

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

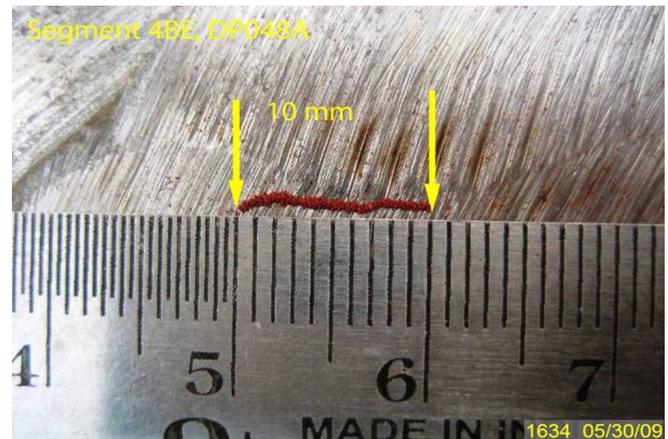
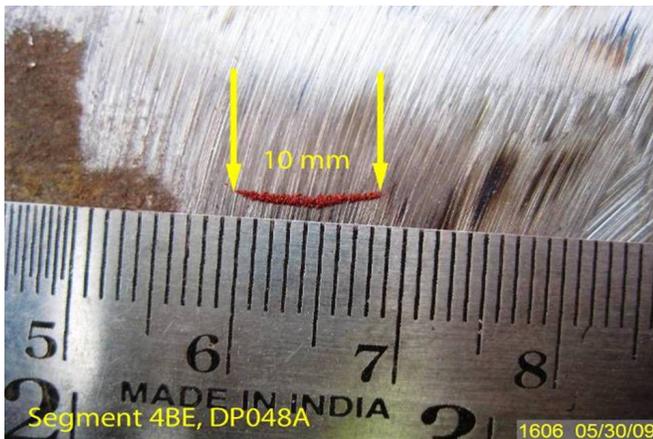
Quality Assurance and Source Inspection



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

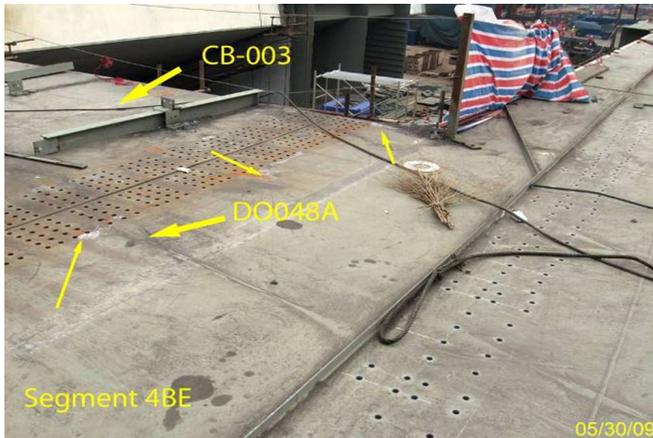
Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.25B**QUALITY ASSURANCE -- NON-CONFORMANCE REPORT****Location:** Changxing Island, Shanghai, P.R. China**Report No:** NCR-000289**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 30-May-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0263**Type of problem:****Welding****Concrete****Other****Welding****Curing****Procedural****Bridge No:** 34-0006**Joint fit-up****Coating****Other****Component:** Deck Panel DP048A, Segment 4BE**Procedural****Procedural****Description:****Reference Description:** Tack Weld Removal MT Indications, Segment 4BE**Description of Non-Conformance:**

Caltrans Quality Assurance Inspector detected 5 linear indications in the base metal of Deck Panel DP048A in Segment 4BE during random magnetic particle testing (MT) of tack weld removal locations. The tack welds were made to hold the splice plate in place while match drilling the segment deck and crossbeam (CB3) in the trial assembly.



QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



Applicable reference:

AWS D1.5, 2002 Section 3.3.7.4 - "The removal of tack welds may expose unacceptably hard or cracked HAZs. Such areas on members subject to tension or reversal-of-stress shall be tested by MT (preferably by the yoke method) to assure that no cracks are present."

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: Hiranch Patel

Name of individual from Contractor notified: Steve Lawton

Time and method of notification: 06/01/09, 8:30, Verbal

Name of Caltrans Engineer notified: Stanley Ku

Time and method of notification: 06/01/09, 16:00, Verbal

QC Inspector's Name: Wang Lu

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 Skyler Guest, (86) 1500.042.2360, who represents the Office of Structural Materials for your project.

Inspected By:	Guest, Skyler	SMR
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Reviewed By:	Wahbeh, Mazen	SMR
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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: 05-Jun-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: 05.03.06-000253

Subject: NCR No. ZPMC-0263

Reference Description: Tack Weld Removal MT Indications, Segment 4BE

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:**

Remarks:

Caltrans Quality Assurance Inspector detected 5 linear indications in the base metal of Deck Panel DP048A in Segment 4BE during random magnetic particle testing (MT) of tack weld removal locations. The tack welds were made to hold the splice plate in place while match drilling the segment deck and crossbeam (CB3) in the trial assembly.

Action Required and/or Action Taken:

Please propose a resolution for the identified non-conformance to prevent future occurrences.

Transmitted by: Stanley Ku Sr. Bridge Engineer

Attachments: ZPMC-0263

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Brian Boal, Doug Coe, Jason Tom, 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: 05.03.06-000253

Subject: NCR No. ZPMC-0263

Dated: 13-Jul-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000255 Rev: 00

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has since committed to remove the paint and re-MT all temporary attachment areas in trail assembly. ABF has employed additional MT personnel to re-inspect these same areas.

ABF has notified ZPMC of this NCR. ZPMC has since committed to remove the paint and re-MT all temporary attachment areas in trail assembly. As a further check of verification, ABF has employed additional MT personnel to re-inspect these same areas after ZPMC has completed their own MT.

Submitted by:

Attachment(s): ABF-NPR-000255R00

Caltrans' comments:

Status: AAP

Date: 05-Aug-2009

The response is acceptable, but the Non-Conformance is not closed.

Please provide documentation of the weld repairs that were performed and that the repairs were acceptable. The Department will review the Contractor's proposal to close Non-Conformance ZPMC-0263 at that time.

Submitted by: Wright, Doug

Date: 05-Aug-2009

Attachment(s):

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000253

Subject: NCR No. ZPMC-0263

Dated: 14-Aug-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000255 Rev: 01

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has provided an internal NCR to identify this nonconformance as well as providing all relative inspection documentation. ZPMC requests closure of this NCR.

ZPMC has provided an internal NCR to identify this nonconformance as well as providing all relative inspection documentation. ZPMC requests closure of this NCR.

Submitted by:

Attachment(s): ABF-NPR-000255R01;

Caltrans' comments:

Status: CLO

Date: 20-Aug-2009

The proposed resolution is acceptable. The inspection documents requested in Rev 0 of NPR-0255 have been provided. The attachment includes the Critical Weld Repair report, and acceptable VT, MT, and UT reports for the base metal areas in question. The Department concurs that Non-Conformance ZPMC-0263 is closed.

Submitted by: Wright, Doug

Date: 20-Aug-2009

Attachment(s):



No. B-447

LETTER OF RESPONSE

TO: American Bridge/Flour

DATE: 2009-8-13

REGARDING: NCR-000289 (ZPMC-263)

With this letter of response, ZPMC requests closure for Caltrans **NCR-000289 (ZPMC-263)**. Per the caltrans' comments on the NCR proposed resolution, we provide the documentation of the weld repairs that were performed and that the repairs were acceptable.

so base on the above explanation and attached documentations, ZPMC applies to close the caltrans's report **NCR-000289 (ZPMC-263)**.

Please reference attached document for acceptance and closure the **NCR-000289 (ZPMC-263)**.

ATTACHMENT:

NCR-000289 (ZPMC-263)

ZPMC internal NCR

The approved and closed CWR

The final VT/UT/MT reports

Zhao Shuangbao

2009. 8. 13

07/第7



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-B-176 (NCR-289)	
Item: Tack Weld Removal MT Indications 名称描述: 点焊去除后发现裂纹		Item Number: 件号: N/A	Drawing: 图号: N/A
Location: Trail Assembly Yard 4BE 位置: 总拼外场 4BE		Date: 日期: 2009-06-10	

Description of Nonconformance:

不符合项状态描述:

Caltrans QA Inspector detected 5 linear indications in the base metal of Deck Panel DP48A in Segment 4BE during random magnetic particles testing of tack weld removal locations. The tack welds were made to hold the splice plate in place while match drilling the segment deck and crossbeam (CB3) in the trial assembly.

加州检验员在随机 MT 抽查中发现 5 处线状缺陷在 4BE 顶板 DP48A 母材位置, 该处位置是点焊去除处。这些点焊用于定位箱梁与扭曲横梁 (CB3) 的连接板。

参考标准: AWS D1.5 2002 版 章节 3.3.7.4 “定位焊缝的清除会使热影响区显现不能接受的硬化或裂纹。承受拉应力或反向应力构件上的这种区域必须进行 MT, 以确定无裂纹存在”; 章节 6.2.6.2 “除目检之外进行 RT 和 MT 检测的焊缝严禁有裂纹”。

Work By: 09.6.12 Prepared by: LJ Zhu Reviewed by QCE: Zhao Shuangbao
 施工方: Xiafa Cui 准备: 06/10/09 质量工程师批准: Zhao Shuangbao

Drawing Error Material Defect Fabrication Error Other 09.06.10
 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: 承受拉应力或反向应力构件上的这种区域必须进行 MT, 以确定无裂纹存在。
 Perform MT to ensure free of crack at extend stress and reverse stress component.

Prepared by: Du Wenling Approved by QCA: _____
 准备 质量经理批准

Reason for Nonconformance:

不符合原因:

因加州检验员在抽查 MT 中发现 5 处点焊在 4BE 顶板 DP48A 母材位置。
 Five linear indication were found by use of MT, at 4BE deck plate DP48A.
 It shall check by MT to ensure free of cracks after removing tack welds.

预防措施: 对总拼外场的连接板定位点焊去除后, 应进行 MT 以确定无缺陷。
 Approved by/批准: Gao Jun 09.06.12

Technical Justification for Use-As-Is/Repair: Attachment Non-attachment

回用或返修的技术依据: 对 DP48A 母材存在缺陷的位置进行返修。
 Repair the defects at dp48A.
 附件 无附件

见 CWP 2009.6.10

Reviewed /批准: _____

Verification: Acceptable Unacceptable
 确认: 可接受 不可接受

Verified by QCI/质检确认: 07120671 李强 09.08.10
 Reviewed by QCA/质检主任审核: _____

6/1/09

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:	05-Jun-2009
Dear:	Mr. Charles Kanapicki	Contract No:	04-0120F4 04-SF-80-13.2 / 13.9
Attention:	Mr. Thomas Nilsson Project/Fabrication Manager	Job Name:	SAS Superstructure
Subject:	NCR No. ZPMC-0263	Document No:	05.03.06-000253

Reference Description: Tack Weld Removal MT Indications, Segment 4BE

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- 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:**

Remarks:

Caltrans Quality Assurance Inspector detected 5 linear indications in the base metal of Deck Panel DP048A in Segment 4BE during random magnetic particle testing (MT) of tack weld removal locations. The tack welds were made to hold the splice plate in place while match drilling the segment deck and crossbeam (CB3) in the trial assembly.

Action Required and/or Action Taken:

Please propose a resolution for the identified non-conformance to prevent future occurrences.

Transmitted by: Stanley Ku Sr. Bridge Engineer

Attachments: ZPMC-0263

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Brian Boal, Doug Coe, Jason Tom, Ching Chao

File: 05.03.06

02.02.15.04
05.03.06-000253,NCT

Received
NCT-600253 05 Jun 09 Page 1 of 1

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

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

Contract #: 04-0120F4

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

File #: 69.25B

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

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

Report No: NCR-000289

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 30-May-2009

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

NCR #: ZPMC-0263

Type of problem:

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

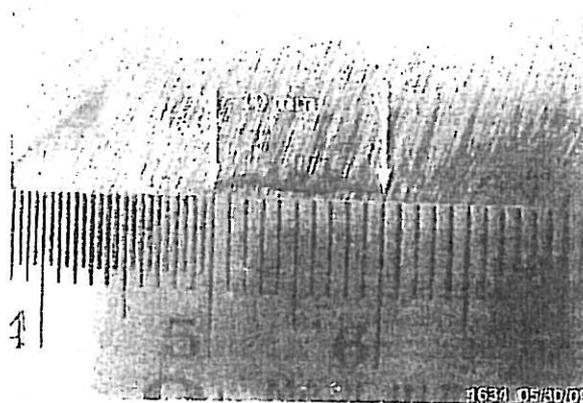
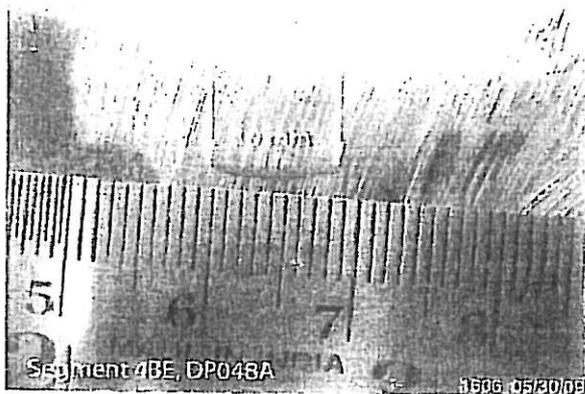
Bridge No: 34-0006

Component: Deck Panel DP048A, Segment 4BE

Reference Description: Tack Weld Removal MT Indications, Segment 4BE

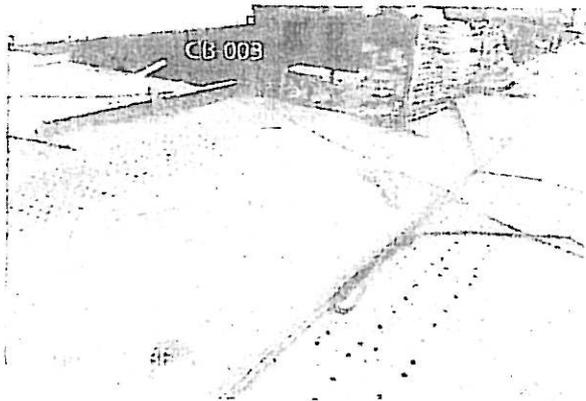
Description of Non-Conformance:

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QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



Applicable reference:

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

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Name of individual from Contractor notified: Steve Lawton

Time and method of notification: 06/01/09, 8:30, Verbal

Name of Caltrans Engineer notified: Stanley Ku

Time and method of notification: 06/01/09, 16:00, Verbal

QC Inspector's Name: Wang Lu

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 Skyler Guest, (86) 1500.042.2360, who represents the Office of Structural Materials for your project.

Inspected By: Guest, Skyler

SMR

Reviewed By: Wahbeh, Mazen

SMR



关键焊缝返修报告
Critical Welding Repair Report (CWR)

版本
Rev. No.:

1

项目名称 Project Name:	美国海湾大桥 SFOBB	部件图号 Drawing No.:	OBE4	报告编号 Report No.	B-CWR616
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	Deck plate DP48A on 4BE	NDT 报告编号 Report No. of NDT	N/A
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

Description of Welding Discontinuity:

加州在抽查 4BE 顶板 DP48A 母材 MT 时,发现存在 5 处裂纹,这些裂纹位于箱梁与 CB3 联系梁连接板去除点焊位置.具体见下图所示:

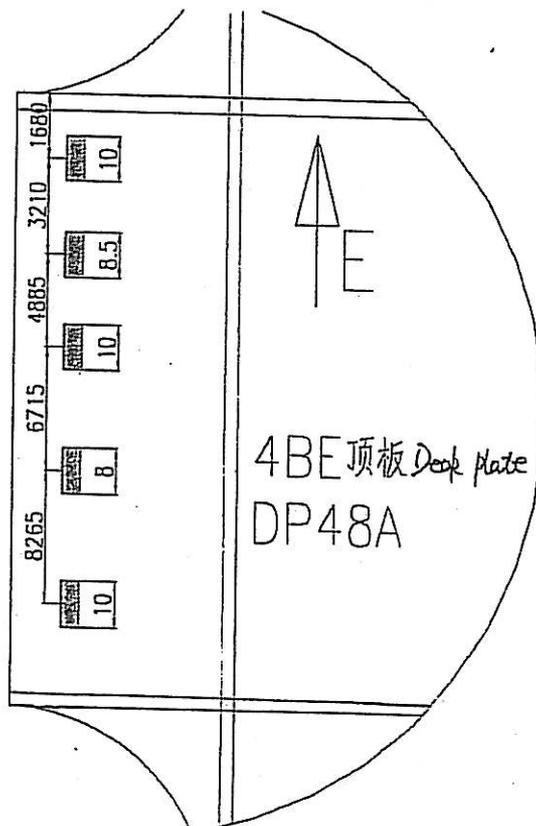
Five cracks were found out after CT performed a casual inspection to the base metal MT on 4BE deck plate DP48A. These cracks were located on the area where the tack welds between box and CB3 connection plate were removed.

检验员 (Inspector): *Wang Zhu*
Wang Zhu

日期 (Date): 2009.07.11

焊缝返修位置示意图:

Draft of Welding Discontinuity:



This document is APPROVED
State of California
DEPARTMENT OF TRANSPORTATION
Pursuant to Section 5-1.02 of the
Standard Specifications

Initial *WZ* Date: 7/13/09

对 WCR 17

产生原因:

Cause:

箱梁与 CB3 联系梁连接板去除点焊时导致母材损伤。

The base metal was damaged when removing the lack welds between the box and CB3 connection plate.

车间负责人 (Foreman): Gao Jun

日期 (Date): 09.07.19

处理意见

Disposition:

1. 这次返修时, QC和Leader CWI到现场指导打磨, 焊接和监控的指导工作;
2. 整个返修的过程, QC和Leader CWI应该有批准CWR的复印件;
3. QC和Leader CWI指导返修, 以保证返修按照处理意见进行;
4. 准备一个正确的接头型式, 具体参照相应的返修WPS;
5. 对修补区域进行VT和MT检测;
6. 根据批准的返修焊接工艺规程 (WPS) 进行预热及焊接;
7. 将修补区域打磨与母材平齐;
8. 对修补区域作100%VT和MT, UT检测;

1. QC and a Lead CWI shall be present and direct all grinding and welding operations during this repair.
2. QC and a Lead CWI shall have an approved copy of the CWR in hand prior to the repair.
3. QC and a Lead CWI shall direct the repair to ensure the repair is per the disposition requirements.
4. Prepare excavation according to the approved repair WPS;
5. Verify with VT and MT repair area is free of all defects.
6. Preheat and weld according to the relevant repair WPS;
7. Grind the repaired area flush with base metal;
8. Perform 100%VT and MT UT of repair area.

This document is APPROVED
 State of California
 DEPARTMENT OF TRANSPORTATION
 Pursuant to Section 5-1.02 of the
 Standard Specifications
 Initial: [Signature] Date: 7/23/09

工艺:

Technical Engineer: Niu Tiefan

审核:

Approved By: [Signature]

日期:

Date: 09.07.19

for checkin

#R787-QCP-900



关键焊缝返修报告

版本
Rev. No.:

Critical Welding Repair Report (CWR)

1

项目名称 Project Name:	美国海湾大桥 SFOBB	部件图号 Drawing No.:	OBE4	报告编号 Report No.	B-CWR616
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	Deck plate DP48A on 4BE	NDT 报告编号 Report No. of NDT	N/A
项目编号 Project No.:	ZP06-787				

纠正措施:**Corrective Action to Prevent Re-occurrence:**

- 对工人进行培训, 提高电焊工和碳刨工技术水平。
 - 加强现场的监控
- 1, Train the welders and grinding operators to improve their technique level.
2, Enhance the monitoring on site.

车间负责人 (Foreman):

Gao Jun

日期 (Date):

09.07.17

参照的 WPS 编号 Repair WPS No.:	WPS-345-SMAW-1 G(1F)-Repair WPS-345-FCAW-1 G(1F)-Repair-1	工艺员 Technologist:	Niu Tiefeng 09.07.19
返修 (碳刨) 前预热温度 Preheat Temperature Before Gouging:	87°C	返修的缺陷 Description of Discontinuity:	cracks
焊前处理检查 Inspection Before Welding:	acc	焊前预热温度 Preheat Temperature Before Welding:	202°C
最大碳刨深度 Max. Depth of Gouge:	6mm	碳刨总长 Total Length of Gouge:	550mm
焊工 Welder:	048617	焊接类型 Welding Type:	SMAW
焊接电流 Current:	190	焊接电压 Voltage:	22
		焊接位置 Position:	1G
		焊接速度 Speed:	110

返修后检查**Inspection After Repair:**

外观检查 VT Result:	acc	检验员 Inspector:	Wu Zhichang 08021751	日期 Date:	09.7.25
NDT 复检 NDT Result:	Aw	探伤员 NDT Person:	Sun Y. Jin Jian ting	日期 Date:	8/3

见证:**Witness/Review:****备注:****Remark:**

#R787-QCP-900

This document is APPROVED
State of California
DEPARTMENT OF TRANSPORTATION
Pursuant to Section 5-1.02 of the
Standard Specifications
Initial: [Signature] Date: 7/23/09

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
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(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: xx.25A**QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION****Location:** Changxing Island, Shanghai, P.R. China**Report No:** NCS-000374**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:****Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0263**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: 30-May-2009**Description of Non-Conformance:**

Caltrans Quality Assurance Inspector detected 5 linear indications in the base metal of Deck Panel DP048A in Segment 4BE during random magnetic particle testing (MT) of tack weld removal locations. The tack welds were made to hold the splice plate in place while match drilling the segment deck and crossbeam (CB3) in the trial assembly.

Contractor's proposal to correct the problem:

Repair cracks and perform required NDT to ensure repairs are in compliance.

Corrective action taken:

Contractor submitted Critical Weld Repair (CWR 616) along with VT and MT reports confirming that repairs are in compliance.

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 Jim Simonis: 1347 246 3441, who represents the Office of Structural Materials for your project.

Inspected By: Simonis, Jim Quality Assurance Inspector**Reviewed By:** Wahbeh, Mazen QA Reviewer