

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-017802**Date Inspected:** 03-Nov-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: ZPMC: Mr. Lv Li Qing, Mr. Li Yan Hua.

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 13

This QA Inspector observed ZPMC welder Mr. Ye Bing stencil 066733 used flux cored welding procedure WPS-B-T-2233-TC-U5-F to make OBG segment 14AE grillage weld SA7038-064. This QA Inspector measured a welding current of approximately 245 amps and 26 volts. This QA Inspector observed that the maximum welding current listed in the WPS is 223.2 amps and that Mr. Ye Bing has a welding current that is approximately 20 amps above this maximum limit. This QA Inspector showed ZPMC QC Inspector Mr. Lv Li Qing that the welding current is above the maximum and Mr. Lv Li Qing adjusted the welding current to approximately 220 amps. This QA Inspector observed Mr. Ye Bing appeared to be certified to make this weld and the base materials were preheated with electric heaters prior to commencement of welding. Items observed on this date do not appear to fully comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Li Shoufu stencil 066674 used flux cored welding procedure WPS-B-T-2233-TC-U5-F to make OBG segment 14AE grillage weld SA7038-050. This QA Inspector measured

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a welding current of approximately 220 amps and 27.0 volts. This QA Inspector observed Mr. Li Shoufu appeared to be certified to make this weld and the base materials were preheated with electric heaters prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Liu Qing Tian, stencil 066359 used flux cored welding procedure WPS-B-T-2233-TC-U5-F to make OBG segment 14AE grillage weld SA7038-036. This QA Inspector measured a welding current of approximately 215 amps and 27.5 volts. This QA Inspector observed Mr. Liu Qing Tian appeared to be certified to make this weld and the base materials were preheated with electric heaters prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

### OBG Bay 14

This QA Inspector observed ZPMC welder Mr. Wan Youxiang, stencil 066912 used flux cored welding procedures WPS-B-T-2233-TC-P4-F and WPS-B-T-2233-TC-U4B-F to make OBG segment 14E grillage welds AP3031-001-792, AP3031-001-793 along with other similar stiffener plate welds. This QA Inspector measured a welding current of approximately 250 amps and 29 volts. This QA Inspector observed that the WPS lists a maximum welding current of 223.2 amps and 27.5 volts. This QA Inspector showed ZPMC QC Inspector Mr. Lv Li Qing that the welding current and voltage are both above the maximum limits listed in the WPS. Mr. Lv Li Qing adjusted the welding machine to approximately 215 amps and 26 volts. This QA Inspector observed Mr. Wan Youxiang appeared to be certified to make this weld and the base materials were preheated with electric heaters prior to commencement of welding. Items observed on this date do not appear to fully comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zhao Shanlun, stencil 066683 used flux cored welding procedure WPS-B-T-2233-TC-P4-F and WPS-B-T-2233-TC-U4B-F to make OBG segment 14E grillage welds AP3031-001-838, AP3031-001-839 along with other similar stiffener plate welds. This QA Inspector measured a welding current of approximately 215 amps and 27.5 volts. This QA Inspector observed Mr. Zhao Shanlun appeared to be certified to make this weld and the base materials were preheated with electric heaters prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Shi Jiabao, stencil 068494 used flux cored welding procedure WPS-B-T-2233-TC-P4-F and WPS-B-T-2233-TC-U4B-F to make OBG segment 14E grillage welds AP3031-001-830, AP3031-001-831 along with other similar stiffener plate welds. This QA Inspector measured a welding current of approximately 220 amps and 25.0 volts. This QA Inspector observed Mr. Shi Jiabao appeared to be certified to make this weld and the base materials were preheated with electric heaters prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Chen Dinghang, stencil 067138 used flux cored welding procedure WPS-B-T-2233-TC-P4-F and WPS-B-T-2233-TC-U4B-F to make OBG segment 14E grillage welds AP3031-001-784, AP3031-001-785 along with other similar stiffener plate welds. This QA Inspector measured a welding current of approximately 200 amps and 26.0 volts. This QA Inspector observed Mr. Chen Dinghang appeared to be certified to make this weld and the base materials were preheated with electric heaters prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

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This QA Inspector observed ZPMC welder Mr. Tian Zhaoquan, stencil 045246 used shielded metal arc welding procedure WPS-345-SMAW-1G(1F)-FCM-Repair to make OBG segment 14W weld repair SEG3002A-005. This bottom plate splice weld had been ultrasonically rejected and the repairs were documented on weld repair document B-WR61350. This QA Inspector measured a welding current of approximately 170 amps. Mr. Tian Zhaoquan appeared to be certified to make this weld and the base materials were preheated with an acetylene torch prior to welding. Items observed on this date appeared to generally comply with applicable contract documents. Later in the shift Mr. Tian Zhaoquan also performed welding repairs of weld SEG3002A\*-008 in accordance with weld repair document B-WR61351 and weld SEG3002A\*-011 in accordance with weld repair document B-WR61352.

This QA Inspector observed ZPMC welder Mr. Li Yangbing, stencil 208567 used shielded metal arc welding process to make a weld repairs of Segment 13E, deck plate welds DP3266-001-050 and -051 adjacent to where temporary attachment plates had been removed. This QA Inspector asked ZPMC CWI Mr. Lv Li Qing the reason for this weld repair and Mr. Lv Li Qing said this area had been visually rejected after a temporary stiffener plate weld had been removed. This QA Inspector asked Mr. Lv Li Qing if ZPMC will be performing a magnetic particle (MT) inspection of this weld repair area and Mr. Lv Li Qing used a black marker identify that this area is to be MT inspected. See the photographs below for additional information.



### 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 James Devy +8615000026784, who represents the Office of Structural Materials for your project.

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**Inspected By:** Dawson,Paul

Quality Assurance Inspector

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**Reviewed By:** Carreon,Albert

QA Reviewer