

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



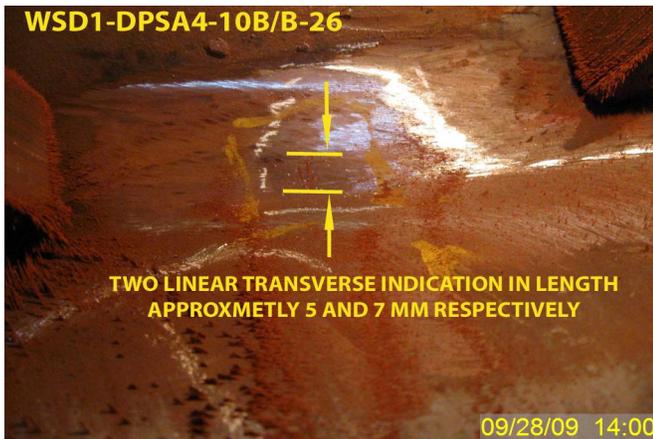
Bay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

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-000439**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 28-Sep-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0413**Type of problem:**

Welding	Concrete	Other	
Welding	Curing	Procedural	Bridge No: 34-0006
Joint fit-up	Coating	Other	Component: West Tower
Procedural	Procedural	Description: West Tower, 119m Diaphragm	

Reference Description: Missed MT indications on West Tower, 119m Diaphragm**Description of Non-Conformance:**

During Magnetic Particle Testing (MT) of West Tower, 119m Diaphragm weld joints WSD1-DPSA4-10B/B-26 and 27, QA discovered three rejectable transverse, linear indications measuring approximately 3mm to 7mm in length. These welds were previously tested and accepted by ZPMC QC 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: Subhasis Bera

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Name of individual from Contractor notified: Kong Xian Hui

Time and method of notification: 9/28/2009, 14:30; Verbal

Name of Caltrans Engineer notified: Scott Kennedy

Time and method of notification: 9/31/2009, 12:00; Verbal

QC Inspector's Name: Zhao Chen Sun

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
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Reviewed By:	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: 02-Oct-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: 05.03.06-000399

Subject: NCR No. ZPMC-0413

Reference Description: Missed Indication (MT) / West Shaft Lift 4 / 119m Diaphragm / Transverse 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:** 04

Remarks:

During Magnetic Particle Testing (MT) of West Tower, 119m Diaphragm weld joints WSD1-DPSA4-10B/B-26 and 27, QA discovered three rejectable transverse, linear indications measuring approximately 3mm to 7mm in length. These welds were previously tested and accepted by ZPMC QC 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 indications 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 deficiencies have been brought into compliance with the contract requirements. Additionally 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, ZPMC-0359, ZPMC-0371, ZPMC-0372, ZPMC-0373, ZPMC-0375, ZPMC-0376, ZPMC-0377, ZPMC-383, ZPMC-0384, ZPMC 0386, ZPMC-0387, ZPMC-0388, ZPMC-0389, ZPMC-0390, ZPMC-0401 and ZPMC-0408 related to Tower.

NCT

(Continued Page 2 of 2)

Transmitted by: Scott Kennedy Sr. Bridge Engineer

Attachments: ZPMC-0413

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: 05.03.06-000399

Subject: NCR No. ZPMC-0413

Dated: 16-Oct-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000395 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-000395R00

Caltrans' comments:

Status: REJ

Date: 19-Oct-2009

Even though the course of action is acceptable, the department will not consider closure of this NCR (ZPMC-0413) until all the repair documents and training documents are submitted and reviewed.

Submitted by: Lee, Ken

Date: 19-Oct-2009

Attachment(s):

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000399

Subject: NCR No. ZPMC-0413

Dated: 30-Nov-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000395 **Rev:** 01

Contractor's Proposed Resolution:

Reference Resolution: Attached is documentation of the repair of the three missed indications and subsequent NDT. The NDT documentation shows that the weld is acceptable.

Attached is documentation of the repair of the three missed indications and subsequent NDT. The NDT documentation shows that the weld is acceptable. ABFJV's QCM has conducted training with ZPMC's MT inspectors and has previously submitted the training agenda and sign in sheet to the Department for verification to show the steps ABFJV is taking to address the missed indications. In addition, ABFJV has implemented NDT verification of welds to ensure that welds are acceptable prior to being inspected by the Engineer. On September 24, 2009 an exploration by ABFJV, ZPMC and the Department found that these indications were slag or porosities which were the result of insufficient interpass cleaning. ABFJV has reminded ZPMC of the importance of interpass cleaning of the welds and ZPMC acknowledges that interpass cleaning must be a focus. Based on these actions and the attached documentation, ZPMC requests closure of this NCR.

Submitted by:

Attachment(s): ABF-NPR-000395R01;

Caltrans' comments:

Status: CLO

Date: 10-Dec-2009

The proposed resolution is acceptable. The Department concurs that Non-conformance ZPMC-0413 is closed.

Submitted by: Lee, Ken

Date: 10-Dec-2009

Attachment(s):



No. T-093

LETTER OF RESPONSE

TO: American Bridge/Flour JV

DATE: 2009-11-25

REGARDING: NCR-000439 (ZPMC-0413)

ZPMC received NCR-000439 (ZPMC-0413), it mentioned QA discovered some rejectable transverse linear indications on 119M diaphragm weld.

ZPMC acknowledged this problem and the worker was arranged to grind off the indications. After the surface grinding, MT was performed to warrant weld quality.

The double diaphragm was green tagged after CT people's verification. So ZPMC hope Caltrans could take a review and consider close the NCR.

ATTACHMENT:

NCR-000439 (ZPMC-0413)

T787-MT-6185

T787-MT-6186


2009-11-25

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: 02-Oct-2009

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-0413

Job Name: SAS Superstructure
Document No: 05.03.06-000399

Reference Description: Missed Indication (MT) / West Shaft Lift 4 / 119m Diaphragm / Transverse 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: 04

Remarks:

During Magnetic Particle Testing (MT) of West Tower, 119m Diaphragm weld joints WSD1-DPSA4-10B/B-26 and 27, QA discovered three rejectable transverse, linear indications measuring approximately 3mm to 7mm in length. These welds were previously tested and accepted by ZPMC QC 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 indications 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 deficiencies have been brought into compliance with the contract requirements. Additionally 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, ZPMC-0359, ZPMC-0371, ZPMC-0372, ZPMC-0373, ZPMC-0375, ZPMC-0376, ZPMC-0377, ZPMC-383, ZPMC-0384, ZPMC 0386, ZPMC-0387, ZPMC-0388, ZPMC-0389, ZPMC-0390, ZPMC-0401 and ZPMC-0408 related to Tower.

NCT

(Continued Page 2 of 2)

Transmitted by: Scott Kennedy Sr. Bridge Engineer

Attachments: ZPMC-0413

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

File: 05.03.06

DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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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-000439

Prime Contractor; American Bridge/Fluor Enterprises, a JV

Date: 28-Sep-2009

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

NCR #: ZPMC-0413

Type of problem:

Welding Concrete Other
Welding Curing Procedural Bridge No: 34-0006
Joint fit-up Coating Other Component: West Tower
Procedural Procedural Description: West Tower, 119m Diaphragm

Reference Description: Missed MT indications on West Tower, 119m Diaphragm

Description of Non-Conformance:

During Magnetic Particle Testing (MT) of West Tower, 119m Diaphragm weld joints WSD1-DPSA4-10B/B-26 and 27, QA discovered three rejectable transverse, linear indications measuring approximately 3mm to 7mm in length. These welds were previously tested and accepted by ZPMC QC 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: Subhasis Bera

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Name of individual from Contractor notified: Kong Xian Hui

Time and method of notification: 9/28/2009, 14:30; Verbal

Name of Caltrans Engineer notified: Scott Kennedy

Time and method of notification: 9/31/2009, 12:00; Verbal

QC Inspector's Name: Zhao Chen Sun

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-6185 DATE日期 2009.10.02 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: WSD1-DPSA4-10 TOWER (W) 119M UPPER 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. 28 ST , 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	<input checked="" type="checkbox"/> WELDING 焊接件 <input type="checkbox"/> CASTING 铸件 <input type="checkbox"/> FORGING 锻造	Material & thickness 母材,厚度	A709M-345T2 A709M-HPS-485WT2-Z 20/75 mm
WELDING PROCESS 焊接方法	FCAW	TYPE OF JOINT 焊缝类型	CORNER JOINT BUTT

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-DPSA4-10A/B-3						*
WSD1-DPSA4-10A/B-4						*
WSD1-DPSA4-10A/B-5						*
WSD1-DPSA4-10A/B-6						*
WSD1-DPSA4-10A/B-7						*
WSD1-DPSA4-10A/B-8				ACC.		100%MT
WSD1-DPSA4-10B/B-26				ACC.		100%MT
WSD1-DPSA4-10B/B-1				ACC.		100%MT

* WSD1-DPSA4-10A/B-8、WSD1-DPSA4-10B/B-26、WSD1-DPSA4-10B/B-1 were MT inspection and ACC, which is the result of required 10% MT.
 * WSD1-DPSA4-10A/B-8、WSD1-DPSA4-10B/B-26、WSD1-DPSA4-10B/B-1 焊缝经MT检测合格, 累积检测长度已经达到了此批要求的10%检测长度。

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EXAMINED BY 主探 Zhou Dongyun LEVEL - II SIGN 签名 / DATE 日期 2009.10.3	REVIEWED BY 审核 Cai Xinxin LEVEL-II SIGN / DATE 日期 2009.10.3
质量经理 / QCM Lin Jianhua 签字 SIGN / 日期 DATE 2009.10.4	用户 CUSTOMER 签字 SIGN / 日期 DATE



REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 T787-MT-6186	DATE日期 2009.10.02	PAGE OF页码 1/1	Revision No: 0
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PROJECT NO. 工程编号: ZP06-787	CONTRACTOR: 用户: CALTRANS
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DRAWING NO. 图号: WSD1-SA4-50 TOWER (W) 119M LOWER DIAPHRAGM	CALTRANS CONTRACT NO.: 加州工程编号 04-0120F4
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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. 28 ST , 2009
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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
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MAGNETIZING METHOD 磁化方法	Continuous magnetic yoke 磁轭式连续法	CURRENT 电流	AC
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PARTICLE TYPE 磁粉类型	Dry magnet powder 干磁粉	YOKE SPACING 磁轭间距	70~150mm
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MATERIAL TO BE EXAMINED 检测材料	<input checked="" type="checkbox"/> WELDING 焊接件 <input type="checkbox"/> CASTING 铸件 <input type="checkbox"/> FORGING 锻造	Material & thickness 母材,厚度	A709M-345T2 A709M-HPS-485WT2-Z 20/75 mm
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WELDING PROCESS 焊接方法	FCAW	TYPE OF JOINT 焊缝类型	CORNER JOINT BUTT
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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-SA4-50-3						*
WSD1-SA4-50-4						*
WSD1-SA4-50-5				ACC.		100%MT
WSD1-SA4-50-6						*
WSD1-SA4-50-7						*
WSD1-SA4-50-8						*
WSD1-DPSA4-10B/B-27				ACC.		100%MT
WSD1-DPSA4-10B/B-2				ACC.		100%MT

* WSD1-SA4-50-5、WSD1-DPSA4-10B/B-27、WSD1-DPSA4-10B/B-2 were MT inspection and ACC, which is the result of required 10% MT.
* WSD1-SA4-50-5、WSD1-DPSA4-10B/B-27、WSD1-DPSA4-10B/B-2 焊缝经MT检测合格, 累积检测长度已经达到了此批要求的10%检测长度。

BLANK

EXAMINED BY主探 Zhou Dongyun Zhou Dongyun 2009.10.3 LEVEL-II SIGN 签名 / DATE日期	REVIEWED BY 审核 Cai Xinxin 2009.10.3 LEVEL-II SIGN / DATE日期
质量经理 / QCM Lu Jianting 2009.10.3 签字 SIGN / 日期 DATE	用户CUSTOMER 签字 SIGN / 日期 DATE

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, PRC**Report No:** NCS-000334**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 23-Nov-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0413**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: 28-Sep-2009**Description of Non-Conformance:**

During Magnetic Particle Testing (MT) of West Tower, 119m Diaphragm weld joints WSD1-DPSA4-10B/B-26 and 27, QA discovered three rejectable transverse, linear indications measuring approximately 3mm to 7mm in length. These welds were previously tested and accepted by ZPMC QC MT technicians.

Contractor's proposal to correct the problem:

Repair affected welds.

Corrective action taken:

The affected welds have been repaired, verified by QA, and green tagged. 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.

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