

**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-002070**Date Inspected:** 05-Apr-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 2300**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 730**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 Fabrication:

CWI Inspectors: Mr. Zhu Zhong Hai and Mr. Chen Xi

**New Tower Shop**

The QA Inspector observed ZPMC welder Mr. Chen Hong Xia stencil 40460 is using welding procedure specification WPS-B-T-2221-B-L3C-S to make submerged arc groove weld SSP1 SA15 90/I. The QA Inspector observed a welding current of approximately 640 amps, 34.0 volts, a travel speed of 660 mm per hour, and the base material is between 110°C and 230°C. Items observed by the QA Inspector appear to comply with project specifications.

**Bay 1**

The QA Inspector observed ZPMC personnel performing welding of deck panel DP495-001 closed ribs the QA Inspector observed the following submerged arc welding measurements:

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Closed rib U163 weld #1 welder Mr. Xu Guo Yin, stencil 59443 has a welding current of 680 amps and 25.0 volts; closed rib U163 weld #2 welder Mr. Xiang Jie, stencil 59378 has a welding current of 680 amps and 25.0 volts; closed rib U166 weld #5 welder Mr. Guo Xin Dong, stencil 59361 has a welding current of 680 amps and 25.0 volts; closed rib U166 weld #6 welder Mr. Jiang Ting Guang, stencil 62265, has a welding current of 680 amps and 25.0 volts; closed rib U162 weld #9 welder Mr. Chen Jie, stencil 59468 has a welding current of 680 amps and 25.0 volts; closed rib U162 weld #10 welder Mr. Xiang Huan Feng, stencil 59416 has a welding current of 680 amps and 25.0 volts. The welding travel speed is approximately 510 mm per minute. Items observed by the QA Inspector appear to comply with project specifications. See the photograph below for additional information.

The QA Inspector observed ZPMC welder Mr. Han Chang Hou, stencil 59464 is using welding procedure specification WPS-B-T-2233-B-U2-F to make flux cored groove welds to splice closed rib U-127 weld DP068-001-118. The QA Inspector observed a welding current of approximately 230 amps and 23.1 volts. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC welder Mr. Liu Xiaomin, stencil 59393 is using welding procedure specification WPS-B-T-2342-U2 (U-rib) to make flux cored tack welds on OBG deck plate closed rib weld DP049-001-006. The QA Inspector observed a welding current of approximately 320 amps and 30.0 volts. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC welder Mr. Xiao Bian Bin, stencil 59440 is using welding procedure specification WPS-B-T-2342-U2 (U-rib) to make flux cored tack welds on OBG deck plate closed rib weld DP049-001-005. The QA Inspector observed a welding current of approximately 330 amps and 29.5 volts. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector performed random visual inspections of deck plate DP407-001 closed rib welds 1 through 5. The QA Inspector used a yellow marker to identify locations on these welds that have various degrees of weld insufficient fill, weld overlap, and other similar weld conditions. The results of these inspections were documented on forms titled: "Caltrans QA Visual Weld Inspection Report for the OBG Deck Panels". These completed forms will be submitted to engineering for review.



### Summary of Conversations:

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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 Patrick Lowey (858) 344-2712, who represents the Office of Structural Materials for your project.

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

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