

**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:** Chanxing Island, Shanghai, PRC**Report No:** NCR-000185**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 02-Sep-2008**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0168**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> 89m Partial Mock-up
<b>Procedural</b>	<b>Procedural</b>	<b>Descriptor:</b>	Fit lug to stiffener and diaphragm weld

**Reference Description:** 04-0120F4 Special Provisions**Description of Non-Conformance:**

While performing the weld cool down on weld MUB-MA21-G/J-26 the temperature of the weld dropped 61°C in the first hour, the original temperature of the weld at completion (1430) was 182°C, one hour later (1530) the temperature was 121°C. Per the approved fabrication plan (ABF-SUB-101R6) cooling is limited to no more than 40°C per hour.

In addition, ZPMC discontinued the monitoring and documentation of the cool down at 1800 the temperature of the weld was measured at 58°C. The ambient average temperature for today was 32°C which gave an approximate difference of 26°C. Per the approved fabrication plan (ABF-SUB-101R6), item 3f: "Upon completion of the welds, cooling shall be limited to no more than 40°C per hour. Temperature of the cooling shall be verified and recorded every 30 minutes from completion of the welds until the welds have reached ambient temperature. Submit cooling temperature data for information."

**Applicable reference:**

Special Provisions, Section 10-1.59, "Steel Structures", subsection "Fabrication" page 313: "For each mock-up, the Contractor shall prepare a written fabrication and welding sequence. The fabrication and welding sequence shall be submitted for review by the Engineer, and approval shall be given before the mock-up is fabricated"; Approved ABF-SUB101R6 dated August 14, 2008.

**Who discovered the problem:** Kenneth Riley, Quality Assurance Inspector**Name of individual from Contractor notified:** Mike Williams**Time and method of notification:** 9/02/2008; 2000; Verbal**Name of Caltrans Engineer notified:** Xu Jun, ZPMC Quality Control Engineer**Time and method of notification:** Doug Coe**QC Inspector's Name:** 9/2/2008; 1500; Verbal**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:**

None at this time

**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 Ryan Smith, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Ishibashi, Josh	SMR
<b>Reviewed By:</b>	Ishibashi, Josh	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:** 09-Sep-2008  
**Contract No:** 04-0120F4  
04-SF-80-13.2 / 13.9

**Dear:** Mr. Charles Kanapicki  
**Attention:** Mr. Dave Williams Consultant  
**Subject:** NCR No. ZPMC-0168

**Job Name:** SAS Superstructure  
**Document No:** 05.03.06-000155

**Reference Description:** Failure to follow Approved Procedure / Post Weld Heat Treatment / 89m Mock-up

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:**

**Lift:**

**Remarks:**

While performing the weld cool down on weld MUB-MA21-G/J-26 the temperature of the weld dropped 61°C in the first hour, the original temperature of the weld at completion (1430) was 182°C, one hour later (1530) the temperature was 121°C. Per the approved fabrication plan (ABF-SUB-101R6) cooling is limited to no more than 40°C per hour.

In addition, ZPMC discontinued the monitoring and documentation of the cool down at 1800 the temperature of the weld was measured at 58°C. The ambient average temperature for today was 32°C which gave an approximate difference of 26°C. Per the approved fabrication plan (ABF-SUB-101R6), item 3f: "Upon completion of the welds, cooling shall be limited to no more than 40°C per hour. Temperature of the cooling shall be verified and recorded every 30 minutes from completion of the welds until the welds have reached ambient temperature. Submit cooling temperature data for information."

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

Propose a resolution that ensures that this systematic non-conformance with regard to the failure to follow the approved procedures will not continue to occur and the steps taken by the welding Quality Control Manager to prevent future failures to follow the submitted and approved procedures. The previous failures by ZPMC Production and Quality Control to follow the approved procedures for the 89m Mock-up resulted in the issuance of NCR ZPMC-0089, ZPMC-0097, ZPMC-0146, ZPMC-0147 and ZPMC-0150.

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

**Attachments:** ZPMC-0168

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

**File:** 05.03.06

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000155

**Subject:** NCR No. ZPMC-0168

**Dated:** 11-Sep-2008

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000155 **Rev:** 00

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### Contractor's Proposed Resolution:

**Reference Resolution:** ABF and ZPMC are currently discussing performing another demonstration of the procedure. ABF has also had several meetings with ZPMC regarding compliance to this procedure.

ZPMC violated the approved partial mock-up procedure (ABF-SUB-101R6) by allowing a cool down time of greater than 40°C per hour. ABF and ZPMC are currently discussing performing another demonstration of the procedure. ABF has also had several meetings with ZPMC regarding compliance to this procedure.

### Submitted by:

**Attachment(s):** ABF-NPR-000155R00

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### Caltrans' comments:

**Status:** CLO

**Date:** 01-Jan-2009

Per State Letter 05.03.01-003067 dated December 8, 2008, the 77m and 89m Tower Section Mock-ups were successfully completed. The Department concurs that Non-Conformance ZPMC-0168 is closed.

As noted in ABF-CAL-LTR-000758, the Department understands that the appropriate fabrication plans will be modified in accordance with Special Provision Section 10-1.59, "Steel Structures," subsection "Working Drawings" through the FCN process.

**Submitted by:** Wright, Doug

**Date:** 02-Jan-2009

**Attachment(s):**

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000155

**Subject:** NCR No. ZPMC-0168

**Dated:** 01-Oct-2008

**Contract No.:** 04-0120F 4  
04-SF-80-13.2 / 13.9

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000161 **Rev:** 00

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**Contractor's Proposed Resolution:**

**Reference Resolution:** ZPMC acknowledges this NCR and has begun repair on the weld.

Please find attached.

**Submitted by:**

**Attachment(s):** ABF-NPR-000161R00;

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**Caltrans' comments:**

**Status:** CLO

**Date:** 01-Jan-2009

Per State Letter 05.03.01-003087 dated December 8, 2008, the 77m and 89m Tower Section Mock-ups were successfully completed. The Department concurs that Non-Conformance ZPMC-0168 is closed.

As noted in ABF-CAL-LTR-000758, the Department understands that the appropriate fabrication plans will be modified in accordance with Special Provision Section 10-1.59, "Steel Structures," subsection "Working Drawings" through the FCN process.

**Submitted by:** Wright, Doug

**Date:** 02-Jan-2009

**Attachment(s):**



TRANSMITTAL LETTER

PROJECT: SAN FRANCISCO OAKLAND BAY BRIDGE

DATE: 09/29/2008

TO: RUBY/ ABFJV QA DEPARTMENT

FROM: ZPMC QA DEPARTMENT

SUBJECT: NCR-000185(ZPMC-0168)FOR CLOSURE

SUBMITTED FOR YOUR APPROVAL.

ENCLOSED WITH THIS TRANSMITTAL IS ONE

- (1) COPY OF LETTER OF RESPONSE WITH NO.CT-146
- (2) COPY OF NCR WITH NUMBER NCR-000185(ZPMC-0168).

PLEASE SIGN THIS TRANSMITTAL AND RETURN TO ME.

ACKNOWLEDGEMENT:

  
 \_\_\_\_\_  
 PLAN HOLDER

9/29/08 0825  
 \_\_\_\_\_  
 DATE

ABFJV  
 \_\_\_\_\_  
 COMPANY

\_\_\_\_\_  
 PHONE NO.

PLAN NUMBER: N/A  
 #R787-QCP-102



No. CT-146

## LETTER OF RESPONSE

TO: American Bridge/Flour JV

DATE: 2007-9-27

REGARDING: NCR-000185 (ZPMC-0168)

ZPMC received CT NCR-000185, it mentioned ZPMC performed the weld cool down on weld MUB-MA21-G/J-26. The temperature of the weld dropped 61°C in the first hour, the original temperature of the weld at completion (14:30) was 182°C, one hour later (15:30) the temperature was 121°C. Per the approved fabrication plan cooling is limited to no more than 40°C per hour.

ZPMC acknowledged this control failure for the temperature cooling. So ZPMC had gouged off it and resumed a new fit lug welding on 89M partial mock up on Sep-24.

Here ZPMC requests Caltrans can close the NCR-000185 (ZPMC-00168).

ATTACHMENT:

NCR-000185 (ZPMC-00168)

*Xujun 2008.9.27*

*Thomas W. [Signature]  
ABF QCM  
29 SEPT. 08*



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge  
333 Burma Road  
Oakland CA 94612  
Tel: 510

## NON-CONFORMANCE REPORT TRANSMITTAL

To: AMERICAN BRIDGE/FLUOR. A. S. P.  
375 BURMA ROAD  
OAKLAND CA 95612

Date: 09-Sep-2006

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

Job Name: SAS Superstructure

Document No: 05.03.06-000155

Dear: Mr. Charles Kanapicki

Attention: Mr. Dave Williams Consultant

Subject: NCR No. ZPMC-0168

Reference Description: Failure to follow Approved Procedure / Post Weld Heat Treatment / 89m Mock-up

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:

Lift:

### Remarks:

While performing the weld cool down on weld MUB-MA21-G/J-26 the temperature of the weld dropped 61°C in the first hour, the original temperature of the weld at completion (1430) was 182°C, one hour later (1530) the temperature was 121°C. Per the approved fabrication plan (ABF-SUB-101R6) cooling is limited to no more than 40°C per hour.

In addition, ZPMC discontinued the monitoring and documentation of the cool down at 1800 the temperature of the weld was measured at 58°C. The ambient average temperature for today was 32°C which gave an approximate difference of 26°C. Per the approved fabrication plan (ABF-SUB-101R6), item 3f: "Upon completion of the welds, cooling shall be limited to no more than 40°C per hour. Temperature of the cooling shall be verified and recorded every 30 minutes from completion of the welds until the welds have reached ambient temperature. Submit cooling temperature data for information."

### Action Required and/or Action Taken:

Propose a resolution that ensures that this systematic non-conformance with regard to the failure to follow the approved procedures will not continue to occur and the steps taken by the welding Quality Control Manager to prevent future failures to follow the submitted and approved procedures. The previous failures by ZPMC Production and Quality Control to follow the approved procedures for the 89m Mock-up resulted in the issuance of NCR ZPMC-0089, ZPMC-0097, ZPMC-0146, ZPMC-0147 and ZPMC-0150.

Transmitted by: Scott Kennedy Sr. Bridge Engineer

Attachments: ZPMC-0168

cc: Rick Morrow, Gary Pursell, Mark Woods, Doug Coe

File: 05.03.06

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Quality Assurance and Source Inspection



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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:** Chanxing Island, Shanghai, PRC**Report No:** NCR-000185**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 02-Sep-2008**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0168**Type of problem:**Welding  Concrete  Other Welding  Curing  Procedural  **Bridge No:** 34-0006Joint fit-up  Coating  Other  **Component:** 89m Partial Mock-upProcedural  **Procedural**  **Description:** Fit lug to stiffener and diaphragm weld**Reference Description:** 04-0120F4 Special Provisions**Description of Non-Conformance:**

While performing the weld cool down on weld MUB-MA21-G/J-26 the temperature of the weld dropped 61°C in the first hour, the original temperature of the weld at completion (1430) was 182°C, one hour later (1530) the temperature was 121°C. Per the approved fabrication plan (ABF-SUB-101R6) cooling is limited to no more than 40°C per hour.

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**Who discovered the problem:** Kenneth Riley, Quality Assurance Inspector**Name of individual from Contractor notified:** Mike Williams**Time and method of notification:** 9/02/2008; 2000; Verbal**Name of Caltrans Engineer notified:** Xu Jun, ZPMC Quality Control Engineer**Time and method of notification:** Doug Coe**QC Inspector's Name:** 9/2/2008; 1500; Verbal**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:

None at this time

**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 Ryan Smith, who represents the Office of Structural Materials for your project.

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**Inspected By:** Ishibashi, Josh

SMR

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**Reviewed By:** Ishibashi, Josh

SMR

**DEPARTMENT OF TRANSPORTATION**

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Quality Assurance and Source Inspection



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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:** Chanxing Island, Shanghai, PRC**Report No:** NCS-000091**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 24-Sep-2008**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0168**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:** 02-Sep-2008**Description of Non-Conformance:**

While performing the weld cool down on weld MUB-MA21-G/J-26 the temperature of the weld dropped 61°C in the first hour, the original temperature of the weld at completion (1430) was 182°C, one hour later (1530) the temperature was 121°C. Per the approved fabrication plan (ABF-SUB-101R6) cooling is limited to no more than 40°C per hour.

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

METS-OSM will track this issue as a Quality Management Issue and does not request a response from the Contractor at this time. If this issue becomes systemic, METS will elevate this issue to second-tier and request a response from the Contractor.

**Corrective action taken:**

N/A

**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 Ryan Smith, (858) 232-6799, who represents the Office of Structural Materials for your project.

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# QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

( Continued Page 2 of 2 )

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**Inspected By:** Ishibashi,Josh

Quality Assurance Inspector

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**Reviewed By:** Smith,Ryan

QA Reviewer