.03.06-000303

Subject: NCR No. ZPMC-0313

Reference Description: Excessive Root Opening

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:**

Remarks:

During random in-process visual inspection of Crossbeam CB10 Deck panel in Bay # 3, Caltrans Quality Assurance (QA) Inspector observed the root opening of weld CB202B010-003 to measure from 7mm to 9mm. This joint has been tack welded into position. This root opening exceeds the tolerances specified in the specified WPS and AWS D1.5 2002 requirement.

Please see attached NCR ZPMC-313 for details.

Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to correct the material/workmanship issue and prevent future occurrences.

Transmitted by: Ching Chao

Attachments: ZPMC-0313

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: 05.03.06-000303

Subject: NCR No. ZPMC-0313

Dated: 24-Aug-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000316 Rev: 00

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has since corrected this condition, welded and inspected this connection. ZPMC will submit the inspection reports at a later date to close this NCR.

ZPMC has since corrected this condition, welded and inspected this connection. ZPMC will submit the inspection reports at a later date to close this NCR.

Submitted by:

Attachment(s): ABF-NPR-000316R00

Caltrans' comments:

Status: AAP

Date: 28-Aug-2009

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

Please provide documentation of what steps were taken to narrow the excessive root gap, and provide documentation that the repairs were acceptable. The Department will review the Contractor's proposal to close Non-Conformance ZPMC-0313 at that time.

Submitted by: Wright, Doug

Date: 28-Aug-2009

Attachment(s):

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000303

Subject: NCR No. ZPMC-0313

Dated: 11-Jan-2010

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000316 Rev: 01

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has now provided the required documents as requested by CT. ZPMC requests closure of this NCR.
ZPMC has now provided the required documents as requested by CT. ZPMC requests closure of this NCR.

Submitted by: Lawton, Steve

Attachment(s): ABF-NPR-000316R01;

Caltrans' comments:

Status: CLO

Date: 11-Jan-2010

The documentation received is sufficient to close this NCR.

Submitted by: Howe, Bill

Date: 11-Jan-2010

Attachment(s):



No. B-552

LETTER OF RESPONSE

TO: American Bridge/Flour

DATE: 2010-1-6

REGARDING: NCR-000339(ZPMC-0313)

With this letter of response, ZPMC requests closure of CT NCR-000339(ZPMC-0313), what mentioned that QA observed excessive root opening.

According to CT's comments in NPR, ZPMC providing the buttering welding repair report and NDT documentation, hoping CT could take a review and consider close this NCR.

ATTACHMENT:

ABF-NPR-000316 R0.

NCR-B-210(ZPMC-0313)

NCR-000339(ZPMC-0313)

B-WR9577

VT FOR B-WR9577

B787-UT-10600

A handwritten signature in black ink, appearing to be "J. W.", is located below the attachment list.

1/6/10



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

Dated: 24-Aug-2009

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

Attention: Pursell, Gary
Resident Engineer

Job Name: SAS Superstructure

Ref: 05.03.06-000303

Document No.: ABF-NPR-000316 Rev: 00

Subject: NCR No. ZPMC-0313

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has since corrected this condition, welded and inspected this connection. ZPMC will submit the inspection reports at a later date to close this NCR.

ZPMC has since corrected this condition, welded and inspected this connection. ZPMC will submit the inspection reports at a later date to close this NCR.

Submitted by:

Attachment(s): ABF-NPR-000316R00

Caltrans' comments:

Status: AAP

Date: 28-Aug-2009

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

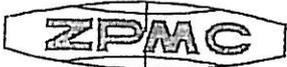
Please provide documentation of what steps were taken to narrow the excessive root gap, and provide documentation that the repairs were acceptable. The Department will review the Contractor's proposal to close Non-Conformance ZPMC-0313 at that time.

Submitted by: Wright, Doug

Date: 28-Aug-2009

Attachment(s):





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-B-210 (ZPMC-0313)
 NCR 编号:

Item: Excessive Root Opening
 名称描述: 根部间隙过大
 Item Number: N/A
 件号:
 Drawing: CB10
 图号:

Location: BAY 3
 位置:
 Date: 2009-07-08
 日期:

Description of Nonconformance:
 不符合项状态描述:

During random in-process visual inspection of Crossbeam CB10 Deck panel in Bay#3, Caltrans Quality Assurance (QA) Inspector observed the root opening of weld CB202B-010-003 to measure from 7mm to 9mm. This joint has been tack welded into position. This root opening exceeds the tolerances specified in the specified WPS and AWS D1.5 2002 requirement. (WPS-B-T-2231-B-U2-F)

加洲检验员发现 BAY3 车间的 CB10 上的焊缝 CB202B-010-003 装配时根部间隙过大, 点焊后的根部间隙为 7 到 9 毫米。这与 WPS (WPS-B-T-2231-B-U2-F) 以及 AWS D1.5 2002 的要求不符。

Work By: Liu jin Fei
 施工方:
 Prepared by: Shen Xuejun
 准备:
 Reviewed by QCE: Zhao Shuangbao
 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
 处理措施: 回用
 Repair
 返修
 Reject
 拒收

Recommendation:
 建议:

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

Reason for Nonconformance:
 不符合原因:
 ①板单元在切割时余量时采用手工半自动割刀切割, 半自动割刀轨道没有固定牢固, 加上火焰切割时气压不稳, 造成火焰粗细不一样。

预防措施: ① Green worker without experience and don't fix flaw adequately.
 ② 没有实际操作经验无老工之操作割刀。③ 固定轨道牢固, 调稳气压。
 → change experience operator during cutting & fix part to stabilize air pressure

Technical Justification for Use-As-Is/Repair: Attachment Non-attachment

回用或返修的技术依据:
 对焊缝做 UT 检测, 若无缺陷, 回用。
 Perform UT to the weld, use as is if the UT result is acceptable.

Reviewed /批准: _____
 附件 无附件

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: _____

是新进
 员工之缺
 乏实际
 操作经验

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Bay Area Branch
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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-000339

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 27-Jun-2009

Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

NCR #: ZPMC-0313

Type of problem:

- Welding Concrete Other
- Welding Curing Procedural
- Joint fit-up Coating Other
- Procedural Procedural Description:

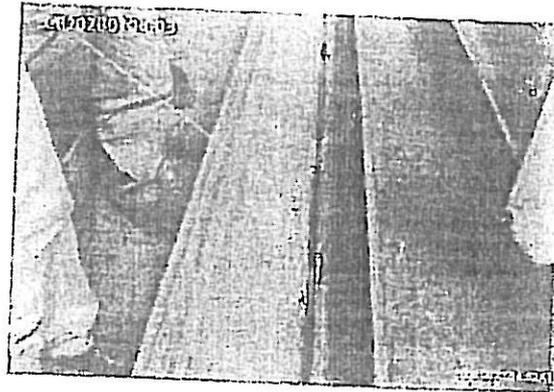
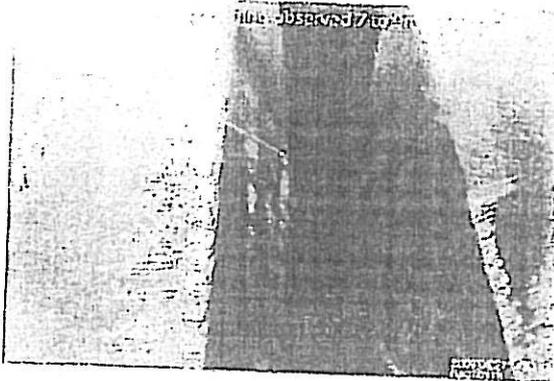
Bridge No: 34-0006

Component: Crossbeam 10

Reference Description: Excessive Root Opening

Description of Non-Conformance:

During random in-process visual inspection of Crossbeam CB10 Deck panel in Bay # 3, Caltrans Quality Assurance (QA) Inspector observed the root opening of weld CB202B010-003 to measure from 7mm to 9mm. This joint has been tack welded into position. This root opening exceeds the tolerances specified in the specified WPS and AWS D1.5 2002 requirement.



Applicable reference:

WPS-B-T-2231-B-U2-F

AWS D1.5 2002 section 3, paragraph 3.3.2.1 "The root opening between part shall not exceed 5mm except in cases involving rolled shapes or plate 75mm or greater in thickness if after straightening and in assembly, the root opening cannot be closed sufficiently to meet this tolerance. In such cases, a maximum root opening of 8mm may be used with backing weld and the final weld meet the requirement for the size.

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Who discovered the problem: Shrikant Utekar
Name of individual from Contractor notified: Peter Ferguson
Time and method of notification: 1500 hours, Verbal
Name of Caltrans Engineer notified: Stanley Ku
Time and method of notification: 1600 hours, Verbal
QC Inspector's Name: Liu Wei 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 Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By: Simonis, Jim

Reviewed By: Wahbeh, Mazen

QA Inspector
SMR

copy



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge
666 Feng Bin Road Room 70B, 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: 05-Jul-2009
Contract No: 04-0120F4
04-SF-80-13.2 / 13.9
Job Name: SAS Superstructure
Document No: 05.03.06-000304

Dear: Mr. Charles Kanapicki
Attention: Mr. Thomas Nilsson Project/Fabrication Manager
Subject: NCR No. ZPMC-0312

Reference Description: T-Stiffener Misalignment, Side Panel, Segment 2AE

The attached Non-Conformance Report describes an occurrence where the contractor did not comply with a requirement of the contract documents 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: 02

Remarks:

Caltrans Quality Assurance (QA) Inspector observed misalignment between T-stiffeners on the side panel of OBG Segment 2AE (crossbeam side) at Panel Point 15. The misalignment between T-stiffeners was measured to be 7mm. ZPMC proceeded welding the joint with this fit-up misalignment.

Please see attached NCR ZPMC-312 for details.

Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to address the material/workmanship issue and prevent future occurrences.

Transmitted by: Ching Chao

Attachments: ZPMC-0312

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



焊缝返修报告

版本 Rev. No.

Welding Repair Report

0

项目名称 Project Name	美国海湾大桥 SFOBB	部件图号 Drawing No	CB202B	报告编号 Report No.	B-WR9577
合同号 Contract No.:	04-0120F4	部件名称 Items Name	CB10横梁 CB10 Beam	NDT报告编号 Report No. of NDT	NA
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述如下:

Description of welding discontinuity:

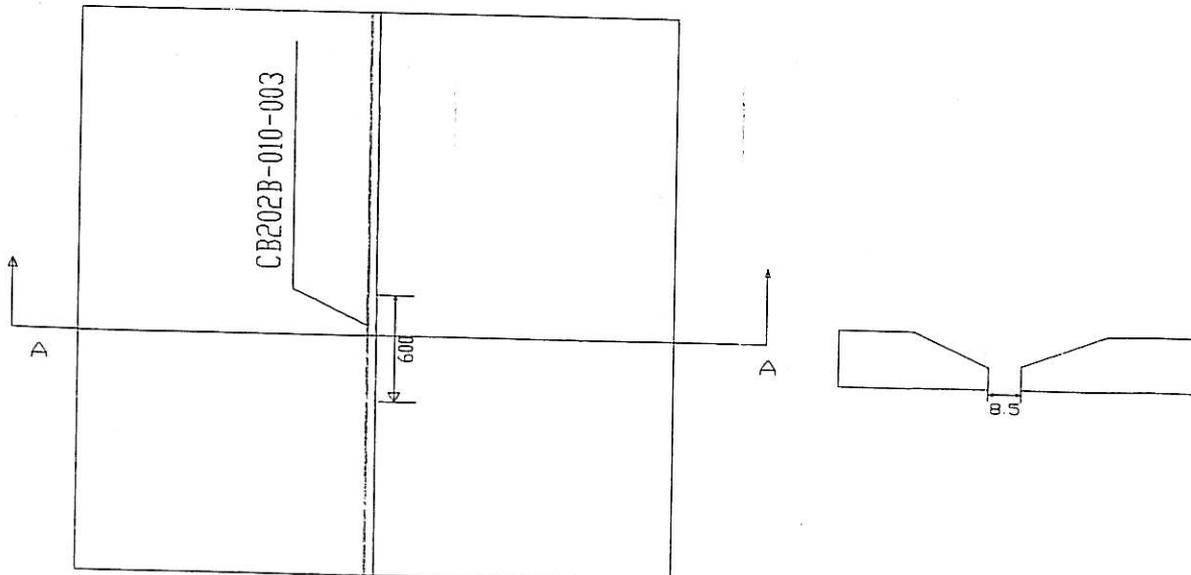
施建刚施工队CB10上的焊缝CB202B-010-003装配点焊后发现有一段根部间隙过大间隙为7到9毫米

The gap was 7-9mm at CB10 weld CB202B-010-003 after tack weld, which fabricated by work team: Shi Jiangan.

检验员 (Inspector): YIN DONG HAI 日期(Date): 09.6.27

焊缝返修位置示意图:

Draft of welding discontinuity:



产生原因:

Caused:

焊接变形和制作误差。

Weld distortion and fabricate error.

处理意见

Disposition:

1. 将要修补的区域打磨光滑;

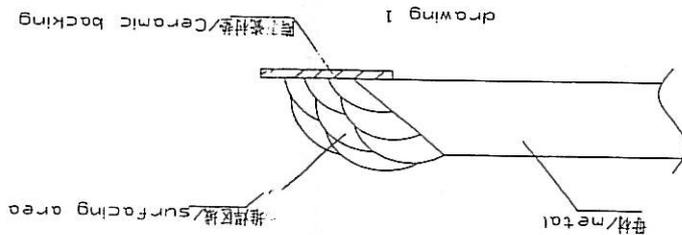
2. 准备一个正确的接头形式, 具体参见返修的WPS;

3. 做100%VT和100%MT, 并按照图一所示加陶瓷衬垫, 具体参见AWS D1.5.3.13;

4. 根据返修的焊接返修工艺规程(WPS)进行预热及焊接;

5. 待返修堆焊至图纸要求间隙后去除陶瓷衬垫, 并将焊缝打磨至与邻边焊缝或母材平齐;

6. 对返修区域进行相应的VT与MT检测;



1. Grind the edge of the repair area cleanly;
2. Prepare an right joint according to the approved WPS;
3. Perform 100%VT and 100%MT, and add ceramic backing according to the attached drawing g 1 and AWS D1.5.3.13;
4. Preheat and weld according to the approved repair WPS;
5. Gouge off the ceramic backing after the gap meet the requirement of drawing at then grind the weld flush with adjacent weld or base metal after welding;
6. Perform VT and MT to the repair area according to these working drawings.

工 艺: He Xianlin
 Technical engineer
 08.06.27

审核: Approved by

日期 Date

车间负责人(Foreman): Wang Guiming
 日期(Date): 08.06.27



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.	CB202B	报告编号 Report No.	B-WR9577
合同号 Contract No.	04-0120F4	部件名称 Items Name	CB10横梁 CB10 Beam	NDT报告号 Report No. NDT	NA
项目编号 Project No.	ZP06-787				

纠正措施:

Correction action to prevent re occurrence:

加强制作过程中的监控, 减少误差。

Enhance supervision in process of fabrication to reduce error.

车间负责人(Foreman): Zhang Guimin (Date): 09.06.27

参照的WP编号 Repair WP No.	WPS-345-SMAW-1 G(1F)-Repair WPS-345-FCAW-1 G(1F)-Repair-1	工艺员 technologist	Hexiaolin 09.06.27
返修(碳刨)前预热温度 Preheat temperature before gouging	70°C	返修的缺陷 Description of discontinuity	gap
焊前处理检查 Inspection before welding	All	焊前预热温度 Preheat temperature before welding	75°C
最大碳刨深 Max. depth of gouging	8mm	碳刨总长 Total length of gouging	600mm
焊工 welder 044824	焊接类型 welding type FCAW	焊接位置 position	1G
焊接电流 Current 307	焊接电压 Voltage 29.4	焊接速度 Speed	412

返修后检查

Inspection after repairing:

外观检查 VT result All	检验员 Inspector Zhu Zhenhua 9045971	日期 Date 09.06.27
NDT复检 NDT result All	探伤员 NDT person	日期 Date 09.06.27

见证:

Witness/Review:

备注:

Remark:

#R787-QC#00



REPORT OF ULTRASONIC EXAMINATION

UT探伤报告

REPORT NO. 报告编号 B787-UT-10600 DATE 2009.06.28 PAGE 1 OF 1 Revision No: 0

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

ITEMS NAME: 部件名称 CB10 CROSS BEAM DRAWING NO.: 图号 CB202B 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 BUTT CALIBRATION DUE DATE 仪器校正有效期 Dec. 28ST, 2010

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

CALIBRATION BLOCK 试块 AWS IIW BLOCK TYPE II COUPLANT 耦合剂 C.M.C MATERIAL/THICKNESS 材料厚度 A709M-345T2-X 22mm

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
CB202B-010-003		70				32									ACC.	100%

AFTER B-WR9577

BLANK

EXAMINED BY 主探 <i>Han Feng</i>	REVIEWED BY 审核 <i>Su Wei</i>
LEVEL - II SIGN / DATE <i>09.6.28</i>	LEVEL - II SIGN / DATE <i>09.6.28</i>
质量经理 / QCM	用户 CUSTOMER
签字 SIGN / 日期 DATE	签字 SIGN / 日期 DATE

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-000447**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 20-Jan-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0313**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: 27-Jun-2009**Description of Non-Conformance:**

During random in-process visual inspection of Crossbeam CB10 Deck panel in Bay # 3, Caltrans Quality Assurance (QA) Inspector observed the root opening of weld CB202B010-003 to measure from 7mm to 9mm. This joint has been tack welded into position. This root opening exceeds the tolerances specified in the specified WPS and AWS D1.5 2002 requirement.

Contractor's proposal to correct the problem:

Butter plates to bring the root opening into compliance with Contract specifications and perform required NDT.

Corrective action taken:

Contractor submitted WRR confirming the root opening was brought into compliance prior to being welded along with NDT documentation verifying the added base material is in conformance with Contract specifications.

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

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