

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



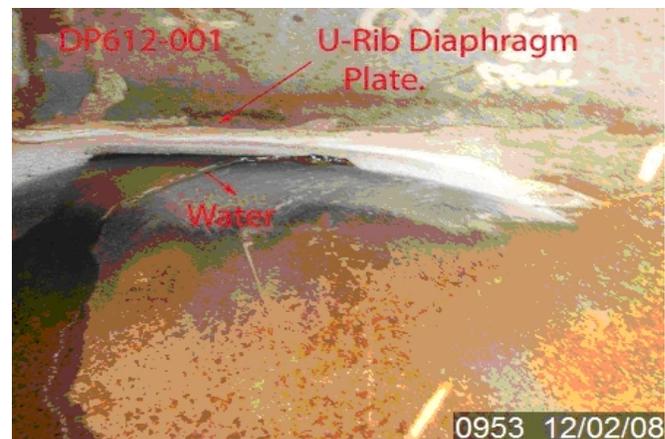
Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

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-000221**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 02-Dec-2008**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0197**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 L/R
<b>Joint fit-up</b>	<b>Coating</b>	<b>Other</b>	<b>Component:</b> Deck Panel
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b> DP-598-001 and DP-612-001	

**Reference Description:** DP-598-001 and DP-612-001**Description of Non-Conformance:**

The Quality Assurance Inspector observed rust at the location of a closed rib open-root repair (indicating that water had been present; 1st photo). Subsequently QA Inspector, observed ZPMC personnel remove sealant caulking (by grinding) on several, deck panel to u-rib diaphragm plates on deck panels DP598-001 and DP612-001. The caulking between u-rib diaphragm plates and deck panel was removed in an effort to relieve entrapped water located within the deck panel u-rib. The Quality Assurance Inspector observed water pour through the location where caulking was removed. The presence of water inside these deck panels is not in conformance with the State of California Department of Transportation Standard Specifications.

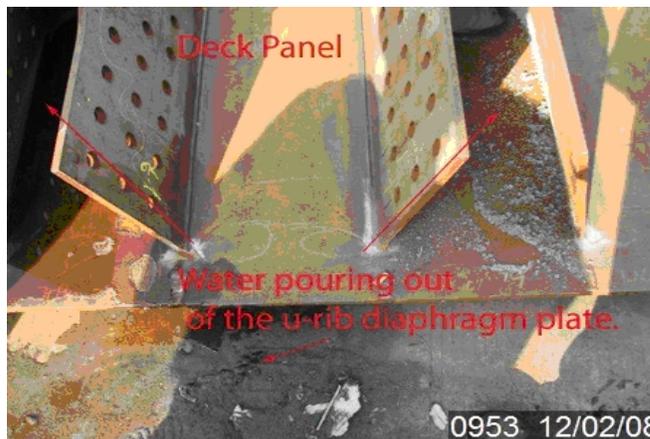


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# QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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### Applicable reference:

State of California Department of Transportation Standard Specifications 1999 section 55 paragraph 55-1.04 Shipping, Handling and Storing of Materials states,

“Material to be stored shall be placed above the ground upon platforms, skids or other supports and shall be kept free from dirt, grease and other foreign material and properly drained and protected from corrosion. Girders and beams shall be placed upright and shored. Long members, such as columns and chords, shall be supported on skids placed near enough together to prevent damage from deflection.”

**Who discovered the problem:** Quality Assurance Inspector, Raymond Lara

**Name of individual from Contractor notified:** none present

**Time and method of notification:** n/a

**Name of Caltrans Engineer notified:** Stanley Ku

**Time and method of notification:** 4-Dec, 1200, verbal

**QC Inspector's Name:** Quality Control Manager (QCM) Steve Lawton

**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 Peter Dautermann, +(86)1.500.219.9593, who represents the Office of Structural Materials for your project.

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**Inspected By:** Dautermann,Peter

SMR

**Reviewed By:** Dautermann,Peter

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:** 05-Dec-2008

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

**Dear:** Mr. Charles Kanapicki

**Job Name:** SAS Superstructure

**Attention:** Mr. Dave Williams Consultant

**Document No:** 05.03.06-000189

**Subject:** NCR No. ZPMC-0197

**Reference Description:** DP-598-001 and DP-612-001

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:**

### Remarks:

The Quality Assurance Inspector observed rust at the location of a closed rib open-root repair. QA Inspector observed ZPMC personnel remove several sealant caulking (by grinding) on deck panel to u-rib diaphragm plates on deck panels, DP598-001 and DP612-001. The caulking between u-rib diaphragm plates and deck panel was removed in an effort to relieve entrapped water located within the deck panel u-rib. The Quality Assurance Inspector observed water pour through the location where caulking was removed. The presence of water inside these deck panels is not in conformance with the State of California Department of Transportation Standard Specifications.

### Action Required and/or Action Taken:

A response for the resolution of this issue is expected within 14 days.

**Transmitted by:** Stanley Ku Sr. Bridge Engineer

**Attachments:** ZPMC-0197

**cc:** Rick Morrow, Gary Pursell, Brian Boal, 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:** 05.03.06-000189

**Subject:** NCR No. ZPMC-0197

**Dated:** 18-Dec-2008

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000189 Rev: 00

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### Contractor's Proposed Resolution:

**Reference Resolution:** To ensure water is not present within the U-Rib, ZPMC will remove the caulking from one end of each U-Rib, lift by crane the opposite end to allow any water to flow out, then re-seal.

Due to the large quantity of Deck Panels it is not logistically possible to store all Deck Panels inside away from the elements. ABF and ZPMC share the concern of CT that water may have entered some of the Deck Panels where sealing of the Diaphragm plate had not occurred in a timely manner. Several of the Diaphragm plates have since been sealed by caulking. To ensure water is not present within the U-Rib, ZPMC will remove the caulking from one end of each U-Rib, lift by crane the opposite end to allow any water to flow out, then re-seal. For lifts 3 and 4 this process will not be completed as the Deck Panels are in the as installed condition rendering this operation useless, however, the Deck Panels within Lifts 3 and 4 have been inside the workshop for longer periods of time during the first phases of OBG segment fabrication and would not pose a threat of water contamination.

### Submitted by:

**Attachment(s):** ABF-NPR-000189R00

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### Caltrans' comments:

**Status:** REJ

**Date:** 01-Jan-2009

This response is not acceptable. The proposed resolution addresses how to remove water from deck panels. However, it does not address two other important issues: 1) verifying that water contamination has not caused corrosion to the interior of the closed ribs, and 2) storing panels in a manner that will protect them from the weather.

1) Verifying that water contamination has not caused corrosion:

The water which poured from the inside of the closed ribs was rusty, which may indicate that corrosion has occurred inside the closed ribs. Propose a method to verify that the water has not caused corrosion damage to the interior of the closed ribs. Also, inform the Department in advance of performing this verification in order to facilitate our witnessing of the verification.

2) Storage of panels:

Section 55-1.04 of the Standard Specifications requires that material be stored in a way to properly drain and be protected from corrosion. Please inform the Department what measures will be taken to protect the existing and future panels that will be stored outside from corrosion.

If you have any questions regarding this matter, please contact the Department's representatives in Shanghai.

**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:** 05.03.06-000189

**Subject:** NCR No. ZPMC-0197

**Dated:** 17-Mar-2009

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000189 Rev: 01

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### Contractor's Proposed Resolution:

**Reference Resolution:** ZPMC is taking action as stated earlier on all deck panels prior to assembly to ensure there is no water retention within the U-Rib.

ZPMC is taking action as stated earlier on all deck panels prior to assembly to ensure there is no water retention within the U-Rib. Any water that has been inside the U-Rib is drained during this process then sealed by caulking. Results of contamination that may have occurred prior to caulking would be insignificant and un-measurable. The deck panel material as well as the U-Rib material is pre-treated by blasting and coating. During the lay-out process to locate the U-Rib onto the Deck Panel, the coating is removed in the area of welding only, therefore this limits the amount of exposed material to water contamination as the majority of the internal U-Rib to Deck surface is coated prior to the water contamination being introduced as stated in this NCR. ZPMC requests closure of this NCR.

### Submitted by:

**Attachment(s):** ABF-NPR-000189R01

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### Caltrans' comments:

**Status:** CLO

**Date:** 30-Apr-2009

The proposed resolution is acceptable. The Department concurs that Non-Conformance ZPMC-0197 is closed.

**Submitted by:** Wright, Doug

**Date:** 30-Apr-2009

**Attachment(s):**

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

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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, PRC**Report No:** NCS-000212**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 08-Apr-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0197**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 L/R
<b>Joint fit-up</b>	<b>Coating</b>	<b>Other</b>	<b>Component:</b>
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b>	

**Date the Non-Conformance Report was written:** 02-Dec-2008**Description of Non-Conformance:**

The Quality Assurance Inspector observed rust at the location of a closed rib open-root repair (indicating that water had been present; 1st photo). Subsequently QA Inspector, observed ZPMC personnel remove sealant caulking (by grinding) on several, deck panel to u-rib diaphragm plates on deck panels DP598-001 and DP612-001. The caulking between u-rib diaphragm plates and deck panel was removed in an effort to relieve entrapped water located within the deck panel u-rib. The Quality Assurance Inspector observed water pour through the location where caulking was removed. The presence of water inside these deck panels is not in conformance with the State of California Department of Transportation Standard Specifications.

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

"ZPMC is taking action as stated earlier on all deck panels prior to assembly to ensure there is no water retention within the U-Rib. Any water that has been inside the U-Rib is drained during this process then sealed by caulking. Results of contamination that may have occurred prior to caulking would be insignificant and un-measurable. The deck panel material as well as the U-Rib material is pre-treated by blasting and coating. During the lay-out process to locate the U-Rib onto the Deck Panel, the coating is removed in the area of welding only, therefore this limits the amount of exposed material to water contamination as the majority of the internal U-Rib to Deck surface is coated prior to the water contamination being introduced as stated in this NCR."

**Corrective action taken:**

ZPMC workers removed water inside the U-Rib deck panels. The caulking (sikaflex-221) have been applied at the gaps between the diaphragm plates and deck panels. This corrective action is acceptable to control further corrosion inside the U-rib deck panels.

**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 Eric Tsang, +(86) 1500.042.2372, who represents the Office of Structural Materials for your project.

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

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