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 #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.25B

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

Location: Changxing Island, Shanghai, PRC **Report No:** NCR-000397
Prime Contractor: American Bridge/Fluor Enterprises, a JV **Date:** 04-Sep-2009
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0371

Type of problem:

Welding	☐	**Concrete**	☐	**Other**	☑		
Welding	☐	**Curing**	☐	**Procedural**	☐	**Bridge No:**	34-0006
Joint fit-up	☐	**Coating**	☐	**Other**	☑	**Component:**	North Tower
Procedural	☐	**Procedural**	☐	**Description:**	Missed MT indications on North Tower		

Reference Description: Missed MT indications on North Tower, Lift 1 discovered during additional NDT review

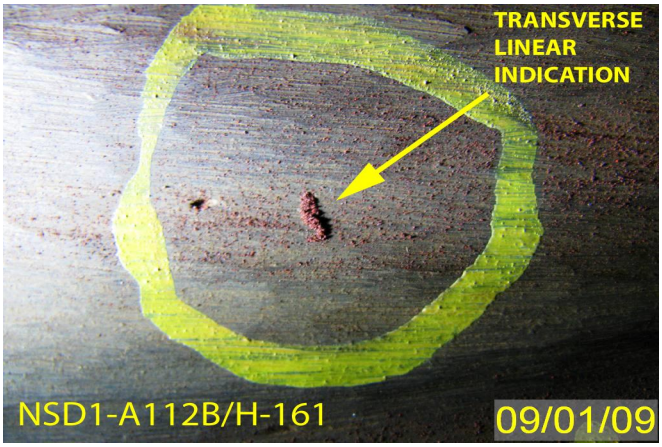
Description of Non-Conformance:

During additional (weld over-check) Magnetic Particle Testing (MT) of accessible welds at the 9 & 13 meter diaphragm elevations of North Tower, Lift 1, QA discovered transverse and longitudinal linear indications at the following welds. These welds were previously tested and accepted by ZPMC Quality Control personnel.

Weld ID - Number of Indications - Type
NSD1-A112A/H-46 - 1 - Transverse Linear Indication
NSD1-A112A/H-43 - 1 - Transverse Linear Indication
NSD1-A112A/H-2 - 2 - Transverse Linear Indication
NSD1-A112A/H-107 - 2 - Transverse Linear Indication
NSD1-A112A/H-85 - 2 - Transverse Linear Indication
NSD1-A112A/H-182 - 2 - Transverse Linear Indication
NSD1-A112A/H-161 - 1 - Transverse Linear Indication
NSD1-A112A/H-72 - 1 - Longitudinal Linear Indication
NSD1-A112A/H-172 - 1 - Longitudinal Linear Indication

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



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) Section 6.26.2 – "Welds that are subject to MT in addition to visual inspection shall have no cracks.

Who discovered the problem: Naddi Sandeep Kumar

Name of individual from Contractor notified: Steve Lawton

Time and method of notification: 09-01-2009, 13:00; Verbal

Name of Caltrans Engineer notified: Scott Kennedy

Time and method of notification: 09-02-2009, 9:00; Verbal

QC Inspector's Name: Lai Tau

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

Inspected By:	Sinevod,Serge	ASMR
Reviewed By:	Wahbeh,Mazen	SMR

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:**	05-Sep-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:**	05.03.06-000360
Subject:	NCR No. ZPMC-0371		

Reference Description: Missed Indications (MT) / North Shaft Lift 1 / Partial Weld Over-Check Transverse & Longitudinal Indications

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:

During additional (weld over-check) Magnetic Particle Testing (MT) of accessible welds at the 9 & 13 meter diaphragm elevations of North Tower, Lift 1, QA discovered transverse and longitudinal linear indications. These welds were previously tested and accepted by ZPMC Quality Control personnel. (see attached NCR for weld ids, number and type of indication)

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) Section 6.26.2 – "Welds that are subject to MT in addition to visual inspection shall have no cracks.

Action Required and/or Action Taken:

Propose a resolution for this systematic non-conformance that addresses the failure of Quality Control to identify the linear indications during magnetic particle testing of the welds. In addition to the welds identified during the limited over-check performed by CT, address how ABF/ZPMC intends to verify that additional indications have not been overlooked throughout the shaft. Provide documentation of steps/actions taken to ensure additional indications have not been overlooked. Address the steps/actions taken by the Quality Control Manager to prevent future occurrences.

In addition to the Quality Control non-conformance, address the material/workmanship for the identified non-conformance including documentation that the identified deficiencies have been brought into compliance with the contract requirements and that additional deficiencies identified by ABF/ZPMC have been remedied. Address the probable causes for the indications and the actions that will be taken to limit future occurrences.

Recent failures by Quality Control to identify linear indications (MT) have resulted in the issuance of NCR ZPMC-0358 and ZPMC-0359 related to Tower.

Transmitted by: Scott Kennedy Sr. Bridge Engineer

Attachments: ZPMC-0371

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

File: 05.03.06

AMERICAN BRIDGE/FLUOR ENTERPRISES, a JV
P.O. BOX 23223 Oakland, CA 94623
Phone (510) 419-0120 / Fax (510) 839-0666

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000360

Subject: NCR No. ZPMC-0371

Dated: **21-Sep-2009**

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

Job Name: SAS Superstructure

Document No.: **ABF-NPR-000367 Rev: 00**

Contractor's Proposed Resolution:

Reference Resolution: ABF has also performed an investigation regarding cracks found during ZPMC, ABF and CT inspections to find a means to prevent these defects from occurring in the first place.

ZPMC MT technicians have been under gone training and testing due to the amount of missed indications found, ABF has implemented overchecks on several welds within the OBG to prevent unacceptable welds from being passed on to CT. ABF has also performed an investigation regarding cracks found during ZPMC, ABF and CT inspections to find a means to prevent these defects from occurring in the first place. As for the specific welds related to this NCR, ZPMC will perform the necessary repairs and submit the repair and inspection documents at a later date for closure of this NCR.

Submitted by:

Attachment(s): ABF-NPR-000367R00

Caltrans' comments:

Status: REJ

Date: 21-Sep-2009

The Department will consider closure of this NCR once the repair doucuments are submitted, reviewed and found to be acceptable.

Submitted by: Lee, Ken

Date: 21-Sep-2009

Attachment(s):

AMERICAN BRIDGE/FLUOR ENTERPRISES, a JV

P.O. BOX 23223 Oakland, CA 94623

Phone (510) 419-0120 / Fax (510) 839-0666

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000360

Subject: NCR No. ZPMC-0371

Dated: **25-Nov-2009**

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

Job Name: SAS Superstructure

Document No.: **ABF-NPR-000367 Rev: 01**

Contractor's Proposed Resolution:

Reference Resolution: ABFJV and ZPMC disputes the basis of the NCR and requests that it be rescinded. These indications have been noted and will be repaired.

This non conformance was written based on the contention that ZPMC had missed the indications which were later found by the Department. On further investigation of this issue, the Department signed off on the QA Verification Form (Green tag) attesting that the welds were acceptable prior to the NCR being written. If the indications in this NCR were present at the time of the inspection then the Department would not have signed off on the QA Verification Form. If indications were discovered in areas not tested by ZPMC then those results should be transmitted in a different means than an NCR. Therefore ABFJV and ZPMC disputes the basis of the NCR and requests that it be rescinded. These indications have been noted and will be repaired.

Submitted by:

Attachment(s): ABF-NPR-000367R01

Caltrans' comments:

Status: CLO

Date: 10-Dec-2009

The Department agrees with the basis of ABFJV and ZPMC's dispute and is rescinding Non-conformance ZPMC-0371. These defects should have been communicated through normal channels and did not warrant a NCR. Non-conformance ZPMC-0371 is closed.

Submitted by: Lee, Ken

Date: 10-Dec-2009

Attachment(s):

DEPARTMENT OF TRANSPORTATION
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: xx.25A

QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

Location: Changxing Island, Shanghai, PRC **Report No:** NCS-000440
Prime Contractor: American Bridge/Fluor Enterprises, a JV **Date:** 13-Jan-2010
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0371

Type of problem:

Welding	☐	**Concrete**	☐	**Other**	☑	
Welding	☐	**Curing**	☐	**Procedural**	☐	**Bridge No:** 34-0006
Joint fit-up	☐	**Coating**	☐	**Other**	☑	**Component:**
Procedural	☐	**Procedural**	☐	**Descripton:**		

Date the Non-Conformance Report was written: 04-Sep-2009

Description of Non-Conformance:

During additional (weld over-check) Magnetic Particle Testing (MT) of accessible welds at the 9 & 13 meter diaphragm elevations of North Tower, Lift 1, QA discovered transverse and longitudinal linear indications at the following welds. These welds were previously tested and accepted by ZPMC Quality Control personnel.

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NSD1-A112A/H-161 - 1 - Transverse Linear Indication
NSD1-A112A/H-72 - 1 - Longitudinal Linear Indication
NSD1-A112A/H-172 - 1 - Longitudinal Linear Indication

Contractor's proposal to correct the problem:

NA

Corrective action taken:

NCR has been rescinded due to indications being discovered outside of are checked by Quality Control Technicians.

Did corrective action require Engineer's approval? ☐ **Yes** ☑ **No**

If so, name of Engineer providing approval: **Date:**

Is Engineer's approval attached?

QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

(Continued Page 2 of 2)

☐ **Yes** ☑ **No**

Comments:

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Inspected By:	Simonis,Jim	Quality Assurance Inspector
Reviewed By:	Wahbeh,Mazen	QA Reviewer