

**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 #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-013697**Date Inspected:** 30-Apr-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1900**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Mr. Chen Xi**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Orthotropic Box Girder (OBG)**Summary of Items Observed:**

This CALTRANS OSM Quality Assurance Inspector (QA) Surendra Prabhu was present during the times noted above for observations relative to the fabrication of the Self Anchored Suspension (SAS) Superstructure being performed by Zhenhua Port Machinery Company (ZPMC) at Changxing Island, in Shanghai, China. QA observed and/or found the following:

**BAY-1**

This QA Inspector Randomly observed the following work in progress:

Flux Cored Arc Welding (FCAW) welding of weld joint 20TR1-045-011. Welder is identified as 203710. ZPMC Quality Control (QC) is identified as Mr. Xiang Feng Feng. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-B-T-2232-TC-U5-F.

FCAW welding of weld joint 20TR2-033-015. Welder is identified as 216872. ZPMC Quality Control (QC) is identified as Mr. Xiang Feng Feng. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-B-T-2232-TC-U5-F.

**BAY-2**

Shielded Metal Arc Welding (SMAW) Tack welding of weld joint FB3217-001-055. Welder is identified as 047854. ZPMC Quality Control (QC) is identified as Mr. Zhu Jun. The welding variables appeared to comply with

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the Applicable WPS: WPS- WPS-B-P-2112.

FCAW Welding of weld joint FB3206-001-009. Welder is identified as 045203. ZPMC Quality Control (QC) is identified as Mr. Zhu Jun. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-B-T-2132- 3.

FCAW Welding of weld joint FB3174-001-002. Welder is identified as 062438. ZPMC Quality Control (QC) is identified as Mr. Zhu Jun. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-B-T-2132- 3.

The following Non Destructive Testing (NDT) Inspection carried out as per the ZPMC submitted Notification No. 005642.

### Ultrasonic Testing (UT)

This QA performed UT of approximately 10% of the area previously tested and accepted by ZPMC Quality Control (QC) personnel. This QA generated UT report for this date. The member is identified as OBG Floor beam weld Components. Total number of welds UT Tested: 02 No's. The weld designations are review as follows:

1. FB3212-001-022.
2. FB3237-001-002.

### BAY-3

SAW welding of weld joint FB3122-001-006. Welder is identified as 062406. ZPMC Quality Control (QC) is identified as Mr. Zhu Jun. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-B-T-2221-B-U3c-S-2.

### BAY-6

SMAW of weld joint WJF-0-389. Welder is identified as 057795. ZPMC Quality Control (QC) is identified as Mr. Zhao Jian Hang. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-B-T-3311-TC-P4.

FCAW welding of weld joint TR5B-PP051-003. Welder is identified as 204342. ZPMC Quality Control (QC) is identified as Mr. Shen jian guo. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-B-T-2231-TC-U4c-F.

During the Quality Assurance (QA) random in-process visual inspection of welds located on Orthotropic Box Girder (OBG) TR Bracket TR5B-PP057, this QA Inspector observed that ZPMC welding personnel welding a Complete Joint Penetration (CJP) weld over an excessive gap between steel backing and the base metal at the weld root approximately 6 mm. The maximum gap between steel backing and the base metal at the weld root is 2mm specified in AWS D1.5 2002 section 3.13.5. The weld is identified as: TR5B-PP057-003. The weld is designated as Non Seismic Performance Critical Material (Non SPCM). ZPMC QC and American Bridge/Fluor (AB/F) QA Inspectors has been informed to this QA that the weld shall be cut out and rectify and re notified for NDT.

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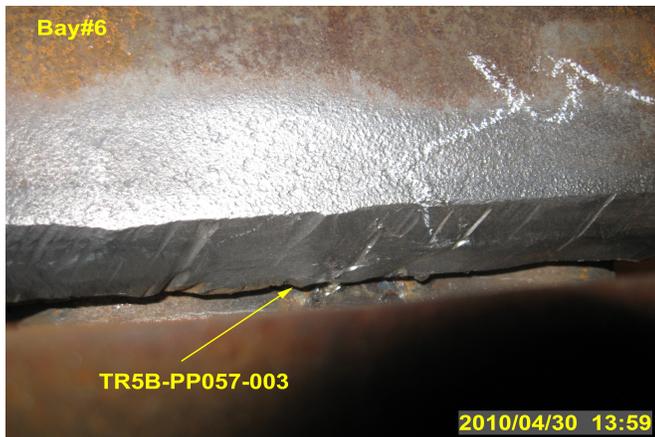
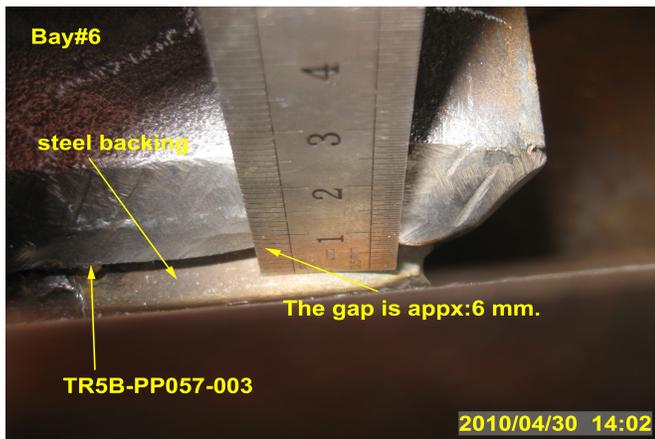
- This QA notified ZPMC QC identified as Mr. Shen jian guo and ABF inspector identified as Mr. Luo Lai Quan of the above issue, and reported to the Team leader.
- For further information, please see the attached pictures.

Applicable reference: American Weld Society (AWS) D1.5 2002 section 3.13.5. Steel backing shall be placed and held in intimate contact with the base metal. The maximum gap between steel backing and the base metal at the weld root shall be 2 mm, as shown in Figure 3.2(A).

BAY-7

FCAW welding of Repair weld joint 22TR2-001-007. Welder is identified as 048625. ZPMC Quality Control (QC) is identified as Mr. Wang Jian. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-345-FCAW-2G (2F)-Repair-1. The Repair welding was performed the Welding Repair Report (WRR) No: B-WR11864. This weld was rejected by ZPMC Ultrasonic Testing (UT) Technicians and recorded on UT Report No: B787-UT-12193.

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.



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**Summary of Conversations:**

Only general conversation was held between QA and Quality Control (QC) concerning this project.

**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 Eric Tsang 15000422372, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Prabhu,Surendra	Quality Assurance Inspector
<b>Reviewed By:</b>	Hall,Steven	QA Reviewer

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