

**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:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-018779**Date Inspected:** 09-Dec-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 Inspector: Mr. Bao Qian

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.

OBG Bay 14

This QA Inspector observed ZPMC welder Mr. Liu Zipei, stencil 062406 used submerged arc welding procedure WPS-B-T-2221-B-U2C-S-2 to make OBG segment 13CE weld SEG3011U-001. This QA Inspector observed a current of approximately 615 amps and 31.5 volts. Mr. Liu Zipei appeared to be certified to make this weld and the base material had been preheated with electric heating elements. Items observed by this QA Inspector appeared to be progressing in compliance with project specifications.

This QA Inspector observed ZPMC welder Mr. Yang Yunfeng, stencil 215553 used shielded metal arc welding procedure WPS-345-SMAW-2G(2F)-FCM-Repair-1 to make a weld repair of ultrasonic rejections to OBG segment 13AE weld SEG3007T-105. ZPMC QC Inspector Mr. Zhong Guo Hui presented this QA Inspector with weld repair document B-WR-17528 that documents the repair area was 14 mm deep. This QA Inspector observed ZPMC QC has recorded a welding current of 158 amps, 25.6 volts and a travel speed of 115mm per minute. This QA Inspector measured a welding current of approximately 160 amps observed Mr. Yang Yunfeng appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract

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documents.

This QA Inspector observed ZPMC welder Mr. Wang Zhengbin, stencil 216086 used shielded metal arc welding procedure specification WPS-345-SMAW-3G(3F)-FCM-Repair to make repairs of OBG segment 13AE weld SEG3007J-036. This weld had been ultrasonically rejected and was repaired in accordance with weld repair document B-WR18398. ZPMC QC had documented that the repairs were 9 and 10 mm deep. This QA Inspector observed ZPMC QC had recorded a welding current of 160 amps, 25.1 volts and a travel speed of 420mm per minute. This QA Inspector measured a welding current of 160 amps and Mr. Wang Zhengbin 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. Zhang Quin Quan, stencil 044774 used flux cored welding procedure WPS-B-T-2231-ESAB to make OBG segment 13AE welds SEG3007U-191 and 166. This QA Inspector observed ZPMC QC has recorded a welding current of 292 amps, 25.4 volts and a travel speed of 234mm per minute. This QA Inspector measured a welding current of approximately 300 amps, 26 volts, a travel speed of 345 mm per minute and that Mr. Zhang Quin Quan appeared to be certified to make these welds. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Han Lin stencil 062782 used flux cored welding procedure WPS-B-T-2233-ESAB to make OBG segment 13AE weld SEG3007AV-087. This QA Inspector observed ZPMC QC has recorded a welding current of 251 amps, 25.3 volts and a travel speed of 138mm per minute. This QA Inspector measured a welding current of approximately 230 amps, 25 volts a travel speed of 150 mm per minute and that Mr. Han Lin 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. Ye Bing stencil 066733 used flux cored welding procedure specification WPS-B-T-2233-ESAB to make OBG segment 13AE weld SEG3007AZ-036. ZPMC QC had recorded a welding current of 245 amps, 25.1 volts and a welding travel speed of 138 mm per minute. This QA Inspector measured a welding current of approximately 250 amps and 29.3 volts. This QA Inspector observed that the maximum welding voltage listed in the welding procedure specification is 27.5 volts and that Mr. Ye Bing had a welding voltage that was approximately 1.8 volts above the maximum limit. This QA Inspector showed ABF CWI Mr. Bao Qian the welding procedure specification and he agreed the welding voltage was too high. Mr. Bao Qian had the welding machine adjusted to a welding voltage of approximately 26 volts. This QA Inspector observed Mr. Ye Bing appeared to be certified to make this weld. Following adjustment of the welding machine, items observed on this date appeared to generally comply with applicable contract documents. See the photograph below for additional information.

This QA Inspector observed ZPMC welder Mr. Zhang Quin Quan, stencil 044774 used shielded metal arc welding process to complete a tack weld between OBG segment 13AE floor beam FB2020-001 and longitudinal diaphragm LD3026A. This QA Inspector observed Mr. Zhang Quin Quan is certified to make 1F, 2F and 3F position welds and he is not certified to make 4F (overhead) position welds. This QA Inspector showed ABF CWI Mr. Bao Qian the weld and Mr. Zhang Quin Quan's welder identification card and Mr. Bao Qian agreed Mr. Zhang Quin Quan was not certified to make this weld. A ZPMC worker used a grinder to remove this tack weld and Mr. Bao Qian

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visually inspected this area after the weld had been removed. 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 Devey +8615000026784, who represents the Office of Structural Materials for your project.

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**Inspected By:** Dawson,Paul

Quality Assurance Inspector

**Reviewed By:** Carreon,Albert

QA Reviewer