

**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-000623

**Prime Contractor:** American Bridge/Fluor Enterprises, a JV

**Date:** 11-Jan-2010

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

**NCR #:** ZPMC-0596

### Type of problem:

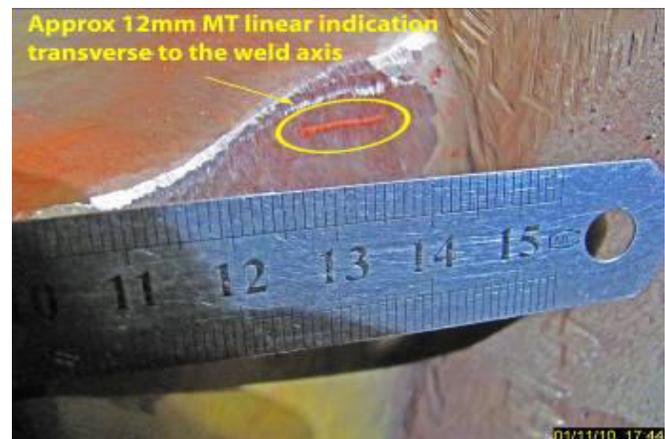
<b>Welding</b>	<b>Concrete</b>	<b>Other</b>	
<b>Welding</b>	<b>Curing</b>	<b>Procedural</b>	<b>Bridge No:</b> 34-0006
<b>Joint fit-up</b>	<b>Coating</b>	<b>Other</b>	<b>Component:</b> East Tower Lift 4 Fit Lug on Skin C
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b> Missed MT indication by QC	

**Reference Description:** Missed MT Indication by QC in East Tower Lift 4 on Skin C

### Description of Non-Conformance:

During the Quality Assurance (QA) Magnetic Particle Testing (MT) review of welds located in East Tower lift 4 fit lug on skin C, this QA Inspector discovered the following issues:

- One (1) linear indication transverse to the weld axis measuring approximately 12mm in length.
- The weld is identified as: ESTL4-2G/L-83
- The weld is a fillet weld joining the 127M Top Diaphragm to Fit Lug near stiffener C1.
- This material is designated as non-Seismic Performance Critical Member (non-SPCM).
- The member is located in Tower Bay 11



### Applicable reference:

-Special Provisions Section 8.3 – “Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents.”

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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-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:** Wang Jiang Hua

**Time and method of notification:** 1800 Hrs, 01/11/10, Verbal

**Name of Caltrans Engineer notified:** Ken Lee

**Time and method of notification:** 1107 Hrs, 01/12/10, Verbal

**QC Inspector's Name:** An Qing Xiang

**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:** Ng,Michael

QA Inspector

**Reviewed By:** Wahbeh,Mazen

SMR

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**DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge**  
 333 Burma Road  
 Oakland CA 94607  
 Tel: 510-808-4618 Fax:

**NON-CONFORMANCE REPORT TRANSMITTAL**

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

**Date:** 12-Jan-2010

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

**Dear:** Mr. Charles Kanapicki  
**Attention:** Mr. Thomas Nilsson Project/Fabrication Manager  
**Subject:** NCR No. ZPMC-0596

**Job Name:** SAS Superstructure  
**Document No:** 05.03.06-000586

**Reference Description:** Missed MT Indication/ East Shaft Lift 4 Skin C/ Fit Lug/ Transverse Indication

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:** Tower **Lift:** 04

**Remarks:**

During the Quality Assurance (QA) Magnetic Particle Testing (MT) review of welds located in East Shaft Lift 4 Fit Lug on Skin C, the Caltrans Quality Assurance (QA) Inspector discovered the following issues:

- One (1) linear indication transverse to the weld axis measuring approximately 12mm in length.
- The weld is identified as: ESTL4-2G/L-83
- The weld is a fillet weld joining the 127M Top Diaphragm to Fit Lug near stiffener C1.
- This material is designated as non-Seismic Performance Critical Member (non-SPCM).
- The member is located in Tower Bay 11
  
- Special Provisions Section 8.3 – “Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents.”
  
- AWS D1.5 (02) Section 6.26.2 – “Welds that are subject to MT in addition to visual inspection shall have no cracks.”

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

Propose a resolution for this non-conformance that addresses the failure of Quality Control to identify the linear indication during magnetic particle testing of the weld. Provide documentation of the steps/actions taken by the Quality Control Manager to prevent future occurrences.

In addition to the Quality Control non-conformance, address the material/workmanship for the identified non-conformance including documentation that the deficiency has been brought into compliance with the contract requirements. Additionally address the probable causes for the indication and the actions that will be taken to limit future occurrences.

The response for the resolution of this issue is requested within 7 days.

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# NCT

( Continued Page 2 of 2 )

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**Transmitted by:** Ken Lee      Transportation Engineer

**Attachments:**    ZPMC-0596

**cc:**    Rick Morrow, Gary Pursell, Mark Woods, Scott Kennedy

**File:** 05.03.06

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000586

**Subject:** NCR No. ZPMC-0596

**Dated:** 19-Jan-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000526 Rev: 00

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### Contractor's Proposed Resolution:

**Reference Resolution:** ZPMC has removed the missed indication by grinding and is providing NDT documentation to show the weld is acceptable. ABF QCM has conducted refresher MT training with the ZPMC inspectors.

ZPMC has removed the missed indication by grinding and is providing NDT documentation to show the weld is acceptable. To reduce incidents of missed indication the ABF QCM has conducted refresher MT training with the ZPMC inspectors on December 23, 2009. In addition, ZPMC will begin performing 100% verification of tested areas beginning January 18, 2010 as a means of preventing future missed indications. ABFJV has purchased powder dispensers for all the ZPMC MT technicians as a means to help control the amount of powder applied during MT testing. Based on the above actions ZPMC requests this NCR be placed closed.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000526R00;

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### Caltrans' comments:

**Status:** CLO

**Date:** 19-Jan-2010

The proposed resolution is acceptable. The Department concurs that Non-conformance ZPMC-0596 is closed.

**Submitted by:** Lee, Ken

**Date:** 19-Jan-2010

**Attachment(s):**



No. T-119

## LETTER OF RESPONSE

**TO: American Bridge/Flour JV**

**DATE: 2010-1-19**

**REGARDING: NCR-000623(ZPMC-0596)**

We ZPMC acknowledged this problem, what our method is to use the light grind remove the liner indication on the surface .Then tell the CT people Umesh D.Gaikwad who discovered this problem to make sure no problem on this weld and accepted this weld.

So ZPMC want to close this NCR.

ATTACHMENT:

NCR-000623(ZPMC-0596)

Report of magnetic particle examinationl:T787-MT-7846

*Lo Xingjun*

*2010.1.19*





**DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge**  
 333 Burma Road  
 Oakland CA 94607  
 Tel: 510-808-4618 Fax:

**NON-CONFORMANCE REPORT TRANSMITTAL**

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

**Date:** 12-Jan-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:** 05.03.06-000586

**Subject:** NCR No. ZPMC-0596

**Reference Description:** Missed MT Indication/ East Shaft Lift 4 Skin C/ Fit Lug/ Transverse Indication

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:** Tower **Lift:** 04

**Remarks:**

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- The member is located in Tower Bay 11

-Special Provisions Section 8.3 – “Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents.”

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

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

Propose a resolution for this non-conformance that addresses the failure of Quality Control to identify the linear indication during magnetic particle testing of the weld. Provide documentation of the steps/actions taken by the Quality Control Manager to prevent future occurrences.

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02.02:15.04  
 NCT 05.03.06-000586,NCT

Received  
 NCT-000586 12 Jan 10 Page 1 of 2

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NCT

( Continued Page 2 of 2 )

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**Transmitted by:** Ken Lee      Transportation Engineer

**Attachments:**    ZPMC-0596

**cc:**    Rick Morrow, Gary Pursell, Mark Woods, Scott Kennedy

**File:**  05.03.06

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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-000623

**Prime Contractor:** American Bridge/Fluor Enterprises, a JV

**Date:** 11-Jan-2010

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

**NCR #:** ZPMC-0596

**Type of problem:**

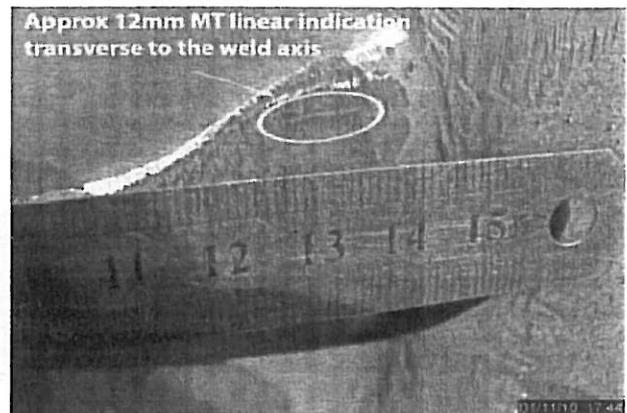
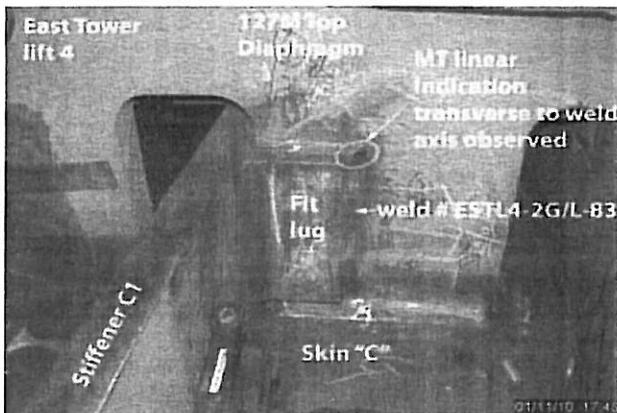
- Welding**  **Concrete**  **Other**   
**Welding**  **Curing**  **Procedural**  **Bridge No:** 34-0006  
**Joint fit-up**  **Coating**  **Other**  **Component:** East Tower Lift 4 Fit Lug on Skin C  
**Procedural**  **Procedural**  **Description:** Missed MT indication by QC

**Reference Description:** Missed MT Indication by QC in East Tower Lift 4 on Skin C

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- The member is located in Tower Bay 11



**Applicable reference:**

-Special Provisions Section 8.3 – “Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents.”

*V mech*  
*V most*

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

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-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:** Wang Jiang Hua

**Time and method of notification:** 1800 Hrs, 01/11/10, Verbal

**Name of Caltrans Engineer notified:** Ken Lee

**Time and method of notification:** 1107 Hrs, 01/12/10, Verbal

**QC Inspector's Name:** An Qing Xiang

**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:** Ng,Michael

QA Inspector

**Reviewed By:** Wahbeh,Mazen

SMR

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# Tool Box Training Agenda

**Subject:** MT Techniques

**Reason for Training:** Several CT NCR's of indications missed during ZPMC NDT inspection.

## 1. Safety

- a. Safety Glasses
- b. Gloves (if required)
- c. Knee Pads
- d. Electrical shock

## 2. Tools

- a. Lighting
- b. MT Powder.                      Red for ambient,      Yellow for High Temperature.
- c. Powder Bulb
- d. Powder Blower
- e. MT Yoke                              Adequate working condition
- f. Pie Gage

## 3. Inspection Techniques

- a. Lighting
- b. Position of body (distance of eyes to the weld surface)
- c. Application of Powder      removal of Powder
- d. Continuous method
- e. Two directions
- f. Both sides of weld
- g. Clean and dry surface



教育培训纪录

培训编号: MT-22-Dec-09

培训内容:	MT Techniques
培训对象:	项目质检
授课人员:	Steve Lawton
培训类型:	内部培训
培训时间:	22-Dec-09 5:00 PM
计划培训地点:	ZPMC QC office

人员签到:

姓名	部门	姓名	部门
孙力杰 Sunlei	钢桥	狄坤伦 Di Kunlun	钢桥
孙广强 Sun Guangqiang	钢桥	蔡新鑫 Cai Xinxin	钢桥
徐海 Xu Hai	钢桥	傅春强 Fu Zhongqiang	钢桥
卞源源 Bian Yuanyuan	钢桥	顾云武 Gu Yunwu	钢桥
许兵 Xu Bing	钢桥	金建廷 Jin Jianting	钢桥 MT
李振华 Li Zhenhua	钢桥	常方杰 Chang Fangjie	钢桥
李坤阳 Li Xunyang	QA	袁俊 Yuan Jun	钢桥
王威 Wang Wei	钢桥	刘章敏 Liu Zhangmin	
孙林 Sun Lin	钢桥 MT	徐华祥 Xu Huaxiang	钢桥
丁阿成 Ding A Cheng	钢桥 MT	周东超 Zhou Dongchao	钢桥
贺佳佳 He Jiajia	钢桥	赵成功 Zhao Cheng Gong	钢桥
黄瑞 Huang Rui	钢桥	孙广强 Sun Guangqiang	钢桥
李黎明 Li Liming	钢桥	徐辉 Xu Hui	钢桥
李昌涛 Li Changtao		刘宏斌 Liu Hongbin	

**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-000478**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:****Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0596**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:** 11-Jan-2010**Description of Non-Conformance:**

During the Quality Assurance (QA) Magnetic Particle Testing (MT) review of welds located in East Tower lift 4 fit lug on skin C, this QA Inspector discovered the following issues:

- One (1) linear indication transverse to the weld axis measuring approximately 12mm in length.
- The weld is identified as: ESTL4-2G/L-83
- The weld is a fillet weld joining the 127M Top Diaphragm to Fit Lug near stiffener C1.
- This material is designated as non-Seismic Performance Critical Member (non-SPCM).
- The member is located in Tower Bay 11

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

Perform and verify repair, conduct MT refresher training.

**Corrective action taken:**

The indication was removed by grinding (without the need for welding) and verified by MT (T787-MT-7846). MT refresher training was held on 12/22/09. Documentation for this training was provided.

**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 Skyler Guest, 15000422360, who represents the Office of Structural Materials for your project.

**Inspected By:** Guest, Skyler

Quality Assurance Inspector

**Reviewed By:** Wahbeh, Mazen

QA Reviewer