DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-006296
Date Inspected: 17-Apr-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 1845
OSM Departure Time: 645
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 Fabrication

Summary of Items Observed:
CWI Inspectors: Mr. Peng Guo, Mr. Liu Fong

On this date CALTRANS OSM 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:

Prior to Caltrans QA Inspectors' concurring with issuance of OBG deck plate closed rib green tag releases a review of the ultrasonic inspection database is performed to verify all closed rib tack weld repair locations have been ultrasonically accepted. Today this QA Inspector, Mr. Paul Dawson, performed data entry of ultrasonic inspection information from the field generated Ultrasonic inspection data sheets onto the common drive computer database for the following OBG deck panels: DP177-001, DP420-001, DP287-001, DP258-001, DP228-001, DP147-001 and DP390-001.

Tower Bay 10 and Bay 11

The QA Inspector observed ZPMC welder Mr. Hu Xing Ping, stencil 049099 is tack welding run off plates on the end of Tower East Shaft skin plate A stiffener groove welds. The QA Inspector observed that the base material where the tack welds had just been completed was at an ambient temperature. The QA Inspector informed ZPMC CWI Mr. Peng Guo and ZPMC QC representative Mr. Lay Tau that the welding had taken place without preheating of the base material. Mr. Lay Tau informed the QA Inspector that once the tack welds are removed, the

areas where the tack welds had been made will receive magnetic particle inspections.

The QA Inspector observed ZPMC welder Mr. Cui Guozhong, stencil 040656 is using welding procedure WPS-345-SMAW-2G(2F)-Repair to make a shielded metal arc weld repair to tower stiffener to skin plate weld ESD1-FESA 3-2B/D-29. The QA Inspector measured a welding current of approximately 240 amps and the QA Inspector observed the base material had been preheated with an electric heater prior to commencement of welding. The QA Inspector observed the weld repairs are where ultrasonic rejections had previously been identified. The QA Inspector asked ZPMC CWI Mr. Inspector Mr. Peng Guo what is the document number for this weld repair. Mr. Peng Guo said ZPMC does not have a number assigned to this weld repair, but a number will be assigned tomorrow during the day shift. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC welder Mr. Chen Shangchun, stencil 046704 is using welding procedure WPS-345-SMAW-2G(2F)-Repair to make a shielded metal arc weld repair to tower East Shaft stiffener to skin plate E weld ESD1-FESA 3-2B/D-25. The QA Inspector measured a welding current of approximately 240 amps and the QA Inspector observed the base material had been preheated with an electric heater prior to commencement of welding. The QA Inspector observed the weld repairs are where ultrasonic rejections had previously been identified. The QA Inspector asked ZPMC CWI Mr. Inspector Mr. Peng Guo what is the document number for this weld repair. Mr. Peng Guo said ZPMC does not have a number assigned to this weld repair, but a number will be assigned tomorrow during the day shift. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC welder Mr. Zie Zhongchengo, stencil 041271 is using welding procedure WPS-345-SMAW-2G(2F)-Repair to make a shielded metal arc weld repair to tower stiffener to skin plate weld ESD1-FESA 3-2B/D-4. The QA Inspector measured a welding current of approximately 240 amps and the QA Inspector observed the base material had been preheated with an electric heater prior to commencement of welding. The QA Inspector observed the weld repairs are where ultrasonic rejections had previously been identified. The QA Inspector asked ZPMC CWI Mr. Inspector Mr. Peng Guo what is the document number for this weld repair. Mr. Peng Guo said ZPMC does not have a number assigned to this weld repair, but a number will be assigned tomorrow during the day shift. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC welder Ms. Dong Yumei, stencil 054069 is using flux cored welding procedure WPS B-T-2332-TC-P5-F to make stiffener plate to tower skin plate weld SSD1-FDSA3-1B/C-54A. The QA Inspector observed the base material had been preheated using electrical heater elements. The QA Inspector measured a welding current of approximately 310 amps and 30.2 volts. Items observed by this QA Inspector appear to be progressing in compliance with project specifications.

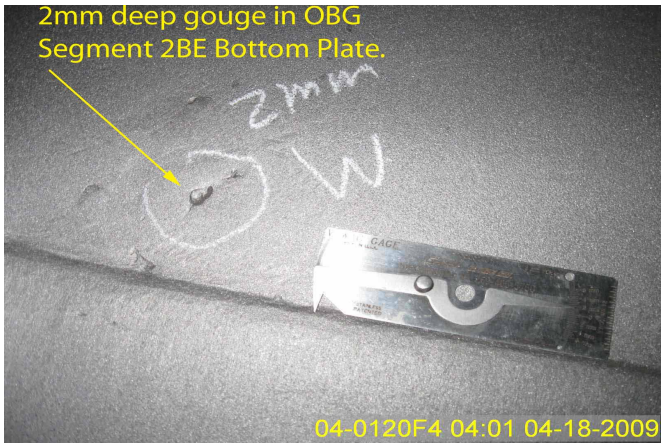
The QA Inspector observed ZPMC welder Ms. Dong Yuqin, stencil 053116 is using flux cored welding procedure WPS B-T-2332-TC-P5-F to make stiffener plate to tower skin plate weld SSD1-FDSA3-1B/C-54B. The QA Inspector observed the base material had been preheated using electrical heater elements. The QA Inspector observed ZPMC Quality Control personnel had measured a welding current of 316 amps, 30.5 volts and a weld travel speed of 305 mm per minute. Items observed by this QA Inspector appear to be progressing in compliance with project specifications.

Blast Shop

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

This QA Inspector along with QA Inspector Mr. Larry Viars performed preliminary random visual inspection of OBG segment 2BE bottom plate and adjacent welds following initial grit blasting. The QA Inspector observed one weld that has a 3mm diameter porosity pit near the center of the weld and at another location there are base material pits that appear to be located where a temporary alignment plate weld had been removed adjacent to a CJP butt weld. The locations of these visual rejections have been documented on a QA "Preliminary Inspection" drawing that will be used during followup inspections by QA personnel. The inspections were limited due to a short window of time that these surfaces were available, between grit blasting events. See the photograph below showing the base material pits.



Summary of Conversations:

See above.

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 Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Clifford,William	QA Reviewer