

**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-022199**Date Inspected:** 20-Mar-2011**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. Cui Zheng Hua, Mr. Man-Kit Li

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 14**

This QA Inspector observed ZPMC welder Mr. Zhu Mingsong, stencil 204339 used shielded metal arc welding procedure WPS-345-SMAW-2G(2F)-FCM-Repair to make a weld repair of visual rejections to OBG segment 13BE weld SEG3009S-088. This QA Inspector measured a welding current of approximately 170 amperes (amps), the base materials had been preheated with a torch and Mr. Zhu Mingsong 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. Bian Henggui stencil 051359 used shielded metal arc welding procedure specification WPS-B-P-2213-TC-U4B-FCM-1 to make repairs to OBG segment 14E welds SEG3009C-215, 239, 240 and 241. This QA Inspector observed a welding current of approximately 160 amps and the base materials were preheated with an electric heater. This weld had been ultrasonically rejected and was being repaired per weld repair document B-WR-20467. Items observed on this date appeared to generally comply with applicable contract documents.

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This QA Inspector observed ZPMC welder Mr. Wang Zhengbin, stencil 216086 used shielded metal arc welding procedure WPS-345-SMAW-3G(3F)-FCM-Repair-1 to make repairs of OBG segment 14E weld 3019BB-011, 012, 033, 034, 056, 100, 108 and 144. ZPMC QC informed this QA Inspector that weld repair document B-WR-20467 documents this weld repair. This QA Inspector observed a welding current of approximately 160 amps the base materials were preheated with an electrical heater 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. Zhao Guanglin, stencil 044779 used shielded metal arc welding procedure specification WPS-345-SMAW-4G(4F)-FCM to make OBG segment 14E tack weld SEG3019BB-001. This QA Inspector observed a welding current of approximately 160 amps, the base materials were preheated with a torch and Mr. Zhao Guanglin appeared to be certified to make this weld. 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. Wang Linjiang stencil 051356 used flux cored welding procedure WPS-B-T-2233-ESAB to make OBG segment 14E weld SEG3019B-001. This QA Inspector observed a welding current of approximately 290 amps and 27.0 volts and Mr. Wang Linjiang appeared to be certified to make his weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder stencil 044324 used flux cored welding procedure WPS-B-T-2132-ESAB to make OBG segment 13BE welds SEG3009E-035 and 036. This QA Inspector measured a welding current of approximately 300 amps and 26.5 volts and the base materials were preheated with an electrical heater. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder stencil 050969 used shielded metal arc welding procedure specification WPS-B-P-2213-TC-U4B-FCM-1 to make OBG segment 13BE weld SEG3009C-211. This QA Inspector observed a welding current of approximately 160 amps and the base materials were preheated with an electric heater. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed a ZPMC worker used shielded metal arc welding process to make a tack weld on stiffener plate weld SEG3019B-021. This weld joins a stiffener plate to OBG segment 14E bottom plate near panel point PP128.7. This QA Inspector observed the base materials did not appear to have been preheated prior to commencement of the tack welding. This QA Inspector asked the worker that had made this tack weld for a welder identification card. This person and all other workers in the area did not appear to speak any English, and the worker appeared to indicate that he was not certified to perform welding. The worker got an electrical grinder and removed this tack weld. No ABF representatives or ZPMC QC Inspectors were at this location when the tack weld had been made. ZPMC then preheated weld joint SEG3019B-021 with a torch and ZPMC welder Mr. Wu Qingqing, stencil 040779 used shielded metal arc welding process to make a tack weld. This QA Inspector observed a welding current of approximately 160 amps. This QA Inspector informed ABF CWI Mr. Cui Zheng Hua and ABF CWI Mr. Man-Kit Li that a tack weld had been made by a non certified worker and that the base materials had not been preheated. Mr. Man-Kit Li informed this QA Inspector that he will discuss his problem with all the QC personnel working on lifts 13 and 14 East segments. See the photograph 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 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:** Riley,Ken

QA Reviewer