

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

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-017912**Date Inspected:** 10-Nov-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: ZPMC: Mr. Yu Jiao, Mr. Sha Zhi

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 12**

ZPMC issued "Inspection Notification Sheet" number 07307, item #2, informing Caltrans QA that ZPMC is requesting ultrasonic inspections (UT) of the complete joint penetration welds on OBG segment 13BW and 13CW subassembly splice plates in bay 12. This QA Inspector performed random visual and ultrasonic inspections of the following welds: SA3114D-007-006, SA3114D-011-006, SA3114D-016-006, SA3114D-021-006, SA3114D-023-006, SA3114D-028-006, SA3114D-031-006 and SA3114D-033-006. Items observed by this QA Inspector appear to comply with AWS D1.5 UT requirements. For additional information on these inspections see the TL6027 Ultrasonic Test Report.

**OBG Bay 13**

This QA Inspector observed two ZPMC workers using grinders to smooth the surfaces of OBG segment 14AE grillage SA7038 welds. Items observed on this date appeared to generally comply with applicable contract

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documents.

## OBG Bay 14

This QA Inspector observed ZPMC welder Mr. Wei Yingchong, stencil 048043 used shielded metal arc welding procedure specification WPS-B-P-2212-FCM-1 to complete tack welds between OBG segment 13BE floor beam diaphragm plate X3184A to deck plate DP3083(PL3184A)-001. This QA Inspector observed Mr. Wei Yingchong appeared to be certified to make this weld, the welding electrodes were stored in a portable rod oven which was warm to the touch and the base materials were preheated with a torch prior to welding. This QA Inspector measured a welding current of approximately 150 amps. 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 Li, stencil 044772 used shielded metal arc welding procedure specification WPS-B-P-2113-FCM-1 to make OBG segment 13AE weld SEG3007B-042. This weld joins a stiffener plate to floor beam FB3119A near panel point PP120. This QA Inspector measured a welding current of approximately 170 amps, the welding electrodes were stored in a portable rod oven which was warm to the touch and Mr. Wang 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. Hong Liang, stencil 200113 used shielded metal arc welding procedure specification WPS-B-P-2113-FCM-1 to make OBG segment 13AE weld SEG3007D-035. This weld joins a stiffener plate to a floor beam near panel point PP120.5. This QA Inspector measured a welding current of approximately 165 amps, the welding electrodes were stored in a portable rod oven which was warm to the touch and Mr. Hong Liang 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. Kua Wen Shan stencil 054013 used shielded metal arc welding procedure specification WPS-B-P-2113-FCM-1 to make OBG segment 13AE weld SEG3007C-036. This weld joins a stiffener plate to floor beam FB3119A near panel point PP120. This QA Inspector measured a welding current of approximately 160 amps, the welding electrodes were stored in a portable rod oven which was warm to the touch and Mr. Kua Wen Shan appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

## OBG Bay 16

This QA Inspector observed ZPMC welder Mr. Qui Yilian, stencil 206296 used flux cored welding procedure WPS-B-T-2132 to make traffic barrier welds W5-SB1-077-082 through -085. This QA Inspector observed a welding current of approximately 300 amps and 34.0 volts. This QA Inspector observed that the maximum welding voltage listed in the WPS is 32.5 volts and that Mr. Mr. Qui Yilian has a welding voltage that is approximately 1.5 volts above this maximum limit. ZPMC QC Inspector Mr. Guo Pan agreed the welding voltage is above the maximum and the welder adjusted the welding voltage to approximately 32 volts amps.

QA Inspector observed that Mr. Mr. Qui Yilian appeared to be certified to make this weld. Following adjustment of the welding voltage items observed on this date appeared to generally comply with applicable contract documents.

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This QA Inspector observed ZPMC welder Mr. Su Hong Biao, stencil 201879 used flux cored welding procedure WPS-B-T-2132 to make traffic barrier welds W5-SB1-025-082 through -085. This QA Inspector observed a welding current of approximately 300 amps and 33.5 volts. This QA Inspector observed that the maximum welding voltage listed in the WPS is 32.5 volts and that Mr. Su Hong Biao has a welding voltage that is approximately 1.0 volt above this maximum limit. ZPMC QC Inspector Mr. Guo Pan agreed the welding voltage is above the maximum and the welder adjusted the welding voltage to approximately 32 volts amps. QA Inspector observed that Mr. Su Hong Biao appeared to be certified to make this weld. Following adjustment of the welding voltage 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 James Devy +8615000026784, 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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