

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-000736**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 18-May-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0699**Type of problem:****Welding****Concrete****Other****Welding****Curing****Procedural****Bridge No:** 34-0006**Joint fit-up****Coating****Other****Component:** Crossbeam 14 Bottom Panel**Procedural****Procedural****Description:**

Reference Description: ZPMC performed Heat Straightening without prior Engineer's approval and without following the ZPMC internal HSR1 document

Description of Non-Conformance:

During Quality Assurance (QA) random in-process observations of the fabrication of crossbeam CB14, this QA inspector observed the following issue:

- ZPMC personnel performed heat straightening to the bottom panels BP203A and BP201A in Crossbeam 14.
- ZPMC personnel did not follow the heat straightening report presented by ZPMC Quality Control (QC) on site. According to ZPMC Heat Straightening Record (HSR) identified as HSR1 (B)-8472, the straightening would be performed using an oxygen/acetylene torch. ZPMC personnel were straightening the material using heat and a hand operated winch (come-along) attached to a weight placed on some timber on the ground. The amount of pull down force being applied is not known. Also, the use of the come-along and weight or any other mechanical force is not mentioned in the HSR.
- The out of flatness was measured to 16mm per 1000mm, which requires a HSR with prior Engineer's approval.
- The bottom panel of the crossbeam is identified as Seismic Performance Critical Member (SPCM).
- Bottom panel material thickness is 12mm.

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



Applicable reference:

Procedures in ZPMC Heat Straightening Record (HSR) HSR1(B)-8472

Special Provisions Section 8-3: "For material less than or equal to 16mm, the Contractor shall not heat straighten members more than 6 in 1000 without prior approval of the Engineer... The Engineer shall be notified immediately when weld distortion occurs that cannot be corrected using the standard procedures for heat straightening submitted in the WQCP. Request to heat straighten shall be in writing and include. 1) sketches of each distorted member showing the dimensions, length of weld, out of tolerance values, and locations where heat will be applied. 2) estimate of the number of applications of heat to bring the material back into conformance, and 3) explanation of how distortion control procedures will be modified and improved. The contractor shall allow 5 days to review these procedures. No remedial work shall begin until the repair procedures are approved in writing by the Engineer."

Who discovered the problem: Shailesh Wadkar

Name of individual from Contractor notified: Peter Shaw

Time and method of notification: 15:30_5/18/10_Verbal

Name of Caltrans Engineer notified: Sean Eagen

Time and method of notification: 18:00_5/18/10_Email

QC Inspector's Name: Wang Lu

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, (818) 292-0659, 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
 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: 19-May-2010

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: 05.03.06-000694

Subject: NCR No. ZPMC-0699

Reference Description: ZPMC performed Heat Straightening without prior Engineer's approval and without following the ZPMC internal HSR1 document

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:** 10

Remarks:

During Quality Assurance (QA) random in-process observations of the fabrication of crossbeam CB14, this QA inspector observed the following issue:

- ZPMC personnel performed heat straightening to the bottom panels BP203A and BP201A in Crossbeam 14.
- ZPMC personnel did not follow the heat straightening report presented by ZPMC Quality Control (QC) on site. According to ZPMC Heat Straightening Record (HSR) identified as HSR1 (B)-8472, the straightening would be performed using an oxygen/acetylene torch. ZPMC personnel were straightening the material using heat and a hand operated winch (come-along) attached to a weight placed on some timber on the ground. The amount of pull down force being applied is not known. Also, the use of the come-along and weight or any other mechanical force is not mentioned in the HSR.
- The out of flatness was measured to 16mm per 1000mm, which requires a HSR with prior Engineer's approval.
- The bottom panel of the crossbeam is identified as Seismic Performance Critical Member (SPCM).
- Bottom panel material thickness is 12mm.

Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences. A response for the resolution of this issue is expected within 7 days.

Transmitted by: Sean Eagen Transportation Engineer

Attachments: ZPMC-0699

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

File: 05.03.06

NCR PROPOSED RESOLUTION

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

Dated: 11-Jun-2010

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

Attention: Pursell, Gary
Resident Engineer

Job Name: SAS Superstructure

Document No.: ABF-NPR-000697 Rev: 00

Ref: 05.03.06-000694

Subject: NCR No. ZPMC-0699

Contractor's Proposed Resolution:

Reference Resolution: ZPMC will provide a revised HASR to show the work that was performed. Also provide the NDT done after to show that affected welds are acceptable.

ZPMC will provide a revised HASR to show the work that was performed. Also provide the NDT done after to show that affected welds are acceptable. Based on this proposal ZPMC requests that this NCR be approved, with actions pending.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000697R00

Caltrans' comments:

Status: AAP

Date: 14-Jun-2010

This proposed resolution is accepted, action pending. Please provide an HSR showing the work that was performed and NDT results for these welds upon completion of heat straightening.

Submitted by: Eagen, Sean

Date: 14-Jun-2010

Attachment(s):

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000694

Subject: NCR No. ZPMC-0699

Dated: 27-Aug-2010

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000697 Rev: 01

Contractor's Proposed Resolution:

Reference Resolution: ZPMC is providing the revised heat straightening report to show work being done at the time the NCR was written.

ZPMC is providing the revised heat straightening report to show work being done at the time the NCR was written. In addition, ZPMC is providing NDT of the affected welds to show the welds are acceptable after heat straightening. Based on this ZPMC requests closure of this NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000697R01;

Caltrans' comments:

Status: REJ

Date: 31-Aug-2010

The revised heat straightening report detailed the methods used during repairs. The NDT is acceptable. However, the report should have been submitted for Engineer's approval in the first place. In addition, the quality management issue has not been addressed.

Submitted by: Woo, Laraine

Attachment(s):

Date: 31-Aug-2010



No. B-852

LETTER OF RESPONSE

TO: American Bridge/Flour

DATE: 2010-08-27

REGARDING: NCR-000736(ZPMC-0699)

ZPMC is providing the revised HSR1 shows the performed work. And based on the attached NDT records, ZPMC is requesting closure of this NCR.

ATTACHMENT:

N CR-000736(ZPMC-0699)

HSR1(B)-8472 R3

B787-MT-24818

A handwritten signature in black ink, appearing to be "J. Z.", is written over the attachment list.

8/27/10



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: 19-May-2010

Contract No: 04-0120F4
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Dear: Mr. Charles Kanapicki

Job Name: SAS Superstructure

Attention: Mr. Thomas Nilsson Project/Fabrication Manager

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Lift: 10

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Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences. A response for the resolution of this issue is expected within 7 days.

Transmitted by: Sean Eagen Transportation Engineer

Attachments: ZPMC-0699

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

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 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-000736

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 18-May-2010

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

NCR #: ZPMC-0699

Type of problem:

Welding Concrete Other

Welding Curing Procedural

Joint fit-up Coating Other

Procedural Procedural Description:

Bridge No: 34-0006

Component: Crossbeam 14 Bottom Panel

Reference Description: ZPMC performed Heat Straightening without prior Engineer's approval and without following the ZPMC internal HSR1 document

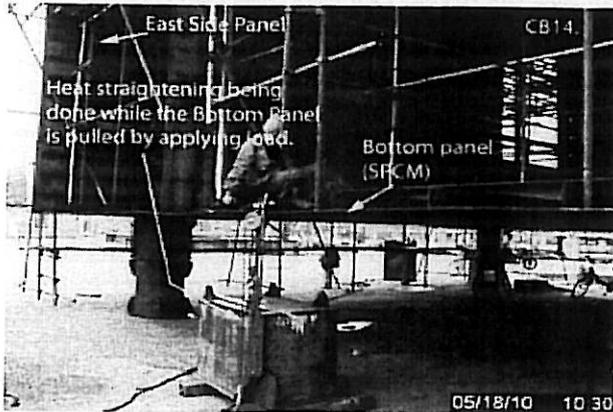
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QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



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Procedures in ZPMC Heat Straightening Record (HSR) HSR1(B)-8472

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Who discovered the problem: Shailesh Wadkar

Name of individual from Contractor notified: Peter Shaw

Time and method of notification: 15:30_5/18/10_Verbal

Name of Caltrans Engineer notified: Sean Eagen

Time and method of notification: 18:00_5/18/10_Email

QC Inspector's Name: Wang Lu

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

Inspected By: Tsang, Eric

SMR

Reviewed By: Wahbeh, Mazen

SMR



火工校正记录

Heat Straightening Record(HSR1)

报告号 Record#

HSR1(B)-8472

版本号 Revision #

3

日期 Date

2010.08.27

美国海湾大桥 San Francisco Oakland Bay Bridge

CALTRANS #04-0120F4

工程编号 JOB#: ZP06-787

装配 Assembly:

质检代表/Quality Control Representative

部装 Sub-Assembly:

Handwritten signature and date 8/27/10

梁段 Gird: CB14

质检经理/Quality Assurance Manager-Approval

塔段 Tower:

N/A

焊缝号 Weld No:

043~052,147,165

焊缝地图号 Weld Map No:

CB202C-014

情况描述 Description of Condition

Cause原因 Welding distortion 焊接变形

Type of Defect缺陷类型 Welding distortion 焊接变形

Inspection Method检查方法 Visual 目检

处置方法 Disposition

缺陷去除方法(Defect Removal Method): Flame Straightening by oxygen acetylene 运用氧乙炔进行校火

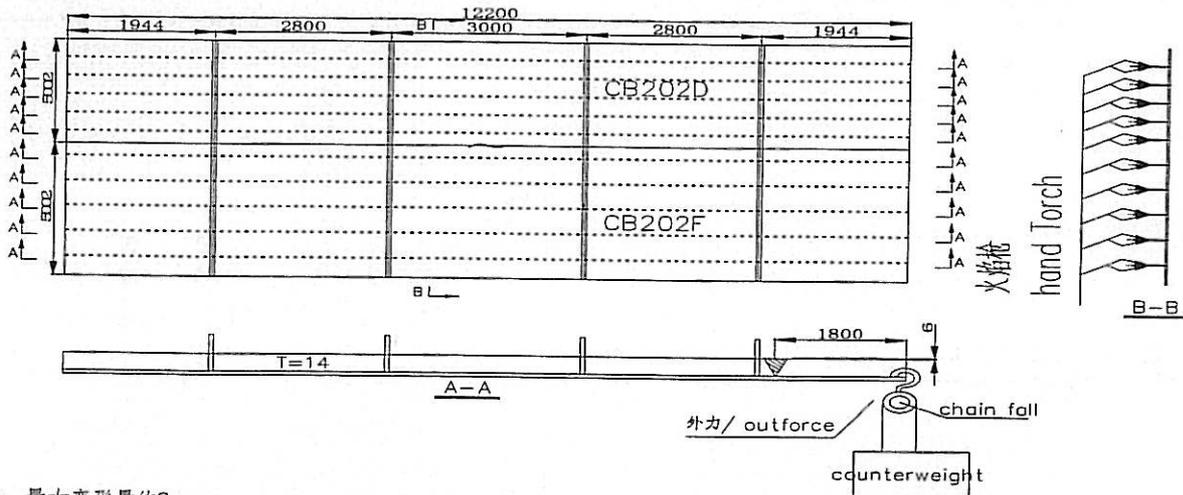
后续NDE(Post-Removal NDE): After finishing heat straightening, the weld of the heat area shall perform NDT according to the approved shop drawing 校火后, 根据图纸要求对热影响区域进行NDT检测。

纠正措施(Corrective Action(s)): Control current, voltage and weld speed according to relevant WPS. If necessary anti-deformation or hold down device can be added. 依据相应的WPS的要求控制电流, 电压和焊接速度。如有必要, 可使用反变形设施进行校正。

实施次数(Number of application): 1~3

最高温度(Maximum temperature): <600°C

简图 Sketch



注: 最大变形量约6mm.

NOTE: the max deformation is about 6mm.

H.S. Date 2010.05.30

To be signed when Closing HSR~Verify compliance and all necessary reports are ready to attach

检验员 Inspector:	<i>chen xi</i>	签字 Signature:	<i>chen xi</i>
CWI #	<i>07072021</i>	Closing Date:	<i>2010.7.21</i>
II 级探伤 NDE Certification:	Level II	质检经理 QC Manager	<i>Lujiun lu</i>
		审核日期 Review Date:	<i>7/21/10</i>

Note: All repair work shall be performed in accordance with applicable CALTRANS approved procedures, contract specifications and AWS D1.5 2002.

#R787-QCP-1101

Approved by Lujiun lu 05/20/10



REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 B787-MT-24818 DATE日期 2010.07.26 PAGE OF页码 1/4 Revision No: 0

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

DRAWING NO. CB202G CALTRANS CONTRACT NO.:
 图号: STRUT FLOOR BEAM 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. 28 ST , 2010
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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
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MAGNETIZING METHOD Continuous magnetic yoke CURRENT
 磁化方法 磁轭式连续法 电流 AC

PARTICLE TYPE Dry magnet powder YOKE SPACING
 磁粉类型 干磁粉 磁轭间距 70~150mm

MATERIAL TO BE EXAMINED 检测材料	<input checked="" type="checkbox"/> WELDING 焊接件 <input type="checkbox"/> CASTING 铸件 <input type="checkbox"/> FORGING 锻造	Material & thickness 母材, 厚度 A709M-345F2-X 12/12/14mm
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WELDING PROCESS SMAW/FCAW TYPE OF JOINT T-JOINT
 焊接方法 焊缝类型

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			
CB202G-041-053				ACC		100%MT
CB202G-041-054				ACC		100%MT
CB202G-041-055				ACC		100%MT
CB202G-041-056				ACC		100%MT
CB202G-041-057				ACC		100%MT
CB202G-041-058				ACC		100%MT
CB202G-041-059				ACC		100%MT
CB202G-041-060				ACC		100%MT
CB202G-041-061				ACC		100%MT
CB202G-041-062				ACC		100%MT
CB202G-041-148				ACC		100%MT
CB202G-041-166				ACC		100%MT
CB202G-041-043				ACC		100%MT
CB202G-041-044				ACC		100%MT

EXAMINED BY 主探 Ding A cheng Ding A cheng 2010.7.26	REVIEWED BY 审核 Mary wei Mary wei 2010.7.26
LEVEL - II SIGN 签名 / DATE 日期	LEVEL-II SIGN / DATE 日期
质量经理 / QCM	用户 CUSTOMER
签字 SIGN / 日期 DATE	签字 SIGN / 日期 DATE



REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 B787-MT-24818 DATE日期 2010.07.26 PAGE OF页码 2/4 Revision No: 0

PROJECT NO. 工程编号: ZP06-787		CONTRACTOR: 用户: CALTRANS	
DRAWING NO. 图号: CB202G STRUT FLOOR 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. 28 ST , 2010
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	<input checked="" type="checkbox"/> WELDING 焊接件 <input type="checkbox"/> CASTING 铸件 <input type="checkbox"/> FORGING 锻造	Material & thickness 母材, 厚度	A709M-345F2-X 12/12/14mm
WELDING PROCESS 焊接方法	FCAW/SMAW	TYPE OF JOINT 焊缝类型	T-JOINT

WELD I.D. 焊缝编号	DISCONTINUITY 不连续性			ACCEPT 接受	REJECT 拒收	REMARKS 备注
	INDICATION 指示	TYPE 类型	LENGTH IN mm 长度			
CB202G-041-045				ACC		100%MT
CB202G-041-046				ACC		100%MT
CB202G-041-047				ACC		100%MT
CB202G-041-048				ACC		100%MT
CB202G-041-049				ACC		100%MT
CB202G-041-050				ACC		100%MT
CB202G-041-051				ACC		100%MT
CB202G-041-052				ACC		100%MT
CB202G-041-147				ACC		100%MT
CB202G-041-165				ACC		100%MT
CB202G-044-053				ACC		100%MT
CB202G-044-054				ACC		100%MT
CB202G-044-055				ACC		100%MT
CB202G-044-056				ACC		100%MT

EXAMINED BY 主探 Ding A cheng <i>Ding A cheng</i> 2010.7.26	REVIEWED BY 审核 Wang Wei <i>Wang Wei</i> 2010.7.26
LEVEL - II SIGN 签名 / DATE 日期	LEVEL-II SIGN / DATE 日期
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: 05.03.06-000694

Subject: NCR No. ZPMC-0699

Dated: 07-Sep-2010

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000697 Rev: 02

Contractor's Proposed Resolution:

Reference Resolution: ZPMC QA along with ABFJV QA will continue to reinforce the importance to all inspectors of ensuring that the proper documents are on hand during repairs.

ZPMC QA along with ABFJV QA will continue to reinforce the importance to all inspectors of ensuring that the proper documents are on hand during repairs. In addition to refresher classes, ZPMC and ABFJV are tracking inspector performance in these areas for additional instruction if necessary. It is understood that heat straightening requests should be approved by the Engineer prior to commencement of work. Based on these actions, and previously submitted NDT documentation to show that the heat straightening did not damage the affected welds ZPMC requests closure of this NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000697R02

Caltrans' comments:

Status: CLO
Date: 14-Sep-2010

The proposed resolution is acceptable. This NCR is considered closed.

Submitted by: Woo, Laraine

Attachment(s):

Date: 14-Sep-2010

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

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Quality Assurance and Source Inspection



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Vallejo, CA 94592-1133
(707) 649-5453
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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-000766**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 14-Sep-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0699**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: 18-May-2010**Description of Non-Conformance:**

During Quality Assurance (QA) random in-process observations of the fabrication of crossbeam CB14, this QA inspector observed the following issue:

- ZPMC personnel performed heat straightening to the bottom panels BP203A and BP201A in Crossbeam 14.
- ZPMC personnel did not follow the heat straightening report presented by ZPMC Quality Control (QC) on site. According to ZPMC Heat Straightening Record (HSR) identified as HSR1 (B)-8472, the straightening would be performed using an oxygen/acetylene torch. ZPMC personnel were straightening the material using heat and a hand operated winch (come-along) attached to a weight placed on some timber on the ground. The amount of pull down force being applied is not known. Also, the use of the come-along and weight or any other mechanical force is not mentioned in the HSR.
- The out of flatness was measured to 16mm per 1000mm, which requires a HSR with prior Engineer's approval.

- The bottom panel of the crossbeam is identified as Seismic Performance Critical Member (SPCM).

- Bottom panel material thickness is 12mm.

Contractor's proposal to correct the problem:

Provide a corrected version of the HSR1 detailing the heat straightening that was performed in the field and perform NDT required to verify weld quality.

Corrective action taken:

Contractor has made the appropriate changes to the HSR used on site detailing the work which was actually performed and has submitted subsequent NDT reports verifying the affected welds meet Contract weld quality requirements.

Did corrective action require Engineer's approval?

QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

(Continued Page 2 of 2)

Yes No

If so, name of Engineer providing approval:

Date:

Is Engineer's approval attached? Yes No

Comments:

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

Inspected By: Simonis,Jim

Quality Assurance Inspector

Reviewed By: Wahbeh,Mazen

QA Reviewer