

**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-001410**Date Inspected:** 01-Feb-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1630**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. Xu Xian Ping

Bay 3

The QA Inspector observed three ZPMC welders using welding procedure specification (WPS) WPS-B-T-2132-3 to make flux cored fillet welds on OBG side plate 072 stiffener welds at the same time. ZPMC has multiple flux cored welding manipulators attached to a movable gantry that runs on tracks along the length of both sides of the stiffener plates. The QA Inspector observed a welding travel speed of approximately 445 mm per hour and the base material appears to have been preheated to a minimum temperature of 10° C as required by the WPS. 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. Dong Jinbao stencil 49775 completed weld SP072-01-021 with a welding current of approximately 325 amps and 31.2 volts, weld SP072-01-022 with a welding current of approximately 320 amps and 30.6 volts, weld SP072-01-023 with a welding current of approximately 280 amps and 30.5 volts and weld SP072-01-024 with an

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# WELDING INSPECTION REPORT

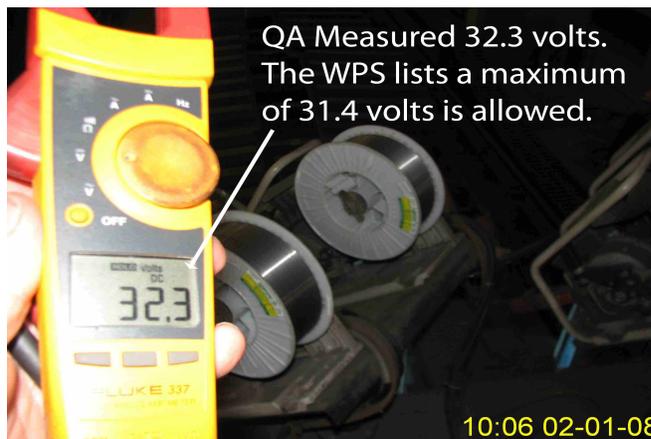
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initial welding current of approximately 275 amps and 31.2 volts. The QA Inspector observed Mr. Jinbao adjusting one of the welding machine electrical control knobs when the welding head had progressed to approximately half way along the length of weld SP072-01-024. The QA Inspector then measured this welding machine to have a welding current of 340 amps and 30.5 volts. The WPS states the maximum welding current to be used for this welding is 334.5 amps and Mr. Jinbao's welding machine is approximately six amps above this limit. The QA Inspector informed ZPMC QC CWI Inspector Mr. Xu Xian Ping that Mr. Jinbao appears to have adjusted his welding machine controls and the welding current appears to be exceeding the maximum allowed by the WPS. Mr. Xian Ping then had Mr. Jinbao adjust the welding machine to approximately 280 amps. Welder Mr. Xin Meng stencil 53742 completed weld SP072-01-019 with a welding current of approximately 320 amps and 31.6 volts and weld SP072-01-020 with a welding current of approximately 320 amps and 30.9 volts. The QA Inspector observed Mr. Meng adjusting one of the welding machine electrical control knobs when the welding head had progressed to approximately half way along the length of weld SP072-01-020. The QA Inspector then measured this welding machine to have a welding current of 300 amps and 32.0 volts. The WPS states the maximum welding voltage to be used for this welding is 31.4 volts and Mr. Meng's welding machine is approximately one volt above this limit. The QA Inspector informed ZPMC QC CWI Inspector Mr. Xu Xian Ping that Mr. Meng appears to have adjusted his welding machine controls and the welding voltage appears to be exceeding the maximum allowed by the WPS. Mr. Xianping then had Mr. Meng adjust the welding machine to approximately 30.0 volts. Welder Mr. Li Shuliang stencil 48801 completed weld SP072-01-015 with a welding current of approximately 310 amps and 31.4 volts and weld SP072-01-016 with a welding current of approximately 305 amps and 29.6 volts. Items observed by the QA Inspector do not appear to fully comply with project specifications due to the electrical welding parameters being exceeded.

The QA Inspector observed no other welding to be taking place in Bay 3. Note: many of the ZPMC workers are observing the Chinese Lunar New Year holiday and are not working today.



## 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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<b>Inspected By:</b>	Dawson,Paul	Quality Assurance Inspector
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<b>Reviewed By:</b>	Cochran,Jim	QA Reviewer
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