

**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-013641**Date Inspected:** 21-Apr-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**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:** OBG**Summary of Items Observed:**

CWI Inspectors: Mr. Xu Xian Ping, Mr. Liu Hua Jie, Mr. Geng Wei, Mr. Guo Yan Fei, Mr. Zhu Tian Shu

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. This QA Inspector observed the following:

**OBG Bay 2**

This QA Inspector observed ZPMC welder Ms. Wang Chaili stencil 045203 is using flux cored welding procedure WPS B-T-2231-B-U2-F-1 to make OBG floor beam tack weld FB3202-001-009. This QA Inspector observed a welding current of approximately 280 amps and 26.0 volts and ZPMC QC Inspector Mr. Zhu Lin is monitoring this welding. This QA Inspector observed that Ms. Wang Chaili appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

**OBG Bay 7**

This QA Inspector observed ZPMC welder Mr. Liu Zihong, stencil 062447 is using flux cored welding procedure WPS-345-FCAW-2G(2F)-Repair to make traveler rail repair weld 22TR2-001-009 in accordance with a weld repair document B-WR11883. The reason for this repair is due to ultrasonic rejections as listed on UT report #B787-UT-12192. This QA Inspector observed ZPMC QC Inspector Mr. Wang Jian is monitoring this welding

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and that Mr. Liu Zihong appears to be certified to make this weld. This QA Inspector measured a welding current of approximately 260 amps and 27.5 volts. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Xin Meng, stencil 053742, is using flux cored welding procedure WPS-345-FCAW-2G(2F)-Repair to make traveler rail repair weld 22TR3-003-009 in accordance with a weld repair document B-WR11855. The reason for this repair is due to ultrasonic rejections as listed on UT report #B787-UT-12194. This QA Inspector observed ZPMC QC Inspector Mr. Wang Jian has recorded a welding current of 295 amps and 28.9 volts and that Mr. Xin Meng appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Ms. He Yumei, stencil 048625 is using flux cored welding procedure WPS-345-FCAW-2G(2F)-Repair to make traveler rail repair weld 22TR4-002-003 in accordance with a weld repair document B-WR11985. The reason for this repair is due to ultrasonic rejections as listed on UT report #B787-UT-12195. This QA Inspector observed ZPMC QC Inspector Mr. Wang Jian has recorded a welding current of 301 amps and 29.2 volts and that Ms. He Yumei appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wei Da Shuai stencil 051246 is using flux cored welding procedure WPS-345-FCAW-2G(2F)-Repair to make traveler rail repair weld 22TR4-008-013 in accordance with a weld repair document B-WR11793R. The reason for this repair is due to ultrasonic rejections as listed on UT report #B787-UT-10797R1. This QA Inspector observed ZPMC QC Inspector Mr. Wang Jian is monitoring this welding and that Mr. Wei Da Shuai appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents

OBG BAY 9

This QA Inspector observed ZPMC welder Ms. Zhang Liping, stencil 201840 is using flux cored welding procedure WPS-B-T-2233-TC-U4b-F to make deck plate weld DP3147-001-258. This weld attaches a stiffener plate to the inside of a closed rib for OBG deck panel DP3147-001. This QA Inspector observed the base material had been cleaned of oxides where the stiffener welds are to be installed. This QA Inspector observed a welding current of approximately 220 amps 25.0 volts and Ms. Zhang Liping appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Song Yinshu, stencil 59241 is using flux cored welding procedure WPS-B-T-2233-TC-U4b-F to make deck plate weld DP3147-001-262. This weld attaches a stiffener plate to the inside of a closed rib for OBG deck panel DP3147-001. This QA Inspector observed the base material had been cleaned of oxides where the stiffener welds are to be installed. This QA Inspector observed a welding current of approximately 210 amps 28.0 volts and Mr. Song Yinshu appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

OBG Bay 14

This QA Inspector observed ZPMC welder Mr. Yang Yunfei, stencil 215553 is using shielded metal welding

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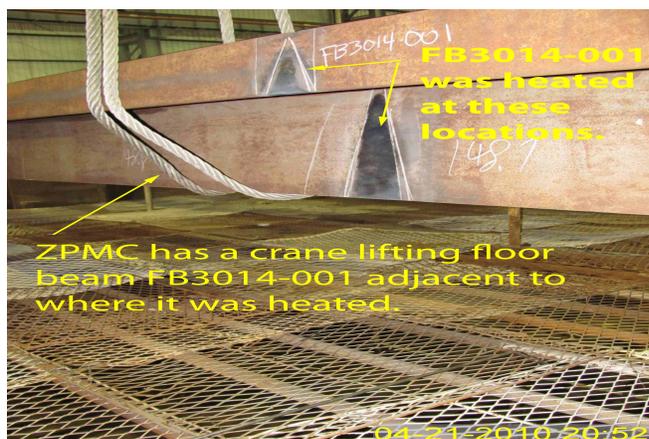
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process WPS-B-P-2213-TC-U4b-FCM-1 to make OBG segment 11DE weld SEG072D-092. This QA Inspector observed that ZPMC CWI Mr. Geng Wei has recorded a welding current of 156 amps and the shielded metal arc welding electrodes are being stored in an electrically heated electrode storage container. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wang Zhenbing, stencil 216086 is using shielded metal welding process WPS-B-P-2213-TC-U4b-FCM-1 to make OBG segment 11DE weld SEG072D-022. This QA Inspector observed that ZPMC CWI Mr. Geng Wei has recorded a welding current of 157 amps and the shielded metal arc welding electrodes are being stored in an electrically heated electrode storage container. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Li Xianyou, stencil 047866 is using flux cored welding procedure WPS-345-FCAW-2G(2F)-Repair to make OBG weld repair DP3045-001-331 and DP3045-001-334. These welds are located in OBG segment 12AW and are being documented on weld repair document that has not had a repair document number assigned. This QA Inspector observed QC Inspector Mr. Li Jie has recorded a welding current of 292 amps and 30.4 volts. This QA Inspector observed that Mr. Li Xianyou appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC workers are using a torch to perform heat straightening of floor beam FB3014-001 which is located at OBG segment 12BE, near panel point 115.5. This QA Inspector observed ZPMC had a crane cable lifting upward with an unknown amount of tension on floor beam FB3014-001 adjacent to where it was heated to a bright red condition. The workers did not appear to be using any digital temperature measurement gauge, temperature indicating crayon or other similar means of monitoring the heat input, and the actual maximum attained temperature does not appear to have been measured or recorded. This QA Inspector questioned QC Certified Welding Inspector (CWI) Mr. Geng Wei and ABF representative Mr. Yang Chao and both of them said they were not aware that this heat straightening was taking place and they did not know if an approved heat straightening document had been issued. This QA Inspector informed Certified Welding Inspector (CWI) Mr. Geng Wei and ABF representative Mr. Yang Chao that an incident report is being issued to document heat straightening of floor beam FB3014-001 without any monitoring of the heat input or approved engineering document. See the photographs below for additional information.



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## 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.

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

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