

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, P.R. China**Report No:** NCR-000579**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 02-Jan-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0552**Type of problem:**

Welding	Concrete	Other	
Welding	Curing	Procedural	Bridge No: 34-0006
Joint fit-up	Coating	Other	Component: Segment 9BW Deck Panel Diaphragm
Procedural	Procedural	Description:	

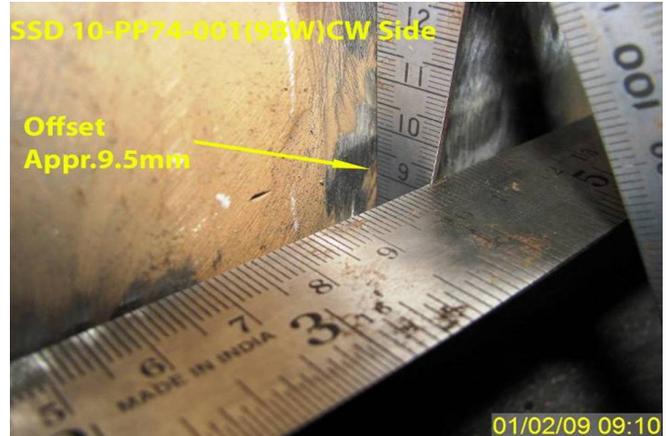
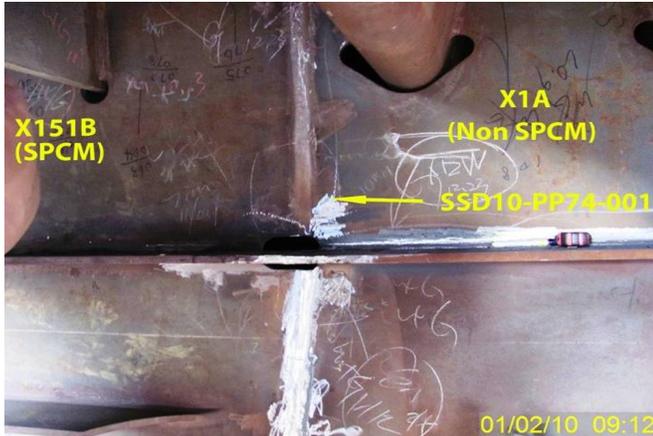
Reference Description: Joint fit-up offset was observed in Segment 9BW Deck Panel Diaphragm**Description of Non-Conformance:**

During the Quality Assurance random Visual Inspection of welds located on Orthotropic Box Girder (OBG) segment 9BW, this Quality Assurance Inspector (QA) discovered the following issues.

- One (1) area of misalignment was measured at a transition in thickness Complete Joint Penetration (CJP) butt weld.
- The weld joint is identified as SSD10-PP74-001.
- The weld joint is located in OBG segment 9BW at Panel Point (PP) 074 on the Counter Weight side.
- The Corner Assembly Web (X151B) Seismic Performance Critical Material (SPCM) plate connects to the Deck Panel Diaphragm (X1A).
- The weld joint SSD10-PP74-001 is a transition in thickness from 22mm (X151A) to 14mm (X1A).
- The misalignment/offset was measured at approximately 9.5mm. There should only be an offset of 4mm due to the transition.
- The weld joint is misaligned for 70mm along the axis of the weld.
- The maximum misalignment/offset allowed per American Weld Society (AWS) D1.5 2002 is 1.4mm (10% of the thinner part).
- The OBG Segment 9BW is located outside in front of Bay# 17.

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 3)



Applicable reference:

Approved Weld Drawing; WD2

Approved Weld Detail Drawings; WD20A and WD20C

AWS D1.5 (2002) section 3.3.3 "Parts to be joined by groove welds shall be carefully aligned. Where the parts are effectively restrained against bending due to eccentricity in alignment, the offset from theoretical alignment shall not exceed 10 percent of the thickness of the thinner part joined, but in no case shall be more than 3 mm [1/8 in.]".

Who discovered the problem: Subhasis Bera

Name of individual from Contractor notified: Ji Cai Fang

Time and method of notification: 0930 hours, 01/02/10, Verbal

Name of Caltrans Engineer notified: Bill Howe

Time and method of notification: 2300 hours, 01/02/10, Email

QC Inspector's Name: Li Ping

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

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 3 of 3)

concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By: Tsang, Eric SMR

Reviewed By: Wahbeh, Mazen SMR



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge
 333 Burma Road
 Oakland CA 94607
 Tel: Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

To: AMERICAN BRIDGE/FLUOR, A JV
 375 BURMA ROAD
 OAKLAND CA 95607

Date: 03-Jan-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: 05.03.06-000542

Subject: NCR No. ZPMC-0552

Reference Description: Joint fit-up offset was observed in Segment 9BW Deck Panel 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: OBG **Lift:** 09

Remarks:

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 - The maximum misalignment/offset allowed per American Weld Society (AWS) D1.5 2002 is 1.4mm (10% of the thinner part).
 - The OBG Segment 9BW is located outside in front of Bay# 17.

Action Required and/or Action Taken:

Submit a repair procedure to the engineer for approval. A response for the resolution of this issue is expected within 7 days.

Transmitted by: Bill Howe Sr. Transportation Engineer
Attachments: ZPMC-0552

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Jason Tom, Contract Files, Ching Chao
File: 05.03.06

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000542

Subject: NCR No. ZPMC-0552

Dated: 20-May-2010

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000664 **Rev:** 00

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has corrected the misalignment and is including the WRR and NDT to show the affected welds are acceptable. Based on this ZPMC requests closure of this NCR.

ZPMC has corrected the misalignment and is including the WRR and NDT to show the affected welds are acceptable. Based on this ZPMC requests closure of this NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000664R00;

Caltrans' comments:

Status: CLO

Date: 25-May-2010

This proposed resolution is acceptable. The documentation received is sufficient and the Department concurs that Non-Conformance ZPMC-0552 is closed.

Submitted by: Eagen, Sean

Attachment(s):

Date: 25-May-2010



No. B-760

LETTER OF RESPONSE

TO: American Bridge/Flour

DATE: 2010-5-18

REGARDING: NCR-000579(ZPMC-0552)

The offset has been rectified by split the associated welds. For detail please refer to the attached WRR. ZPMC is providing the NDT records show the affected welds are acceptable and is requesting closure of this NCR.

ATTACHMENT:

NCR-000579(ZPMC-0552)

B-WR9725

B787-UT-10724

B787-MT-18985

A handwritten signature in black ink, appearing to be "Jing Wu", is written above the date.

5/18/10



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: 03-Jan-2010
Contract No: 04-0120F4
04-SF-80-13.2 / 13.9
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Attention: Mr. Thomas Nilsson Project/Fabrication Manager
Document No: 05.03.06-000542
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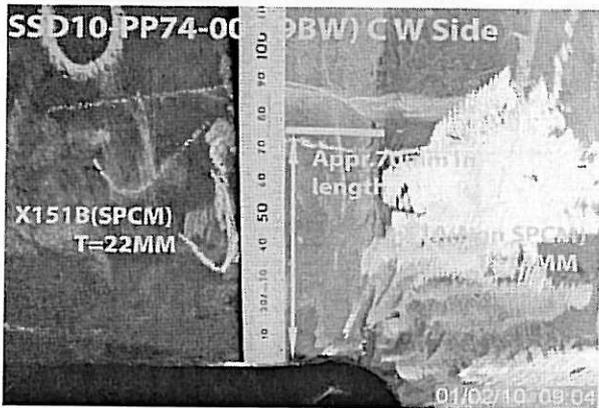
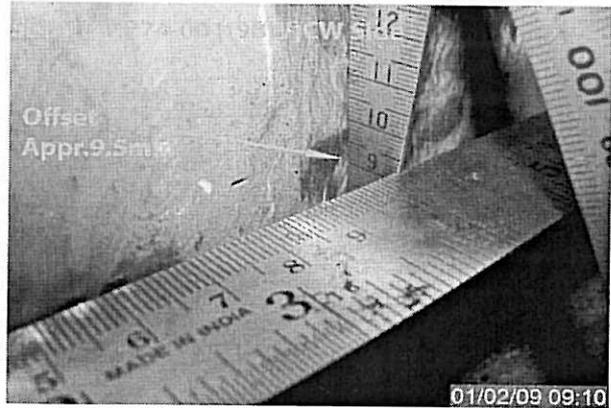
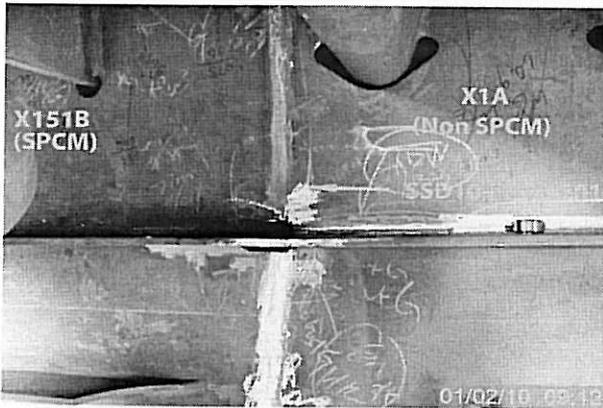
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QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 3)



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Time and method of notification: 0930 hours, 01/02/10, Verbal

Name of Caltrans Engineer notified: Bill Howe

Time and method of notification: 2300 hours, 01/02/10, Email

QC Inspector's Name: Li Ping

Was QC Inspector aware of the problem: Yes No

Contractor's proposal to correct the problem:

N/A

Comments:

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QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 3 of 3)

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Inspected By:	Tsang, Eric	SMR
Reviewed By:	Wahbeh, Mazen	SMR



焊缝返修报告

版本 Rev. No.

Welding Repair Report

0

项目名称 Project Name	美国海湾大桥 SFOBB	部件图号 Drawing No	SSD10	报告编号 Report No.	B-WR9725
合同号 Contract No.:	04-0120F4	部件名称 Items Name	隔板 Diaphragm	NDT报告编号 Report No.of NDT	NA
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

Description of welding discontinuity:

根据检查发现角单元隔板与顶板连接板立焊对接错位, 最大错位8mm。长150mm, 焊缝编号 SSD10-PP074-001 SSD10-PP074-008 涉及焊缝编号: SSD10-PP074-003/004.

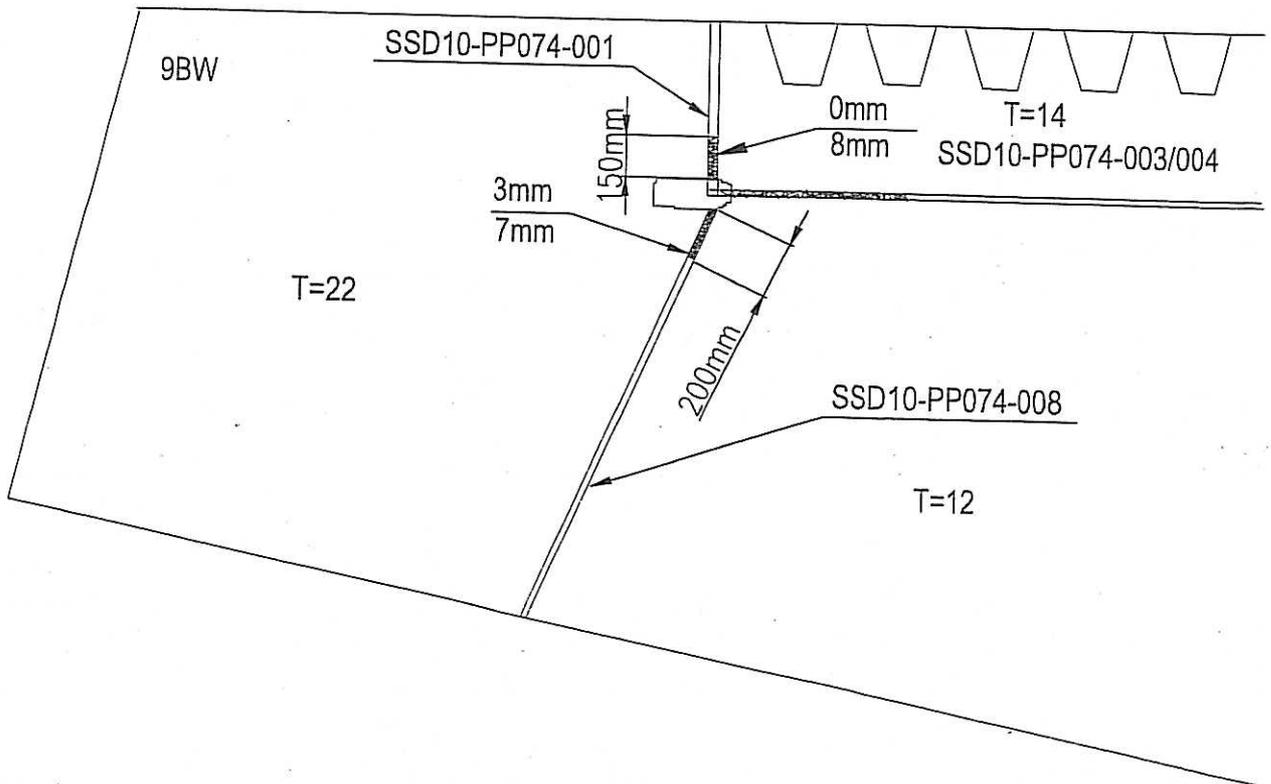
After inspection corner assembly diaphragm and deck plate connect plate overhand weld, it was 8mm misalignment, 150mm in length, weld ID: SSD10-PP074-001 SSD10-PP074-008, relevant weld ID: SSD10-PP074-003/004.

L. Ping

检验员 (Inspector): li ping 日期(Date): 2010-1-5

焊缝返修位置示意图:

Draft of welding discontinuity:



产生原因:

Caused:

焊接变形和制作误差。

Weld distortion and fabricate error.

车间负责人(Foreman): Hu Yuzhong 日期(Date): 10.01.06.

处理意见

Disposition:

1. 采用切割或碳刨的方法去除焊缝SSD10-PP074-001的部分焊缝L1及焊缝SSD10-PP074-008上的部分焊缝L2, 焊缝SSD10-PP074-003/004及同位置翼缘板底部的正面及反面焊缝(即FB011-PP074-003/004)的部分焊缝L3, L1、L2以及L3的长度根据现场错边的实际情况而定。碳刨前根据相应WPS预热;
2. 根据相应返修WPS准备相应的焊接接头;
3. 采用外力调整顶板连接板以及FB11B使其与角单元隔板对接端口的错变量在公差范围内, 并进行定位;
4. 根据相应WPS预热及焊接焊缝SSD10-PP074-001及焊缝SSD10-PP074-008;
5. 焊后检测错变量是否在公差范围内, 如果满足则根据WPS预热及焊接焊缝SSD10-PP074-003/004及翼缘板底部的正面及反面焊缝FB011-PP074-003/004;
6. 将上述返修处焊缝打磨与周边母材或焊缝平齐;
7. 根据图纸要求进行NDT检测。

注: 如果CJP焊缝对接装配时, 间隙超差, 可用使用钢衬垫进行烧焊, 焊接结束后将钢衬垫去除。

1. Remove a portion from butt weld SSD10-PP074-001(length: L1) and a portion from butt weld SSD10-PP074-008(length: L2), and a portion from fillet weld SSD10-PP074-003/004 and weld in bottom side of flange including near side and far side (namely weld FB011-PP074-003/004) in the same area (length: L3) by flame cutting or gouging. The length L1, L2 and L3 will be decided according to actual situation. Preheat according to the WPS prior to gouging.
2. Prepare the excavations according to the relevant WPS.
3. Adjust diaphragm and FB11B to make the misalignment meet the tolerance by external force. Tack weld the items.
4. Preheat and weld SSD10-PP074-001 and SSD10-PP074-008 according to repair WPS.
5. Check the misalignment after welding, if it is acceptable, preheat and weld SSD10-PP074-003/004 and FB011-PP074-003/004.
6. Grind the welds above flush to the adjacent weld or base metal.
7. Check the weld with relevant NDT according to the work drawings.

Note: If gap of butt weld exceeds the tolerance, steel backing can be used in the process of welding, and remove the steel backing after welding.

工艺: Xu Dongkai
Technical engineer

10.01.06

审核: [Signature]
Approved by

日期
Date 2010.1.13



焊缝返修报告

Welding Repair Report

版本 Rev. No.

0

项目名称 Project Name	美国海湾大桥 SFOBB	部件图号 Drawing No.	SSD10	报告编号 Report No.	B-WR9725
合同号 Contract No.:	04-0120F4	部件名称 Items Name	隔板 Diaphragm	NDT报告编号 Report No. of NDT	NA
项目编号 Project No.:	ZP06-787				

纠正措施:

Correction action to prevent re occurrence:

加强制作过程中的监控, 减少误差。

Enhance supervision in process of fabrication to reduce error.

车间负责人(Foreman): Hu Yuzhong 日期(Date): 10.01.06

参照的WPS编号 Repair WPS No.	WPS-345-SMAW-2 G(2F)-Repair WPS-345-SMAW-2 G(2F)-Repair-1 WPS-345-SMAW-3 G(3F)-FCM-Repair WPS-345-SMAW-4 G(4F)-Repair	工艺员 technologist	Xu Dongkai 10.01.06
返修(碳刨)前预热温度 Preheat temperature before gouging	94°C	返修的缺陷 Description of discontinuity	Misalignment 焊缝错位
焊前处理检查 Inspection before welding	Acc	焊前预热温度 Preheat temperature before welding	128°C
最大碳刨深度 Max. depth of gouging	8mm	碳刨总长 Total length of gouging	1300mm
焊工 welder	037840	焊接类型 welding type	SMAW
		焊接位置 position	3G
焊接电流 Current	182	焊接电压 Voltage	25
		焊接速度 Speed	168

返修后检查

Inspection After repairing:

外观检查 VT result	Acc	检验员 Inspector	Li Yanhua 07120701	日期 Date	2010.01.07
NDT复检 NDT result	Acc	探伤员 NDT person	Jiang Yong	日期 Date	2010.01.07

见证:

Witness/Review:

备注:

Remark:

#R787-QCP-900



REPORT OF ULTRASONIC EXAMINATION

UT探伤报告

REPORT NO. 报告编号 B787-UT-10724 DATE 2010.01.12 PAGE 1 OF 1 Revision No: 0

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

ITEMS NAME: 9BW CORNER ASSEMBLY FLOOR BEAM DRAWING NO.: SSD10 CALTRANS CONTRACT NO.: 04-0120F4
 部件名称 图号 加州工程编号

REFERENCING CODE 参考规范 ACCEPTANCE STANDARD 接受标准 PROCEDURE NO. 程序编号
 AWS D1.5-2002 AWS D1.5-2002(Table 6.3) ZPQC-UT-01

WELDING PROCESS 焊接方法 JOINT TYPE 焊缝类型 CALIBRATION DUE DATE 仪器校正有效期
 SMAW BUTT Dec. 28ST, 2010

EQUIPMENT 设备 MANUFACTURER 制造商 MODEL NO. 样式编号 SERIAL NO. 序列编号
 UT SCOPE PANAMETRICS EPOCH-4B 071565311, 061488510, 061495811, 070152011,

CALIBRATION BLOCK 试块 COUPLANT 耦合剂 MATERIAL/THICKNESS 材料厚度
 AWS IIW BLOCK TYPE II C.M.C A709M-345T2-X 22/14/12mm

TRANSDUCER 探头

MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸	MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸
Changchao	70°	2.5MHz	18×18mm				
Changchao	0°	2.5MHz	20mm	Reference Level 参考灵敏度		20dB	

Base metal inspected per AWS D1.5-2002 Section 6.19.5 0° UT OK.

WELD IDENTIFICATION 焊缝部件编号	INDICATION NO. 指示号	PROBE ANGLE 探测角度	FROM FACE 检测面	LEG (次数)	DECIBELS分贝				DISCONTINUITY 不连续性					Discontinuity Evaluation 缺陷估计	Remark 备注	
					Indication Level	Reference Level	Attenuation Factor	Indication Rating	LOCATION OF DISCONTINUITY 不连续位置(mm)							
									a	b	c	d	Length 长度			Sound Path 声程
SSD10-PP074-001		70				32									ACC.	100%
SSD10-PP074-008		70				32									ACC.	100%

AFTER B-WR9725

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EXAMINED BY 主探 <u>Jiang Yong</u> LEVEL - II SIGN / DATE 10.01.12	REVIEWED BY 审核 <u>Jin Feng</u> LEVEL - II SIGN / DATE 10.01.12
质量经理 / QCM _____ 签字 SIGN / 日期 DATE	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 B787-MT-18985 DATE日期 2010.03.01 PAGE OF页码 8/8 Revision No: 0

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

DRAWING NO. 图号: SSD10 CALTRANS CONTRACT NO.: 加州工程编号 04-0120F4
 9BW FLOOR BEAM SPLICE

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, 2010

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

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 Material & thickness 母材,厚度: A709M-345T2-X
 CASTING 铸件 12/8/20/14/18/30mm
 FORGING 锻造

WELDING PROCESS 焊接方法: FCAW 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			
SSD10-PP74-122				ACC.		100%MT
SSD10-PP74-123				ACC.		100%MT
SSD10-PP74-003				ACC.		100%MT
SSD10-PP74-004				ACC.		100%MT
SSD10-PP74-124				ACC.		100%MT
SSD10-PP74-125				ACC.		100%MT
SSD10-PP74-128				ACC.		100%MT
SSD10-PP74-129				ACC.		100%MT

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EXAMINED BY主探: Xu hua xiang REVIEWED BY 审核: Huang Jing
 LEVEL-II SIGN 签名 / DATE日期: 10.03.01 LEVEL-II SIGN 1 / DATE日期: 10.03.01
 质量经理 / QCM 用户CUSTOMER
 签字 SIGN / 日期 DATE 签字 SIGN / 日期 DATE

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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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, P.R. China**Report No:** NCS-000638**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 25-May-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0552**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: 02-Jan-2010**Description of Non-Conformance:**

During the Quality Assurance random Visual Inspection of welds located on Orthotropic Box Girder (OBG) segment 9BW, this Quality Assurance Inspector (QA) discovered the following issues.

- One (1) area of misalignment was measured at a transition in thickness Complete Joint Penetration (CJP) butt weld.
- The weld joint is identified as SSD10-PP74-001.
- The weld joint is located in OBG segment 9BW at Panel Point (PP) 074 on the Counter Weight side.
- The Corner Assembly Web (X151B) Seismic Performance Critical Material (SPCM) plate connects to the Deck Panel Diaphragm (X1A).
- The weld joint SSD10-PP74-001 is a transition in thickness from 22mm (X151A) to 14mm (X1A).
- The misalignment/offset was measured at approximately 9.5mm. There should only be an offset of 4mm due to the transition.
- The weld joint is misaligned for 70mm along the axis of the weld.
- The maximum misalignment/offset allowed per American Weld Society (AWS) D1.5 2002 is 1.4mm (10% of the thinner part).
- The OBG Segment 9BW is located outside in front of Bay# 17.

Contractor's proposal to correct the problem:

Correct misalignment issue and perform NDT required to verify quality of affected welds.

Corrective action taken:

Weld between misaligned members was removed and members were brought within Contract tolerance for continuous members. Contractor supplied post repair NDT of new welds as well as welds affected by repair work verifying welds are in conformance with Contract weld quality requirements.

Did corrective action require Engineer's approval?

QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

(Continued Page 2 of 2)

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 Jim Simonis, who represents the Office of Structural Materials for your project.

Inspected By: Simonis,Jim

Quality Assurance Inspector

Reviewed By: Wahbeh,Mazen

QA Reviewer