

**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, PRC**Report No:** NCR-000301**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 09-Jun-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0275**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> North Tower, Lift 1
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b>	No preheat on CD interior corner seam weld repair

**Reference Description:** No preheat on CD interior corner seam weld repair**Description of Non-Conformance:**

QA observed ZPMC performing weld repairs of North Tower, Lift 1, CD interior corner seam weld NSD1-A166E/J-124A/B without adequate preheat of the adjacent base material. A 160 degree Celsius temperature crayon did not melt when applied to the adjacent base material.

**Applicable reference:**

WPS-345-FCAW-2G (2F) requires a minimum base material preheat temperature of 160 degree Celsius.

**Who discovered the problem:** Shrikant Utekar**Name of individual from Contractor notified:** Xiao Tun Peng**Time and method of notification:** 6/9/2009, 22:00; Verbal**Name of Caltrans Engineer notified:** Scott Kennedy**Time and method of notification:** 6/10/2009, 13:00; Verbal**QC Inspector's Name:****Was QC Inspector aware of the problem:**

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# QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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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 Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Sinevod,Serge	ASMR
<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:** 10-Jun-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:** 05.03.06-000263

**Subject:** NCR No. ZPMC-0275

**Reference Description:** Preheat / North Shaft Lift 1 Skin C & D / Weld Repair Skins C to D Interior Seam

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:** 01

**Remarks:**

QA observed ZPMC performing weld repairs of North Tower, Lift 1, CD interior corner seam weld NSD1-A166E/J-124A/B without adequate preheat of the adjacent base material. A 160 degree Celsius temperature crayon did not melt when applied to the adjacent base material.

WPS-345-FCAW-2G (2F) requires a minimum base material preheat temperature of 160 degree Celsius.

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

Propose a resolution for this systematic non-conformance including documentation that the weld placed is in compliance with the contract requirements. In addition to addressing Production's failure to perform the required preheat of the material, address the failure of Quality Control to identify the inadequate preheat. Provide documentation of the steps/actions taken by Production and Quality Control to prevent future occurrences. Also detail what steps/actions are being taken by ABFJV to address the quality control failures of ABFJV's fabricator/ZPMC.

Recent failures by Quality Control to identify and Production to perform the required preheating of the material have resulted in the issuance of NCR ZPMC-0202, ZPMC-0233, ZPMC-0249, ZPMC-0259, ZPMC-0262 and an additional Incident Report concerning lack of preheating on 03/28/09 (Tower).

**Transmitted by:** Scott Kennedy Sr. Bridge Engineer

**Attachments:** ZPMC-0275

**cc:** Rick Morrow, Gary Pursell, Mark Woods, Doug Coe, Jason Tom

**File:** 05.03.06

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000263

**Subject:** NCR No. ZPMC-0275

**Dated:** 24-Aug-2009

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000303 **Rev:** 00

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### Contractor's Proposed Resolution:

**Reference Resolution:** ABF QA lead inspectors have been informed to increase monitoring of ZPMC QC regarding preheat temperatures. ABF has informed ZPMC QC supervision of this nonconformance.

ABF QA lead inspectors have been informed to increase monitoring of ZPMC QC regarding preheat temperatures. ABF has informed ZPMC QC supervision of this nonconformance. ZPMC has attached the necessary documents and requests closure of this NCR.

### Submitted by:

**Attachment(s):** ABF-NPR-000303R00;

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### Caltrans' comments:

**Status:** CLO

**Date:** 28-Aug-2009

The proposed resolution is acceptable. The weld in question has been accepted by UT as shown in the attached documents. The Department concurs that Non-Conformance ZPMC-0275 is closed.

**Submitted by:** Wright, Doug

**Date:** 28-Aug-2009

**Attachment(s):**



# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

REPORT NO. 报告编号 T787-UT-1836R3      DATE 2009.07.02      PAGE 1 OF 2      Revision No: 0

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

ITEMS NAME: THE 1ST LIFTING TOWER(N) CD ANGLE      DRAWING NO.: NSD1-A166E/J NSD1-A112B/H      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 6.4)      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      CORNER-JOINT      Dec. 28<sup>ST</sup>, 2009

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-Z      65/90mm

### 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	45°	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
NSD1-A112B/H-2A/B	1R3	45													ACC.	100%
	2R3	45													ACC.	100%
	3R3	45													ACC.	100%
	4R3	45													ACC.	100%
	5R3	45													ACC.	100%
	6R3	45													ACC.	100%
	7R3	45													ACC.	100%

EXAMINED BY 主探 *Tang Xingshan*      REVIEWED BY 审核 *Zhang Lin*

LEVEL - II SIGN / DATE *09-07-02*      LEVEL - II SIGN / DATE *09-07-02*

质量经理 / QCM      用户 CUSTOMER

签字 SIGN / 日期 DATE      签字 SIGN / 日期 DATE



# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

REPORT NO. 报告编号 T787-UT-1836R3      DATE 2009.07.02      PAGE 2 OF 2      Revision No: 0

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		
		70				33								ACC.	100%
NSD1-A166E/J-124A/B	1R3	45				33								ACC.	100%
	2R3	45				33								ACC.	100%
	3R3	45				33								ACC.	100%
	4R3	45				33								ACC.	100%
	5R3	45				33								ACC.	100%
		70				33								ACC.	100%

AFTER T-CWR167 168

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EXAMINED BY 主探 <div style="font-family: cursive; font-size: 1.2em; margin-left: 50px;">Tang Xingshan</div>	REVIEWED BY 审核 <div style="font-family: cursive; font-size: 1.2em; margin-left: 50px;">Zhuo</div>
LEVEL - II SIGN / DATE <div style="font-family: cursive; font-size: 1.2em; margin-left: 50px;">9.27.02</div>	LEVEL - II SIGN / DATE <div style="font-family: cursive; font-size: 1.2em; margin-left: 50px;">9.27.02</div>
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:** 05.03.06-000263

**Subject:** NCR No. ZPMC-0275

**Dated:** 24-Aug-2009

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000308 Rev: 00

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### Contractor's Proposed Resolution:

**Reference Resolution:** ABF QA lead inspectors have been informed to increase monitoring of ZPMC QC regarding preheat temperatures. ABF has informed ZPMC QC supervision of this nonconformance.

ABF QA lead inspectors have been informed to increase monitoring of ZPMC QC regarding preheat temperatures. ABF has informed ZPMC QC supervision of this nonconformance. ZPMC will submit the necessary inspection reports at a later date to close this NCR.

### Submitted by:

**Attachment(s):** ABF-NPR-000308R00

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### Caltrans' comments:

**Status:** AAP

**Date:** 28-Aug-2009

The response is acceptable, but the Non-Conformance is not closed.

Please provide documentation of the weld repairs that were performed and that the repairs were acceptable. The Department will review the Contractor's proposal to close Non-Conformance ZPMC-0275 at that time.

**Submitted by:** Wright, Doug

**Date:** 28-Aug-2009

**Attachment(s):**

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000263

**Subject:** NCR No. ZPMC-0275

**Dated:** 27-Aug-2009

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000308 **Rev:** 01

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### Contractor's Proposed Resolution:

**Reference Resolution:** ZPMC has attached the repair and inspection documents needed for closure of this NCR. Also ZPMC generated an internal NCR to document corrective and preventive actions.

ZPMC has attached the repair and inspection documents needed for closure of this NCR. Also ZPMC generated an internal NCR to document corrective and preventive actions. ZPMC requests closure of this NCR.

### Submitted by:

**Attachment(s):** ABF-NPR-000308R01;

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### Caltrans' comments:

**Status:** CLO

**Date:** 28-Aug-2009

The proposed resolution is acceptable. The welds in question has been accepted by VT and MT as shown in the attached documents. The Department concurs that Non-Conformance ZPMC-0275 is closed.

**Submitted by:** Wright, Doug

**Date:** 28-Aug-2009

**Attachment(s):**



# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

REPORT NO. 报告编号 T787-UT-1836R3      DATE 2009.07.02      PAGE 1 OF 2      Revision No: 0

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

ITEMS NAME: THE 1ST LIFTING TOWER(N) CD ANGLE      DRAWING NO.: NSD1-A166E/J NSD1-A112B/H      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  
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WELDING PROCESS 焊接方法      JOINT TYPE 焊缝类型      CALIBRATION DUE DATE 仪器校正有效期  
 FCAW      CORNER-JOINT      Dec. 28<sup>ST</sup>, 2009

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-Z      65/90mm

### 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	45°	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
NSD1-A112B/H-2A/B	1R3	45													ACC.	100%
	2R3	45													ACC.	100%
	3R3	45													ACC.	100%
	4R3	45													ACC.	100%
	5R3	45													ACC.	100%
	6R3	45													ACC.	100%
	7R3	45													ACC.	100%

EXAMINED BY 主探 LEVEL - II SIGN / DATE 09-27-09	REVIEWED BY 审核 LEVEL - II SIGN / DATE 09-27-09
质量经理 / QCM _____ 签字 SIGN / 日期 DATE	用户 CUSTOMER _____ 签字 SIGN / 日期 DATE



# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

REPORT NO. 报告编号 T787-UT-1836R3      DATE 2009.07.02      PAGE 2 OF 2      Revision No: 0

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		
		70				33								ACC.	100%
NSD1-A166E/J-124A/B	1R3	45				33								ACC.	100%
	2R3	45				33								ACC.	100%
	3R3	45				33								ACC.	100%
	4R3	45				33								ACC.	100%
	5R3	45				33								ACC.	100%
		70				33								ACC.	100%

AFTER T-CWR167 168

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EXAMINED BY 主探 Tang Xingshan  
 LEVEL - II SIGN / DATE 09.07.02  
 质量经理 / QCM  
 签字 SIGN / 日期 DATE

REVIEWED BY 审核 [Signature]  
 LEVEL - II SIGN / DATE 09.07.02  
 用户 CUSTOMER  
 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  
(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, PRC**Report No:** NCS-000289**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 26-Aug-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0275**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-2009**Description of Non-Conformance:**

QA observed ZPMC performing weld repairs of North Tower, Lift 1, CD interior corner seam weld NSD1-A166E/J-124A/B without adequate preheat of the adjacent base material. A 160 degree Celsius temperature crayon did not melt when applied to the adjacent base material.

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

Submit NDT results indicating a sound weld.

**Corrective action taken:**

NDT results indicating a sound weld have been submitted and the weld has been green tagged. To prevent recurrence, the Contractor has instructed its inspectors to increase monitoring of preheat temperatures.

**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 Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

**Inspected By:** Sinevod, Serge

Quality Assurance Inspector

**Reviewed By:** Wahbeh, Mazen

QA Reviewer