

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, PR China**Report No:** NCR-000877**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 27-Oct-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0839**Type of problem:**

Welding	Concrete	Other	
Welding	Curing	Procedural	Bridge No: 34-0006
Joint fit-up	Coating	Other	Component: Tower Lift 5 Grillage, East and West
Procedural	Procedural	Description:	

Reference Description: Repair of Backing Bars for CJP weld joints**Description of Non-Conformance:**

During the Caltrans Quality Assurance (QA) in-process observation on Tower Lift-5 grillages, East and West this QA Inspector discovered the following issues:

-West tower Lift-5:-

- 1) Non-Fused backing bar requires removal -joint -WSD1-TL5-4B/F#7,36
- 2) Non-Fused backing bar requires removal -joint-WSD1-TL5-4B/F#8,35
- 3) Buckled backing bar requires removal -joint-WSD1-TL5-4B/F#24
- 4) Non-Fused backing bar requires removal -joint-WSD1-TL5-4B/F#4

-East tower Lift-5:-

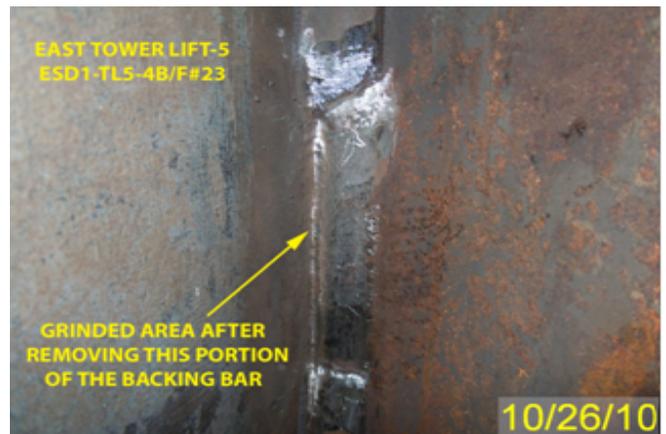
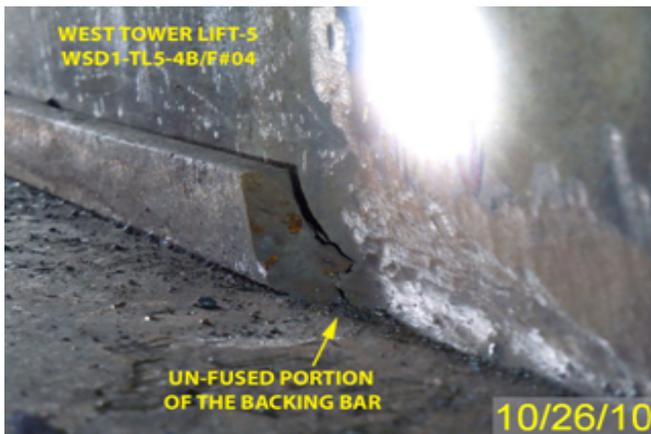
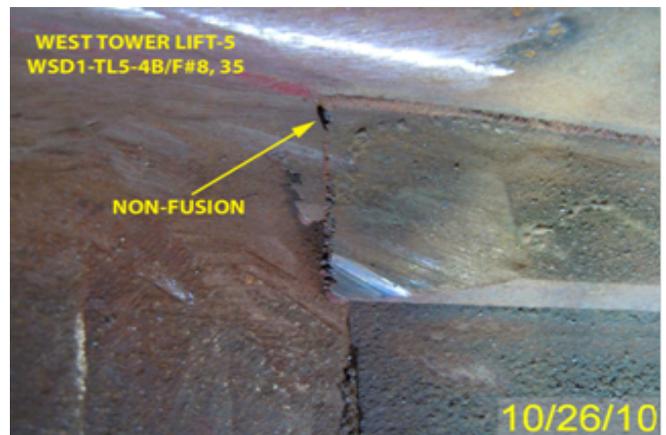
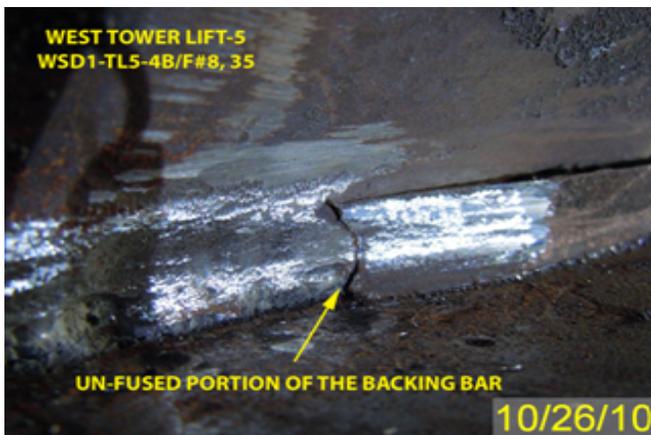
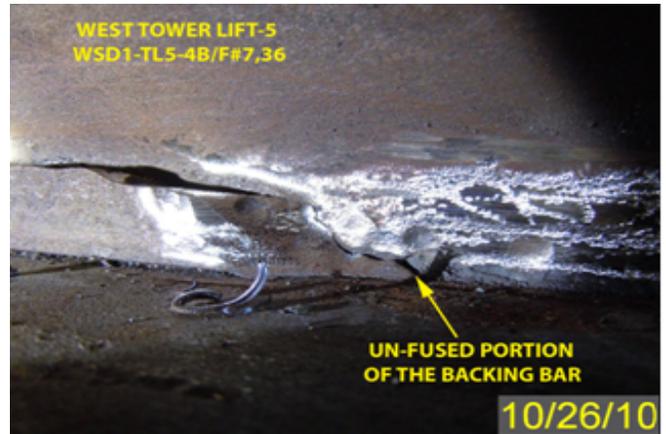
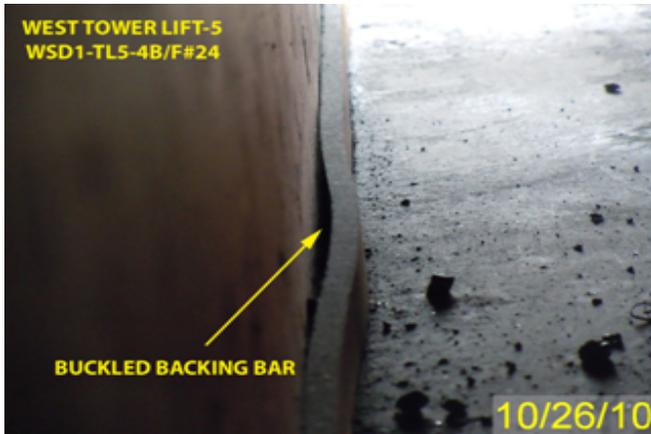
- 1) Area where backing bar has been removed requires back welding -joint ESD1-TL5-2B/F#23

-As per AWS D1.5 the RFI-002099R0 the groove welds made with steel backing shall have the weld metal thoroughly fused. The remaining ends of the backing bar shall be tapered in with and in depth at a slope no steeper than 1:2.5, as shown in the sketch attached with the referenced RFI.

-Above mentioned welds are T-joint complete joint penetration (CJP) welds.

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 3)



Applicable reference:

AWS D1.5 2002, Section 3.13.2: "Groove welds made with the use of steel backing shall have the weld metal thoroughly fused with the backing."

RFI-002099R0: The remaining ends of the backing bar shall be tapered in with and in depth at a slope no steeper than 1:2.5, as shown in the sketch attached with the referenced RFI.

AWS D1.5 2002, Section 4.6.9: "CJP groove welds made without the use of steel backing shall have the root gouged to sound metal before welding is started from the second side."

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 3 of 3)

Who discovered the problem: Naddi Sandeep Kumar

Name of individual from Contractor notified: Mr. Jeff Chen

Time and method of notification: 900 hours, 10/28/10, email

Name of Caltrans Engineer notified: Jim Reid

Time and method of notification: 1000 hours 10/28/10, verbal

QC Inspector's Name: Mr.Zhao

Was QC Inspector aware of the problem: 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 Thomas Ho (86)15002048250, who represents the Office of Structural Materials for your project.

Inspected By: Ng,Michael

QA Inspector

Reviewed By: Devey,Jim

SMR



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: 29-Oct-2010

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: 05.03.06-000834

Subject: NCR No. ZPMC-0839

Reference Description: Repair of Backing Bars for CJP weld joints

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:** 05

Remarks:

During the Caltrans Quality Assurance (QA) in-process observation on Tower Lift-5 grillages, East and West this QA Inspector discovered the following issues:

-West tower Lift-5:-

- 1) Non-Fused backing bar requires removal -joint -WSD1-TL5-4B/F#7,36
- 2) Non-Fused backing bar requires removal -joint-WSD1-TL5-4B/F#8,35
- 3) Buckled backing bar requires removal -joint-WSD1-TL5-4B/F#24
- 4) Non-Fused backing bar requires removal -joint-WSD1-TL5-4B/F#4

-East tower Lift-5:-

- 1) Area where backing bar has been removed requires back welding -joint ESD1-TL5-2B/F#23

-As per AWS D1.5 the RFI-002099R0 the groove welds made with steel backing shall have the weld metal thoroughly fused. The remaining ends of the backing bar shall be tapered in with and in depth at a slope no steeper than 1:2.5, as shown in the sketch attached with the referenced RFI.

-Above mentioned welds are T-joint complete joint penetration (CJP) welds.

Action Required and/or Action Taken:

Propose resolutions for the identified non-conformance items and document that the various deficiencies have been brought in compliance with contract requirements. Also propose a resolution that addresses the apparent failure of Quality Control to identify the non-conformance with the appropriate Welding Procedure Specification (WPS). Provide documentation of the steps taken by the Quality Control Manager to prevent future occurrences.

The response for the resolution of this issue is requested within 7 days.

NCT

(Continued Page 2 of 2)

Transmitted by: Sean Eagen Transportation Engineer

Attachments: ZPMC-0839

cc: Rick Morrow, Peter Siegenthaler, Brian Boal, Mark Woods, 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: 05.03.06-000834

Subject: NCR No. ZPMC-0839

Dated: 10-Jan-2011

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000896 Rev: 00

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has repaired the areas in question and is providing the NDT to show that it is acceptable.
ZPMC has repaired the areas in question and is providing the NDT to show that it is acceptable. ZPMC requests closure of this NCR.

Submitted by: Ishibashi, Joshua
Attachment(s): ABF-NPR-000896R00;

Caltrans' comments:

Status: CLO
Date: 10-Jan-2011

This proposed resolution is acceptable. The documentation received is sufficient and the Department concurs that Non-Conformance ZPMC-0839 is closed.

Submitted by: Eagen, Sean
Attachment(s):

Date: 10-Jan-2011



No. T-180

LETTER OF RESPONSE

TO: American Bridge/Flour JV

DATE: 2010-12-20

REGARDING: NCR-000877(ZPMC-0839)/NCR-000888(ZPMC-850),

ZPMC received two NCRs, both of which are related to backing bar of tower lift 5.

When got these NCRs, ZPMC conducted repair work, and some welds location were fixed treated through grinding way, the others were fixed by welding.

After two time inspections, these areas satisfied the requirement by CT.

Here attached related NDT reports, hope CT to take a review and close these NCRs.

ATTACHMENT:

NCR-000877(ZPMC-0839)

NCR-000888(ZPMC-0850)

T787-MT-11520

T787-UT-3313

Zhang Wanli

2010.12.20

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Contract #: 04-0120F4

City: SF/ALA Rte: 80 PM: 13.2/13.9

File #: 69.25B

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

Location: Changxing Island, Shanghai, PR China

Report No: NCR-000877

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 27-Oct-2010

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

NCR #: ZPMC-0839

Type of problem:

Welding Concrete Other Welding Curing Procedural Joint fit-up Coating Other Procedural Procedural Description:

Bridge No: 34-0006

Component: Tower Lift 5 Grillage, East and West

Reference Description: Repair of Backing Bars for CJP weld joints

Description of Non-Conformance:

During the Caltrans Quality Assurance (QA) in-process observation on Tower Lift-5 grillages, East and West this QA Inspector discovered the following issues:

-West tower Lift-5:-

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-East tower Lift-5:-

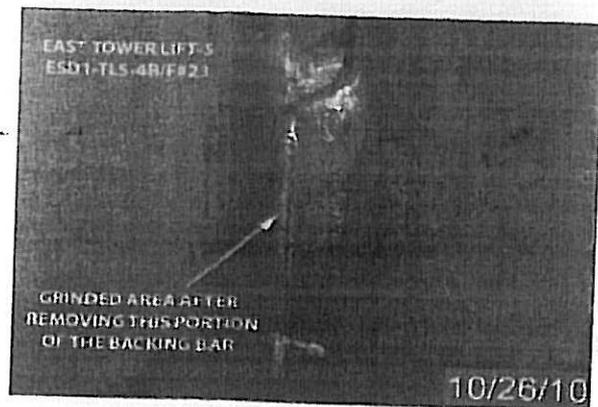
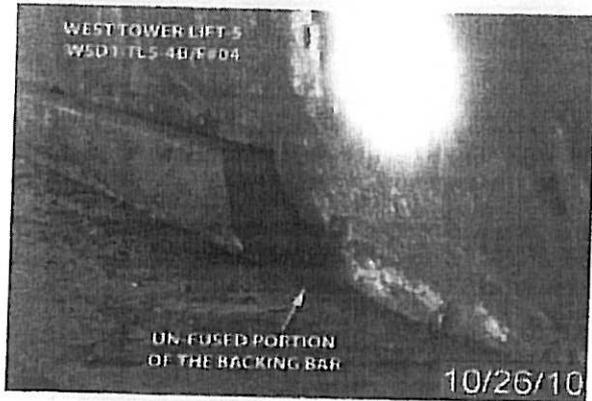
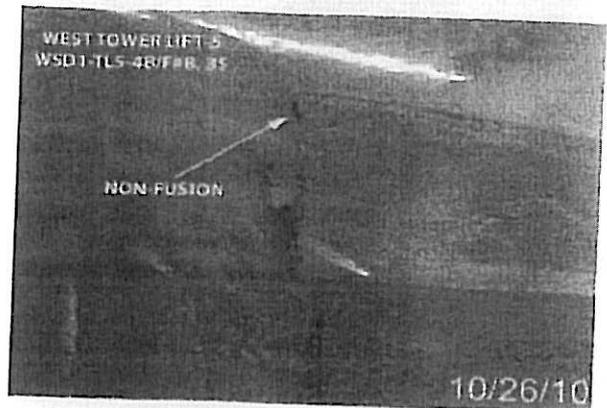
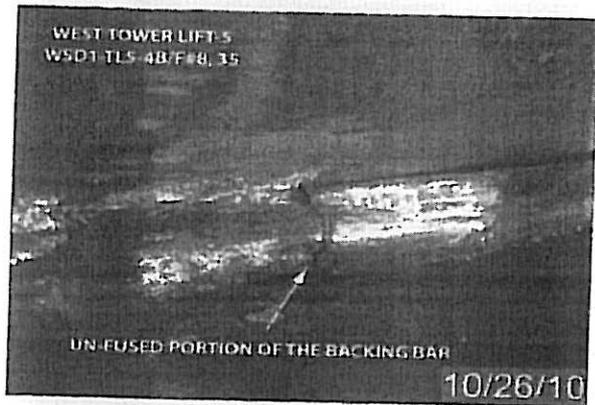
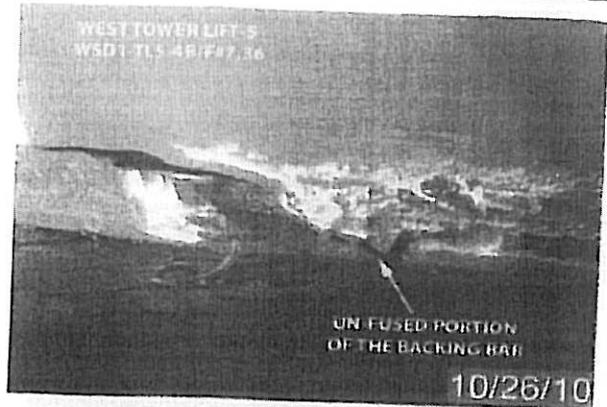
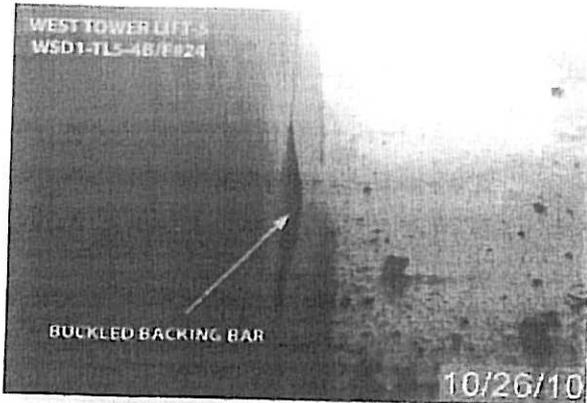
- 1) Area where backing bar has been removed requires back welding -joint ESD1-TL5-2B/F#23

-As per AWS D1.5 the RFI-002099R0 the groove welds made with steel backing shall have the weld metal thoroughly fused. The remaining ends of the backing bar shall be tapered in with and in depth at a slope no steeper than 1:2.5, as shown in the sketch attached with the referenced RFI.

-Above mentioned welds are T-joint complete joint penetration (CJP) welds.

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 3)



Applicable reference:

AWS D1.5 2002, Section 3.13.2: "Groove welds made with the use of steel backing shall have the weld metal thoroughly fused with the backing."

RFI-002099R0: The remaining ends of the backing bar shall be tapered in with and in depth at a slope no steeper than 1:2.5, as shown in the sketch attached with the referenced RFI.

AWS D1.5 2002, Section 4.6.9: "CJP groove welds made without the use of steel backing shall have the root gouged to sound metal before welding is started from the second side."

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 3 of 3)

Who discovered the problem: Naddi Sandeep Kumar
Name of individual from Contractor notified: Mr. Jeff Chen
Time and method of notification: 900 hours, 10/28/10, email
Name of Caltrans Engineer notified: Jim Reid
Time and method of notification: 1000 hours 10/28/10, verbal
QC Inspector's Name: Mr. Zhao
Was QC Inspector aware of the problem: 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 Thomas Ho (86)15002048250, who represents the Office of Structural Materials for your project.

Inspected By: Ng, Michael

QA Inspector

Reviewed By: Devey, Jim

SMR

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 Cty: SF/ALA Rte: 80 PM: 13.2/13.9
 File #: 69.25B

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

Location: Changxing Island, Shanghai, P.R. China

Report No: NCR-000888

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 08-Nov-2010

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

NCR #: ZPMC-0850

Type of problem:

Welding Concrete Other

Welding Curing Procedural

Joint fit-up Coating Other

Procedural Procedural Description:

Bridge No: 34-0006

Component: Lift 5 Grillage West Shaft

Reference Description: Lift 5 Grillage West Shaft Non-fusion Backing bar

Description of Non-Conformance:

During the Caltrans Quality Assurance (QA) in-process observation on West Tower Lift-5 grillage, this QA Inspector discovered the following issues:

-ZPMC offered NWIT #007275 for Visual Testing (VT) and Magnetic Particle Testing (MT) of a repair to an area of backing bar non-fusion.

-The affected weld locations are as follows:

1) WSD1-TL5-4B/F#07; 36 – Non-fused backing bar has not been completely removed. There is a slag line at the entire visible root pass area.

2) WSD1-TL5-4B/F#04 – Root pass has been ground out to an average depth of 1.5mm. Back welding has not been performed.

-Welds are T-Joint Complete Joint Penetration (CJP) welds.

-The component located at fabrication Bay#11.

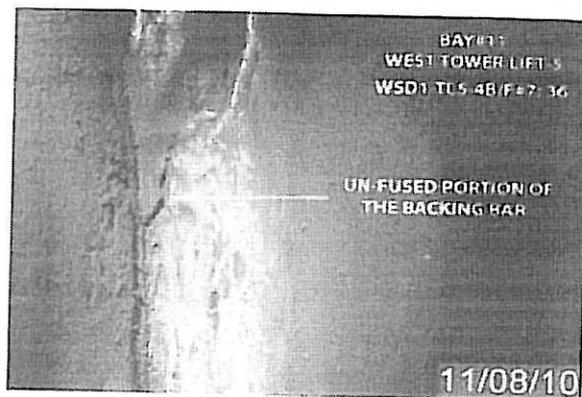
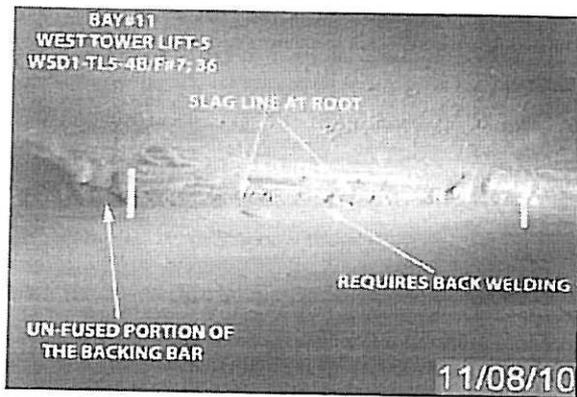
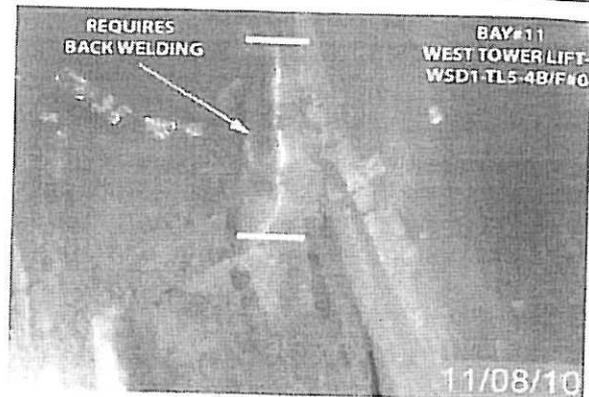
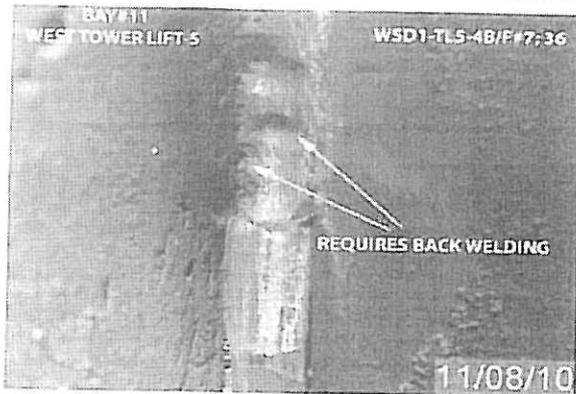
With the intention to close the Non-Conformance Report, NCR#ZPMC-0839, ZPMC had submitted the Notice of Witness Inspection Number (NWIT) # 007275. This repaired area has been previously tested and accepted by ZPMC Quality Control (QC) personnel. ZPMC's QC personnel performed 100% VT and MT inspection of this area.

A Notice of Witness #007231 had been submitted on 11/4/10 for similar inspection for Lift 5, East Grillage, also assembled and inspected in Bay 11. The non-conforming retrofit work then was rejected. AB/F was made aware of the reason of rejection in the "Notification Daily Document Tracking" and Incident Report (IR 1662). This latest NWIT# 007275 was submitted for a request to inspect/ sign off unacceptable non-conforming retrofit works, not dissimilar to that in NWIT # 007231.

For further information, please see the attached pictures below.

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 3)



Applicable reference:

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 3.13.2: “Groove welds made with the use of steel backing shall have the weld metal

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 3 of 3)

thoroughly fused with the backing.”

AWS D1.5 2002, Section 4.6.9: “CJP groove welds made without the use of steel backing shall have the root gouged to sound metal before welding is started from the second side.”

Who discovered the problem: Naddi Sandeep Kumar

Name of individual from Contractor notified: Mr. Xing Xiao Guang

Time and method of notification: 1400 hours, 11/08/10, Verbal

Name of Caltrans Engineer notified: Jim Reid, Verbal

Time and method of notification: 1000 hours, 11/09/10, Email

QC Inspector's Name: Mr. Xu Le Feng

Was QC Inspector aware of the problem: 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, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By: Ng, Michael

QA Inspector

Reviewed By: Devey, Jim

SMR



REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 T787-MT-11520		DATE日期 2010.12.01	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-TL5-4B/F ESD1-TL5-2B/F WEST TOWER FIFTH LIFT 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 , 2010	
EQUIPMENT 设备 MT YOKE	MANUFACTURER 制造商 USA	MODEL NO. 样式编号 MODEL #ES-X	SERIAL NO. 连续编号 13984	
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-HPS-485WT2-Z 65/70/90 mm	
WELDING PROCESS 焊接方法	SMAW	TYPE OF JOINT 焊缝类型	T/CORNER 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-TL5-4B/F-7				ACC.		100%MT
WSD1-TL5-4B/F-36				ACC.		100%MT
WSD1-TL5-4B/F-8				ACC.		100%MT
WSD1-TL5-4B/F-35				ACC.		100%MT
WSD1-TL5-4B/F-4				ACC.		100%MT
WSD1-TL5-4B/F-24				ACC.		100%MT
ESD1-TL5-2B/F-23				ACC.		100%MT
BLANK						

EXAMINED BY主探 He Zhishun <i>He Zhishun</i> LEVEL - II SIGN 签名 / DATE日期 <i>2010.12.01</i> 质量经理 / QCM <i>[Signature]</i> 2010.12.1 签字 SIGN / 日期 DATE (FORM# ZPQC-MT01)	REVIEWED BY 审核 <i>[Signature]</i> 2010.12.01 LEVEL-II SIGN / DATE日期 用户CUSTOMER 签字 SIGN / 日期 DATE
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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, PR China**Report No:** NCS-000883**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 12-Jan-2011**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0839**Type of problem:**

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

Date the Non-Conformance Report was written: 27-Oct-2010**Description of Non-Conformance:**

During the Caltrans Quality Assurance (QA) in-process observation on Tower Lift-5 grillages, East and West this QA Inspector discovered the following issues:

-West tower Lift-5:-

- 1) Non-Fused backing bar requires removal -joint -WSD1-TL5-4B/F#7,36
- 2) Non-Fused backing bar requires removal -joint-WSD1-TL5-4B/F#8,35
- 3) Buckled backing bar requires removal -joint-WSD1-TL5-4B/F#24
- 4) Non-Fused backing bar requires removal -joint-WSD1-TL5-4B/F#4

-East tower Lift-5:-

- 1) Area where backing bar has been removed requires back welding -joint ESD1-TL5-2B/F#23

-As per AWS D1.5 the RFI-002099R0 the groove welds made with steel backing shall have the weld metal thoroughly fused. The remaining ends of the backing bar shall be tapered in with and in depth at a slope no steeper than 1:2.5, as shown in the sketch attached with the referenced RFI.

-Above mentioned welds are T-joint complete joint penetration (CJP) welds.

Contractor's proposal to correct the problem:

Contractor will remove the backing bars in question, and repair the area as per Design's requirements ie. RFI-2099. Contractor will also provide NDT report to show the welds involved and also the repair areas are acceptable.

Corrective action taken:

Contractor gouged off the defective backing bars, and ground the areas as per RFI 2099 requirements. NDT reports were provided proving the welds involved and the repair areas were free of defects. Considering the access difficults, and facilitate fabrication the repair has been accepted by Construction as "fit for purpose."

