

**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-000733**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 14-May-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0696**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> Strut Angle ED1-SA4-143M-5
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b>	

**Reference Description:** Critical Weld Repair Without Engineer's Approval, Welding to Incorrect WPS, Strut Angle ED1-SA4-143M-5

**Description of Non-Conformance:**

During random in-process verification of strut angle connection plate, Caltrans Quality Assurance (QA) discovered the following issues:

- ZPMC personnel were performing base metal repair by Shielded Metal Arc Welding (SMAW) process on the base metal of strut angle connection plate as per Welding Repair Report (WRR) T-WR3217, Rev. 0.
- Weld Repair Report (WRR) cites WPS-485-SMAW-1G(1F)-FCM-REPAIR as applicable.
- This repair welding has been performed as per WPS-485-SMAW-1G(1F)-REPAIR.
- This repair area is measured to be approximately 157mm in width, 460mm in length and 6mm in deep.
- This base metal repair has been performed without prior approval of the engineer.
- The welder is identified as 040655.
- The member is identified as ED1-SA4-68-143M-5.
- The material is identified as Seismic Performance Critical Member (SPCM).
- The member is located in Bay 11.

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# QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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### Applicable reference:

AWS D1.5 Section: 3.7.4: "Prior approval of the Engineer shall be obtained for repairs to base metal (other than those required by 3.2), or for a revised design to compensate for deficiencies."

Special Provisions 8-3: "The Engineer shall be notified immediately in writing when welding problems, deficiencies, base metal repairs, or any other type of repairs not submitted in the WQCP are discovered and also the proposed repair procedures to correct them."

**Who discovered the problem:** Umesh D. Gaikwad

**Name of individual from Contractor notified:** Bi De Wei

**Time and method of notification:** 0820 Hrs, 05/14/10, Verbal

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

**Time and method of notification:** 1000 Hrs, 05/14/10, Verbal

**QC Inspector's Name:** Xu Jin Long

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

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<b>Inspected By:</b>	Guest, Skyler	SMR
<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: 510-808-4618 Fax:

**NON-CONFORMANCE REPORT TRANSMITTAL**

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

**Date:** 16-May-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-0696

**Job Name:** SAS Superstructure  
**Document No:** 05.03.06-000691

**Reference Description:** Critical Weld Repair Without Engineer's Approval, Welding to Incorrect WPS/ Tower/ Strut Angle ED1-SA4-143M-5

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:** N/A

**Remarks:**

During random in-process verification of strut angle connection plate, Caltrans Quality Assurance (QA) discovered the following issues:

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- Weld Repair Report (WRR) cites WPS-485-SMAW-1G(1F)-FCM-REPAIR as applicable.
- This repair welding has been performed as per WPS-485-SMAW-1G(1F)-REPAIR.
- This repair area is measured to be approximately 157mm in width, 460mm in length and 6mm in deep.
- This base metal repair has been performed without prior approval of the engineer.
- The welder is identified as 040655.
- The member is identified as ED1-SA4-68-143M-5.
- The material is identified as Seismic Performance Critical Member (SPCM).
- The member is located in Bay 11.

AWS D1.5 Section: 3.7.4: "Prior approval of the Engineer shall be obtained for repairs to base metal (other than those required by 3.2), or for a revised design to compensate for deficiencies."

Special Provisions 8-3: "The Engineer shall be notified immediately in writing when welding problems, deficiencies, base metal repairs, or any other type of repairs not submitted in the WQCP are discovered and also the proposed repair procedures to correct them."

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

Propose a resolution for the identified non-conformance, documenting that the repairs are in compliance with the contract requirements. Documentation provided for the Engineer's review of the acceptability of the weld repairs shall at a minimum include the procedure utilized and the NDT results.

In addition to the material/workmanship non-conformance, address the failure by both Production and Quality Control in proceeding with work without prior approval of the Engineer or proper WPS. Provide documentation of the steps/actions taken by Production and

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# NCT

( Continued Page 2 of 2 )

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Quality Control to prevent future occurrences.

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

**Transmitted by:** Ken Lee      Transportation Engineer

**Attachments:**    ZPMC-0696

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

**File:** 05.03.06

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000691

**Subject:** NCR No. ZPMC-0696

**Dated:** 30-Aug-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000756 Rev: 00

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**Contractor's Proposed Resolution:**

**Reference Resolution:** ZPMC has removed the weld in question and re welded it using the correct WPS. The welds has been subsequently tested and accepted by the Department.

ZPMC has removed the weld in question and re welded it using the correct WPS. The welds has been subsequently tested and accepted by the Department. ZPMC is providing NDT records to show that the new weld is acceptable. Based on this ZPMC requests closure of this NCR.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000756R00;

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**Caltrans' comments:**

**Status:** AAP

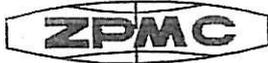
**Date:** 31-Aug-2010

This proposed resolution is accepted with action pending. The NDT documentation is acceptable; however, ZPMC has not addressed the cause for apparent failure of Quality Control to identify the deficiency nor provided documentation of the steps/actions taken by the Quality Control Manager to prevent future occurrences.

**Submitted by:** Rizzardo, Gina

**Attachment(s):**

**Date:** 31-Aug-2010



No. T-157

## LETTER OF RESPONSE

**TO: American Bridge/Flour JV**

**DATE: 2010-08-29**

**REGARDING: NCR-000733(ZPMC-0696)**

ZPMC realized this problem, and make the repairing work for as-described length weld. Finally these relevant welds were fixed and checked by UT. Also they were re-inspected by CT inspector and green tagged. Here attached the related documents to prove the welds are sound after repairing.

Basing on above information, ZPMC hope CT could take a review and close these NCRs.

**ATTACHMENT:**

**NCR-000733(ZPMC-0696)**

**T-787-UT-2894**

zhao jia neng  
2010-8-29

**DEPARTMENT OF TRANSPORTATION**  
 DIVISION OF ENGINEERING SERVICES  
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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-000733

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 14-May-2010

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

NCR #: ZPMC-0696

### Type of problem:

Welding  Concrete  Other Welding  Curing  Procedural  Bridge No: 34-0006Joint fit-up  Coating  Other  Component: Strut Angle ED1-SA4-143M-5Procedural  Procedural  Description:

Reference Description: Critical Weld Repair Without Engineer's Approval, Welding to Incorrect WPS, Strut Angle ED1-SA4-143M-5

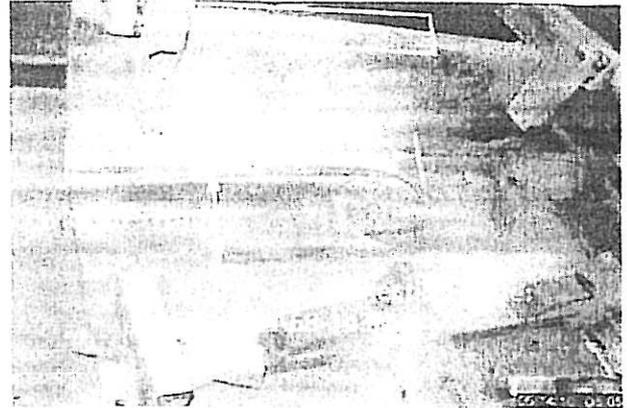
### Description of Non-Conformance:

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# QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )



### Applicable reference:

AWS D1.5 Section: 3.7.4: "Prior approval of the Engineer shall be obtained for repairs to base metal (other than those required by 3.2), or for a revised design to compensate for deficiencies."

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Name of individual from Contractor notified: Bi De Wei

Time and method of notification: 0820 Hrs, 05/14/10, Verbal

Name of Caltrans Engineer notified: Ken Lee

Time and method of notification: 1000 Hrs, 05/14/10, Verbal

QC Inspector's Name: Xu Jin Long

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

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Inspected By:	Guest, Skyler	SMR
Reviewed By:	Wahbeh, Mazen	SMR

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# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

REPORT NO. 报告编号 T787-UT-2894      DATE 2010.05.22      PAGE 1 OF 1      Revision No: 0

PROJECT NO.: 工程编号 ZP06-787		CONTRACTOR: CALTRANS	
ITEMS NAME: 部件名称 THE 4th LIFTING TOWER	DRAWING NO.: 图号 ED1-SA68/ND1-SA68	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 SAW SMAW	JOINT TYPE 焊缝类型 CORNER JOINT	CALIBRATION DUE DATE 仪器校正有效期 Dec. 28 <sup>ST</sup> , 2010	
EQUIPMENT 设备 UT SCOPE	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 IIV BLOCK TYPE II	COUPLANT 耦合剂 C.M.C	MATERIAL/THICKNESS 材料厚度 A709SL-Gr485/Gr485+      32mm	

### 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	Depth from Surface 距表面深度	From'X 距X	From'Y 距Y		
ND1-SA4-68-143M-8-1A/B		70					33							ACC.	100%
ND1-SA4-68-131M-5-1A/B		70					33							ACC.	100%
ND1-SA4-68-127M-8-1A/B		70					33							ACC.	100%
ED1-SA4-68-131M-4-1A/B		70					33							ACC.	100%
ED1-SA4-68-143M-5-1A/B		70					33							ACC.	100%
ED1-SA4-68-131M-1-1A/B		70					33							ACC.	100%
ND1-SA4-68-131M-1-1A/B		70					33							ACC.	100%

AFTER HSR1(T)-11348

EXAMINED BY 主探 <i>Daz Gous Sheu</i> 2/25/22	REVIEWED BY 审核 <i>XJ Row Gary</i> 10-25-22
LEVEL - II SIGN / DATE	LEVEL - II SIGN / DATE
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:** Siegenthaler, Peter  
Resident Engineer

**Ref:** 05.03.06-000691

**Subject:** NCR No. ZPMC-0696

**Dated:** 21-Sep-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000756 Rev: 01

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### Contractor's Proposed Resolution:

**Reference Resolution:** In the future, the system which ABFJV and ZPMC has established to monitor inspector performance ZPMC QC did not identify the incorrect WPS used at the time and as a result the responsible inspector was reprimanded to ensure he was aware checking that the correct WPS is being used is a basic inspector responsibility and not to assume that the welder is using the correct WPS. In the future, the system which ABFJV and ZPMC has established to monitor inspector performance with regards to non conformances is fully in place to ensure that inspectors are accountable for the work in their areas. The production team leaders have been instructed to ensure that their welders are using the correct WPS in all cases to ensure there are 2 levels of verification. Based on this and previously submitted NDT, ZPMC requests closure of this NCR.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000756R01

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### Caltrans' comments:

**Status:** CLO

**Date:** 21-Sep-2010

This proposed resolution is acceptable. This and the previous documentation received is sufficient and the Department concurs that Non-Conformance ZPMC-0696 is closed.

**Submitted by:** Eagen, Sean

**Attachment(s):**

**Date:** 21-Sep-2010

**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-000783**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 21-Sep-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0696**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:** 14-May-2010**Description of Non-Conformance:**

During random in-process verification of strut angle connection plate, Quality Assurance (QA) discovered the following issues:

- ZPMC personnel were performing base metal repair by Shielded Metal Arc Welding (SMAW) process on the base metal of strut angle connection plate as per Welding Repair Report (WRR) T-WR3217, Rev. 0.
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- The member is identified as ED1-SA4-68-143M-5.
- The material is identified as Seismic Performance Critical Member (SPCM).
- The member is located in Bay 11.

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

Contractor will remove the weld, reweld with the correct WPS, and provide the proper NDT documentation. In addition, Contractor will reprimand the responsible inspectors along with establishing a system to monitor inspectors performance with regards to non conformances. This will include the production team leaders ensuring the welders are using the correct WPS in all cases with two levels of verification.

**Corrective action taken:**

Contractor repaired and provided acceptable NDT records to close the issue. Inspector responsible for incident was reprimanded and the production team leader has been instructed to ensure the welders are using the updated WPS.

**Did corrective action require Engineer's approval?**

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## QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

( Continued Page 2 of 2 )

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Yes    No

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

**Date:**

**Is Engineer's approval attached?**            Yes    No

**Comments:**

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**Inspected By:**    Ng,Michael

Quality Assurance Inspector

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**Reviewed By:**    Devey,Jim

QA Reviewer