

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-000415

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 21-Sep-2009

Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

NCR #: ZPMC-0389

Type of problem:

Welding	Concrete	Other	
Welding	Curing	Procedural	Bridge No: 34-0006
Joint fit-up	Coating	Other	Component: 135 meter Diaphragm
Procedural	Procedural	Description: 135 meter Diaphragm	

Reference Description: Missed MT indication on 135 meter Diaphragm

Description of Non-Conformance:

During Magnetic Particle Testing (MT) of West Tower, 135 m Diaphragm weld WSD1-DPSA4-6B/B-007, QA discovered a 6mm long linear indication. This weld had been previously tested and accepted by ZPMC Quality Control MT Technicians.



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 D1.5-2002, Section 6.26.2 – “Welds that are subject to MT in addition to visual inspection shall have no cracks.”

Who discovered the problem: Dhanasingh Sukanthan

Name of individual from Contractor notified: Zhang Hui Long

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Time and method of notification: 9/20/2009, 10:00; Verbal

Name of Caltrans Engineer notified: Scott Kennedy

Time and method of notification: 9/21/2009, 12:00; Verbal

QC Inspector's Name: Zhang Jiadi

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 **Date:** 21-Sep-2009
 375 BURMA ROAD
 OAKLAND CA 95607 **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:** 05.03.06-000377
Subject: NCR No. ZPMC-0389
Reference Description: Missed Indication (MT) / West Shaft Lift 4 / 135m Diaphragm

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:** 04

Remarks:

During Magnetic Particle Testing (MT) of West Tower, 135 m Diaphragm weld WSD1-DPSA4-6B/B-007, QA discovered a 6mm long linear indication. This weld had been previously tested and accepted by ZPMC Quality Control MT Technicians.

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 D1.5-2002, 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 indication during magnetic particle testing of the welds. Provide documentation of 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 deficiency has been brought into compliance with the contract requirements. Additionally address the probable cause for the indication 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, ZPMC-0359, ZPMC-0371, ZPMC-0372, ZPMC-0373, ZPMC-0375, ZPMC-0376, ZPMC-0377, ZPMC-383, ZPMC-0384, ZPMC 0386, ZPMC-0387 and ZPMC-0388 related to Tower.

Transmitted by: Scott Kennedy Sr. Bridge Engineer

NCT

(Continued Page 2 of 2)

Attachments: ZPMC-0389

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: 05.03.06-000377

Subject: NCR No. ZPMC-0389

Dated: 16-Oct-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000384 **Rev:** 00

Contractor's Proposed Resolution:

Reference Resolution: ABF JV QCM has implemented training with ZPMC to improve the quality of inspections. ABF JV will provide documentation showing attendance by ZPMC QC inspectors and the subject of training.

ABF JV QCM has implemented training with ZPMC to improve the quality of inspections. ABF JV will provide documentation showing attendance by ZPMC QC inspectors and the subject of training. Topics to be covered during the instruction are: inspection of equipment prior to use, proper conditions for inspection, proper technique for MT, and UT. In addition, ABF JV has committed to perform overchecks in both the Tower and OBG. This will serve two purposes, first to monitor if the training is effective at reducing the number of missed indications and second to ensure missed indications are prevented.

Documentation of repairs and subsequent NDT specific to this report will be transmitted through Daily Welding Reports and will be available in the documentation data base. Based on this course of action, ZPMC is requesting that this proposed resolution be approved with action pending. Once training records are available to be transmitted, ZPMC will request closure of this NCR.

Submitted by:

Attachment(s): ABF-NPR-000384R00

Caltrans' comments:

Status: REJ

Date: 18-Oct-2009

Even though the course of action is acceptable, the department will not consider closure of this NCR (ZPMC-0389) until all the repair documents and training documents are submitted and reviewed.

Submitted by: Lee, Ken

Date: 18-Oct-2009

Attachment(s):

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000377

Subject: NCR No. ZPMC-0389

Dated: 06-Nov-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000384 Rev: 01

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has removed the indications by grinding, tested the welds and found them acceptable. ZPMC requests closure of this NCR.

ZPMC has removed the indications by grinding, tested the welds and found them acceptable. ZPMC requests closure of this NCR.

Submitted by:

Attachment(s): ABF-NPR-000384R01;

Caltrans' comments:

Status: AAP

Date: 08-Nov-2009

The Department finds the repair documents acceptable. However, all issues listed on the Department's transmittal letter need to be addressed.

Please address the failure of Quality Control to identify the linear indication during magnetic particle testing of the welds and the steps/ actions taken by the Quality Control Manager to prevent future occurrences. Please also address the probable causes for the indication and the action that will be taken to limit future occurrences.

Submitted by: Lee, Ken

Date: 08-Nov-2009

Attachment(s):



No. T-074

LETTER OF RESPONSE

TO: American Bridge/Flour JV

DATE: 2009-11-6

REGARDING: NCR-000415(ZPMC-0389)

ZPMC received NCR-000415(ZPMC-0389), it mentioned QA discovered a 6mm long linear indication during MT of West Tower, 135M diaphragm weld WSD1-DPSA4-6B/B-007.

ZPMC acknowledged this. When ZPMC received this information, the grinder was arranged and the indication was removed from the weld surface. ZPMC MT technician retested the weld subsequently. And the double diaphragm was green tagged after CT's verification.

So ZPMC hope Caltrans could take a review and close this NCR basing on attached document.

ATTACHMENT:

NCR-000415(ZPMC-0389)

T787-MT-5935

Picture 1 of CT verification

Picture 2 of approved green tag


2009-11-6



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-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: 05.03.06-000377

Subject: NCR No. ZPMC-0389

Reference Description: Missed Indication (MT) / West Shaft Lift 4 / 135m Diaphragm

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:** 04

Remarks:

During Magnetic Particle Testing (MT) of West Tower, 135 m Diaphragm weld WSD1-DPSA4-6B/B-007, QA discovered a 6mm long linear indication. This weld had been previously tested and accepted by ZPMC Quality Control MT Technicians.

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 D1.5-2002, 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 indication during magnetic particle testing of the welds. Provide documentation of 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 deficiency has been brought into compliance with the contract requirements. Additionally address the probable cause for the indication 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, ZPMC-0359, ZPMC-0371, ZPMC-0372, ZPMC-0373, ZPMC-0375, ZPMC-0376, ZPMC-0377, ZPMC-383, ZPMC-0384, ZPMC 0386, ZPMC-0387 and ZPMC-0388 related to Tower.

Transmitted by: Scott Kennedy Sr. Bridge Engineer

NCT

(Continued Page 2 of 2)

Attachments: ZPMC-0389

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

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, PRC**Report No:** NCR-000415**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 21-Sep-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0389**Type of problem:**Welding Concrete Other Welding Curing Procedural **Bridge No:** 34-0006Joint fit-up Coating Other **Component:** 135 meter DiaphragmProcedural Procedural **Description:** 135 meter Diaphragm**Reference Description:** Missed MT indication on 135 meter Diaphragm**Description of Non-Conformance:**

During Magnetic Particle Testing (MT) of West Tower, 135 m Diaphragm weld WSD1-DPSA4-6B/B-007, QA discovered a 6mm long linear indication. This weld had been previously tested and accepted by ZPMC Quality Control MT Technicians.

**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 D1.5-2002, Section 6.26.2 – “Welds that are subject to MT in addition to visual inspection shall have no cracks.”

Who discovered the problem: Dhanasingh Sukanthan**Name of individual from Contractor notified:** Zhang Hui Long

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Time and method of notification: 9/20/2009, 10:00; Verbal

Name of Caltrans Engineer notified: Scott Kennedy

Time and method of notification: 9/21/2009, 12:00; Verbal

QC Inspector's Name: Zhang Jiadi

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



REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 T787-MT-5935 DATE日期 2009.09.23 PAGE OF页码 1/1 Revision No: 0

PROJECT NO. 工程编号: ZP06-787 CONTRACTOR: 用户: CALTRANS

DRAWING NO. 图号: SA4-50/WP4-28/WP4-39/WP4-21/WP4-38 Tower(W) 135m diaphragm CALTRANS CONTRACT NO.: 加州工程编号 04-0120F4

REFERENCING CODE 参考规范编码 AWS D1.5-2002 ACCEPTANCE STANDARD 接受标准 AWS D1.5-2002 PROCEDURE NO. 程序编号 ZPQC-MT-01 CALIBRATION DUE DATE 仪器校正有效期 Dec. 28ST, 2009

EQUIPMENT 设备 MT YOKE MANUFACTURER 制造商 PARKER MODEL NO. 样式编号 B310S SERIAL NO. 连续编号 5620 5395 5617

MAGNETIZING METHOD 磁化方法 Continuous magnetic yoke 磁轭式连续法 CURRENT 电流 AC

PARTICLE TYPE 磁粉类型 Dry magnet powder 干磁粉 YOKE SPACING 磁轭间距 70~150mm

MATERIAL TO BE EXAMINED 检测材料 WELDING 焊接件 CASTING 铸件 FORGING 锻造 Material & thickness 母材,厚度 A709M-HPS-485T2-Z 75/40mm

WELDING PROCESS 焊接方法 SMAW TYPE OF JOINT 焊缝类型 T-JOINT

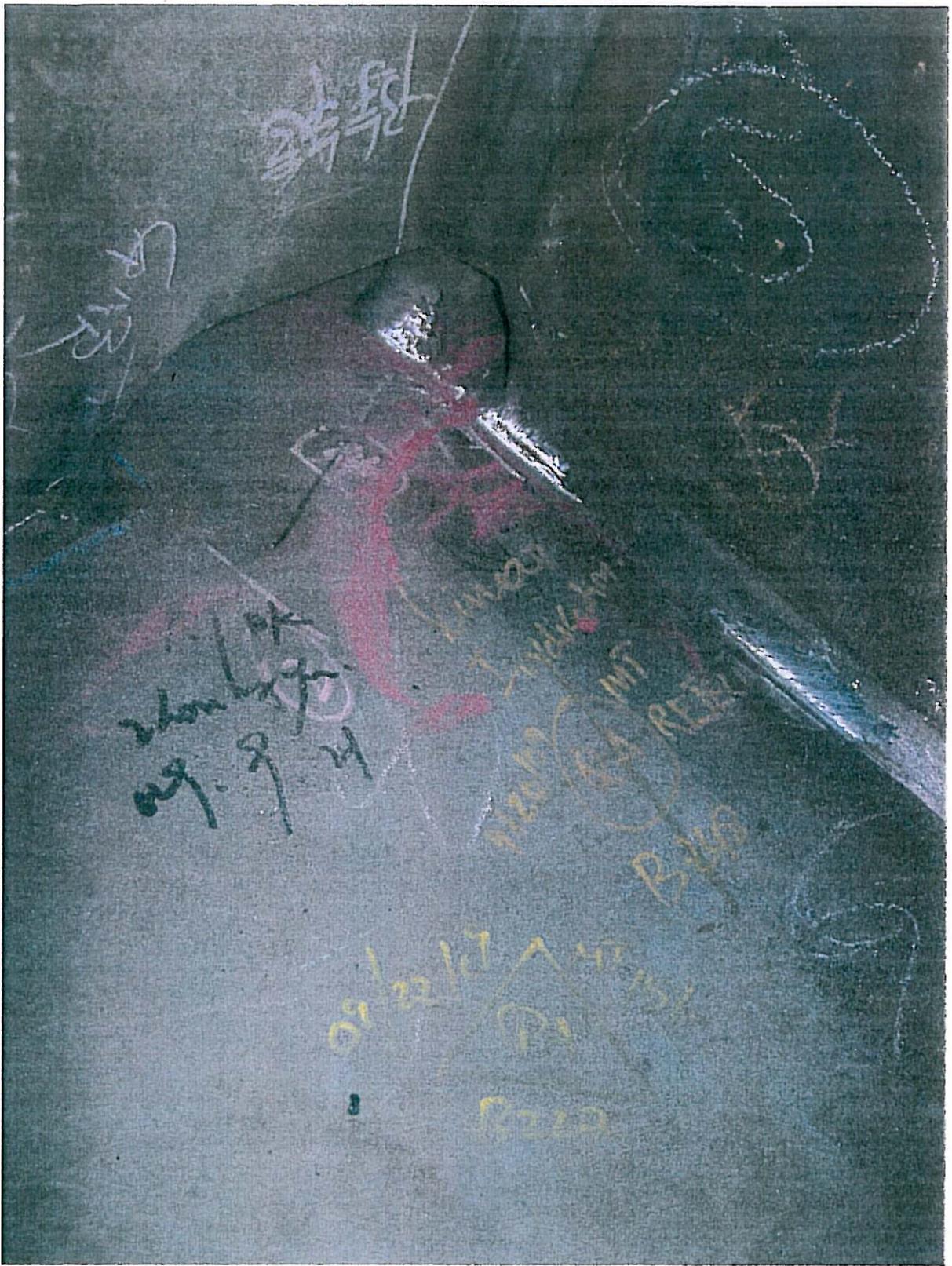
WELD I.D. 焊缝编号	DISCONTINUITY不连续性			ACCEPT 接受	REJECT 拒收	REMARKS 备注
	INDICATION 指示	TYPE 类型	LENGTH IN mm 长度			
WSD1-DPSA4-6B/B-11				ACC.		100%MT
WSD1-DPSA4-6B/B-10				ACC.		100%MT
WSD1-DPSA4-6B/B-7				ACC.		100%MT
WSD1-DPSA4-6B/B-6				ACC.		100%MT
WSD1-DPSA4-6B/B-18				ACC.		100%MT
WSD1-DPSA4-6B/B-19				ACC.		100%MT
WSD1-DPSA4-6B/B-14				ACC.		100%MT
WSD1-DPSA4-6B/B-15				ACC.		100%MT

AFTER HSR1(T)-9359

BLANK

EXAMINED BY主探 Zhou Dongyun Zhou Dongyun 09.09.23 REVIEWED BY 审核 Wang Weli Wang Weli 09.09.23
LEVEL - II SIGN 签名 / DATE日期 LEVEL-II SIGN / DATE日期

质量经理 / QCM Lu Tianhua Lu Tianhua 09.09.23 用户CUSTOMER
签字 SIGN / 日期 DATE 签字 SIGN / 日期 DATE





MSD1-B5M

MSD-DP-4-03/B

Blue label with illegible text

ASTM A70

WTS

14

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000377

Subject: NCR No. ZPMC-0389

Dated: 09-Dec-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000384 **Rev:** 02

Contractor's Proposed Resolution:

Reference Resolution: In order to improve identification of these indications ABFJV's QCM has conducted training with ZPMC's MT inspectors and submitted the training agenda and sign in sheet to the Department.

The ZPMC QC and QA Departments are aware of the high number of missed indications in the Tower. In order to improve identification of these indications ABFJV's QCM has conducted training with ZPMC's MT inspectors and submitted the training agenda and sign in sheet to the Department. Refresher training will be conducted to continue the emphasis on performing quality inspections. In addition, ABFJV has implemented NDT verification of welds in the Tower to ensure that welds are acceptable prior to being inspected by the Engineer. Based on these actions, ZPMC requests closure of this NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000384R02

Caltrans' comments:

Status: CLO

Date: 09-Dec-2009

The proposed resolution is acceptable. The Department concurs that Non-conformance ZPMC-0389 is closed.

Submitted by: Lee, Ken

Attachment(s):

Date: 09-Dec-2009

DEPARTMENT OF TRANSPORTATION

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Quality Assurance and Source Inspection



Bay Area Branch
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(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-000324**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 10-Nov-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0389**Type of problem:**

Welding	Concrete	Other	
Welding	Curing	Procedural	Bridge No: 34-0006
Joint fit-up	Coating	Other	Component:
Procedural	Procedural	Descriptor:	

Date the Non-Conformance Report was written: 21-Sep-2009**Description of Non-Conformance:**

During Magnetic Particle Testing (MT) of West Tower, 135 m Diaphragm weld WSD1-DPSA4-6B/B-007, QA discovered a 6mm long linear indication. This weld had been previously tested and accepted by ZPMC Quality Control MT Technicians.

Contractor's proposal to correct the problem:

Repair affected weld and submit NDT documentation indicating weld soundness.

Corrective action taken:

The weld has been repaired and NDT documentation indicating weld soundness has been submitted. To resolve the recurring failure for QC to detect MT indications, ABFJV QCM has implemented training with ZPMC to improve quality of inspectors. Topics include: inspection of equipment prior to use, proper conditions for inspection, proper technique for MT & UT. In addition, ABFJV is performing weld over-checks. This will serve two purposes, first to monitor if the training is effective at reducing the number of missed indications and second, to ensure missed indications are prevented.

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

Inspected By: Sinevod, Serge

Quality Assurance Inspector

Reviewed By: Wahbeh, Mazen

QA Reviewer