

**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-000870**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 19-Oct-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0832**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> Crossbeam 16 Components
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b> Missed MT cracks by QC Inspection	

**Reference Description:** QA found 5 missed MT cracks after ZPMC had tested and accepted these welds in various Crossbeam 16 components

**Description of Non-Conformance:**

During the Quality Assurance (QA) Magnetic Particle Testing (MT) review of welds located on Orthotropic Box Girder (OBG) Cross Beam CB16, this QA Inspector discovered the following issues:

- One Transverse Linear crack measuring approximately 4mm.
- The weld is identified as FB205-050-027.
- The weld is a fillet weld joining floor beam diaphragm web plate to flange.
- Y location is approximately 550mm from west side panel identified as SP206A.
  
- One Transverse Linear crack measuring approximately 9mm.
- The weld is identified as FB204-049-55.
- The weld is the fillet weld joining flange to floor beam diaphragm web plate.
- Y location is approximately 250mm from east side cope hole.
- Three (3) Longitudinal Linear cracks in welds identified as CB202G-051-180, CB202G-051-185 & CB202G-049-185.
- Weld CB202G-051-180.
- Longitudinal Linear indication measures approximately 6mm.
- Y location is 0mm from the Side panel (SP205A).
- Weld CB202G-051-180 is a Fillet Weld joining Floor Beam Intermediate Diaphragm FB205-051 to Side Panel SP205A.
- SP205A is designated as SPCM.
  
- Weld CB202G-051-185.
- Longitudinal Linear indication measuring approximately 4mm.
- Y location is 0mm from the Side panel (SP202A)
- Weld CB202G-051-185 is a Fillet Weld joining Floor Beam Intermediate Diaphragm FB204-051 to Side

# QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 4 )

Panel SP202A.

-SP202A is designated as SPCM.

-Weld CB202G-049-185.

-Longitudinal Linear indication measuring approximately 8mm.

-Y location is 0mm from the Side panel (SP202A)

-Weld CB202G-049-185 is a Fillet Weld joining Floor Beam Intermediate Diaphragm FB204-049 to Side Panel SP202A.

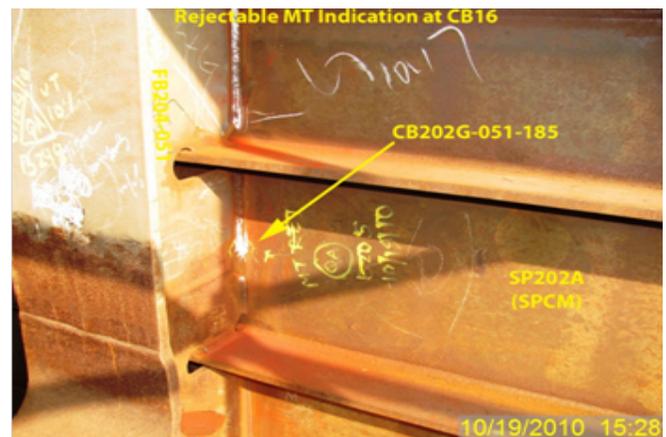
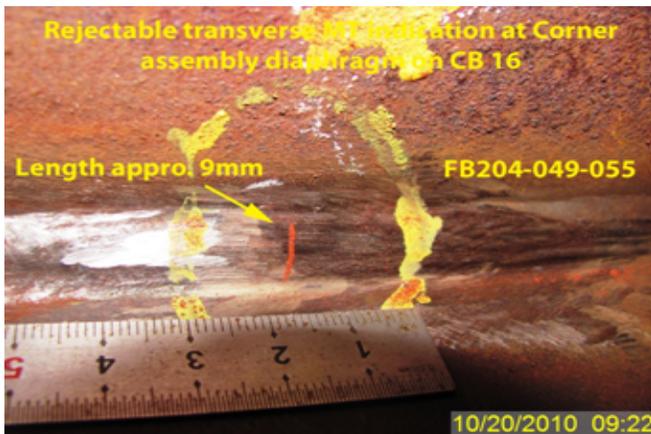
-SP202A is designated as SPCM.

-OBG Cross Beam CB16 is located near the North end of bay 19.

-The Notice of Witness Inspection Number (NWIT) is 07010.

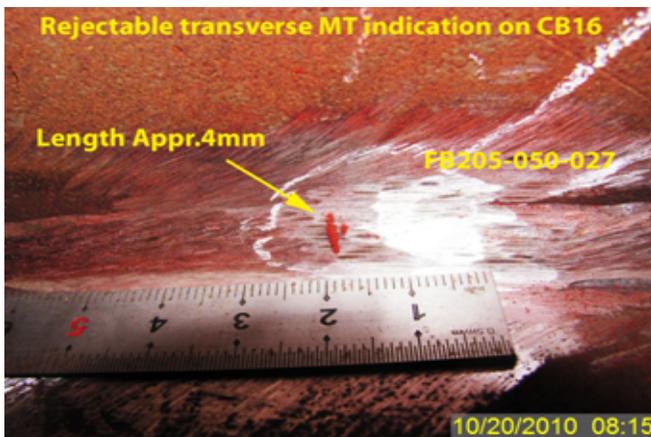
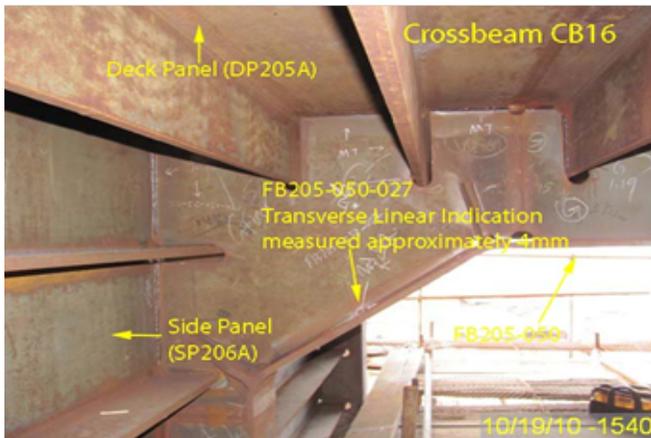
-Weld FB205-050-027 is within an area previously tested and accepted by ZPMC Quality Control (QC) personnel. ZPMC's QC personnel are required to perform 10% MT of this weld.

-Welds CB202G-051-180, CB202G-051-185 & CB202G-049-185 are within an area previously tested and accepted by ZPMC Quality Control (QC) personnel. ZPMC's QC personnel are required to perform 100% MT inspection of these welds.



# QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 3 of 4 )



## Applicable reference:

Special Provisions Section 8.3 "Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents."

AWS D1.5 (02) Table 6.8 specifies fusion type discontinuities greater than 1.6mm in length shall be rejected on 6mm fillet welds.

AWS D1.5 (02) Section 6.26.2 "Welds that are subject to MT in addition to visual inspection shall have no cracks."

**Who discovered the problem:** D. Sukanthan and Subhasis Bera

**Name of individual from Contractor notified:** Jicai Fang

**Time and method of notification:** 15:30 hours\_10/19/10\_Verbal

**Name of Caltrans Engineer notified:** Laraine Woo, Ching Chao

**Time and method of notification:** 15:00 hours, 10/20/10\_Email

**QC Inspector's Name:** Zheng Zhi Wei

**Was QC Inspector aware of the problem:**

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 4 of 4 )

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**Yes    No**

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

N/A

**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 Mazen Wahbeh, +(86) 134.7247.7571, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Tsang, Eric	SMR
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<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:** 21-Oct-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-0832

**Job Name:** SAS Superstructure  
**Document No:** 05.03.06-000827

**Reference Description:** QA found 5 missed MT cracks after ZPMC had tested and accepted these welds in various Crossbeam 16 components

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:** Xbeam **Lift:**

**Remarks:**

During the Quality Assurance (QA) Magnetic Particle Testing (MT) review of welds located on Orthotropic Box Girder (OBG) Cross Beam CB16, Caltrans QA Inspector discovered the following issues:

- One Transverse Linear crack measuring approximately 4mm.
- The weld is identified as FB205-050-027.
- The weld is a fillet weld joining floor beam diaphragm web plate to flange.
- Y location is approximately 550mm from west side panel identified as SP206A.
  
- One Transverse Linear crack measuring approximately 9mm.
- The weld is identified as FB204-049-55.
- The weld is the fillet weld joining flange to floor beam diaphragm web plate.
- Y location is approximately 250mm from east side cope hole.
  
- Three (3) Longitudinal Linear cracks in welds identified as CB202G-051-180, CB202G-051-185 & CB202G-049-185.
- Weld CB202G-051-180.
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- Y location is 0mm from the Side panel (SP205A).
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- SP205A is designated as SPCM.
  
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- Longitudinal Linear indication measuring approximately 4mm.
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- Weld CB202G-051-185 is a Fillet Weld joining Floor Beam Intermediate Diaphragm FB204-051 to Side Panel SP202A.
- SP202A is designated as SPCM.

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# NCT

( Continued Page 2 of 2 )

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-Weld CB202G-049-185.

-Longitudinal Linear indication measuring approximately 8mm.

-Y location is 0mm from the Side panel (SP202A)

-Weld CB202G-049-185 is a Fillet Weld joining Floor Beam Intermediate Diaphragm FB204-049 to Side Panel SP202A.

-SP202A is designated as SPCM.

-OBG Cross Beam CB16 is located near the North end of bay 19.

-The Notice of Witness Inspection Number (NWIT) is 07010.

-Weld FB205-050-027 is within an area previously tested and accepted by ZPMC Quality Control (QC) personnel. ZPMC's QC personnel are required to perform 10% MT of this weld.

-Welds CB202G-051-180, CB202G-051-185 & CB202G-049-185 are within an area previously tested and accepted by ZPMC Quality Control (QC) personnel. ZPMC's QC personnel are required to perform 100% MT inspection of these welds.

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

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences. A response for the resolution of this issue is expected within 7 days.

**Transmitted by:** Laraine Woo      Transportation Engineer

**Attachments:**    ZPMC-0832

**cc:**    Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Jason Tom, Contract Files, Ching Chao, Bill Casey

**File:**    05.03.06

## NCR PROPOSED RESOLUTION

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

**Attention:** Siegenthaler, Peter  
Resident Engineer

**Ref:** 05.03.06-000827

**Subject:** NCR No. ZPMC-0832

**Dated:** 25-Oct-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000812 Rev: 00

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### Contractor's Proposed Resolution:

**Reference Resolution:** ZPMC has repaired the indications noted in the NCR and is providing NDT documentation after the repair to show the indications has been removed

ZPMC has repaired the indications noted in the NCR and is providing NDT documentation after the repair to show the indications has been removed. This particular crossbeam was inspected prior to the ABFJV and ZPMC combining their resources. ABFJV has noted which inspector was responsible for this missed indication and is monitoring his performance, if he continues to miss indications disciplinary action will be undertaken. Based on these actions, ZPMC requests closure of this NCR.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000812R00;

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### Caltrans' comments:

**Status:** CLO  
**Date:** 02-Nov-2010

The proposed resolution is acceptable. This NCR is closed.

**Submitted by:** Woo, Laraine

**Attachment(s):**

**Date:** 02-Nov-2010



No. B-917

## LETTER OF RESPONSE

**TO: American Bridge/Flour**

**DATE: 2010-10-25**

**REGARDING: NCR-000870(ZPMC-0832)**

ZPMC acknowledged the indications were missed and has issued an internal NCR to address this problem. ZPMC has repaired these indications and is providing the NDT records to show the acceptance of these welds. Based on this, ZPMC is requesting closure of this NCR.

**ATTACHMENT:**

NCR-000870(ZPMC-0832)

B787-MT-31702 R1

B787-MT-31701 R1

A handwritten signature in black ink, appearing to be 'L. M.' or similar, written in a cursive style.

10/25/2010



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge  
333 Burma Road  
Oakland CA 94607  
Tel: Fax:

## NON-CONFORMANCE REPORT TRANSMITTAL

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375 BURMA ROAD  
OAKLAND CA 95607

**Date:** 21-Oct-2010

**Contract No:** 04-0120F4  
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**Dear:** Mr. Charles Kanapicki

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**Attention:** Mr. Thomas Nilsson Project/Fabrication Manager

**Document No:** 05.03.06-000827

**Subject:** NCR No. ZPMC-0832

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**Material Location:** Xbeam

**Lift:**

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## NCT

( Continued Page 2 of 2 )

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**Attachments:**    ZPMC-0832

**cc:**    Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Jason Tom, Contract Files, Ching Chao, Bill Casey

**File:**    05.03.06

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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-000870**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 19-Oct-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0832**Type of problem:**Welding  Concrete  Other Welding  Curing  Procedural  **Bridge No:** 34-0006Joint fit-up  Coating  Other  **Component:** Crossbeam 16 ComponentsProcedural  Procedural  **Description:** Missed MT cracks by QC Inspection**Reference Description:** QA found 5 missed MT cracks after ZPMC had tested and accepted these welds in various Crossbeam 16 components**Description of Non-Conformance:**

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# QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 4 )

Panel SP202A.

-SP202A is designated as SPCM.

-Weld CB202G-049-185.

-Longitudinal Linear indication measuring approximately 8mm.

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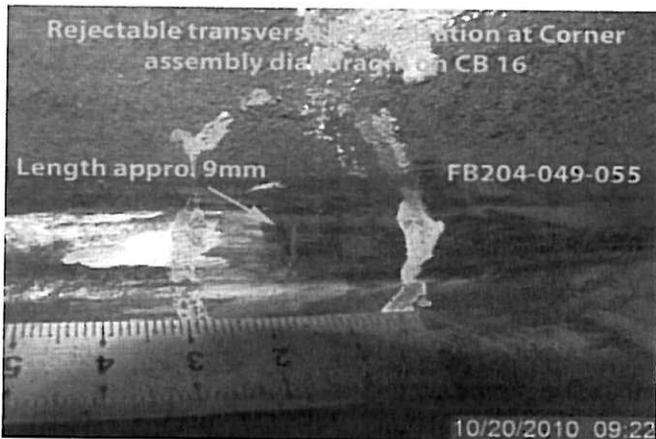
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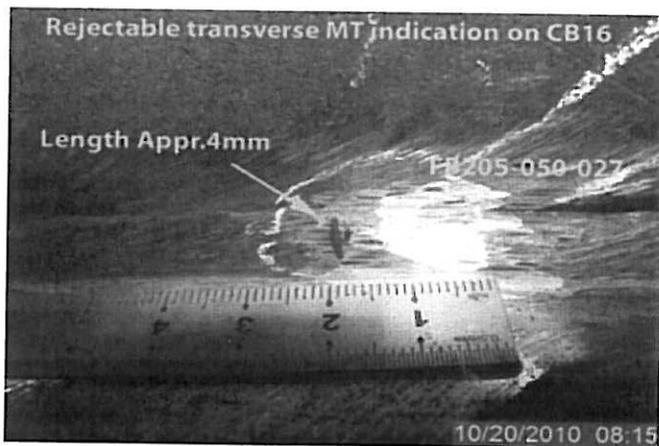
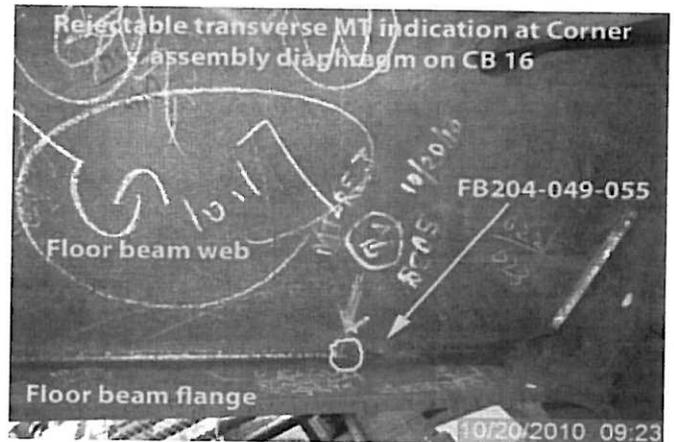
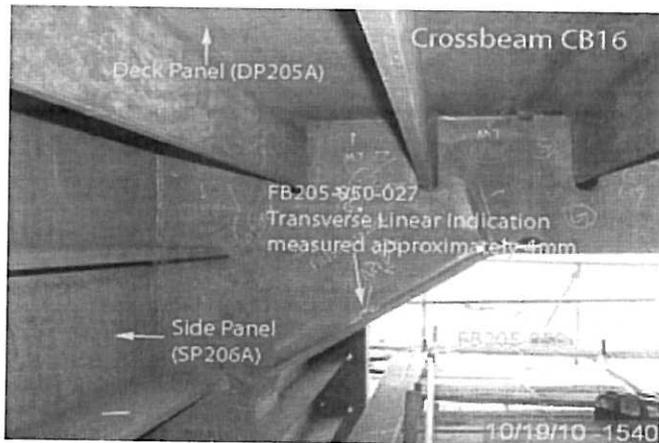
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# QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 3 of 4 )



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**Name of individual from Contractor notified:** Jicai Fang

**Time and method of notification:** 15:30 hours\_10/19/10\_Verbal

**Name of Caltrans Engineer notified:** Laraine Woo, Ching Chao

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**QC Inspector's Name:** Zheng Zhi Wei

**Was QC Inspector aware of the problem:**

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 4 of 4 )

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Yes  No

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

N/A

**Comments:**

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<b>Inspected By:</b>	Tsang, Eric	SMR
<b>Reviewed By:</b>	Wahbeh, Mazen	SMR

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**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-000825**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 25-Oct-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0832**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:** 19-Oct-2010**Description of Non-Conformance:**

During the Quality Assurance (QA) Magnetic Particle Testing (MT) review of welds located on Orthotropic Box Girder (OBG) Cross Beam CB16, this QA Inspector discovered the following issues:

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