

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-000812**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 26-Jul-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0774**Type of problem:**

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

Reference Description: Weld Repair performed on SPCM Material without Engineer's approval**Description of Non-Conformance:**

During random in process observations, Caltrans Quality Assurance Inspector (QA) observed the following:

- ZPMC welder personnel is performing Shielded Metal Arc Welding (SMAW) repair on Seismic Performance Critical Material (SPCM) without the Engineer approval.

- The effected Tower Strut identified as ND1-STSA4-6-143M-2, Joint No identified as ND1-STSA4-6-143M-2-74A/B.

- The Material thickness is 32 mm.

- This Tower Strut is located in Sub assembly Bay#11.

For further information, please see the attached pictures below.

**Applicable reference:**

AWS D1.1 (2002) Section 12.17.4: "All critical repairs to base metal and welds shall be approved by the Engineer prior to beginning the repair and shall be documented giving details of the type of discontinuity and extent of repair."

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Caltrans Special Provisions section 8-3.01:” In addition to the provisions in AWS D1.5, section 3.7.4 and section 12.17, third time repairs of welds, or base metal, regardless of NDT method,...require prior approval of the Engineer.

Who discovered the problem: Shailesh Gaikwad

Name of individual from Contractor notified: Zhao Xian He

Time and method of notification: 1545/ 07/26/10/ Verbal

Name of Caltrans Engineer notified: Jim Reid

Time and method of notification: 0830/ 07/27/10/ Verbal

QC Inspector's Name: 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



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge

333 Burma Road
Oakland CA 94607
Tel: 510-286-0539 Fax: 510-286-0550

NON-CONFORMANCE REPORT TRANSMITTAL

To:	AMERICAN BRIDGE/FLUOR, A JV 375 BURMA ROAD OAKLAND CA 95607	Date:	28-Jul-2010
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-0774	Document No:	05.03.06-000770

Reference Description: Weld Repair performed on SPCM Material without Engineer's approval /Tower/Lift 4 Strut

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:** 04

Remarks:

During random in process observations, Caltrans Quality Assurance Inspector (QA) observed the following:

- ZPMC welder personnel is performing Shielded Metal Arc Welding (SMAW) repair on Seismic Performance Critical Material (SPCM) without the Engineer approval.
- The effected Tower Strut identified as ND1-STSA4-6-143M-2, Joint No identified as ND1-STSA4-6-143M-2-74A/B.
- The Material thickness is 32 mm.
- This Tower Strut is located in Sub assembly Bay#11.

References:

- AWS D1.1 (2002) Section 12.17.4: "All critical repairs to base metal and welds shall be approved by the Engineer prior to beginning the repair and shall be documented giving details of the type of discontinuity and extent of repair."
- Caltrans Special Provisions section 8-3.01: "In addition to the provisions in AWS D1.5, section 3.7.4 and section 12.17, third time repairs of welds, or base metal, regardless of NDT method,...require prior approval of the Engineer."

Action Required and/or Action Taken:

Propose a resolution for the non-conformance item and document that the deficiencies have been brought into 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.

Transmitted by: Gina Rizzardo Transportation Engineer
Attachments: ZPMC-0774

NCT

(Continued Page 2 of 2)

cc: Rick Morrow, Gary Pursell, Mark Woods

File: 05.03.06

NCR PROPOSED RESOLUTION

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

Attention: Siegenthaler, Peter
Resident Engineer

Ref: 05.03.06-000770

Subject: NCR No. ZPMC-0774

Dated: 20-Sep-2010

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000776 Rev: 00

Contractor's Proposed Resolution:

Reference Resolution:

The repair was stopped at the time of that the non conformance was noted and ZPMC waited until the CWR was received before proceeding. ZPMC is providing NDT results after the CWR to show that the weld repair was successful and the NDT is acceptable. The inspector involved with this missed indication has been reprimanded and is aware of the future consequences of not stopping repairs without that require Engineer approval. Based on these actions ZPMC requests closure of this NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000776R00;

Caltrans' comments:

Status: CLO

Date: 20-Sep-2010

This proposed resolution is acceptable. The documentation received is sufficient and the Department concurs that Non-Conformance ZPMC-0774 is closed.

Submitted by: Eagen, Sean

Attachment(s):

Date: 20-Sep-2010



No. T-163

LETTER OF RESPONSE

TO: American Bridge/Flour JV

DATE: 2010-09-17

REGARDING: NCR-000812(ZPMC-0774)

ZPMC received NCR-000812(ZPMC-0774), it mentioned that ZPMC welder personnel was performing SMAW repair on SPCM without the Engineer approval.

ZPMC stopped the welding at that time and took the immediate rectification on this weld after we get the CWR.

Finally these welds were checked and green tagged by CT, here attached CWR and related NDT reports show the welds are sound finally.

Basing on above information, ZPMC hope CT could take a review and close the NCR.

ATTACHMENT:

NCR-000812(ZPMC-0774)

T787-UT-3077R1

T-CWR672 R1

Zhao Jia neng
2010-9-17



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge
 333 Burma Road
 Oakland CA 94607
 Tel: 510-286-0539 Fax: 510-286-0550

NON-CONFORMANCE REPORT TRANSMITTAL

To: AMERICAN BRIDGE/FLUOR, A JV Date: 28-Jul-2010
 375 BURMA ROAD
 OAKLAND CA 95607 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: 05.03.06-000770
 Subject: NCR No. ZPMC-0774

Reference Description: Weld Repair performed on SPCM Material without Engineer's approval /Tower/Lift 4 Strut

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.
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Material Location: Tower Lift: 04

Remarks:

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 -The effected Tower Strut identified as ND1-STSA4-6-143M-2, Joint No identified as ND1-STSA4-6-143M-2-74A/B.
 -The Material thickness is 32 mm.
 -This Tower Strut is located in Sub assembly Bay#11.

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Action Required and/or Action Taken:

Propose a resolution for the non-conformance item and document that the deficiencies have been brought into 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.

Transmitted by: Gina Rizzardo Transportation Engineer
 Attachments: ZPMC-0774

02.02.15.04 05.03.06-000770.NCT

Received Page 1 of 2
 NCT-000770 28 Jul 10

NCT

(Continued Page 2 of 2)

cc: Rick Morrow, Gary Pursell, Mark Woods

File: 05.03.06

DEPARTMENT OF TRANSPORTATION
 DIVISION OF ENGINEERING SERVICES
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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, P.R. China

Report No: NCR-000812

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 26-Jul-2010

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

NCR #: ZPMC-0774

Type of problem:

Welding Concrete Other

Welding Curing Procedural

Joint fit-up Coating Other

Procedural Procedural Description:

Bridge No: 34-0006

Component: Tower Struts

Reference Description: Weld Repair performed on SPCM Material without Engineer's approval

Description of Non-Conformance:

During random in process observations, Caltrans Quality Assurance Inspector (QA) observed the following:

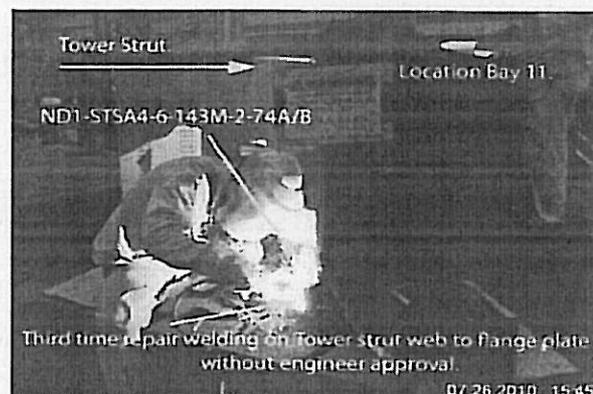
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For further information, please see the attached pictures below.



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QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

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Who discovered the problem: Shailesh Gaikwad

Name of individual from Contractor notified: Zhao Xian He

Time and method of notification: 1545/ 07/26/10/ Verbal

Name of Caltrans Engineer notified: Jim Reid

Time and method of notification: 0830/ 07/27/10/ Verbal

QC Inspector's Name: 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 ULTRASONIC EXAMINATION

UT探伤报告

REPORT NO. 报告编号 T787-UT-3077R1 DATE 2010.08.05 PAGE 1 OF 1 Revision No: 0

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

ITEMS NAME: FOURTH LIFTING STRUT PLATE DRAWING NO.: ND1-STSA4-6 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 T-JIONT 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 A709SL-GR485 /GR345 32/75mm

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			

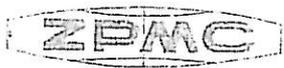
Base metal inspected per AWS D1.5-2002 Section 6.19.5 0° UT OK.

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
ND1-STSA4-6-143M-2-74A/B	1R1	70				32									ACC.	100%

AFTER T-CWR672REV1

BLANK

EXAMINED BY 主操 <i>Dai Fengsheng</i>	REVIEWED BY 审核 <i>Xu Ronggang</i>
LEVEL - II SIGN / DATE <i>2010.8.25</i>	LEVEL - II SIGN / DATE <i>2010.8.25</i>
质量经理 / QCM <i>Wang...</i> 2010.8.5	用户CUSTOMER
签字 SIGN / 日期 DATE	签字 SIGN / 日期 DATE



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	部件编号 Drawing No.:	ND1-STSA4-6	报告编号 Report No.:	T-CWR672
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	FOURTH LIFTING TOWER ER(M)	NDT 报告编号 NDT Report No.:	T787-UT-3077
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

Description of Welding Discontinuity:

Rejected indication found by ultrasonic inspection at second time.

(UT探伤返修第二次, 并且该板为A709SL-GE485。) ND1-STSA4-6-143M-2-74A/B

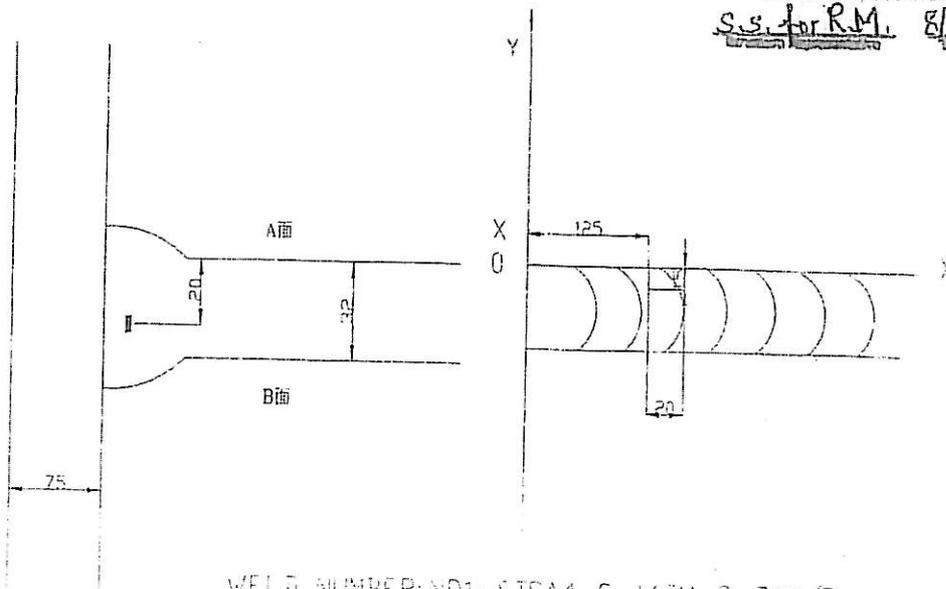
Welder ID No. (焊工编号): 040667 Position:(位置): 2G

检验员 (Inspector): *Dai Gengsheng*
Dai Gengsheng

日期 (Date): 2010.07.28

焊缝返修位置示意图:

Draft of Welding Discontinuity:



APPROVED
 APPROVED AS NOTED
 RETURNED FOR CORRECTION
 Prepared to Section 5-123
 of the Standard Specifications
 State of California
 DEPARTMENT OF TRANSPORTATION
 Division of Engineering Services
 Office of Structural Construction

S.S. for R.M. 8/3/10

WELD NUMBER: ND1-STSA4-6-143M-2-74A/B

产生原因:

Cause:

1 The weld defect location may not have been properly identified prior to grinding. i.e. the X and Y location was incorrect or the excavation was not centered on the defect, therefore the excavation did not encompass the whole defect

1. 打磨前缺陷的位置没有标识清楚。例如: XY的位置标的不正确, 或者没有将缺陷完全清除, 因此没有清楚所有的缺陷

车间负责人 (Foreman): *Lu Yefei* 日期 (Date): *10.07.28*

处理意见

Disposition :

1. QC shall monitor and direct the welder and the grinder doing the repair operation.
2. Preheat before gouging; the temperature shall be at least 65°C.
3. Gouge the weld to remove identified defects.
4. Joint details shall refer to the approved WPS repair.
5. Grind the gouged areas to a smooth and shiny surface.
6. Verify with VT and MT to ensure no defects remain in the weld joint prior to welding.
7. QC shall monitor all welding passes being deposited.
8. QC shall ensure all slag has been removed prior the deposition of next pass.
9. Preheat and maintain interpass temperature control in accordance with the WPS.
10. Blend the weld repaired areas into the adjacent weld or base metal by grinding.
11. Perform VT, MT and UT NDT inspection to the repaired areas.

- 1、在返修过程中, QC 应该监控和指导焊工和打磨工;
- 2、碳刨之前必须先进行预热, 温度不低于 65° C;
- 3、碳刨去除缺陷;
- 4、缺陷被完全清除后, 必须准备一个正确的接头型式, 具体接头型式请参见对应的修补焊接工艺规程(WPS);
- 5、将碳刨面打磨光滑;
- 6、在准备好焊接接头焊接前, 用 VT 和 MT 检测缺陷被完全清除;
- 7、在返修过程中, QC 确认焊道清理干净;
- 8、在进入下道焊缝前, QC 应该保证所有的缺陷已经去除;
- 9、根据 WPS 控制预热和焊道的温度;
- 10、打磨返修区域与临近焊缝和母材齐平;
- 11、对返修区域进行 VT, MT 和 UT 等 NDT 检测。

APPROVED
 APPROVED AS NOTED
 RETURNED FOR CORRECTION
 Pursuant to Section 8-1.03
 of the Standard Specifications
 State of California
 DEPARTMENT OF TRANSPORTATION
 Division of Engineering Services
 Office of Structural Construction
S.S. for R.M. 8/3/10

工艺:

Technical Engineer: *Lichunping*

审核:

Approved By: *Lu Yefei*

日期:

Date: *10.07.28*

#R787-QCP-701



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.:	ND1-STSA4-6	报告编号 Report No.:	T-CWR672
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	FOURTH LIFTING TO WER(N)	NDT 报告编号 NDT Report No.:	T787-UT-3077
项目编号 Project No.:	ZP06-787				

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

- QC and production to properly lay out the UT defect, mark the X, Y, D on the base metal and the location on the surface of weld by use of rectangle or circle, by doing this, UT operator will verify the exact location of the defect prior to excavation.
 - The UT operator and or CWI will take the responsibility to verify the excavation has completely removed the defect
- QC和生产部门应该正确的标出缺陷的位置, 在母材上标出缺陷X, Y, D的值, 在焊缝上, 用长方形和圆圈标出缺陷的位置, 这样, 在碳刨前, 能够准确的确认缺陷的位置;
 - UT检验员和CWI必须确认缺陷已经完全刨除.

车间负责人 (Foreman):

Lu Yefei

日期 (Date):

10.07.24

参照的WPS编号 Repair WPS No.:	WPS-485-SMAW-1G(1 F)-FCM-Repair-1 WPS-485-SMAW-2G(2 F)-FCM-Repair-1 WPS-485-SMAW-3G(3 F)-FCM-Repair	工艺员 Technologist:	Lichunping 10.07.24
返修(碳刨)前预热温度 Preheat Temperature Before Gouging:	65°C	返修的缺陷 Description of Discontinuity:	夹杂 slag
焊前处理检查 Inspection Before Welding:	ALL	焊前预热温度 Preheat Temperature Before Welding:	200°C
最大碳刨深度 Max. Depth of Gouge:	16mm	碳刨总长 Total Length of Gouge:	80mm
焊工 Welder:	040656	焊接类型 Welding Type:	SMAW
焊接电流 Current:	248A	焊接电压 Voltage:	23.8
		焊接位置 Position:	2G
		焊接速度 Speed:	150mm/min

返修后检查**Inspection After Repair:**

外观检查 VT Result:	ALL	检验员 Inspector:	Yudongping 07/11/25	日期 Date:	10.08.05
NDT复检 NDT Result:	WT ALL	探伤员 NDT Person:	Dai Gangsheng	日期 Date:	

见证:

Witness/Review:

备注:

Remark:

APPROVED
APPROVED
RETURNED FOR CORRECTION
Permit to Section 6-1.02
of the Standard Specifications
State of California
DEPARTMENT OF TRANSPORTATION
Division of Engineering Services
Office of Structural Construction

S.S. for R.M. 8/3/10

#R787-OCP-701

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-000854**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 20-Sep-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0774**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: 26-Jul-2010**Description of Non-Conformance:**

During random in process observations, Caltrans Quality Assurance Inspector (QA) observed the following:

-ZPMC welder personnel is performing Shielded Metal Arc Welding (SMAW) repair on Seismic Performance Critical Material (SPCM) without the Engineer approval.

-The effected Tower Strut identified as ND1-STSA4-6-143M-2, Joint No identified as ND1-STSA4-6-143M-2-74A/B.

-The Material thickness is 32 mm.

-This Tower Strut is located in Sub assembly Bay#11.

For further information, please see the attached pictures below.

Contractor's proposal to correct the problem:

Contractor stopped the repair weld and only resume the repair after the CWR approval by Engineer. Contractor will perform NDT after repair to prove the weld is acceptable. Contractor will educate the inspector involved for carrying out critical weld repair without approved by Engineer.

Corrective action taken:

Contractor stopped the repair works immediately. Repair resumed until CWR is approved by Engineer. NDT report submitted subsequently showed that the weld is acceptable. Contractor reprimanded the inspector involved and made him aware of the consequence of repairing with no Engineer's approval.

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

QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

(Continued Page 2 of 2)

Inspected By: Ng,Michael

Quality Assurance Inspector

Reviewed By: Devey,Jim

QA Reviewer