

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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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-007418**Date Inspected:** 10-Jun-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 1900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See Below**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 and Tower Fabrication**Summary of Items Observed:**

CWI Inspectors: Mr. Liu Fa Wen, Mr. Wuzhi Cheng

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. The QA Inspector observed the following:

**OBG Bay 13**

The QA Inspector observed ZPMC welder Ms. Chen Feng Lian is using the flux cored process WPS-B-T-2232-TC-U4b-F to make fillet weld 8BE CA51-003. The QA Inspector observed a welding current of approximately 340 amps and 34.0 volts. The QA Inspector informed ZPMC CWI Mr. Zhang Qiang what welding voltage he had recorded Mr. Qiang showed this QA Inspector a QC welding tracking sheet that lists approximately 330 amps and 31.5 volts. The QA Inspector informed ZPMC CWI Mr. Lin Fa Wen that Ms. Lian appears to have a welding voltage of 34.0 volts which is 1.5 volts above the maximum. Mr. Wen said that voltage is different that what he had previously measured and that he will adjust the welding machine, which he did, and the QA Inspector later measured a welding voltage of approximately 31.5 volts. Items observed by the QA Inspector do not appear to fully comply with project specifications.

The QA Inspector observed ZPMC welder Mr. Zhao Jibo, stencil 055564 is using flux cored welding procedure WPS-B-T-2231-B-U2-F to make weld SEG-045-006. The QA Inspector observed a welding current of

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approximately 290 amps and 31.2 volts. The QA Inspector observed Quality Control (QC) personnel monitoring this welding. Items observed on this date appeared to generally comply with applicable contract documents.

The QA Inspector observed ZPMC welder Mr. Zhuang Hua, stencil 068206 is using flux cored welding procedure WPS-B-T-2132 to make fillet weld DP416-001-065. The QA Inspector observed a welding current of approximately 310 amps and 30.3 volts. The QA Inspector observed Quality Control (QC) personnel monitoring this welding. Items observed on this date appeared to generally comply with applicable contract documents.

The QA Inspector observed ZPMC welder Mr. Shi Jiabao, stencil 068494 is using flux cored welding procedure WPS-B-T-2132 to make fillet weld DP384-001-125. The QA Inspector observed a welding current of approximately 260 amps and 27.5 volts. The QA Inspector observed Quality Control (QC) personnel monitoring this welding. Items observed on this date appeared to generally comply with applicable contract documents.

### OBG Assembly

This QA Inspector observed ZPMC welder Mr. Xue Yian, stencil 040634 is working on weld SEG012-052 in segment 4BE near panel point PP27. The QA Inspector observed ZPMC has removed this weld to permit an adjacent bolted connection to be properly seated prior to installation of high strength bolts. The QA inspector observed Mr Yian has completed weld SEG012-050 on one side of this plate and the top of the weld has a weave width of approximately 35 mm which is in excess of the 25 mm maximum allowed by AWS. Weld SEG012-052 has not been rewelded and the weld joint appears to have been air carbon arc gouged and the areas to be welded have not been ground. The QA Inspector informed ZPMC QC Inspector Mr. Wang Wi Liang and CWI Mr. Kua Wenshang that the air carbon arc oxide material will need to be ground to a bright metal condition prior to welding.

Around ten minutes later the QA Inspector observed ZPMC welder Mr. Xue Yian starting to weld SEG012-052. The QA Inspector observed this weld joint has not been ground to a bright metal condition and the QA Inspector informed CWI Mr. Kua Wenshang and ZPMC QC Representative Mr. Wang Lu (Mr. Testino) that welding on this oxide surface is a violation of AWS D1.5 and that an incident report is going to be issued. See the photographs below for additional information.



### Summary of Conversations:

See above.

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### 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 phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Dawson,Paul	Quality Assurance Inspector
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<b>Reviewed By:</b>	Carreon,Albert	QA Reviewer
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