

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



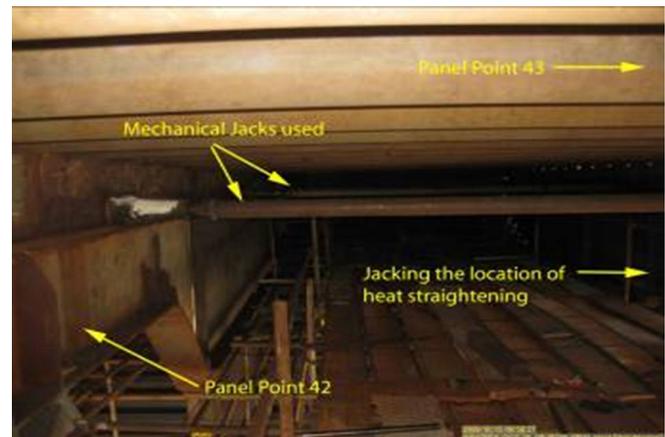
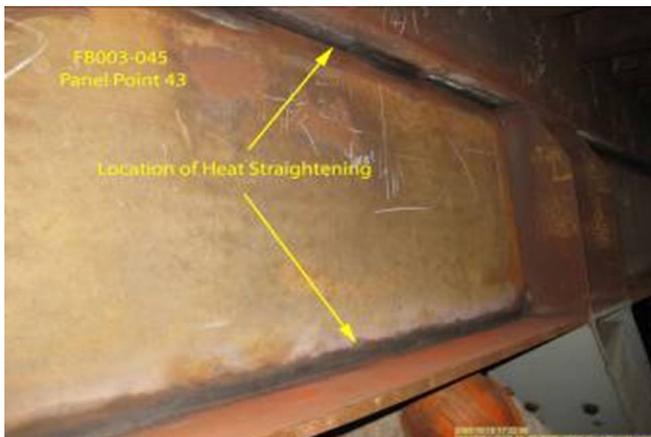
Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

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-000481**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 16-Oct-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0454**Type of problem:**

|   |                   |  |   |
|---|-------------------|--|---|
| <b>Welding</b>  | <b>Concrete</b>   | <b>Other</b>   |   |
| <b>Welding</b>  | <b>Curing</b>     | <b>Procedural</b>  | <b>Bridge No:</b> 34-0006                                 |
| <b>Joint fit-up</b>   | <b>Coating</b>    | <b>Other</b>   | <b>Component:</b> Seg 6BW Upper Flange of Floor Beam Weld |
| <b>Procedural</b>   | <b>Procedural</b> | <b>Description:</b> Heat Straightening without Engineer's Approval |   |
| <b>Reference Description:</b> Heat Straightening without Engineer's Approval on Seg 6BW Upper Flange of FB003-045 |                   |  |   |

**Description of Non-Conformance:**

During random visual inspection of OBG Segment 6BW at panel point 43. The Caltrans Quality Assurance (QA) Inspector observed that contractor was Heat Straightening the FL2-1 floor beam FB003-045 of the upper flange X6F at panel point 43 by the use of a mechanical jack without the approval of the Engineer. The maximum distortion measurements that were taken at this upper flange is 12mm prior to the Heat Straightening and mechanical jacking.

**Applicable reference:**

AWS D1.5/2002 Section 3.7.3; Members distorted by welding shall be heat straightened by mechanical means or by carefully supervised application of a limited amount of localized heat as approved by the engineer.

Contract Special Provisions 8-3.01 "For material more than 16mm, the Contractor shall not notified immediately when weld distortion occurs that cannot be corrected using the standard procedures for heat straightening submitted in the WQCP."

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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**Who discovered the problem:** Rodney Patterson  
**Name of individual from Contractor notified:** Peter Shaw  
**Time and method of notification:** 1000 hour, Verbal  
**Name of Caltrans Engineer notified:** Ching Chao  
**Time and method of notification:** 1100 hours, Verbal  
**QC Inspector's Name:** Zhang Wei  
**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.

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|                      |                |                           |
|----------------------|----------------|---------------------------|
| <b>Inspected By:</b> | Carreon,Albert | Lead Reviewer/Task Leader |
| <b>Reviewed By:</b>  | 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-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:** 05.03.06-000444

**Subject:** NCR No. ZPMC-0454

**Reference Description:** Heat Straightening without Engineer's Approval on Seg 6BW Upper Flange of FB003-045

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:** OBG **Lift:** 06

**Remarks:**

During random visual inspection of OBG Segment 6BW at panel point 43. The Caltrans Quality Assurance (QA) Inspector observed that contractor was Heat Straightening the FL2-1 floor beam FB003-045 of the upper flange X6F at panel point 43 by the use of a mechanical jack without the approval of the Engineer. The maximum distortion measurements that were taken at this upper flange is 12mm prior to the Heat Straightening and mechanical jacking.

**Action Required and/or Action Taken:**

Submit HSR to the engineer.

**Transmitted by:** Bill Howe

**Attachments:** ZPMC-0454

**cc:** Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, 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:** 05.03.06-000444

**Subject:** NCR No. ZPMC-0454

**Dated:** 11-Jan-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000475 **Rev:** 00

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**Contractor's Proposed Resolution:**

**Reference Resolution:** ZPMC will revise the CWR to reflect the work completed and submit at a later date to close this NCR.

ZPMC will revise the CWR to reflect the work completed and submit at a later date to close this NCR.

**Submitted by:** Lawton, Steve

**Attachment(s):** ABF-NPR-000475R00

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**Caltrans' comments:**

**Status:** REJ

**Date:** 12-Jan-2010

The response letter does not address revised procedures to prevent future occurrences or training and equipment as required so the ZPMC MT technician can pick up these indications in the future. Therefore it is rejected.

**Submitted by:** Howe, Bill

**Date:** 12-Jan-2010

**Attachment(s):**

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000444

**Subject:** NCR No. ZPMC-0454

**Dated:** 09-Feb-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000475 Rev: 01

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### Contractor's Proposed Resolution:

**Reference Resolution:** Attached is the HSR1 that was being used when observed by the inspector as well as the NDT reports after which show that the welds affected by the heat straightening are acceptable.

Attached is the HSR1 that was being used when observed by the inspector as well as the NDT reports after which show that the welds affected by the heat straightening are acceptable. Based on this ZPMC requests closure of this NCR.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000475R01;

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### Caltrans' comments:

**Status:** CLO

**Date:** 09-Feb-2010

The documentation received closes this NCR.

**Submitted by:** Howe, Bill

**Date:** 09-Feb-2010

**Attachment(s):**



No. B-604

## LETTER OF RESPONSE

**TO: American Bridge/Flour**

**DATE: 2010-2-9**

**REGARDING: NCR-00481 (ZPMC-0454)**

With this letter of response, ZPMC requests closure of CT NCR-00481 (ZPMC-0454), what mentioned that CT Inspector observed Heat Straightening without Engineer's approval on SEGMENT 6BW upper flange of FB003-045.

- The upper flange of FB003-045 is NON SPCM material. The heat straightening was performed according to HSR1(B)-7745. According to WQCP Section 11.1.5: As approved by this procedure mechanical means may be used to achieve the required flatness. For this case, with the approved HSR1(B), this heat straightening won't be required the approval of Engineer.
- MT was performed after heat straightening to warrant the affected welds' quality.

Based on the taken actions and attached documentation, ZPMC requests closure of this NCR.

**ATTACHMENT:**

NCR-00481 (ZPMC-0454)

HSR1(B)-7745

B-VT-52088

B787-MT-19126

A handwritten signature in black ink, appearing to be "Jing" followed by a stylized flourish.

2/9/10



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-Nov-2009  
 Contract No: 04-0120F4  
 04-SF-50-13.2 / 13.9  
 Job Name: SAS Superstructure  
 Document No: 05.03.06-000444

Dear: Mr. Charles Kanapicki  
 Attention: Mr. Thomas Nilsson Project/Fabrication Manager  
 Subject: NCR No. ZPMC-0454

Reference Description: Heat Straightening without Engineer's Approval on Seg 6BW Upper Flange of FB003-045

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: OBG Lift: 06

Remarks:

During random visual inspection of OBG Segment 6BW at panel point 43. The Caltrans Quality Assurance (QA) Inspector observed that contractor was Heat Straightening the FL2-1 floor beam FB003-045 of the upper flange X6F at panel point 43 by the use of a mechanical jack without the approval of the Engineer. The maximum distortion measurements that were taken at this upper flange is 12mm prior to the Heat Straightening and mechanical jacking.

Action Required and/or Action Taken:

Submit HSR to the engineer.

Transmitted by: Bill Howe

Attachments: ZPMC-0454

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

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

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

Contract #: 04-0120F4  
City: SE/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-000481

Date: 16-Oct-2009

NCR #: ZPMC-0454

**Type of problem:**

- Welding  Concrete  Other
- Welding  Curing  Procedural
- Joint fit-up  Coating  Other
- Procedural  Procedural  Description: Heat Straightening without Engineer's Approval

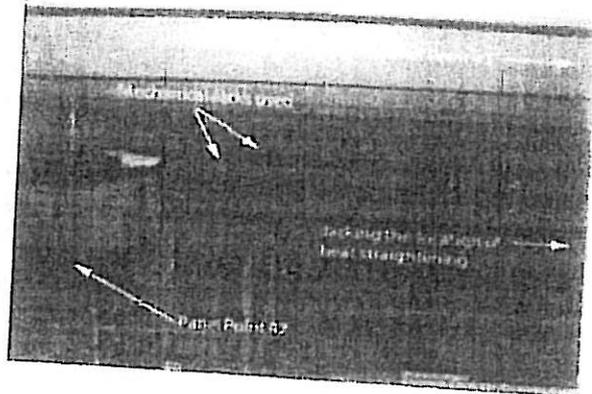
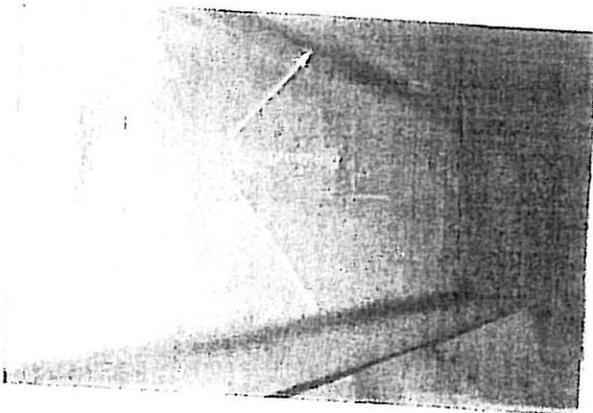
Bridge No: 34-0006

Component: Seg 6BW Upper Flange of Floor Beam Weld

Reference Description: Heat Straightening without Engineer's Approval on Seg 6BW Upper Flange of FB003-045

**Description of Non-Conformance:**

During random visual inspection of OBG Segment 6BW at panel point 43. The Caltrans Quality Assurance (QA) Inspector observed that contractor was Heat Straightening the FL2-1 floor beam FB003-045 of the upper flange X6F at panel point 43 by the use of a mechanical jack without the approval of the Engineer. The maximum distortion measurements that were taken at this upper flange is 12mm prior to the Heat Straightening and mechanical jacking.



**Applicable reference:**

AWS D1.5/2002 Section 3.7.3; Members distorted by welding shall be heat straightened by mechanical means or by carefully supervised application of a limited amount of localized heat as approved by the engineer.

Contract Special Provisions 8-3.01 "For material more than 16mm, the Contractor shall not notified immediately when weld distortion occurs that cannot be corrected using the standard procedures for heat straightening submitted in the WQCP."

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

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(Continued Page 2 of 2)

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Who discovered the problem: Rodney Patterson  
Name of individual from Contractor notified: Peter Shaw  
Time and method of notification: 1000 hour, Verbal  
Name of Caltrans Engineer notified: Ching Chao  
Time and method of notification: 1100 hours, Verbal  
QC Inspector's Name: Zhang Wei  
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.

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Inspected By: Carreon, Albert  
Reviewed By: Wahbeh, Mazen

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Lead Reviewer/Task Leader  
SMR

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# 火工校正记录

## Heat Straightening Record(HSR1)

报告号 Record #

HSR1(B)-7745

版本号 Revision #

0

日期 Date

2009.10.07

美国海湾大桥 San Francisco Oakland Bay Bridge

CALTRANS #04-0120F4

工程编号 JOB#: ZP06-787

装配 Assembly:

部装 Sub-Assembly:

梁段 Gird: 6BW

塔段 Tower: N/A

焊缝号 Weld No: SSD9B/SSD9-003,004 FB003A-045-004,005/FB009A-003-003,004/FB015A-006-001,002

焊缝地图号 Weld Map No: N/A SSD9-PP043-003,004 FB003-045-004,005/FB009-003-003,004

### 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): natural gas 天然气

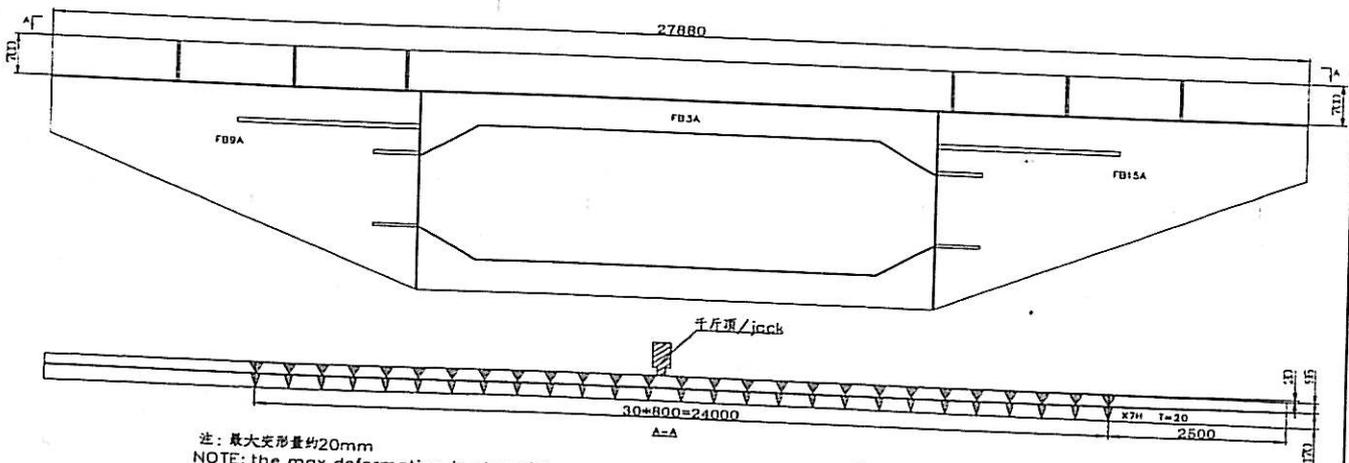
后续 NDE (Post-Removal NDE): After finishing heat straightening, the weld of the heat area shall perform NDT according to the approved shop drawing 校火后, 根据图纸要求对热影响区域进行 NDT 检测。

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): &lt;650°C

### 简图 Sketch



HSD 09.10.10

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

检验员 Inspector:

Li Yanhua

签字 Signature:

李艳华

CWI #

0712001

II 级探伤 NDE Certification:

Level II

Closing Date:

10.01.12

质检经理 QC Manager

Li Yanhua

审核日期 Review Date:

01/12/10

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 Li Yanhua (Co.)





# REPORT OF MAGNETIC PARTICLE EXAMINATION

## 磁粉检测报告

REPORT NO. 报告编号 B787-MT-19126      DATE日期 2010.01.08      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: SSD9      CALTRANS CONTRACT NO.: 加州工程编号 04-0120F4  
6BW FLOOR BEAM SPLICE

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<sup>ST</sup>, 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:  WELDING 焊接件      Material & thickness 母材, 厚度: A709M-345T2-X

CASTING 铸件      14/20/12mm

FORGING 锻造

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

| WELD I.D.<br>焊缝编号 | DISCONTINUITY 不连续性 |            |                    | ACCEPT<br>接受 | REJECT<br>拒收 | REMARKS<br>备注 |
|-------------------|--------------------|------------|--------------------|--------------|--------------|---------------|
|                   | INDICATION<br>指示   | TYPE<br>类型 | LENGTH IN mm<br>长度 |              |              |               |
| FB003-045-003     |                    |            |                    | ACC.         |              | 100%MT        |
| FB003-045-004     |                    |            |                    | ACC.         |              | 100%MT        |
| FB009-003-003     |                    |            |                    | ACC.         |              | 100%MT        |
| FB009-003-004     |                    |            |                    | ACC.         |              | 100%MT        |
| FB015-006-001     |                    |            |                    | ACC.         |              | 100%MT        |
| FB015-006-002     |                    |            |                    | ACC.         |              | 100%MT        |

AFTER HSR1(B)-7745

BLANK

EXAMINED BY 主探: Sun Gongchang      REVIEWED BY 审核: [Signature]      DATE 日期: 2010.01.08

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

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

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690 Walnut Ave. St. 150  
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(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-000517**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 11-Feb-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0454**Type of problem:**

|                     |                   |                    |                           |
|---------------------|-------------------|--------------------|---------------------------|
| <b>Welding</b>      | <b>Concrete</b>   | <b>Other</b>       |                           |
| <b>Welding</b>      | <b>Curing</b>     | <b>Procedural</b>  | <b>Bridge No:</b> 34-0006 |
| <b>Joint fit-up</b> | <b>Coating</b>    | <b>Other</b>       | <b>Component:</b>         |
| <b>Procedural</b>   | <b>Procedural</b> | <b>Descriptor:</b> |                           |

**Date the Non-Conformance Report was written:** 16-Oct-2009**Description of Non-Conformance:**

During random visual inspection of OBG Segment 6BW at panel point 43. The Caltrans Quality Assurance (QA) Inspector observed that contractor was Heat Straightening the FL2-1 floor beam FB003-045 of the upper flange X6F at panel point 43 by the use of a mechanical jack without the approval of the Engineer. The maximum distortion measurements that were taken at this upper flange is 12mm prior to the Heat Straightening and mechanical jacking.

**Contractor's proposal to correct the problem:**

Perform NDT to verify the welds mentioned are in conformance with Contract specifications.

**Corrective action taken:**

Contractor submitted NDT records verifying the welds are in conformance. Repairs have continued in the vicinity of the area in question, and are being tracked on the Voyage 2 Punchlist.

**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 152. 1675.3703, who represents the Office of Structural Materials for your project.

**Inspected By:** Simonis, Jim **Quality Assurance Inspector****Reviewed By:** Wahbeh, Mazen **QA Reviewer**