

**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:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-015483**Date Inspected:** 08-Jul-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 and Tower**Summary of Items Observed:**

CWI Inspectors: Mr. An Qing Xiang, Mr. Xu Le Feng, Mr. Wu Shi Gao

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:

## Tower Bay 10

The QA Inspector observed ZPMC welder Ms. Chen Ziqion, stencil 056364 was using shielded metal arc welding procedure WPS-B-T-3213-TC-U5b to add weld material to build up the edge of plate TD-5 using weld SSD1-TL5-1-A-4-TD5-10 in accordance with a non numbered weld repair document. This QA Inspector asked ZPMC CWI Mr. Xu Le Feng and QC Inspector Mr. You Zhi Lai if there was a number assigned to this document and Mr. Xu Le Feng informed this QA Inspector that this is a "Casual" repair and that there has not been any number assigned to this document. This QA Inspector observed a welding current of approximately 270 amps and the base material has been preheated to a minimum temperature of 180 degrees Celsius using electric heating elements. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC welder Ms. Li Ji Nang, stencil 056829 was using shielded metal arc welding procedure WPS-B-T-3213-TC-U5b to add weld material to build up the edge of plate TD-5 using weld SSD1-TL5-1-A-4-TD5-10 in accordance with a non numbered weld repair document. This QA Inspector

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observed a welding current of approximately 275 amps and the base material has been preheated to a minimum temperature of 180 degrees Celsius using electric heating elements. Items observed by the QA Inspector appear to comply with project specifications.

### Tower Bay 11

This QA Inspector observed ZPMC welder Mr. Xu Changhong, stencil 040611 was using shielded metal arc process to tack weld East tower lift 5 groove weld ESD1-TL5-3E-F-12B. Prior to welding, this QA Inspector observed ZPMC used a single torch to preheat the 65 mm and 70 mm thick base materials. This QA Inspector observed ZPMC QC Inspector Mr. Xu Jie measuring the base material temperature on the surfaces that were being preheated and this QA Inspector asked ZPMC QC Inspector Mr. Xu Jie if he was also been monitoring the preheat on the back sides of these 65 mm and 70 mm thick plates. A few minutes later this QA Inspector observed a second person using a torch to heat the back side of the weld joint. After ZPMC QC Inspector Mr. Xu Jie determined the base material was a minimum of 160 degrees Celsius, this QA Inspector observed a welding current of approximately 170 amps. About a minute later ZPMC QC Inspector Mr. Xu Jie determined the base material temperature was starting to drop below 160 degrees Celsius and he had Mr. Xu Changhong stop welding. This QA Inspector observed three people using torches to heat the back sides of the weld joint and the adjacent plate that is to be welded. Once QC had verified the base material was a minimum of 160 degrees Celsius Mr. Xu Changhong resumed welding. ZPMC welder Mr. Xu Changhong appeared to be certified to make these tack welds and the E9018 shielded metal welding electrodes are being stored in a heated container. Items observed on this date appeared to generally comply with applicable contract documents.

### OBG Segment Trial Assembly

This QA Inspector observed ZPMC welder Mr. Chen Zheng Hua, stencil 220067 was using flux cored welding procedure WPS-B-T-2233-TC-U4b-F to make weld SEG052B-043. This weld repair was located at OBG segment 9BE to 9CE. This QA Inspector observed CWI Mr. An Qing Xiang was monitoring this weld and Mr. Chen Zheng Hua appeared 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. Dai Lu, stencil 048659 was using shielded metal arc procedure WPS-345-SMAW-4G(4F)-FCM-Repair to tack weld longitudinal diaphragm LD12B at OBG segment 9CE near panel point PP077. This work was authorized by weld repair document B- WR13818 to correct misalignment. This QA Inspector observed the welding electrodes were being stored in a portable rod oven which was connected to an electric power cable, Mr. Dai Lu had a welding current of approximately 175 amps and Mr. Dai Lu appeared 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. Wang Chang Ming, stencil 047864 was using shielded metal arc welding procedure specification WPS-B-P-21133-TC-U4b-FCM-1 to complete OBG segment 12AW weld SEG3004J-177 and 178 near panel point PP110. This QA Inspector observed a welding current of approximately 175 amps, the base material appears to have been preheated with a torch prior to welding and Mr. Wang Chang

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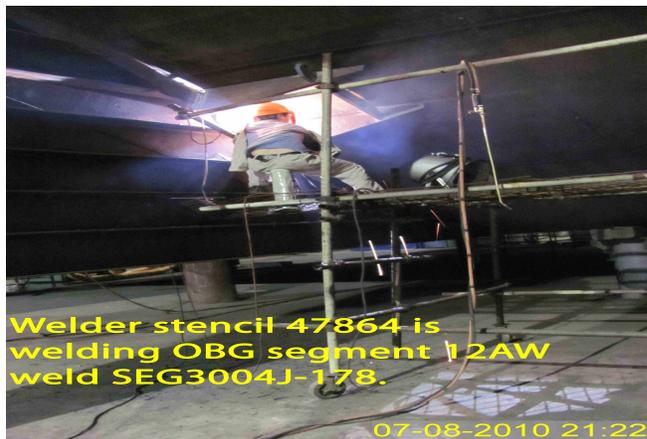
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Ming appeared to be certified to make this weld. This QA Inspector observed the welding electrodes were stored in a portable electrode storage oven. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Liu Houkuan, stencil 045133 was using shielded metal arc process to perform tack welding of OBG segment 13BW longitudinal diaphragm groove weld LD3032-001-003. This QA Inspector observed a welding current of approximately 180 amps and Mr. Liu Houkuan appeared to be certified to make this weld. This QA Inspector observed ZPMC preheated the base material prior to welding. Items observed by the QA Inspector appear to comply with project specifications.



### 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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**Inspected By:** Dawson,Paul

Quality Assurance Inspector

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**Reviewed By:** Carreon,Albert

QA Reviewer