

**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-000137**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 21-May-2008**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0131**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> DP-594-001
<b>Procedural</b>	<b>Procedural</b>	<b>Descriptor:</b>	OBG Deck Panel

**Reference Description:** Unapproved repair of cracked tack welds**Description of Non-Conformance:**

The Contractor did not properly evaluate the extent of a crack prior to repair and welding over the crack. The Contractor attempted to repair numerous cracked tack welds by grinding without performing MT, PT or other equally positive means to ascertain the extent of the cracks. The Contractor did not remove 50 millimeters on either side of the crack before commencing the closed rib GMAW root pass. This occurred on tack welds in weld joint #s -001 through -010 on deck panel DP-594-001. The cracks were initially observed on Tuesday 05-20-2008 as indicated in the time and date stamp in the digital photograph below.

**Applicable reference:**

AWS D1.5, Section 3.7.2.4: "Cracks in Weld or Base Metal. The extent of the crack shall be ascertained by use of MT, PT, or other equally positive means; the metal shall be removed for the full length of the crack plus 50 mm [2 in.] beyond each end of the crack, and rewelded."

**Who discovered the problem:** QA Inspector Greg Bertlesman**Name of individual from Contractor notified:** ABFJV QC Inspector Mr. Steve Lawton

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

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**Time and method of notification:** 1100 Verbal notification.

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

**Time and method of notification:** 5/22/08 1230 Verbal

**QC Inspector's Name:** ZPMC QC Inspector Sun Wei

**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 Patrick Lowry, 916-227-5719, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Lowry,Patrick	SMR
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<b>Reviewed By:</b>	Lowry,Patrick	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:** 30-May-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:** 05.03.06-000112

**Subject:** NCR No. ZPMC-0131

**Reference Description:** Unapproved repair of cracked tack welds

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 Contractor did not properly evaluate the extent of a crack prior to repair and welding over the crack. The Contractor attempted to repair numerous cracked tack welds by grinding without performing MT, PT or other equally positive means to ascertain the extent of the cracks. The Contractor did not remove 50 millimeters on either side of the crack before commencing the closed rib GMAW root pass. This occurred on tack welds in weld joint #s -001 through -010 on deck panel DP-594-001.

### Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences.

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

**Attachments:** ZPMC-0131

**cc:** Rick Morrow, Gary Pursell, Brian Boal, Jason Tom, Martin Chandrawinata

**File:** 05.03.06

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000112

**Subject:** NCR No. ZPMC-0131

**Dated:** 10-Sep-2008

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000130 **Rev:** 00

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### Contractor's Proposed Resolution:

**Reference Resolution:** ZPMC is now performing NDT on all tacks as an initial means of inspection to complement the VT inspection.

At the time of this NCR, ZPMC did not acknowledge the requirement of MT or PT of cracks to ascertain the extent of the cracks until ABF provided identified the requirement in the AWS Code. Until that time, cracks were found visually, removed by grinding and re-inspected visually. As for removing 50mm on each side of the crack, this would not be possible since tack welds are only 75mm in length. ZPMC is now performing NDT on all tacks as an initial means of inspection to complement the VT inspection. CT is performing modified UT testing of all tack weld locations in finished deck panels to verify if cracks remain after completion of welding. If cracks are determined to be in the tack locations of finished welds, they will be removed to the extent directed by the Engineer, repaired by welding per the approved internal weld repair procedure and re-inspected using the same modified UT method as originally used to determine the existence of the crack.

### Submitted by:

**Attachment(s):** ABF-NPR-000130R00

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### Caltrans' comments:

**Status:** CLO

**Date:** 26-Sep-2008

The proposed resolution is acceptable. The Department concurs that Non-Conformance ZPMC-0131 is closed.

**Submitted by:** Wright, Doug

**Date:** 26-Sep-2008

**Attachment(s):**

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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-000077**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 23-Sep-2008**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0131**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:** 21-May-2008**Description of Non-Conformance:**

The Contractor did not properly evaluate the extent of a crack prior to repair and welding over the crack. The Contractor attempted to repair numerous cracked tack welds by grinding without performing MT, PT or other equally positive means to ascertain the extent of the cracks. The Contractor did not remove 50 millimeters on either side of the crack before commencing the closed rib GMAW root pass. This occurred on tack welds in weld joint #s -001 through -010 on deck panel DP-594-001. The cracks were initially observed on Tuesday 05-20-2008 as indicated in the time and date stamp in the digital photograph below.

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

If cracks are determined to be in the tack locations of finished welds, they will be removed to the extent directed by the Engineer, repaired by welding per the approved internal weld repair procedure and re-inspected using the same modified UT method as originally used to determine the existence of the crack.

**Corrective action taken:**

The Contractor is now performing NDT on all tacks as an initial means of inspection to complement the VT inspection. CT is performing modified UT testing of all tack weld locations in finished deck panels to verify if cracks remain after completion of welding.

**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 Ady Velasco, 011-86-138-1694-2685, who represents the Office of Structural Materials for your project.

**Inspected By:** Liu, Chengwen

Quality Assurance Inspector

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# QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

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**Reviewed By:** Velasco, Abifhiram

QA Reviewer