

**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-001538**Date Inspected:** 24-Feb-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Changxing Island**CWI Name:** Sun Wei**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:** OBG Deck Plate**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Larry Viars was present to perform observations of the welding of Orthotropic Box Girder (OBG) U-rib Production Monitoring Test (PMT) and Production Panel, for the San Francisco Oakland Bay Self Anchored Suspension Bridge, at Zhenhua Port Machinery Company (ZPMC) facility on Changxing Island.

Caltrans QA Inspector Viars observed the U-rib Production Monitoring Test for Production Panel DP062-001 and DP018-001 closed rib welds in Bay #1. ZPMC welding personnel performed Gantry Machine Gas Metal Arc Welding (GMAW) for the root pass. Dual process WPS-B-T-2342-U1 (U-rib)-3 was posted as the Welding procedure specification for closed rib welding. The following weld joint and welder were recorded for the PMT, weld joint (wj) wj # 1 Mr. Han Chang Hou, wj # 2 Mr. Chen Jie, wj # 3 Mr. Gao Xin Dong, wj # 4 Mr. Jiang Ting Guang, wj # 5 Mr. Zhao Cheng Shuang and wj # 6 Mr. Yuan Fengchuan. Welding operator was Mr. Li Xide. The following welding variables of the PMT were recorded, amperage 339 to 370, voltage 30.4 to 31.5 with a travel speed of 525 mm/min.

The ambient temperature in bay # 1 was recorded at 6 degrees Celsius at 0903 with the PMT panel temperature recorded at 14 degrees Celsius prior to welding.

After completion of the PMT GMAW pass ZPMC personnel performed the GMAW pass on Production Panel DP062-001. The following welders were observed welding production deck plate u-ribs welds, Mr. Hang Chang Hou wj-1 and 3, Mr. Chen Jie wj- 2 and 4, Mr. Guo Xin Dong wj-5 and 7, Mr. Jiang Ting Guang wj-6 and 8, Mr. Zhao Cheng Shuang and Mr. Yuan Fengchuan wj-10. The following welding variables of production panel U-ribs were recorded, amperage 338 to 357, voltage 30.4 to 31.5 with a travel speed of 521. During the GMAW the

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## WELDING INSPECTION REPORT

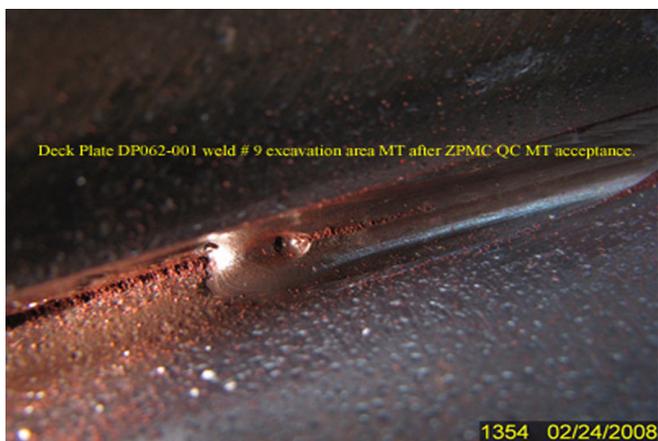
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Gantry Machine malfunctioned and terminated the welding bead at 2080 mm from the Y axis. Visual observations of the termination of welds # 5, 6, 9 and 10 found longitudinal cracks approximately 15 mm in length. These areas were shown to ZPMC QC Mr. Sun Wei. Mr. Sun relayed that the repair was in the root and did not require a Critical Weld Repair (CWR) and that ZPMC personnel would remove the crack and perform Magnetic Particle Testing (MT) of the excavation. Caltrans QA inspector informed Mr. Sun That an incident report would be issued for the repair of cracking without a CWR.

After the ZPMC personnel excavated the crack areas ZPMC QC Zhou Dongyun performed MT and accepted the excavation areas. Caltrans QA Inspector performed verification of the excavation and all four longitudinal cracks were still present. ZPMC performed additional grinding and removed the cracks to the partial joint penetration fit line. MT was found acceptable by ZPMC and the Caltrans QA inspector. ZPMC QC Mr. Sun Wei was informed that a incident report would be issued for the QA oversight of longitudinal cracking. Please see the attached photo of the above mentioned crack after ZPMC MT acceptance.



### Summary of Conversations:

As identified within the contents of this report.

### 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.

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<b>Inspected By:</b>	Viars,Larry	Quality Assurance Inspector
<b>Reviewed By:</b>	Cuellar,Robert	QA Reviewer

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