

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-001250**Date Inspected:** 15-Jan-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 830**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1800**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 Inspectors: Xu Xian Ping, Hu Wie Qing

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The QA Inspector observed ZPMC welder Mr. Wang Zang Hua stencil 53753 is using welding procedure specification WPS-B-P-2112-FCM using the shielded metal welding process for fillet tack welds on OBG PL88A side plate SP037 stiffener weld SP037-01-001 and weld SP037-01-002. The QA Inspector observed THJ506-Fe-1 4.0 mm diameter electrodes, a welding current of approximately 160 amps and the base material had been preheated to a minimum of 40°C. Items observed by the QA Inspector appear to comply with project specifications.

QA Inspector observed ZPMC welder Ms. He Yu Mei stencil 48625 is using welding procedure specification WPS-B-T-2132-2 using the flux cored welding process for fillet tack welds on OBG side plate SP020 stiffener welds SP020-01-020 and SP020-01-021. The QA Inspector observed a welding current of approximately 255

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amps, 28.7 volts and the base material has a minimum preheat temperature of 100° C. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC welder Mr. Sun Tiyu stencil 54459 is using welding procedure specification WPS-B-T-2132-2 using the flux cored welding process for fillet tack welds on OBG side plate SP020 stiffener welds SP020-01-017 and SP020-01-018. The QA Inspector observed a welding current of approximately 285 amps, 29.5 volts and the base material has a minimum preheat temperature of 100° C. Items observed by the QA Inspector appear to comply with project specifications.

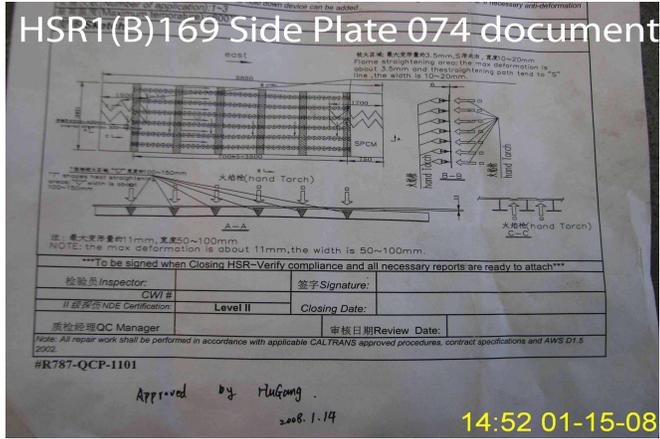
The QA Inspector observed ZPMC QC Inspector Mr. Yuan Yabing measuring the locations of areas that are going to be undergoing the heat straightening process on OBG base plate SP074 as authorized by HSR1(B)-169. The QA inspector performed random measurements of the locations where heat straightening is to be performed and observed ZPMC personnel using a tightly stretched string and a scale to determine the amount of straightening for each of the locations. Mr. Yabing used a tape measure to confirm the heat straightened locations are correctly marked. This HSR document has been authorized for implementation by Hu Gang on 1-14-2008. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed three ZPMC welders using welding procedure specification WPS-B-T-2132-3 using the flux cored welding process for PL70 fillet welds on six OBG side plate SP009 stiffener welds at the same time. ZPMC has multiple flux cored welding process manipulators attached to a movable gantry that runs on a track along the length of the stiffener plates. The QA Inspector observed a welding travel speed of approximately 450 mm per minute. 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. The QA Inspector observed all six welding machines have a shielding gas flow between 18 and 21 liters per minute as required by the WPS. Welder Mr. Li Xuehua stencil 58174 completed weld SP009-01-019 with a welding current of approximately 290 amps and 30.5 volts and weld SP009-01-018 with a welding current of approximately 280 amps and 28.5 volts. Welder Mr. Xin Meng stencil 53742 completed weld SP009-01-023 with a welding current of approximately 310 amps and 31.2 volts and weld SP009-01-022 with a welding current of approximately 300 amps and 31.2 volts. Welder Mr. Li Shuliang stencil 48801 completed weld SP009-01-027 with a welding current of approximately 290 amps and 30.6 volts and weld SP009-01-026 with a welding current of approximately 280 amps and 30.6 volts. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC personnel are placing new concrete footings east of the existing overhead gantry welding tracks. It appears that these footings are to be used to support new mounting tables where OBG components will be positioned prior to fillet welding of stiffener plates. See the photograph below for additional information.

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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
Reviewed By:	Cochran, Jim	QA Reviewer