

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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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-008811**Date Inspected:** 25-Aug-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 1846**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 715**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 Fabrication**Summary of Items Observed:**

CWI Inspectors: Mr. Chen Xi, Mr. Zhao Chen Sun, Mr. Guo Yan Fei

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 Mr. Rao Wei, stencil 049972 is using shielded metal arc process WPS-B-T-2112 to tack OBG floor beam FB3004-001-031. This QA Inspector observed a welding current of approximately 150 amps, the base material is clean where the tack welds were being made and Mr. Rao Wei is certified to make this weld. This QA Inspector observed the shielded metal arc welding electrodes are being stored in an electrically heated electrode storage container which is warm to the touch and it appears to be connected to the welding power supply cable. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Ms. Wang Chaili stencil 045203 is using flux cored welding procedure WPS-B-T-2132-3 to make groove weld FB3029-001-004 root pass. This QA Inspector observed Ms. Chaili is certified to make this weld. This QA Inspector observed ZPMC QC personnel have recorded a welding current of 305 amps and 30.5 volts. This QA Inspector measured a welding current of approximately 245 amps and 29.0

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volts. The QA Inspector asked ZPMC CWI Mr. Chen Xi where this welding procedure specification was located and after he looked on several places he informed this QA Inspector that the welding procedure specification is on the south wall of OBG Bay #2. This QA Inspector observed the welding procedure lists a minimum welding current of 273 amps and a maximum welding current of 334 amps. The welding current that had been measured by this QA Inspector appears to be approximately 28 amps below the minimum allowable welding current. ZPMC CWI Mr. Chen Xi also measured the welding current and he confirmed the welding current is too low. Mr. Xi then adjusted the welding current to approximately 285 amps. Items observed by this QA Inspector do not appear to fully comply with project specifications.

This QA Inspector observed ZPMC welder Mr. Xu Fubao, stencil 200569 is using shielded metal arc process WPS-B-P-2112-B-U2-FCM to tack weld OBG floor beam groove weld FB3039-001-122. This QA Inspector observed a welding current of approximately 150 amps, the base material is clean where the tack welds were being made and Mr. Xu Fubao is certified to make this weld. This QA Inspector observed the shielded metal arc welding electrodes are being stored in an electrically heated electrode storage container which is warm to the touch. Items observed on this date appeared to generally comply with applicable contract documents.

### OBG Bay 6

This QA Inspector observed ZPMC welder Mr. Wei Jun, stencil 067707 is using shielded metal arc procedure WPS-B-T-2112 to make shear link weld WDI-A305-65M3-20. This QA Inspector measured a welding current of 220 amps. This QA Inspector observed Mr. Wei Jun is certified to make this weld. It appears that ZPMC personnel had used electric heaters to preheat the base material where the weld is to be made. This QA Inspector observed the shielded metal arc welding electrodes are being stored in an electrically heated electrode storage container which is warm to the touch and it appears to be connected to the welding power supply cable. Items observed by this QA Inspector appear to comply with project specifications.

This QA Inspector observed ZPMC welder Mr. Li Gangzi, stencil 069493 is using shielded metal arc procedure WPS-B-T-2112 to make shear link weld WDI-A305-65M3-32. This QA Inspector measured a welding current of 220 amps. This QA Inspector observed Mr. Li Gangzi is certified to make this weld. It appears that ZPMC personnel had used electric heaters to preheat the base material where the weld is to be made. This QA Inspector observed the shielded metal arc welding electrodes are being stored in an electrically heated electrode storage container which is warm to the touch and it appears to be connected to the welding power supply cable. Items observed on this date appeared to generally comply with applicable contract documents.

### 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