

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-000707**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 07-Apr-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0674**Type of problem:**

| | | | |
|---------------------|-------------------|--|---|
| Welding | Concrete | Other | |
| Welding | Curing | Procedural | Bridge No: 34-0006 |
| Joint fit-up | Coating | Other | Component: Segment 9CE Bottom Plates |
| Procedural | Procedural | Description: Missed UT Indication by QC | |

Reference Description: Missed UT indication by QC on Segment 9CE Bottom Plate to Bottom Plate Weld**Description of Non-Conformance:**

During the Quality Assurance (QA) Ultrasonic Testing (UT) review of welds located on Segment 9CE, this QA Inspector discovered the following issue:

- One (1) Rejectable Class "A" indication measuring approximately 25mm in length.
- The indication rating is +9dBs.
- The weld is identified as SEG054A-006.
- The nominal thickness of the bottom plate is 20mm.
- The Weld is a complete joint penetration (CJP) Butt Weld joining the Bottom Plates BP72A to BP126A.
- The "Y" location is approximately 5130mm when measured from the west leading edge of the plate.
- The indication is clearly marked near the weld.
- This weld is designated as Non Seismic Performance Critical Member (Non SPCM).
- The OBG Segment is located at back side of OBG Bay #14.

Applicable reference:

AWS D1.5-2002, Section 6, Table 6.3: "Specifies a class A indication as having a dBs rating of +10 and lower for weld thicknesses 8mm through 20mm."

Special Provisions Section 8.3: "Quality Control (QC) shall be the responsibility of the contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents."

Who discovered the problem: Hiranch Patel**Name of individual from Contractor notified:** Li Man Kit**Time and method of notification:** 1700 hours, 04/07/10, Verbal**Name of Caltrans Engineer notified:** Sean Eagen**Time and method of notification:** 0800 hours, 04/08/10, Verbal

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

QC Inspector's Name: Zhang wei

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, +(86) 134.7247.7571, who represents the Office of Structural Materials for your project.

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|----------------------|-------------|-----|
| Inspected By: | Tsang, Eric | SMR |
|----------------------|-------------|-----|

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| Reviewed By: | Wahbeh, Mazen | SMR |
|---------------------|---------------|-----|



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: 08-Apr-2010

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

Dear: Mr. Charles Kanapicki
Attention: Mr. Thomas Nilsson Project/Fabrication Manager
Subject: NCR No. ZPMC-0674

Job Name: SAS Superstructure
Document No: 05.03.06-000663

Reference Description: Missed UT indication by QC on Segment 9CE Bottom Plate to Bottom Plate Weld

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:

- During the Quality Assurance (QA) Ultrasonic Testing (UT) review of welds located on Segment 9CE, this QA Inspector discovered the following issue:
- One (1) Rejectable Class “A” indication measuring approximately 25mm in length.
 - The indication rating is +9dBs.
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 - The “Y” location is approximately 5130mm when measured from the west leading edge of the plate.
 - The indication is clearly marked near the weld.
 - This weld is designated as Non Seismic Performance Critical Member (Non SPCM).
 - The OBG Segment is located at back side of OBG Bay #14.

Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences. A response for the resolution of this issue is expected within 7 days.

Transmitted by: Sean Eagen Transportation Engineer
Attachments: ZPMC-0674

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

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000663

Subject: NCR No. ZPMC-0674

Dated: 28-Apr-2010

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000648 Rev: 00

Contractor's Proposed Resolution:

Reference Resolution: ZPMC is providing a copy of the NDT results showing that the repair was successfully conducted and the weld is now acceptable. Based on that ZPMC requests closure of this NCR.

ZPMC is providing a copy of the NDT results showing that the repair was successfully conducted and the weld is now acceptable. Based on that ZPMC requests closure of this NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000648R00;

Caltrans' comments:

Status: CLO

Date: 29-Apr-2010

This proposed resolution is acceptable. The documentation received is sufficient and the Department concurs that Non-Conformance ZPMC-0674 is closed.

Submitted by: Eagen, Sean

Attachment(s):

Date: 29-Apr-2010



No. B-738

LETTER OF RESPONSE

TO: American Bridge/Flour

DATE: 2010-4-28

REGARDING: NCR-000707(ZPMC-0674)

ZPMC acknowledged the problem and has issued internal NCR. Attached documentations show this missed indication has been repaired and was tested acceptable. Based on this ZPMC is requesting closure of this NCR.

ATTACHMENT:

NCR-000707(ZPMC-0674)

B-WR11816

B787-UT-12244 R1

A handwritten signature in black ink, appearing to be "Jing" followed by a flourish.

4/28/10



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: 08-Apr-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: 05.03.06-000663

Subject: NCR No. ZPMC-0674

Reference Description: Missed UT indication by QC on Segment 9CE Bottom Plate to Bottom Plate Weld

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Transmitted by: Sean Eagen Transportation Engineer

Attachments: ZPMC-0674

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

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Office of Structural Materials

Quality Assurance and Source Inspection



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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-000707**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 07-Apr-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0674**Type of problem:**Welding Concrete Other Welding Curing Procedural Bridge No: 34-0006Joint fit-up Coating Other Component: Segment 9CE Bottom PlatesProcedural Procedural Description: Missed UT Indication by QC**Reference Description:** Missed UT indication by QC on Segment 9CE Bottom Plate to Bottom Plate Weld**Description of Non-Conformance:**

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Special Provisions Section 8.3: "Quality Control (QC) shall be the responsibility of the contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents."

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QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

QC Inspector's Name: Zhang wei

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, +(86) 134.7247.7571, who represents the Office of Structural Materials for your project.

Inspected By: Tsang, Eric SMR

Reviewed By: Wahbeh, Mazen SMR



焊缝返修报告
Welding Repair Report

版本 Rev. No.

0

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|----------------------|-----------------|--------------------|-----------------------------|-----------------------------|---------------|
| 项目名称 Project Name | 美国海湾大桥 SFOBB | 部件图号 Drawing No | SEG054A | 报告编号 Report No. | B-WR11816 |
| 合同号 Contract No.: | 04-0120F4 | 部件名称 Items Name | 9CE BOTTOM PLATE SPLI CE | NDT报告编号 Report No.of NDT | B787-UT-12244 |
| 项目编号 Project No.: | ZP06-787 | | | | |

焊缝缺陷描述:

Description of welding discontinuity:

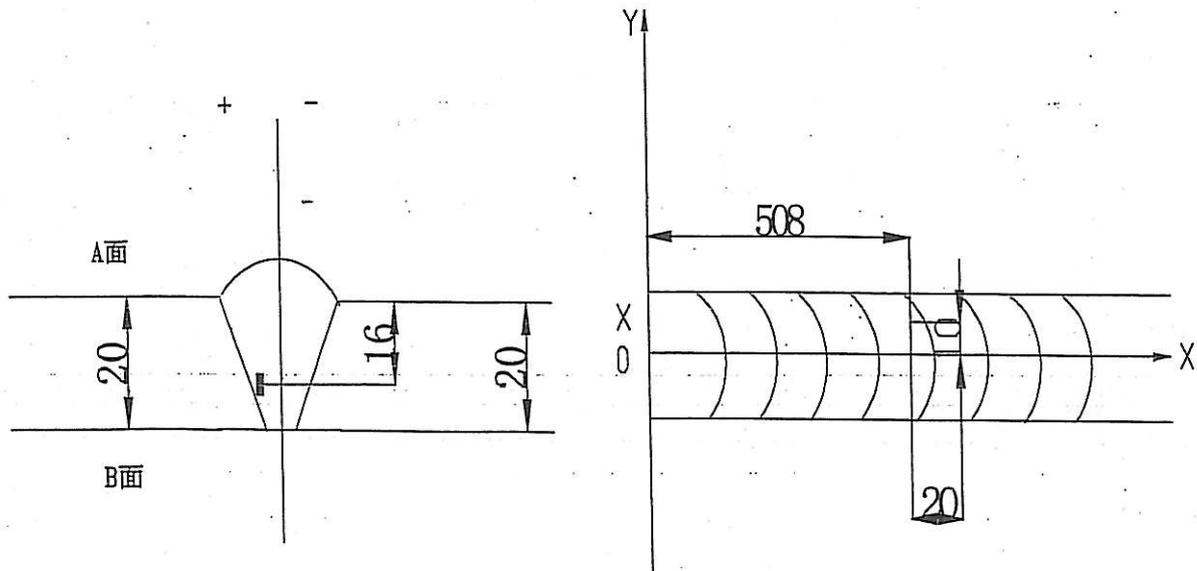
Rejected indication found by ultrasonic inspection is less than the maximum allowance aggregate length.

(UT探伤发现的缺陷总长度小于最大允许长度。) SEG054A-006

检验员 (Inspector) Sun Yin 日期(Date): 2010.04.09

焊缝返修位置示意图:

Draft of welding discontinuity:



WELD NUMBER: SEG054A-006

产生原因:

Caused:

1、焊道未及时处理干净。

1. Did not clear the weld pass completely in time.

车间负责人(Foreman): *Li Xigang* 日期(Date): 10.04.09

处理意见

Disposition :

1. 从缺陷距离端面较近一侧 ($D \leq 0.65T$, D为缺陷深度, T为板厚) 采用碳刨或打磨的方法去除焊缝缺陷;
2. 参照返修焊接工艺规程 (WPS) 准备正确的接头型式, 预热和焊接;
3. 焊前对修补区域进行VT检测保证缺陷完全被清除;
4. 将修补区域打磨到与母材或邻近焊缝平齐;
5. 对焊缝进行UT检测, 检测范围为返修区域以及其两端各延长50mm。

1. Gouge or grind from nearer side from metal edge ($D \leq 0.65T$, "D" is depth of defects, "T" is thickness of metal) to remove all defects;
2. Follow repair WPS for joint preparation, preheat, and weld deposit;
3. Verify with VT no defects remain in the weld joint prior to welding;
4. Grind the repaired area flush with base metal or the adjacent weld;
5. Perform UT inspection to the weld along with 50mm on each end of the repair area;

工艺:
Technical engineer *Hexianlin*

审核:
Approved by

日期
Date 10.06.09



焊缝返修报告

Welding Repair Report

版本 Rev. No.

0

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|----------------------|-----------------|--------------------|-----------------------------|-----------------------------|---------------|
| 项目名称 Project Name | 美国海湾大桥 SFOBB | 部件图号 Drawing No | SEG054A | 报告编号 Report No. | B-WR11816 |
| 合同号 Contract No.: | 04-0120F4 | 部件名称 Items Name | 9CE BOTTOM PLATE SP LICE | NDT报告编号 Report No.of NDT | B787-UT-12244 |
| 项目编号 Project No.: | ZP06-787 | | | | |

纠正措施:

Correction action to prevent re occurrence:

1. 加强焊接监控和道间清理。
1. Improve monitoring of welding and interpass cleaning.

车间负责人(Foreman): *Lizhigang* 日期(Date): 10.04.09

| | | | |
|--|--|---|-------------------------------------|
| 参照的WPS编号 Repair WPS No. | WPS-345-SMAW-1 G(1F)-Repair WPS-345-FCAW-1 G(1F)-Repair-1 WPS-345-SMAW-4 G(4F)-Repair | 工艺员 technologist | <i>Hexiaolin</i> <i>10.04.09</i> |
| 返修(碳刨)前预热温度 Preheat temperature before gouging | <i>88°C</i> | 返修的缺陷 Description of discontinuity | <i>Z-F</i> |
| 焊前处理检查 Inspection before welding | <i>Acc</i> | 焊前预热温度 Preheat temperature before welding | <i>121°C</i> |
| 最大碳刨深度 Max. depth of gouging | <i>- 6mm</i> | 碳刨总长 Total length of gouging | <i>120mm</i> |
| 焊工 welder | <i>044772</i> | 焊接类型 welding type | <i>SMAW</i> |
| 焊接电流 Current | <i>142</i> | 焊接电压 Voltage | <i>243</i> |
| | | 焊接位置 position | <i>4G</i> |
| | | 焊接速度 Speed | <i>129</i> |
| 返修后检查 Inspection After repairing: | | | |
| 外观检查 VT result | 检验员 Inspector | 日期 Date | |
| <i>Acc</i> | <i>07/20/01</i> <i>Li Jianhua</i> | <i>2010.4.14</i> | |
| NDT复检 NDT result | 探伤员 NDT person | 日期 Date | |
| <i>15m</i> | <i>Sun Yin</i> | <i>1.2.24.27</i> | |
| 见证: Witness/Review: | | | |
| 备注: Remark: | | | |



REPORT OF ULTRASONIC EXAMINATION

UT探伤报告

REPORT NO. 报告编号 B787-UT-12244 DATE 2010.04.09 PAGE 1 OF 1 Revision No: 0

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

ITEMS NAME: 9CE BOTTOM PLATE SPLICE DRAWING NO.: SEG054A 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
 SAW 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 20mm

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 |
|---------------------|-------------|-----------------|------------|-----------------------|-------------|-----------------|------------|
| Changchiao | 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 | Depth from Surface 距表面深度 | From X 距X | From Y 距Y | | |
| SEG054A-006 | 1 | 70 | A | 1 | 41 | 32 | 3 | +6 | 20 | 67 | 16 | +10 | 508 | REJ. | 100% |

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| EXAMINED BY 主探 Sun Yin LEVEL - II SIGN / DATE 10.04.09 | REVIEWED BY 审核 Huang Jing LEVEL - II SIGN / DATE 10.04.09 |
| 质量经理 / QCM | 用户CUSTOMER |
| 签字 SIGN / 日期 DATE | 签字 SIGN / 日期 DATE |



REPORT OF ULTRASONIC EXAMINATION

UT探伤报告

REPORT NO. 报告编号 B787-UT-12244R1 DATE 2010.04.27 PAGE 1 OF 1 Revision No: 0

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

ITEMS NAME: 9CE BOTTOM PLATE SPLICE DRAWING NO.: SEG054A 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 IIV BLOCK TYPE II C.M.C A709M-345T2-X 20mm

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.

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|-------------------------------|-----------------------|---------------------|------------------|----------|------------------|-----------------|--------------------|-------------------|--|---|---|---|--------------|----------------------------------|--------------|------------------|
| | | | | | 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 |
| SEG054A-006 | | 70 | | | | 32 | | | | | | | | | ACC. | 100% |

AFTER B-WR11816

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| EXAMINED BY 主探 <i>Sun Jin</i> | REVIEWED BY 审核 <i>Zhang</i> |
| LEVEL - II SIGN / DATE <i>2010.4.27</i> | LEVEL - II SIGN / DATE <i>2010.4.27</i> |
| 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

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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-000667**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 29-Apr-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0674**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: 07-Apr-2010**Description of Non-Conformance:**

During the Quality Assurance (QA) Ultrasonic Testing (UT) review of welds located on Segment 9CE, this QA Inspector discovered the following issue:

- One (1) Rejectable Class "A" indication measuring approximately 25mm in length.
- The indication rating is +9dBs.
- The weld is identified as SEG054A-006.
- The nominal thickness of the bottom plate is 20mm.
- The Weld is a complete joint penetration (CJP) Butt Weld joining the Bottom Plates BP72A to BP126A.
- The "Y" location is approximately 5130mm when measured from the west leading edge of the plate.
- The indication is clearly marked near the weld.
- This weld is designated as Non Seismic Performance Critical Member (Non SPCM).
- The OBG Segment is located at back side of OBG Bay #14.

Contractor's proposal to correct the problem:

Repair said indication and perform NDT required to verify weld quality.

Corrective action taken:

Contractor submitted post repair NDT report verifying the weld is now in conformance with Contract weld quality requirements.

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

QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

(Continued Page 2 of 2)

Inspected By: Simonis,Jim

Quality Assurance Inspector

Reviewed By: Wahbeh,Mazen

QA Reviewer