

**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-000759**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 09-Jun-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0721**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> Suspender Brackets in Lift 7E
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b> Missed UT Indication by QC	

**Reference Description:** QA found an UT Indication after the contractor's had tested and accepted a weld for Suspender Bracket SB014-PP52 (Lift 7E)

**Description of Non-Conformance:**

During the Quality Assurance (QA) Ultrasonic Testing (UT) review of welds located on Orthotropic Box Girder (OBG) Suspender Bracket SB014-PP52, this QA Inspector discovered the following issues:

- One (1) Class A longitudinal indication measuring approximately 15mm in length.
- The indication dB rating is +6.
- Material thickness is 22mm.
- The depth of the indication is approximately 8.5mm.
- The weld is identified as SB014-052-004.
- The weld is Complete Joint Penetration (CJP) "T" joint joining the bracket top to side.
- The indication is clearly marked near the weld.
- The Y distance for this indication is 375mm measured from the west end of the bracket.
- Suspender Bracket SB014-PP52 is located in fabrication Bay 19.

The Notice of Witness Inspection (NWIT) No. is 005939. The indication is located within the area previously tested and accepted by ZPMC Quality Control (QC) personnel. As per the contract documents, ZPMC's QC personnel are required to perform hundred (100%) percent UT inspection of this weld.

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# QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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### Applicable reference:

AWS D1.5-02 Section 6; Table 6.3 specifies a class “A” indication as having a rating of 8dBs and under for material thicknesses 21mm through 38mm.

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.”

**Who discovered the problem:** Subhasis Bera

**Name of individual from Contractor notified:** Peng Wen Jun

**Time and method of notification:** 1630 hours, 06-09-10, Verbal

**Name of Caltrans Engineer notified:** Sean Eagen

**Time and method of notification:** 1300 hours, 06-10-10, Verbal

**QC Inspector's Name:** Chan Zhoe

**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 Jim Devey, (86) 150-0002-6784, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Tsang, Eric	SMR
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<b>Reviewed By:</b>	Devey, Jim	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:** 10-Jun-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:** 05.03.06-000717

**Subject:** NCR No. ZPMC-0721

**Reference Description:** QA found an UT Indication after the contractor's had tested and accepted a weld for Suspender Bracket SB014-PP52 (Lift 7E)

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:** 07

**Remarks:**

During the Quality Assurance (QA) Ultrasonic Testing (UT) review of welds located on Orthotropic Box Girder (OBG) Suspender Bracket SB014-PP52, this QA Inspector discovered the following issues:

- One (1) Class A longitudinal indication measuring approximately 15mm in length.
- The indication dB rating is +6.
- Material thickness is 22mm.
- The depth of the indication is approximately 8.5mm.
- The weld is identified as SB014-052-004.
- The weld is Complete Joint Penetration (CJP) "T" joint joining the bracket top to side.
- The indication is clearly marked near the weld.
- The Y distance for this indication is 375mm measured from the west end of the bracket.
- Suspender Bracket SB014-PP52 is located in fabrication Bay 19.

The Notice of Witness Inspection (NWIT) No. is 005939. The indication is located within the area previously tested and accepted by ZPMC Quality Control (QC) personnel. As per the contract documents, ZPMC's QC personnel are required to perform hundred (100%) percent UT inspection of this weld.

**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-0721

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

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# NCT

( Continued Page 2 of 2 )

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**File:** 05.03.06

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000717

**Subject:** NCR No. ZPMC-0721

**Dated:** 30-Jun-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000721 **Rev:** 00

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### Contractor's Proposed Resolution:

**Reference Resolution:** ZPMC has repaired the indication discovered in the NCR and has performed NDT after to show that the weld is acceptable.

ZPMC has repaired the indication discovered in the NCR and has performed NDT after to show that the weld is acceptable. To prevent further missed indications while performing UT. ZPMC inspectors will increase the acceptance criteria by +2dB to prevent missing these borderline indications. Based on this ZPMC requests closure of this NCR.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000721R00;

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### Caltrans' comments:

**Status:** REJ

**Date:** 07-Jul-2010

The NDT documentation submitted is acceptable. However, the Department cannot concur with the Contractor's proposal to increase the acceptance criteria by 2 dB. NDT shall be performed in accordance with D1.5 only.

**Submitted by:** Woo, Laraine

**Date:** 07-Jul-2010

**Attachment(s):**



No. B-810

## LETTER OF RESPONSE

**TO: American Bridge/Flour**

**DATE: 2010-6-30**

**REGARDING: NCR-000759(ZPMC-0721)**

ZPMC is providing the NDT record show the missed indication has been removed, repaired and retested to be acceptable. To reduce the missed UT indication, ZPMC inspector will add +2dB than relevant code when performing UT testing. Based on this, ZPMC is requesting closure of this NCR.

**ATTACHMENT:**

N CR-000759(ZPMC-0721)

B787-UT-13303 R1

  
6/30/10



**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:** 10-Jun-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:** 05.03.06-000717

**Subject:** NCR No. ZPMC-0721

**Reference Description:** QA found an UT Indication after the contractor's had tested and accepted a weld for Suspender Bracket SB014-PP52 (Lift 7E)

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:** 07

**Remarks:**

During the Quality Assurance (QA) Ultrasonic Testing (UT) review of welds located on Orthotropic Box Girder (OBG) Suspender Bracket SB014-PP52, this QA Inspector discovered the following issues:

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- Suspender Bracket SB014-PP52 is located in fabrication Bay 19.

The Notice of Witness Inspection (NWIT) No. is 005939. The indication is located within the area previously tested and accepted by ZPMC Quality Control (QC) personnel. As per the contract documents, ZPMC's QC personnel are required to perform hundred (100%) percent UT inspection of this weld.

**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-0721

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

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NCT

(Continued Page 2 of 2)

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File: 05.03.06

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(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-000759**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 09-Jun-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0721**Type of problem:**Welding  Concrete  Other Welding  Curing  Procedural  **Bridge No:** 34-0006Joint fit-up  Coating  Other  **Component:** Suspender Brackets in Lift 7EProcedural  Procedural  **Description:** Missed UT Indication by QC**Reference Description:** QA found an UT Indication after the contractor's had tested and accepted a weld for Suspender Bracket SB014-PP52 (Lift 7E)**Description of Non-Conformance:**

During the Quality Assurance (QA) Ultrasonic Testing (UT) review of welds located on Orthotropic Box Girder (OBG) Suspender Bracket SB014-PP52, this QA Inspector discovered the following issues:

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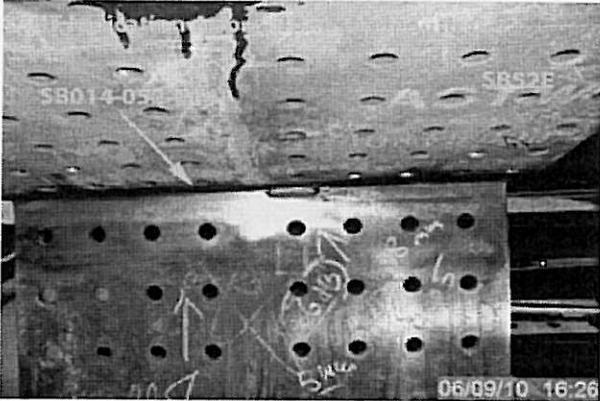
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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

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**Applicable reference:**

AWS D1.5-02 Section 6; Table 6.3 specifies a class "A" indication as having a rating of 8dBs and under for material thicknesses 21mm through 38mm.

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."

**Who discovered the problem:** Subhasis Bera

**Name of individual from Contractor notified:** Peng Wen Jun

**Time and method of notification:** 1630 hours, 06-09-10, Verbal

**Name of Caltrans Engineer notified:** Sean Eagen

**Time and method of notification:** 1300 hours, 06-10-10, Verbal

**QC Inspector's Name:** Chan Zhoe

**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 Jim Devey, (86) 150-0002-6784, who represents the Office of Structural Materials for your project.

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**Inspected By:** Tsang, Eric

SMR

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**Reviewed By:** Devey, Jim

SMR



# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

REPORT NO. 报告编号 B787-UT-13403R1      DATE 2010.06.30      PAGE 1 OF 1      Revision No: 0

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

ITEMS NAME: SUSPENDER BRACKET      DRAWING NO.: SB52E      CALTRANS CONTRACT NO.: 04-0120F4  
 部件名称      图号      加州工程编号

REFERENCING CODE 参考规范      ACCEPTANCE STANDARD 接受标准      PROCEDURE NO. 程序编号  
 AWS D1.5-2002      AWS D1.5-2002(Table 6.3)      ZPQC-UT-01

WELDING PROCESS 焊接方法      JOINT TYPE 焊缝类型      CALIBRATION DUE DATE 仪器校正有效期  
 FCAW      T-JOINT      Dec. 28<sup>ST</sup>, 2010

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

CALIBRATION BLOCK 试块      COUPLANT 耦合剂      MATERIAL/THICKNESS 材料厚度  
 AWS IIW BLOCK TYPE II      C.M.C      A709M-345T2      20/22mm

### 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
SB014-052-004	1R1	70				34									ACC.	100%

AFTER B-WR13563

BLANK

EXAMINED BY 主探 <i>Tangyishan</i> LEVEL - II SIGN / DATE      10.06.10	REVIEWED BY 审核 <i>Shan yong</i> LEVEL - II SIGN / DATE      12.06.10
质量经理 / QCM _____ 签字 SIGN / 日期 DATE	用户CUSTOMER _____ 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:** 05.03.06-000717

**Subject:** NCR No. ZPMC-0721

**Dated:** 13-Jul-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000721 **Rev:** 01

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### Contractor's Proposed Resolution:

**Reference Resolution:** ZPMC will adhere to the relevant inspection criteria when performing NDT. To prevent future missed indications ZPMC will verify any indications which are on the border of being rejectable.

ZPMC will adhere to the relevant inspection criteria when performing NDT. To prevent future missed indications ZPMC will verify any indications which are on the border of being rejectable. Based on this and previously submitted documentation, ZPMC requests closure of this NCR.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000721R01

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### Caltrans' comments:

**Status:** CLO

**Date:** 19-Jul-2010

The NDT documentation submitted and preventive measures taken by the Contractor are acceptable. This NCR is considered closed.

**Submitted by:** Woo, Laraine

**Date:** 19-Jul-2010

**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  
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(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-000696**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 19-Jul-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0721**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:** 09-Jun-2010**Description of Non-Conformance:**

During the Quality Assurance (QA) Ultrasonic Testing (UT) review of welds located on Orthotropic Box Girder (OBG) Suspender Bracket SB014-PP52, this QA Inspector discovered the following issues:

- One (1) Class A longitudinal indication measuring approximately 15mm in length.
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- Suspender Bracket SB014-PP52 is located in fabrication Bay 19.

The Notice of Witness Inspection (NWIT) No. is 005939. The indication is located within the area previously tested and accepted by ZPMC Quality Control (QC) personnel. As per the contract documents, ZPMC's QC personnel are required to perform hundred (100%) percent UT inspection of this weld.

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

Repair said indication and perform NDT required to verify weld quality.

**Corrective action taken:**

Contractor supplied post repair NDT documentation verifying weld conforms with Contract weld quality requirements.

**Did corrective action require Engineer's approval?** Yes No

**If so, name of Engineer providing approval:**

**Date:**

**Is Engineer's approval attached?**

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## QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

( Continued Page 2 of 2 )

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**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.

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<b>Inspected By:</b>	Simonis,Jim	Quality Assurance Inspector
<b>Reviewed By:</b>	Wahbeh,Mazen	QA Reviewer

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