

**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-011015**Date Inspected:** 18-Dec-2009**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. Li Jia, Mr. Peng Guo

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 5**

This QA Inspector observed ZPMC welder Mr. Wang Guilin, stencil 067275, is using flux cored welding procedure WPS-B-T-2232-TC-U5-F to make traveler rail weld 10TR1-007-014. This QA Inspector observed a welding current of approximately 320 amps 31.5 volts and Mr. Wang Guilin appears 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. Li Yuanzheng, stencil 217185, is using flux cored welding procedure WPS-B-T-2232-TC-U5-F to make traveler rail weld 10TR2-008-014. This QA Inspector observed a welding current of approximately 310 amps and 30.7 volts and Mr. Li Yuanzheng appears 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. Pan Ben Yung, stencil 067601, is using flux cored welding procedure WPS-B-T-2232-TC-U5-F to make traveler rail weld 10TR2-013-014. This QA Inspector observed a

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welding current of approximately 305 amps and 32.0 volts and Mr. Pan Ben Yung appears 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. Si Gao Feng, stencil 204342, is using flux cored welding procedure WPS-B-T-2232-TC-U5-F to make traveler rail weld 11TR1-004-014. This QA Inspector observed a welding current of approximately 310 amps 31.8 volts and Mr. Si Gao Feng is 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. Wang Yuan, stencil 215250, has recently used Flux Cored welding procedure WPS-345-FCAW-2G(2F)-Repair-1 to make a weld repair to a cantilever beam in accordance with weld repair report B-WR9148. This QA Inspector observed ZPMC QC has recorded a welding current of 282 amps and 29.9 volts. This QA Inspector observed Mr. Wang Yuan is certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

### Heavy Dock East Tower

This QA Inspector observed ZPMC welder Mr. Wang Daping, stencil 040736, is using flux cored welding procedure WPS-B-T-2333-TC-P4-F to make east tower lift 1 weld ESD1-SA22-F/G-12. This QA Inspector observed CWI Mr. Peng Guo measuring and adjusting the welding machine to have a welding current of 215 amps and 26.2 volts and Mr. Wang Daping appears 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. Wu Jinguo, stencil 049541, is using flux cored welding procedure WPS-B-T-2333-TC-P4-F to make east tower lift 1 weld ESD1-SA227-F/G-04. This QA Inspector observed CWI Mr. Peng Guo had recorded a welding current of 210 amps and 26.0 volts and Mr. Wu Jinguo appears 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. Li Xing Quan, stencil 062126, is using flux cored welding procedure WPS-B-T-2333-TC-P4-F to make east tower lift 1 weld ESD1-SA227-F/G-06. This QA Inspector observed a welding current of 210 amps and 24.0 volts and Mr. Li Xing Quan appears 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. Jin Yinghuang, stencil 040704, is using flux cored welding procedure WPS-B-T-2333-TC-P4-F to make east tower lift 1 weld ESD1-SA227-F/G-14. This QA Inspector observed CWI Mr. Peng Guo measuring and adjusting the welding machine to have a welding current of 220 amps and 26.0 volts and Mr. Jin Yinghuang appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

### Segment E4 on board a ship located at the Heavy Dock

ZPMC issued "Inspection Notification Sheet" number 12172009-1 informing QA that at 2230 hours ABF Inspectors will be performing magnetic particle (MT) and ultrasonic (UT) inspections of OBG segment weld repairs: SEG021A-031. This weld connects the side plate to the bottom plate on the bikepath side of OBG segment 4E. This bikepath segment is located on a ship that is berthed at the end of the Heavy Dock. At around

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2230 hours this QA Inspector arrived at OBG segment 4E and witnessed ABF Inspectors performing MT and UT inspections of the weld repairs. This QA Inspector performed ultrasonic inspections of the two weld repair locations for detection of longitudinal and planar transverse indications utilizing scanning pattern A, B, C and D (AWS D1.5 Fig 6.7). ABF UT Inspector Mr. Xiao Long Li informed this QA Inspector that the original ultrasonic rejection report indicates the first UT repair is located at 1000 mm from the end of the weld and that the actual weld repair area is between 1000mm and 1200 mm and that the second UT rejection is listed on the UT report as being located at 1450 mm and the actual repair area is between 1500 and 1650 mm from the end of the weld. ABF UT Inspector Mr. Xiao Long Li said that the original ultrasonic inspection report might have had the wrong locations and that he had performed UT inspections of the correct locations. Items observed on this date appeared to generally comply with applicable contract documents.

### Blast Shop #1

This QA Inspector performed random visual inspections of the OBG internal ceiling and upper floor beam surfaces from panel point 62 to panel point 63 of OBG Segment 8AE as per ZPMC request number 2274. ZPMC has recently completed grit blasting of these areas and the steel surfaces are now mostly free of rust oxide and other contaminants that had previously obscured portions of the plate and weld surfaces. This QA Inspector visually observed approximately 50 locations that require grinding to resolve visual weld spatter, arc strikes, shallow nicks, scrapes, and other minor surface rejections. The areas were marked with colored chalk and ZPMC had workers removing the visually unacceptable areas with electric grinders and ZPMC will have a magnetic particle (MT) inspector perform MT of the arc strike removal areas after the grinding is completed.

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

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