

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:** Shanghai, China**Report No:** NCR-000010**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 03-Oct-2007**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0010**Type of problem:**

Welding	Concrete	Other	
Welding	Curing	Procedural	Bridge No: 34-0006
Joint fit-up	Coating	Other	Component: Tower Splice Mock-up Skin B upper panel
Procedural	Procedural	Descriptor:	

Description of Non-Conformance:

ABF has allowed the fabricator to proceed with making repairs to rejectable indications found in the complete joint penetration (CJP) welds which connect Skin Plates B upper panel to the longitudinal stiffener mp1006, weld joint MUSC-MA101-8 of the 114 m mock-up. These indications were found using Ultrasonic Testing (UT) at lengths greater than 10% of the cumulative length of the welds.

Applicable reference:

Special Provisions, Section 10-1.59, "Fabrication/Erection Procedure and Mock-Ups", Page 313, paragraph B.2 and B.4.

Who discovered the problem: Quality Assurance, Alfredo Acuna**Name of individual from Contractor notified:** ABF Quality Assurance Manager, Steve Lawton**Time and method of notification:** 03-October-07 at approximately 0830 hours via verbal notification**Name of Caltrans Engineer notified:** Stanley Ku, Senior Bridge Engineer.**Time and method of notification:** 03-October 07, 0800 hours via verbal notification.**QC Inspector's Name:** ZPMC QC inspector, Fu Yu Hong**Was QC Inspector aware of the problem:** Yes No**Contractor's proposal to correct the problem:**

None proposed at this time.

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: Acuna, Alfredo

Quality Assurance Inspector

Reviewed By: Cuellar, Robert

QA Reviewer



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge

333 Burma Road

Oakland CA 94607

Tel: 510-622-5158 Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

To: American Bridge/Fluor Enterprises, a JV
375 BURMA ROAD
OAKLAND CA 95607

Date: 06-Nov-2007

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

Dear: Mr. Charles Kanapicki

Job Name: SAS Superstructure

Attention: Mr. Michael Flowers Project Executive

Document No: 05.03.06-000072

Subject: NCR No. ZPMC-0010

Reference Description: Repairs to longitudinal stiffener welds greater than 10% in length on the 114m Mock-up

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 - No Response Required.

Material Location: **Lift:**

Remarks:

Originally sent by State letter 05.03.01-000795

Action Required and/or Action Taken:

Transmitted by: Keith Osantowski Sr. Engineer

Attachments: ZPMC-0010

cc:

File: 05.03.06

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000072

Subject: NCR No. ZPMC-0010

Dated: 12-Dec-2007

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000011 **Rev:** 00

Contractor's Proposed Resolution:

Reference Resolution: ABF has reviewed the Mock-up section of the Special Provisions with ZPMC to gain understanding of this requirement which is different from the requirements for production.

Rejects in Stiffener to Skin Plate welds exceeded 10%, repairs were made contrary to contract requirements.

ABF JV has reviewed the Mock-up section of the Special Provisions with ZPMC to gain understanding of this requirement which is different from the requirements for production. Both ABFJV and ZPMC now understand this requirement. ZPMC initiated an internal NCR to address this nonconformance. ZPMC also conducted internal tests and has submitted a plan to improve weld quality. Attached for review is the ZPMC Internal NCR and the written plan to improve weld quality.

Submitted by: Flowers, Michael

Attachment(s): ABF-NPR-000011R00; ABF-NPR-000011-01

Caltrans' comments:

Status: Approved

Date: 24-Mar-2008

See State Letter 05.03.01-001406

Submitted by: Pursell, Gary

Attachment(s): NPR CT Comments; 05.03.01-001406; TC-20 9

Date: 22-Feb-2008

14-Feb-2008

ABF-CAL-LTR-000445

Mr. Gary Pursell
Resident Engineer
California Department of Transportation
333 Burma Road,
Oakland, CA 94607, USA

PROJECT: San Francisco Oakland Bay SAS Bridge Superstructure
Caltrans Contract No. 04-0120F4
ABF Job No. 660110

SUBJECT: RESPONSE TO NCR-0009 AND 0010

Gentlemen:

American Bridge / Fluor Enterprises Inc. a Joint Venture (ABFJV) acknowledges receipt of the Department's Letter No.05.03.01-000795 dated November 6, 2007 forwarding the Department's Non-Compliance Reports NCR-0009, 0010, 0011, 0012 and 0013

The attached documents the response to NCRs 0009 and 0010 and closure by the Engineer's China Fabrication Team. Based on the attached ABFJV is requesting written confirmation from the Engineer that NCR 0009 and 0010 are closed.

If you need any more information, please call Chuck Kanapicki at (510) 808-4609.

Sincerely,

AMERICAN BRIDGE/FLUOR ENTERPRISES, INC. A JOINT VENTURE



Michael Flowers
Project Director
MF/CK/cc

File: 02.01, 02.28.4
Enclos: Response to NCR 0009 and 0010

DEPARTMENT OF TRANSPORTATION

CHINA FABRICATION TEAM
506 Shangcheng Rd., Pudong New District
Shanghai 200120, PRC



REVIEW OF CONTRACTOR'S TRANSMITTAL

To: Dave Williams, American Bridge – Fluor, a Joint Venture
Gary Pursell, Resident Engineer

Review Date: 12/20/2007

From: Joshua Ishibashi, Structural Materials Representative

Contract No.: 04-0120F4

Date/Time Submittal Recieved: 12/12/2007 1026

China Standard Time
(GMT+08:00)

Contractor's Transmittal #: TL-07-0752 Rev. # 0

<input checked="" type="checkbox"/>	substantially complies with contract requirements and is approved		
<input type="checkbox"/>	substantially complies with contract requirements and is approved as noted.		
<input type="checkbox"/>	Lacks sufficient information and/or contains unacceptable items that must be corrected or prior to resubmittal		
Verbal Notification		<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes
		Date: <u>01/18/08</u>	Time: <u>1200</u>
Name of individual from Contractor Notified: <u>Steve Lawton</u>			
This submittal is a:	<input type="checkbox"/> Welding Report	<input type="checkbox"/> Critical Weld Repair	
	<input type="checkbox"/> Request for Information	<input type="checkbox"/> Heat Straightening Request	
	<input type="checkbox"/> Fabrication Procedures	<input checked="" type="checkbox"/> Other: <u>NCR Closure</u>	
Submitting Contractor: <u>ZPMC</u>			
ITEMS REVIEWED	COMPLIES		COMMENTS
1. ABF-SL-07-0239 NCR Resolution for ZPMC 09 & 10	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Approved
2.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
3.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
4.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
5.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
6.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
7.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
8.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
9.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
10.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Remarks: METS has completed the review of ABF-TL-07-0752. This NCR was closed in PMIV on 12/20/07. At the request of ABF China METS is generating a TC20 to document this closure. METS recommends the aforementioned NCR be closed.

Reviewer: Joshua Ishibashi

Date: 01/18/2008

Construction Concurrence: ce Initial 1/18/08 Date

December 12, 2007

California Department of Transportation
666 Feng Bin Road, Room 708
Changxing Island, Shanghai China

Reply to: SL-ABF-07-0239

Attention: Gary Pursell

Reference: San Francisco Oakland Bay SAS Bridge Superstructure
Caltrans Contract No. 04-0120F4
ABF Job No. 660110

Subject: State Letter 05.03.01-000795

Mr. Purcell:

American Bridge / Fluor (ABF) Quality Assurance Department is in receipt of State Letter 05.03.01-000795 November 06, 2007 providing ABF notification regarding Nonconformance Report (NCR) No.009 and 010.

This letter is issued to provide formal response addressing the proposed resolution to each of the mentioned NCR's for Engineer's review and approval.

NCR-00009 - Tower Mock-up 114M, Skin B Upper Panel

ZPMC performed 3rd time repair without approval by the Engineer, contrary to contract requirements.

ZPMC has generated an internal NCR addressing this issue. ZPMC has since generated a CWR form and notified production and QC personnel of the requirements for CWR and engineer approval for 3rd time repairs. Attached is the ZPMC internal NCR.

NCR-000010 - Tower Splice Mock-up Skin B upper panel

Rejects in Stiffener to Skin Plate welds exceeded 10%, repairs were made contrary to contract requirements.

This document is: **APPROVED**
State of California
DEPARTMENT OF TRANSPORTATION
Pursuant Section 5-1.02 of the
Standard Specifications
Initial *cc* Date: *1/18/08*

AMERICAN BRIDGE / FLUOR JV

Page 2

ABFJV has reviewed the Mock-up section of the Special Provisions with ZPMC to gain understanding of this requirement which is different from the requirements for production. Both ABFJV and ZPMC now understand this requirement. ZPMC initiated an internal NCR to address this nonconformance. ZPMC also conducted internal tests and has submitted a plan to improve weld quality. Attached for review is the ZPMC Internal NCR and the written plan to improve weld quality.

If you have any questions or need additional information, please contact this office

Sincerely,



AMERICAN BRIDGE / FLUOR JV

Steve Lawton

Foreign Quality Assurance Manager

cc: file

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DEPARTMENT OF TRANSPORTATION
Pursuant Section 5-1.02 of the
Standard Specifications
Initial *SL* Date: *1/18/08*



LETTER OF RESPONSE

DATE: 2007.11.26

To: AB/F Steve Lawton

From: ZPMC

Subject: Response to CT NCR-000010-CT

Mr. Lawton:

ZPMC has generated internal NCR-CT-008 in Response to NCR-000010-CT, Regarding weld defects exceeding 10% weld length. ZPMC has performed weld trials to determine acceptable method to perform these welds with less than a 10% reject rate.

Attached you will find a copy of ZPMC internal NCR as well as documented plan to perform these welds with less than a 10% reject rate.

If further information is needed, Please contact me.

Sincerely

Yang Xuehui

A handwritten signature in cursive script that reads 'Yang Xuehui'.

This document is: APPROVED
State of California
DEPARTMENT OF TRANSPORTATION
Pursuant Section 5-1.02 of the
Standard Specifications
Initial *u* Date: *1/18/08*

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program

333 Burma Rd.

Oakland, CA 94607

(510) 622-5660, (510) 286-0550 fax



Flex your power
Be energy efficient!

November 06, 2007

Michael Flowers
Project Executive
American Bridge/Fluor Enterprises, a JV
375 Burma Road
Oakland, CA 94607

Contract No. 04-0120F4
04-SF-80-13.2 / 13.9
Self-Anchored Suspension Bridge
Letter No. 05.03.01-000795
CAL-ABF- LR- 000795

RECEIVED

NOV 06 2007

Dear Michael Flowers,

AMERICAN BRIDGE/FLUOR
02:02

NCR's 9, 10, 11, 12 & 13 - Zhenhua Port Machinery Company, Ltd.

This letter is issued to provide a formal notification to American Bridge/Fluor Enterprises (ABF) of the issuance of non-conformance reports (NCR's) at the Zhenhua Port Machinery Company, Ltd. (ZPMC) facility in Shanghai, China. Verbal notification was previously provided to ABF representatives on site. The following is a summary of the NCR's which have been attached to this document:

NCR 9 - 114m Mock-up Skin B Upper Panel

The Contractor allowed the Fabricator to proceed with third time repairs to Skin B sub-assemblies without the approval of the Engineer.

NCR 10 - 114m Mock-up Skin B Upper Panel

The Contractor allowed the Fabricator to make repairs to rejectable indications found in the complete joint penetration welds between the longitudinal stiffener and Skin Plate B at lengths greater than 10% of the cumulative length of the welds.

NCR 11 - Mock-up

Quality Control failed to document the required fit-up inspection of Longitudinal Stiffener Piece Mark p920-3 to Interior Splice Assembly MUC -A75, Weld Joint No. 3A.

NCR 12 - 114m Mock-up Skin Plate E

The Contractor allowed the Fabricator to make repairs to rejectable indications found in the complete joint penetration weld joint #3 on Skin Plate E at lengths greater than 10% of the cumulative length of the welds.

NCR 13 - 89m Mock-up

The Contractor allowed the Fabricator to weld parts of the 89m strut sub-assemblies with an electrode not in compliance with the Contract Specifications.

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Initial *u* Date: *1/8/08*

American Bridge/Fluor Enterprises, a JV
November 06, 2007
Page 2 of 2

ABF shall provide a formal response addressing the proposed resolution to each of these NCR's for the Engineer's review and approval.

Sincerely,



GARY PURSELL
Resident Engineer

Attachment

cc: Rick Morrow, Brian Boal, Pat Lowry, Mazen Wahbeh, Mark Woods
file: 05.03.01, 09.01.06

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DEPARTMENT OF TRANSPORTATION
Pursuant Section 5-1.02 of the
Standard Specifications
Initial *u* Date: *1/18/08*



Nonconformance Report

不符合项报告

Project Name: 项目名称:	S.F.O.B.B 美国加州海湾大桥	NCR Number: NCR 编号:	NCR-CT-008 (NCR-000010-CT)
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Item: 114M Skin B upper plate 名称描述: 114 米 B 上面板	Item Number: 件号: NA	Drawing Number: 图号: MUSC-MA101, mp1006
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Location: 位置:	114M Mock Up 114 米模型段	Date: 日期:	2007-10-17
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Description of Nonconformance:
不符合项状态描述:

ABF has allowed the fabrication to proceed with making repairs to rejectable indications found in the complete joint penetration (CJP) welds which connect Skin Plates B upper panel to the longitudinal stiffener mp1006, weld joint MUSC-MA101-8 of the 114m mock-up. These indicators were found using Ultrasonic Testing (UT) at lengths greater than 10% of the cumulative length of the welds.

承包商允许制造者在 114 米 B 上面板和筋板 mp1006 连接的 CJP 焊缝 MUSC-MA101-8 缺陷上进行返修。用 UT 发现的这些缺陷的累计长度超过焊缝的 10%。

Work By: Lu Yang cheng Prepared by: Zhao chensun Reviewed by QCE: Fu Yuhong 2007.10.17

施工方: 07.10.17 准备: 2007.10.17 质量工程师批准: _____

Drawing Error Material Defect Fabrication Error Other
 图纸错误 材料缺陷 制作错误 其他原因

Disposition: 处理措施:	<input type="checkbox"/> Use as is 回用	<input checked="" type="checkbox"/> Repair 返修	<input type="checkbox"/> Reject 拒收
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Recommendation:
建议

1. Do critical welding report.
2. Stop using the low quality welders
3. Do the relevant experiment to look for the best weld method.

Prepared by: Yang Xuehui Approved by QCA: Hu Gang
 准备: 2007.10.17 质量经理批准: 2007.10.17

Reason for Nonconformance:
不符合原因:

The weld pass wasn't cleaned clearly.

Prevention of Re-occurrence:
预防措施: 1 Stop using the low quality welders

2. Do the relevant experiment to look for the best weld method.

Approved by/批准: Yang Xuehui 2007.10.17

This document is: APPROVED
 State of California
 DEPARTMENT OF TRANSPORTATION
 Pursuant Section 5-1.02 of the
 Standard Specifications
 Initial W Date: 1/18/08

Technical Justification for Use-As-Is/Repair: Attachment Non-attachment
 回用或返修的技术依据: 附件 无附件

1. Clean the weld pass clearly during the weld.
2. Use the high quality welders.
3. Put the plate up and repair on the horizontal welding location.

Reviewed /批准: Lu wen yu 2007.10.17

Verification: 确认:	<input type="checkbox"/> Acceptable 可接受	<input type="checkbox"/> Unacceptable 不可接受
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Verified by QCI/质检确认:	Reviewed by QCA/质检主任审核:
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Nonconformance Report

不符合项报告

Project Name: S.F.O.B.B
项目名称: 美国加州海湾大桥

NCR Number:
NCR 编号: NCR-CT-008
 (NCR-000010-CT)

Item: 114M Skin B upper plate
名称描述: 114 米 B 上面板

Item Number:
件号: NA

Drawing Number:
图号: MUSC-MA101, mp1006

Location: 77M Mock Up
位置: 114 米模型段

Date:
日期: 2007-10-17

Description of Nonconformance:

不符合项状态描述:

ABF has allowed the fabrication to proceed with making repairs to rejectable indications found in the complete joint penetration (CJP) welds which connect Skin Plates B upper panel to the longitudinal stiffener mp1006, weld joint MUSC-MA101-8 of the 114m mock-up. These indicators were found using Ultrasonic Testing (UT) at lengths greater than 10% of the cumulative length of the welds.

承包商允许制造者在 114 米 B 上面板和筋板 mp1006 连接的 CJP 焊缝 MUSC-MA101-8 缺陷上进行返修。用 UT 发现的这些缺陷的累计长度超过焊缝的 10%。

Work By: W. Yang **Prepared by:** Zhou Chen Sun **Reviewed by QCE:** Fu Yulong
施工方: 2007.10.17 **准备:** 2007.10.17 **质量工程师批准:**

- Drawing Error Material Defect Fabrication Error Other
 图纸错误 材料缺陷 制作错误 其他原因

Disposition: Use as is Repair Reject
处理措施: 回用 返修 拒收

Recommendation:

- 建议: ① 出具关键焊缝返修报告
 ② 停用合格率低焊工
 ③ 作相关试验寻找最佳焊接途径

Prepared by: Yang Xuethui **Approved by QCA:** Huifang
准备: 2007.10.17 **质量经理批准:** 2007.10.17

Reason for Nonconformance:

不符合原因: 焊缝未清理干净

Prevention of Re-occurrence:

- 预防措施:** ① 停用合格率低焊工
 ② 作相关试验寻找最佳焊接途径



Approved by/批准: Yang Xuethui 2007-10-17

Technical Justification for Use-As-Is/Repair: Attachment Non-attachment
回用或返修的技术依据: 附件 无附件

1. 焊接过程中应清理干净。
 2. 停用合格率低焊工。
 3. 将板清理干净, 在焊缝位置进行返修。
Reviewed/批准: Lu Wengyi 2007.10.17

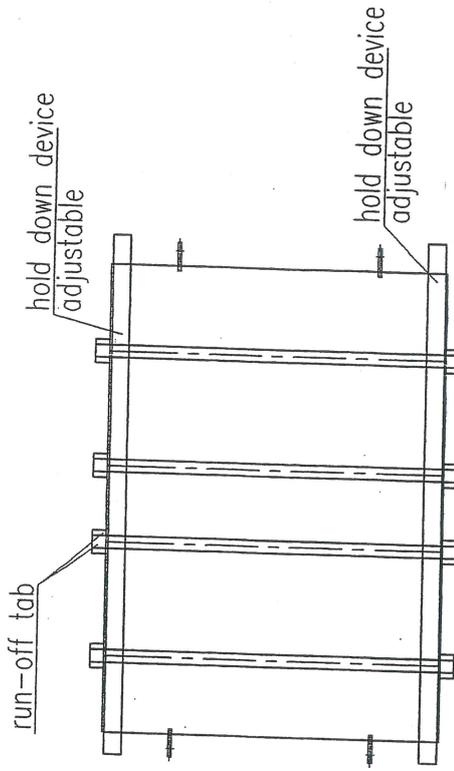
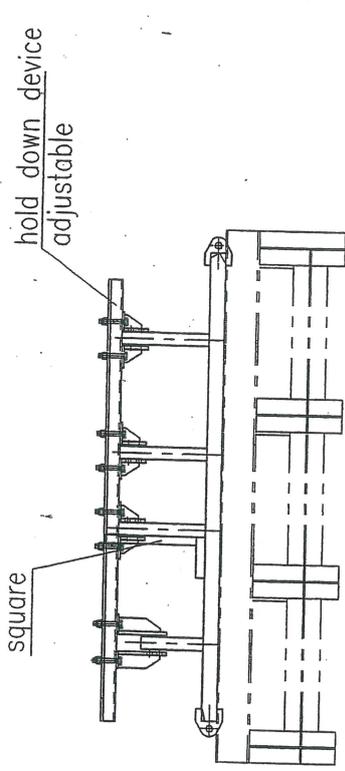
Verification: Acceptable Unacceptable
确认: 可接受 不可接受

Verified by QCI/质检确认: _____ **Reviewed by QCA/质检主任审核:** _____

Step 1 装配纵向筋

Step 1. Fit up of Longitudinal Stiffener to Skin Plate.

- 1.1. 在装配纵向筋之前, 按照已批准的图纸要求将纵向筋加工到位,
 - 1.1.1. Machine approved weld detail bevels onto longitudinal stiffeners.
 - 1.1.2. 在面板上划好纵向筋的装配线.
 - 1.1.2 Lay out Skin plate and mark longitudinal stiffener positions.
 - 1.1.3. 在两端增加好可调卡码(如右图), 安装并根据已批准的WPS的要求把纵向筋点焊固定在面板. 检测其垂直度.
- 1.3 Install adjustable holding down device, assemble and tack weld the longitudinal stiffeners to Skin plate inline with the parameters of the approved WPS and check the verticality to the Skin plate.
- 1.4. 对所有尺寸进行检查.
 - 1.4. Check all the dimensions.



SHANGHAI ZHENHUA PORT MACHINERY CO., LTD.

SAN FRANCISCO OAKLAND BAY BRIDGE, EAST SPAN SELF-ANCHORED SUSPENSION SPAN
ROUTE 80 EAST OF YERBA BUENA ISLAND, DISTRICT 04, SF COUNTY, CA.
BRIDGE Nos. 34-0008L PM 8.2, KP 13.2 & 34-0008R PM 8.7, KP 13.9
STATE OF CALIFORNIA DEPT. OF TRANSPORTATION CONTRACT NO. 04-0120F4
ENGINEER: CALTRANS --- T.Y. LIN / MOFFATT & NICHOL, JV.
CONTRACTOR: AMERICAN BRIDGE / FLUOR ENTERPRISES, JV.

纵向筋与面板CJP焊缝的改进工艺

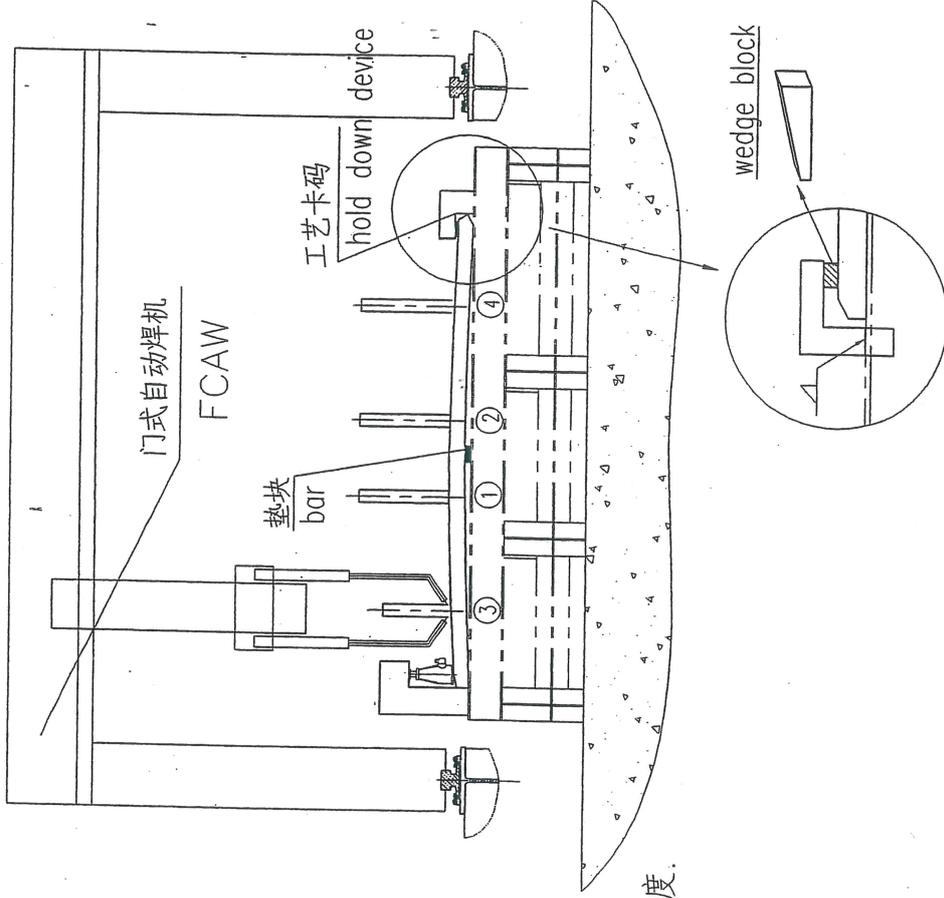
DRAWN: [Signature] SHEET NO. RP-01
CHECKED: [Signature] 2007-10-20 ORDER NO.

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DEPARTMENT OF TRANSPORTATION
Pursuant Section 5-1.02 of the
Standard Specifications
Initial: [Signature] Date: 1/11/08

Step2 焊接纵向筋的PJP部分焊缝

Step2 Welding the PJP joint of longitudinal stiffener

- 2.1. 预防反变形, 在面板中间垫厚度为t的钢板, 两侧用千斤顶压住.
- 2.1. Position flat bar under the center of the Skin plate and pre-set using jacks.
- 2.2. 采用FCAW多头焊机按照已批准的WPS按图示顺序烧焊纵向筋.
- 2.2 Using FCAW multi head welding machine and following the approved WPS, weld the stiffeners simultaneously in sequence as shown on the sketch.
(WPS-B-T-2232-TC-P5-F and WPS-B-T-2332-TC-P5-F-1)
- 2.3. 焊后检查纵向垂直度, 如需要按批准的WQCP要求热校正纵向筋垂直度.
- 2.3 Check the verticality of the stiffeners and adjust by heat straightening if required following the approved WQCP.
- 2.4. NDT检测要求: 打底焊和表面焊焊接后进行100%MT及VT检查.
- 2.4 Perform NDT, VT and MT 100% root weld and cap.



SHANGHAI ZHENHUA PORT MACHINERY CO., LTD.

SAN FRANCISCO OAKLAND BAY BRIDGE, EAST SPAN SELF-ANCHORED SUSPENSION SPAN
 ROUTE 80 EAST OF YERBA BUENA ISLAND, DISTRICT 04, SF COUNTY, CA.
 BRIDGE Nos.: 34-0006L PM 6.2, KP 13.2 & 34-0006R PM 6.7, KP 13.9
 STATE OF CALIFORNIA DEPT. OF TRANSPORTATION CONTRACT NO. 04-0120P-4
 ENGINEER: CALTRANS --- T.Y. LIN / MOFFATT & NICHOL, JV.
 CONTRACTOR: AMERICAN BRIDGE / FLUOR ENTERPRISES, JV.

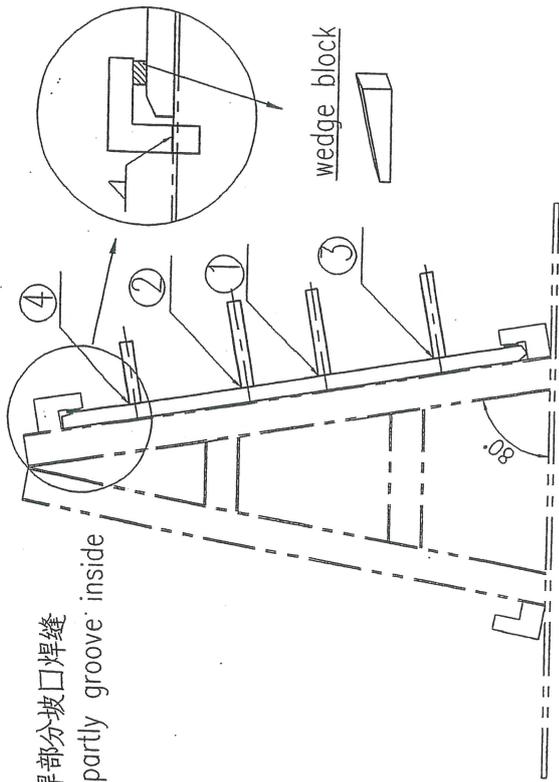
This document is: **APPROVED**
 State of California
 DEPARTMENT OF TRANSPORTATION
 Pursuant Section 6-1.02 of the
 Standard Specifications
 Initial *ca* Date: *1/18/08*

DRAWN	2007-10-20	SHEET NO.	RP-02	ORDER NO.
CHECKED		纵向筋与面板CJP焊缝的改进工艺		

位置1

正面焊部分坡口焊缝

weld partly groove inside

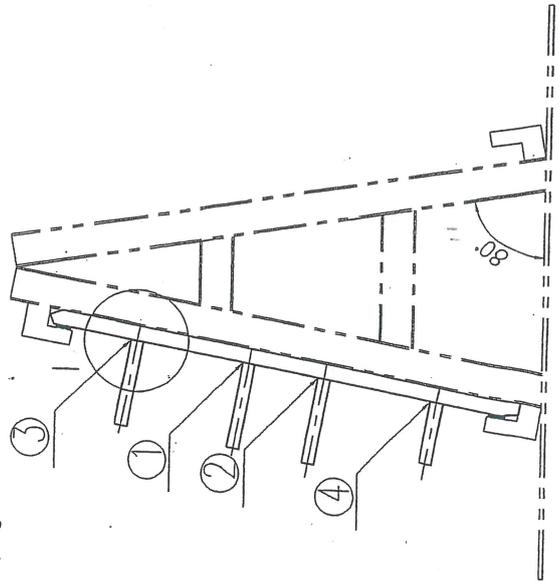


↓ turnover

位置2

翻身碳刨清根, 焊部分坡口焊缝

weld partly groove outside



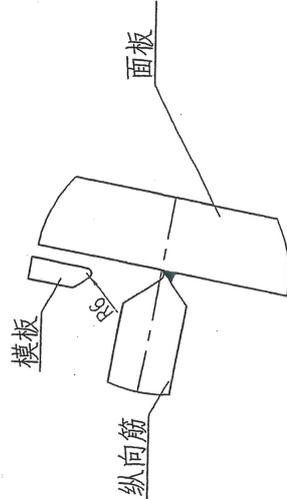
Step 3 焊接纵向筋的CJP焊缝

Step 3 Welding the CJP joint of longitudinal stiffeners.

- 3.1. 焊接位置: 将板单元放置在特制的带有80度左右的倾斜角度胎架上, 加好卡码固定.
- 3.1. Position Skin plate in welding jig inclined at approximately 80 degrees and fit holding down attachment.
- 3.2. 采用FCAW手工焊接按照已批准的WPS按图示顺序烧焊纵向筋.
- 3.2 Using manual FCAW and following the approved WPS, weld the stiffeners in sequence as shown on the sketch.
(Weld WPS: WPS-B-T-2231-TC-U5-F and WPS-B-T-2231-TC-U5-F-1)

- 3.3. 完成打底焊及正面第一次烧焊焊接后, 将面板翻身及进行碳刨.
- 3.3 Complete root weld and part fill, turn over Skin plate and back gouge.

放大
检验碳刨



This document is: APPROVED
State of California
DEPARTMENT OF TRANSPORTATION
Pursuant Section 6-1.02 of the
Standard Specifications
Initial *W* Date: *1/28/08*



SHANGHAI ZHENHUA PORT MACHINERY CO., LTD.

SAN FRANCISCO OAKLAND BAY BRIDGE, EAST SPAN SELF-ANCHORED SUSPENSION SPAN
ROUTE 80 EAST OF YERBA BUENA ISLAND, DISTRICT 04, SF COUNTY, CA.
BRIDGE Nos.: 34-0006L PM B.2, KP 13.2 & 34-0008R PM B.7, KP 13.9
STATE OF CALIFORNIA DEPT. OF TRANSPORTATION CONTRACT NO. 04-0120F4
ENGINEER: CALTRANS ----- T.Y. LIN / MOFFATT & NICHOL, JV.
CONTRACTOR: AMERICAN BRIDGE / FLUOR ENTERPRISES, JV.

纵向筋与面板CJP焊缝的改进工艺

DRAWN: *[Signature]*
CHECKED: *[Signature]*

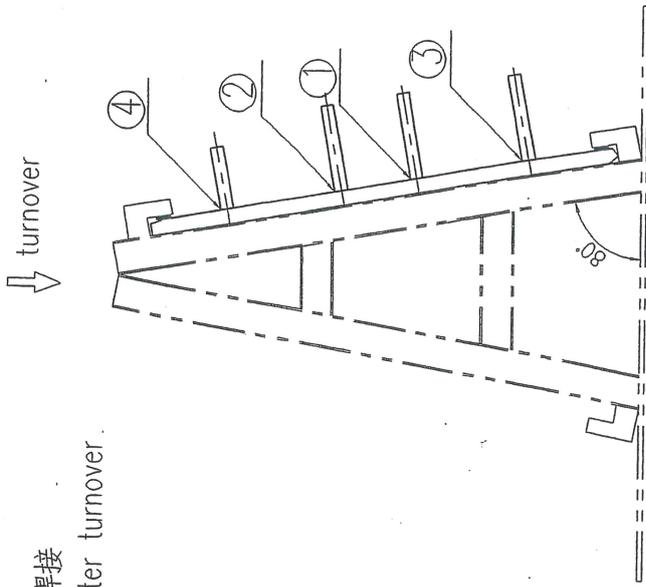
SHEET NO.
RP-03

ORDER NO.

位置3

翻身
后焊接

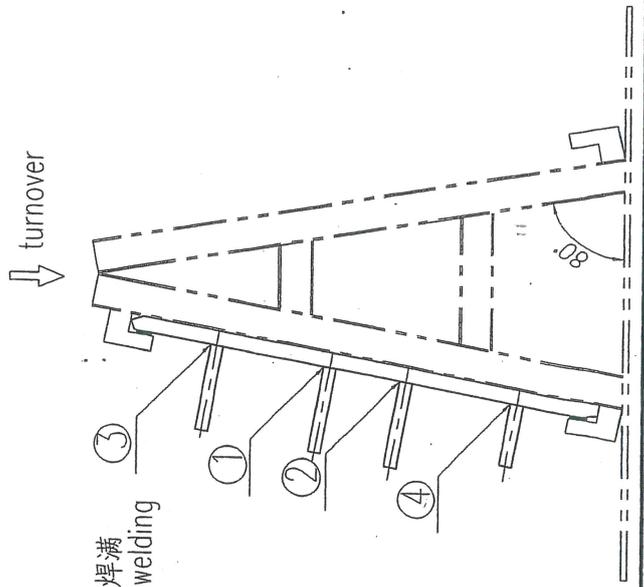
weld after
turnover



位置n

翻身
后焊满

finish
welding



3.4. 碳刨结束后,将碳刨面打磨光亮,并利用模板检验碳刨的角度。
 3.4. Grind surface to a smooth finish and check profile of back gouge with template.

3.5. 继续对碳刨面一侧进行烧焊,并监测焊缝以确保3.6.焊接时采用多次翻身控制纵向筋垂直度是可行的变形控制方法。

3.5. Weld to part fill back gouged side and monitor weld to ensure distortion control measures are adequate by rotating the Skin plate when required to control the verticality of stiffener.

3.6. 焊后检查纵向筋垂直度.如需要按批准的WQCP要求热校正纵向筋垂直度。

3.6. Check the verticality of the stiffeners and adjust by heat straightening if required following the approved WQCP.

3.7. NDT检测要求:焊接后进行100%UT及VT检查。

3.7 Perform NDT,VT and UT 100%.



SHANGHAI ZHENHUA PORT MACHINERY CO., LTD.

SAN FRANCISCO OAKLAND BAY BRIDGE, EAST SPAN SELF-ANCHORED SUSPENSION SPAN
 ROUTE 80 EAST OF YERBA BUENA ISLAND, DISTRICT 04, SF COUNTY, CA.
 BRIDGE Nos.: 34-0066L PM 8.2, KP 13.2 & 34-0066R PM 8.7, KP 13.9
 STATE OF CALIFORNIA DEPT. OF TRANSPORTATION CONTRACT NO. 04-012DF4
 ENGINEER: CALTRANS --- T.Y.LIN / MOFFATT & NICHOL, JV.
 CONTRACTOR: AMERICAN BRIDGE / FLUOR ENTERPRISES, JV.

纵向筋与面板CJP焊缝的改进工艺

DRAWN 4-20-04
 CHECKED 4-20-04
 SHEET NO. RP-04
 ORDER NO.

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 DEPARTMENT OF TRANSPORTATION
 Pursuant Section 6-1.02 of the
 Standard Specifications
 Initial *W* Date: *1/18/04*

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program

333 Burma Rd.
Oakland, CA 94607
(510) 622-5660, (510) 286-0550 fax



*Flex your power
Be energy efficient!*

February 22, 2008

Contract No. 04-0120F4
04-SF-80-13.2 / 13.9
Self-Anchored Suspension Bridge
Letter No. 05.03.01-001406

Michael Flowers
Project Executive
American Bridge/Fluor Enterprises, a JV
375 Burma Road
Oakland, CA 94607

Dear Michael Flowers,

Response to NCRs 1, 5, 7, 8, 9, 10, 11, 12 & 13

This letter is issued as a response to ABF-CAL-LTR-000443, 444, 445, dated February 14, 2008, and ABF-CAL-LTR-000446, dated February 15, 2008, requesting written confirmation from the Engineer that the referenced Non-Conformance Reports (NCRs) at Zhenhua Port Machinery Company, Ltd (ZPMC) have been closed. The Department considers the following ZPMC NCRs closed:

NCR No.	State Letter No.	ABF Document No.	Description
1	05.03.01-000123	ABF-CAL-LTR-000443	Radiographic Testing issues (IQI placement, source type, etc.)
5	05.03.01-000757	ABF-CAL-LTR-000444	Repairs to longitudinal stiffener welds greater than 10% in length on the 77m Mock-up
7	05.03.01-000757	ABF-CAL-LTR-000444	QC not following the approved UT procedure on 114m Mock-up
8	05.03.01-000757	ABF-CAL-LTR-000444	Repairs to skin plate welds greater than 10% in length on the 114m Mock-up
9	05.03.01-000795	ABF-CAL-LTR-000445	Third time repairs to Skin B sub-assemblies on the 114m Mock-up without Engineer approval
10	05.03.01-000795	ABF-CAL-LTR-000445	Repairs to longitudinal stiffener welds greater than 10% in length on the 114m Mock-up
11	05.03.01-000795	ABF-CAL-LTR-000446	Failure to document fit-up of longitudinal stiffener on Mock-up
12	05.03.01-000795	ABF-CAL-LTR-000446	Repairs to skin plate welds greater than 10% in length on the 114m Mock-up
13	05.03.01-000795	ABF-CAL-LTR-000446	Welding electrode used on 89m Strut Sub-Assembly not in compliance

American Bridge/Fluor Enterprises, a JV
February 22, 2008
Page 2 of 2

Please contact us if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Gary Purcell".

GARY PURSELL
Resident Engineer

cc: Rick Morrow
Brian Boal
Gary Lai
Mark Woods

file: 05.03.01

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:** Shanghai, China**Report No:** NCS-000005**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 20-Dec-2007**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0010**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: 03-Oct-2007**Description of Non-Conformance:**

ABF has allowed the fabricator to proceed with making repairs to rejectable indications found in the complete joint penetration (CJP) welds which connect Skin Plates B upper panel to the longitudinal stiffener mp1006, weld joint MUSC-MA101-8 of the 114 m mock-up. These indications were found using Ultrasonic Testing (UT) at lengths greater than 10% of the cumulative length of the welds.

Contractor's proposal to correct the problem:

None proposed at this time.

Corrective action taken:

ABFJV has reviewed the mock-up section of the Special Provision with ZPMC to gain understanding of this requirement which is different from the requirements for production. Both ABFJV and ZPMC now understand this requirement. ZPMC initiated an internal NCR to address this nonconformance. ZPMC also conducted internal tests and has submitted a plan to improved weld quality.

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 Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By: Ishibashi, Josh

Quality Assurance Inspector

Reviewed By: Wahbeh, Mazen

QA Reviewer