

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-001643**Date Inspected:** 14-Feb-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**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

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QA Inspector observed ZPMC welder Mr. Li Shuliang stencil 48801 is using welding procedure specification WPS-B-T-2132-3 using the flux cored welding process for stiffener plate fillet welds on OBG stiffener plate weld SP043-01-005. The QA Inspector observed a welding current of approximately 300 amps, 28.3 volts, the base material has a minimum preheat temperature of 60° C and the shielding gas flow is approximately 19 cubic liters per hour. The QA Inspector observed Mr. Shuliang has a welding travel speed of approximately 280 mm per minute. The WPS requires a minimum travel speed of 392 mm per minute and the welding travel speed is below this minimum limit. The QA Inspector informed ZPMC QC CWI Inspector Mr. Wu Ming Kai that the welding travel speed is too slow. Mr. Kai said he will have Mr. Shuliang increase his welding travel speed. Later in the shift, the QA Inspector observed Mr. Shuliang has a welding travel speed of approximately 420 mm per minute, which is in compliance with the WPS acceptable limits. Items observed by the QA Inspector do not appear to

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fully comply with project specifications.

QA Inspector observed ZPMC welder Mr. Li Xhanqian stencil 48810 is using welding procedure specification WPS-B-T-2132-3 using the flux cored welding process for welds on OBG stiffener plate fillet weld SP043-01-006.

The QA Inspector observed a welding current of approximately 280 amps, 28.0 volts, the base material has a minimum preheat temperature of 60° C and the shielding gas flow is approximately 16 cubic liters per hour. The WPS requires a minimum shielding gas flow of 18 cubic liters per hour and the shielding gas flow is below this minimum limit. The QA Inspector informed ZPMC QC CWI Inspector Mr. Wu Ming Kai that the shielding gas flow is below the minimum limit and Mr. Kai had the gas flow adjusted to an acceptable limit. The QA Inspector observed Mr. Xhanqian has a welding travel speed of approximately 290 mm per minute. The WPS requires a minimum travel speed of 392 mm per minute and the welding travel speed is below his minimum limit. The QA Inspector informed ZPMC QC CWI Inspector Mr. Wu Ming Kai that the welding travel speed is too slow. Mr. Kai informed the QA Inspector he will have QC Inspector Mr. Guo Yang Wei inform Mr. Xhanqian to increase his welding travel speed. Later in the shift, the QA Inspector observed Mr. Xhanqian has a welding travel speed of approximately 430 mm per minute, which is in compliance with the WPS acceptable limits. Items observed by the QA Inspector do not appear to fully comply with project specifications.

Note: ZPMC welders Mr. Li Shuliang and Mr. Li Xhanqian are simultaneously welding on the opposite sides of the same stiffener plates. See the photograph below showing both of these welders preparing to weld on the opposite side of a stiffener plate.



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.

Inspected By: Dawson,Paul

Quality Assurance Inspector

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Reviewed By: Cochran,Jim

QA Reviewer