

**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-001638**Date Inspected:** 20-Feb-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**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:** Tower and OBG Fabrication**Summary of Items Observed:**

Caltrans 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:

Orthotropic Box Girder (OBG) and Tower Mock Up:

CWI Inspector: Mr. Wu Ming Kai

Bay 3

The QA Inspector observed ZPMC personnel performing heat straightening of OBG side plate SP013 stiffener plates as directed by HSR(B)-044. This HSR has been approved by Caltrans Engineering 01-31-2008. Torch heat is being applied from both sides of the side plate at the same time. The QA inspector observed ZPMC Quality Control personnel monitoring the heat temperature using a laser indicating device and the maximum temperatures that had had recorded are all less than the maximum limit of 600°C. See the photograph below for additional information.

The QA Inspector observed three ZPMC welders using welding procedure specification WPS-B-T-2132-3 to make flux cored fillet welds on six OBG side plate 749 stiffener welds at the same time. ZPMC has multiple flux cored welding manipulators attached to a movable gantry that runs on a track along the length of the stiffener plates.

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## WELDING INSPECTION REPORT

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The QA Inspector observed a welding travel speed of approximately 440 mm per hour. As the welding commences, each of the welders is responsible for two of the flux cored welding heads. All welders are using 1.4 mm diameter E71T-1 rolls of electrodes that have been marked as being installed earlier today. Welder Mr. Li Zhaqian stencil 48810 completed weld SP749-01-012 with a welding current of approximately 300 amps and 30.2 volts and weld SP749-01-011 with a welding current of approximately 300 amps and 30.3 volts. Welder Mr. Li Shuliang stencil 48801 completed weld SP749-01-008 with a welding current of approximately 310 amps and 30.5 volts and weld SP749-01-007 with a welding current of approximately 305 amps and 30.1 volts. Welder Mr. Sun Tiyu stencil 54459 completed weld SP749-01-004 with a welding current of approximately 290 amps and 30.6 volts and weld SP749-01-003 with a welding current of approximately 275 amps and 30.0 volts. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC welder Mr. Dai Lu stencil 48659 is using shielded metal arc welding procedure WPS-B-P-2112-FCM to make fillet tack welds on OBG side plate stiffener welds SP602-001-027 and SP522-01-027. The QA Inspector observed E7018 4.0 mm diameter electrodes, a welding current of approximately 190 amps and a minimum base material preheat temperature of 40° C. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC personnel drilling holes in various stiffener plates. See the photograph for additional information.



### Summary of Conversations:

See above for summary of conversations.

### 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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**Inspected By:** Dawson,Paul

Quality Assurance Inspector

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**Reviewed By:** Cochran,Jim

QA Reviewer