

**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:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-015482**Date Inspected:** 07-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**Summary of Items Observed:**

CWI Inspectors: Mr. Zhu Tian Shu, Mr. Geng Wei,

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 1**

This QA Inspector observed ZPMC workers were performing heat straightening of traveler rail TR20. This activity is being documented on HSR(B)-362 revision #0. ZPMC QC Inspector Mr. Zhu Lin had an infrared heat measurement device to monitor the temperature of the base material as it was being heat straightened. Items observed on this date appeared to generally comply with applicable contract documents.

**OBG Bay 2**

This QA Inspector observed ZPMC welder Mr. Yan Shitian, stencil 062708 using flux cored welding procedure WPS-B-T-2133 to make floor beam weld FB3218-001-027. This QA Inspector observed a welding current of approximately 230 amps and 25.03 volts. This QA Inspector observed that Mr. Yan Shitian appeared to be certified to make this weld and the base material appeared to have been preheated with a torch. Items observed on this date appeared to generally comply with applicable contract documents.

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This QA Inspector observed ZPMC welder Ms. Zhang Sumei, stencil 207464 has used shielded metal arc welding process to make various tack welds on floor beam FB3173-001. This QA Inspector observed that Ms. Zhang Sumei appeared to be certified to make this weld, the shielded metal arc welding electrodes were being stored in an electrically heated electrode storage container which was warm to the touch and ZPMC QC Inspector Mr. Zhong Yong Gang was monitoring the welding activities. Items observed on this date appeared to generally comply with applicable contract documents.

### OBG Bay 4

This QA Inspector observed ZPMC workers performing heat straightening of floor beam FB3122-001. This activity was being documented on HSR(B)-376 revision #0. ZPMC QC Inspector Mr. Wang Liang was monitoring the temperature of the base material as it was heat straightened. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC workers performing heat straightening of floor beam FB3109-001. This activity is being documented on HSR(B)-375 revision #0. ZPMC QC Inspector Mr. Wang Liang was monitoring the temperature of the base material as it was heat straightened. Items observed on this date appeared to generally comply with applicable contract documents.

### OBG Bay 6

This QA Inspector observed ZPMC welder Mr. Xiao Di, stencil 203204 was using shielded metal arc procedure WPS-T-T-4112-4 to tack weld OBG segment 13CE deck plate DP3108-001-167. This 2F position weld joins a diaphragm plate to the deck plate. This QA Inspector observed a welding current of approximately 180 amps and Mr. Xiao Di appears 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. See the photograph below for additional information.

This QA Inspector observed ZPMC welder Mr. Yang Xuhe, stencil 057795 was using shielded metal arc procedure WPS-T-T-4113-4 to tack weld OBG segment 13CE deck plate DP3108-001-059. This 3F position weld joins a diaphragm plate to an "I" rib. This QA Inspector observed a welding current of approximately 170 amps and Mr. Yang Xuhe 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.

### OBG Bay 14

This QA Inspector observed ZPMC welder Mr. Dan Deyin, stencil 044795 was using flux cored welding procedure WPS-B-T-2132 to make OBG weld SP3075-001-026 between a stiffener plate and OBG segment 13CEA side plate. This QA Inspector observed ZPMC a welding current of 285 amps and 25.8 volts, the base material appeared to have been preheated with electric heating elements and that Mr. Dan Deyin appeared to be certified to make this weld. ZPMC QC Inspector Mr. Wang Xu informed this QA Inspector that the welding voltage was too low and Mr. Wang Xu then confirmed 25.8 volts. Mr. Wang Xu informed ZPMC welder Mr. Dan Deyin that the voltage was too low and Mr. Dan Deyin adjusted the FCAW wire extension distance between the

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welding head and the weld joint and ZPMC QC Inspector Mr. Wang Xu then measured the voltage to be approximately 28.5 volts. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Hong Yong Li, stencil 044801 was using flux cored welding procedure WPS-B-T-2132 to make OBG weld SP3075-001-025 between a stiffener plate and OBG segment 13CE side plate. This QA Inspector observed a welding current of 308 amps and 30.2 volts, the base material appeared to have been preheated with electric heating elements and that Mr. Hong Yong Li 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. Xi Xianyou, stencil 047866 was using flux cored welding procedure WPS-B-T-2132 to make OBG segment 13AW longitudinal diaphragm weld LC3031-001-004 root pass. This QA Inspector observed ZPMC QC Inspector Mr. Tao Wei had recorded a welding current of 307 amps and 28.0 volts. This QA Inspector observed Mr. Xi Xianyou appeared to be certified to make these welds and the base material appears to have been preheated with electric heaters. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Ms. Hue Junrong, stencil 201215 was using flux cored welding procedure WPS-B-T-2231-TC-U4b-F to make OBG segment 12CW weld SEG3006M-221 near panel point PP116.

This QA Inspector observed ZPMC QC Inspector Mr. Wang Wei Ming had recorded a welding current of 305 amps, 30.4 volts and Ms. Hue Junrong 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. He Hanbi, stencil 202122 was using flux cored welding procedure WPS-B-T-2231-TC-U4b-F to make OBG segment 12CW weld SEG3006M-241 near panel point PP116. This QA Inspector observed ZPMC QC Inspector Mr. Wang Wei Ming had recorded a welding current of 287 amps, 29.5 volts and Mr. He Hanbi appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.



### Summary of Conversations:

See Above.

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## 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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<b>Inspected By:</b>	Dawson,Paul	Quality Assurance Inspector
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<b>Reviewed By:</b>	Carreon,Albert	QA Reviewer
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