

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



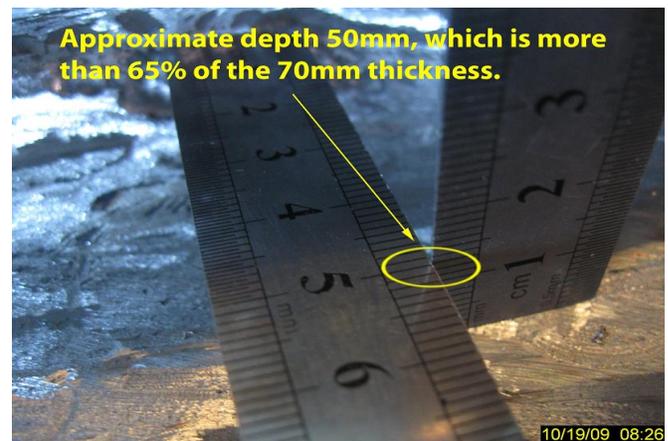
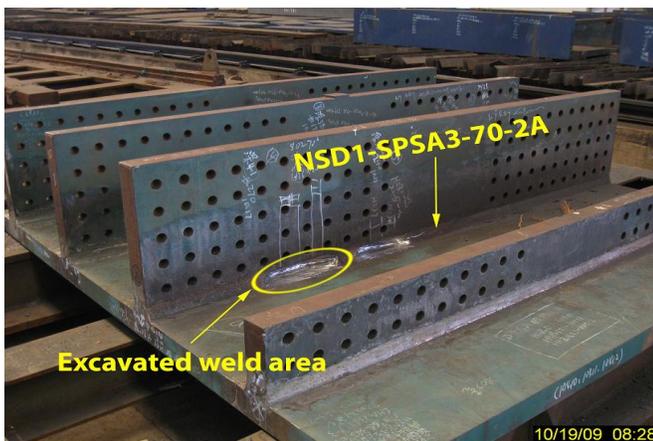
Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.25B**QUALITY ASSURANCE -- NON-CONFORMANCE REPORT****Location:** Changxing Island, Shanghai, PRC**Report No:** NCR-000450**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 19-Oct-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0423**Type of problem:**

<b>Welding</b>	<b>Concrete</b>	<b>Other</b>	
<b>Welding</b>	<b>Curing</b>	<b>Procedural</b>	<b>Bridge No:</b> 34-0006
<b>Joint fit-up</b>	<b>Coating</b>	<b>Other</b>	<b>Component:</b> North Tower
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b> North Tower, Interior Splice Plate	

**Reference Description:** Weld repair performed without CWR on North Tower, Interior Splice Plate**Description of Non-Conformance:**

During in-process Visual Testing (VT) of North Tower, Interior Splice Plate Skin to Stiffener weld NSD1-SPSA3-70-2A, QA observed that the CJP weld repair excavation depth exceeded 65% of the weld size. The 70mm thick plate was excavated approximately 50mm deep. A Critical Weld Repair (CWR) was not submitted for approval.

**Applicable reference:**

AWS D1.5-2002, Section 12.17.2 Noncritical Repair Welds, (4) - "First-time excavation and repair from one side of groove welds and fillet welds which contain unacceptable porosity, slag and fusion discontinuities, provided the excavations do not exceed the following limits:

The depth of groove weld excavation shall not exceed 65 percent of the weld size shown on the drawings."

AWS D1.5-2002, Section 12.17.3 Critical Weld Repairs - "Except as provided in 12.17.2, all welded repairs shall be considered critical."

**Who discovered the problem:** Umesh Gaikwad

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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**Name of individual from Contractor notified:** You Yuan Mao

**Time and method of notification:** 10/19/2009, 10:00; Verbal

**Name of Caltrans Engineer notified:** Scott Kennedy

**Time and method of notification:** 10/21/2009, 10:00; Verbal

**QC Inspector's Name:** Gao Zhi Chun

**Was QC Inspector aware of the problem:** Yes No

**Contractor's proposal to correct the problem:**

**Comments:**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Sinevod,Serge	ASMR
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<b>Reviewed By:</b>	Wahbeh,Mazen	SMR
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**DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge**  
 333 Burma Road  
 Oakland CA 94607  
 Tel: 510-808-4618 Fax:

**NON-CONFORMANCE REPORT TRANSMITTAL**

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

**Date:** 21-Oct-2009

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

**Dear:** Mr. Charles Kanapicki  
**Job Name:** SAS Superstructure

**Attention:** Mr. Thomas Nilsson Project/Fabrication Manager  
**Document No:** 05.03.06-000413

**Subject:** NCR No. ZPMC-0423

**Reference Description:** Weld repair performed without CWR on North Tower, Interior Splice Plate

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:** 02

**Remarks:**

During in-process Visual Testing (VT) of North Tower, Interior Splice Plate Skin to Stiffener weld NSD1-SPSA3-70-2A, QA observed that the CJP weld repair excavation depth exceeded 65% of the weld size. The 70mm thick plate was excavated approximately 50mm deep. A Critical Weld Repair (CWR) was not submitted for approval.

AWS D1.5-2002, Section 12.17.2 Noncritical Repair Welds, (4) - "First-time excavation and repair from one side of groove welds and fillet welds which contain unacceptable porosity, slag and fusion discontinuities, provided the excavations do not exceed the following limits:

The depth of groove weld excavation shall not exceed 65 percent of the weld size shown on the drawings."

AWS D1.5-2002, Section 12.17.3 Critical Weld Repairs - "Except as provided in 12.17.2, all welded repairs shall be considered critical.

"

**Action Required and/or Action Taken:**

Propose a resolution for the identified non-conformance with revised procedures to ensure critical weld repair that requires the Engineer's approval does not occur prior to the submission to and approval by the Engineer of the procedures to be utilized. In addition, provide documentation of the steps taken by the welding Quality Control Manager to prevent future occurrences

**Transmitted by:** Ken Lee Transportation Engineer  
**Attachments:** ZPMC-0423

**cc:** Rick Morrow, Gary Pursell, Mark Woods, Doug Coe, Scott Kennedy  
**File:** 05.03.06

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000413

**Subject:** NCR No. ZPMC-0423

**Dated:** 04-Nov-2009

**Contract No.:** 04-0120F 4  
04-SF-80-13.2 / 13.9

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000414 **Rev:** 00

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### Contractor's Proposed Resolution:

**Reference Resolution:** Enclosed is the WRR for the observed repair. ZPMC requests closure of this NCR.

The sub assembly that the inspector wrote the NCR is not a fracture critical member, therefore Section 12, AWS D1.5 does not apply. Enclosed is the WRR for the observed repair. ZPMC requests closure of this NCR.

### Submitted by:

**Attachment(s):** ABF-NPR-000414R00;

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### Caltrans' comments:

**Status:** CLO

**Date:** 04-Nov-2009

The Department has reviewed the applicable codes and found that it was in error in the issuance of NCR ZPMC-423. ZPMC/ABF JV is correct in their interpretation of the code. However, it should also be noted that ZPMC did submit CWR-0396 on October 22, 2009 and it was approved on October 26, 2009. This is contrary to ZPMC's statement, "A CWR was not submitted for approval".

The Department concurs that Non-Conformance ZPMC-423 is closed.

**Submitted by:** Lee, Ken

**Date:** 04-Nov-2009

**Attachment(s):**



No. T-070

## LETTER OF RESPONSE

TO: American Bridge/Flour JV

DATE: 2009-11-03

REGARDING: NCR-000450(ZPMC-0423)

ZPMC received NCR-000450(ZPMC-0423), it mentioned that CT inspector observed CJP weld repair excavation depth exceeded 65% of the weld size on North Tower, Interior Splice Plate Skin to Stiffener weld NSD1-SPSA3-70-2A. The 70mm thick plate was excavated approximately 50mm deep. A CWR was not submitted for approval.

As we all know on Tower members only Tower Strut Plate and Cross Bracing are SPCM members and also it could be checked in the drawing that this Interior Splice Plate Skin to Stiffener is not a SPCM member. So obviously it needn't comply with AWS D1.5 Section 12. As an inspector, the CT inspector was not familiar with related specification and criteria firstly, even ZPMC and AB/F people had explained it him, but he still insisted on his mistake and issued the NCR. ZPMC had to announced, as a responsible work attitude, before action some CT inspectors need think more but not assume something as a matter of course.

Here attached the WRR to prove ZPMC's repair was reasonable.

So ZPMC claims CT could take a review and withdraw this NCR.

ATTACHMENT:

NCR-000450(ZPMC-0423)

T-WR2529

Zhang Jiali  
2009.11.3



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge  
333 Burma Road  
Oakland CA 94607  
Tel: 510-808-4618 Fax:

## NON-CONFORMANCE REPORT TRANSMITTAL

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

**Date:** 21-Oct-2009

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

**Dear:** Mr. Charles Kanapicki

**Job Name:** SAS Superstructure

**Attention:** Mr. Thomas Nilsson Project/Fabrication Manager

**Document No:** 05.03.06-000413

**Subject:** NCR No. ZPMC-0423

**Reference Description:** Weld repair performed without CWR on North Tower, Interior Splice Plate

The attached Non-Conformance Report describes an occurrence where the contractor did not comply with a requirement of the contract document as indicated below:

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- Non-Conformance Resolved.

**Material Location:** Tower

**Lift:** 02

### Remarks:

During in-process Visual Testing (VT) of North Tower, Interior Splice Plate Skin to Stiffener weld NSD1-SPSA3-70-2A, QA observed that the CJP weld repair excavation depth exceeded 65% of the weld size. The 70mm thick plate was excavated approximately 50mm deep. A Critical Weld Repair (CWR) was not submitted for approval.

AWS D1.5-2002, Section 12.17.2 Noncritical Repair Welds, (4) - "First-time excavation and repair from one side of groove welds and fillet welds which contain unacceptable porosity, slag and fusion discontinuities, provided the excavations do not exceed the following limits:

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### Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to ensure critical weld repair that requires the Engineer's approval does not occur prior to the submission to and approval by the Engineer of the procedures to be utilized. In addition, provide documentation of the steps taken by the welding Quality Control Manager to prevent future occurrences

**Transmitted by:** Ken Lee Transportation Engineer

**Attachments:** ZPMC-0423

**cc:** Rick Morrow, Gary Pursell, Mark Woods, Doug Coe, Scott Kennedy

**File:** 05.03.06

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



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 690 Walnut Ave. St. 150  
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 (707) 649-5453  
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Contract #: 04-0120F4  
 Cty: SF/ALA Rte: 80 PM: 13.2/13.9  
 File #: 69.25B

## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

**Location:** Changxing Island, Shanghai, PRC

**Report No:** NCR-000450

**Prime Contractor:** American Bridge/Fluor Enterprises, a JV

**Date:** 19-Oct-2009

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

**NCR #:** ZPMC-0423

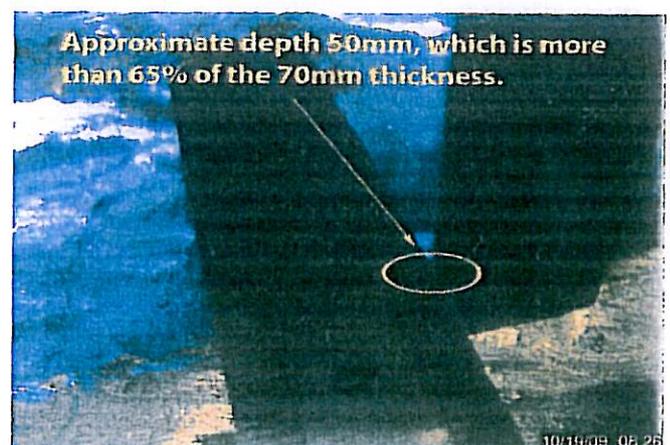
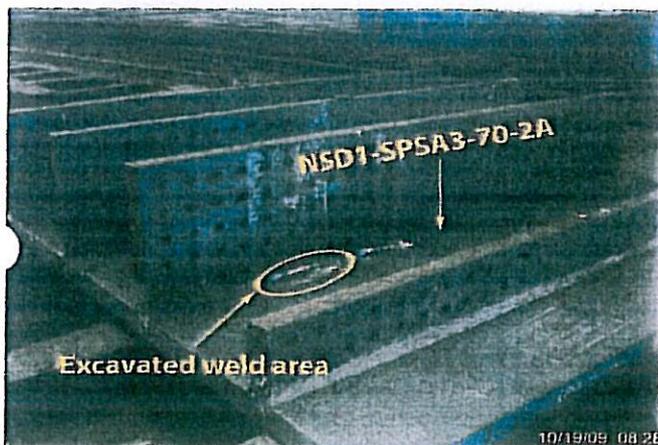
### Type of problem:

Welding  Concrete  Other   
 Welding  Curing  Procedural  Bridge No: 34-0006  
 Joint fit-up  Coating  Other  Component: North Tower  
 Procedural  Procedural  Description: North Tower, Interior Splice Plate

**Reference Description:** Weld repair performed without CWR on North Tower, Interior Splice Plate

### Description of Non-Conformance:

During in-process Visual Testing (VT) of North Tower, Interior Splice Plate Skin to Stiffener weld NSD1-SPSA3-70-2A, QA observed that the CJP weld repair excavation depth exceeded 65% of the weld size. The 70mm thick plate was excavated approximately 50mm deep. A Critical Weld Repair (CWR) was not submitted for approval.



### Applicable reference:

AWS D1.5-2002, Section 12.17.2 Noncritical Repair Welds, (4) - "First-time excavation and repair from one side of groove welds and fillet welds which contain unacceptable porosity, slag and fusion discontinuities, provided the excavations do not exceed the following limits:

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AWS D1.5-2002, Section 12.17.3 Critical Weld Repairs - "Except as provided in 12.17.2, all welded repairs shall be considered critical."

**Who discovered the problem:** Umesh Gaikwad

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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Name of individual from Contractor notified: You Yuan Mao

Time and method of notification: 10/19/2009, 10:00; Verbal

Name of Caltrans Engineer notified: Scott Kennedy

Time and method of notification: 10/21/2009, 10:00; Verbal

QC Inspector's Name: Gao Zhi Chun

Was QC Inspector aware of the problem:  Yes  No

Contractor's proposal to correct the problem:

**Comments:**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

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Inspected By: Sinevod,Serge

ASMR

Reviewed By: Wahbeh,Mazen

SMR

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# 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	NSD1-SPSA3-70	报告编号 Report No.	T-WR2529
合同号 Contract No.:	04-0120F4	部件名称 Items Name	THIRD LIFTING TOWE R(N)	NDT报告编号 Report No.of NDT	T787-UT-2359
项目编号 Project No.:	ZP06-787				

缺陷描述:

Description of welding discontinuity:

Rejected indication found by ultrasonic inspection is less than the maximum allowance aggregate length.

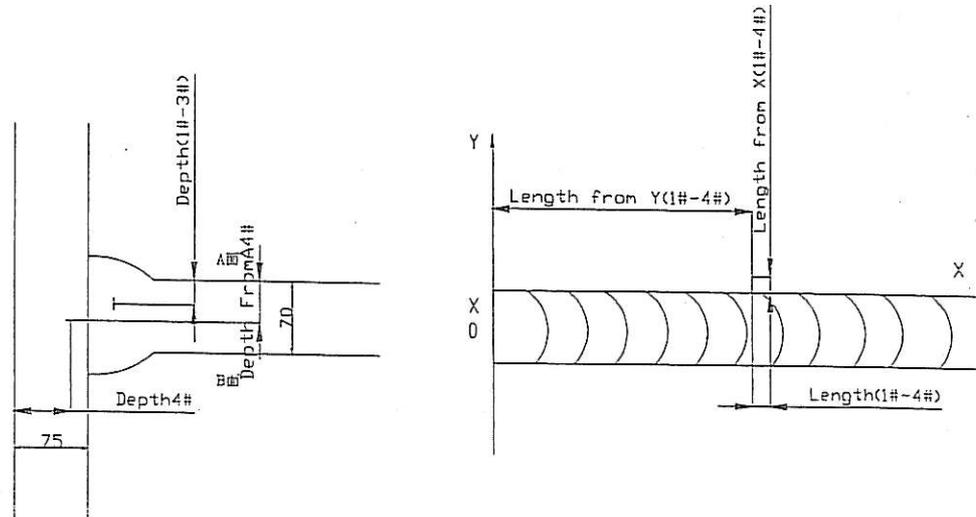
(UT探伤发现的缺陷总长度小于最大允许长度) NSD1-SPSA3-70-2A/B

检验员 (Inspector): Xu Ronggang 日期(Date): 09.10.17

*Xu Ronggang*

焊缝返修位置示意图

Draft of welding discontinuity:



WELD NUMBER: NSD1-SPSA3-70-2A/B

Please see the detail data from UT report!

产生原因:

Caused:

- 1、 碳刨后,焊接接头没有有效打磨;
  - 2、 起弧和收弧没有交错布置,以将焊渣减少到最少;
  - 3、 焊道间没有有效的清理.
- 1.The weld joint was not ground sufficiently after arc-gouging.
  2. The arc starts and stops were not staggered to minimize slag entrapment.
  3. Interpass cleaning was not performed properly.

车间负责人(Foreman): *Li Jifei*; 日期(Date): 09.10.20

处理意见

Disposition :

- 1、 Gouge off the defect weld;
  - 2、 Grind smoothly the gouged surface;
  - 3、 If User's request ,check with MT or other NDT method to make sure the defect remove compelety;
  - 4、 Preheat and the interpass temperature control according to the relative WPS-repair;
  - 5、 Check the welding according to the approved shop drawing.
- 1、 请将有缺陷的焊缝碳刨去除;
  - 2、 将碳刨处打磨光滑;
  - 3、 如用户要求,用 MT 或其它的无损检测方法证实缺陷被完全清除;
  - 4、 按批准后返修焊接工艺规程 WPS 要求进行预热和控制道间温度;
  - 5、 按图纸要求检测焊缝

工艺: *Lichunping*  
Technical engineer

审核:  
Approved by

日期  
Date

09.10.20



# 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.	NSD1-SPSA3-70	报告编号 Report No.	T-WR2529
合同号 Contract No.:	04-0120F4	部件名称 Items Name	THIRD LIFTING TOWER (N)	NDT 报告编号 Report No. of NDT	T787-UT-2359
项目编号 Project No.:	ZP06-787				

纠正措施:

**Correction action to prevent re occurrence:**

- 1、碳刨后的接头位置打磨圆滑过渡，保证每道焊缝的接头可以交错布置；
  - 2、认真仔细检查每道焊缝和加强焊道的清理；
  3. 焊缝中所有的焊渣全部去除后，表面的缺陷全部打磨干净。
1. The joint shall be ground to a smooth transition to ensure that arc starts and stops are in a staggered Arrangement.
  2. QC shall inspect the weld passes more carefully and enforcing interpass cleaning.
  3. All weld slag shall be removed and surface defects ground during interpass cleaning.

车间负责人(Foreman): *Lu Yefei*

日期(Date): *09.10.20*

参照的WPS编号 Repair WPS No.	WPS-345-FCAW-1 G(1F)-FCM-Repair WPS-345-FCAW-2 G(2F)-FCM-Repair WPS-345-SMAW-1 G(1F)-FCM-Repair WPS-345-SMAW-2 G(2F)-FCM-Repair	工艺员 technologist	<i>Li Chunping</i> <i>09.10.20</i>
返修(碳刨)前预热温度 Preheat temperature before gouging		返修的缺陷 Description of discontinuity	
焊前处理检查 Inspection before welding		焊前预热温度 Preheat temperature before welding	
最大碳刨深度 Max. depth of gouging		碳刨总长 Total length of gouging	
焊工 welder	焊接类型 welding type	焊接位置 position	
焊接电流 Current	焊接电压 Voltage	焊接速度 Speed	
<b>返修后检查</b> Inspection After repairing:			
外观检查 VT result	检验员 Inspector	日期 Date	
NDT复检 NDT result	探伤员 NDT person	日期 Date	
见证: Witness/Review:			
备注: Remark:			

#R787-QCP-900

**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, PRC**Report No:** NCS-000316**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 23-Oct-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0423**Type of problem:**

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

**Date the Non-Conformance Report was written:** 19-Oct-2009**Description of Non-Conformance:**

During in-process Visual Testing (VT) of North Tower, Interior Splice Plate Skin to Stiffener weld NSD1-SPSA3-70-2A, QA observed that the CJP weld repair excavation depth exceeded 65% of the weld size. The 70mm thick plate was excavated approximately 50mm deep. A Critical Weld Repair (CWR) was not submitted for approval.

**Contractor's proposal to correct the problem:**

Submit CWR for approval.

**Corrective action taken:**

A CWR (T-CWR 396) for the repair has been submitted and approved by the Engineer.

**Did corrective action require Engineer's approval?** Yes No**If so, name of Engineer providing approval:****Date:****Is Engineer's approval attached?** Yes No**Comments:**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

**Inspected By:** Sinevod, Serge

Quality Assurance Inspector

**Reviewed By:** Wahbeh, Mazen

QA Reviewer