

**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-013642**Date Inspected:** 30-Apr-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 Inspector: Mr. Wu Zhi Cheng

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 Segment Assembly**

This QA Inspector observed ZPMC welder Mr. Wang Fu Peng, stencil 205718 is using shielded metal arc process to perform tack welding of OBG drip plate weld OBW7N-014. This QA Inspector observed a welding current of approximately 150 amps and Mr. Wang Fu Peng appears to be certified to make this 4F (overhead position) 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 a torch was used to preheat the base material prior to welding. Items observed on this date appear to comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Tian Zhaoquan, stencil 045246 is using shielded metal arc welding procedure WPS-B-P-2214-B-U2-FCM-1 to make 4G (overhead) position shielded metal arc weld OBW7C-008 which joins the bottom plate between OBG segments 7DW and 7EW near panel point 58. This QA Inspector observed Mr. Tian Zhaoquan has a welding current of approximately 160 amps and Mr. Tian Zhaoquan appears to be certified to make this weld. This QA Inspector observed the welding electrodes are being stored in a heated

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portable electrode storage oven and the base material appears to have been preheated with an electrical heating element located on the interior of the OBG segments. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zang Chang Ming, stencil 047864 is using shielded metal arc welding procedure WPS-B-P-2214-B-U2-FCM-1 to make 4G (overhead) position shielded metal arc weld OBW7C-008 which joins the bottom plate between OBG segments 7DW and 7EW near panel point 58. This QA Inspector observed Mr. Zang Chang Ming has a welding current of approximately 160 amps and Mr. Zang Chang Ming appears to be certified to make this weld. This QA Inspector observed the welding electrodes are being stored in a heated portable electrode storage oven and the base material appears to have been preheated with an electrical heating element located on the interior of the OBG segments. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Bi Laishu, stencil 045280 is using flux cored welding procedure specification WPS-B-T-2132 to make OBG segment 7DW hold back weld BP092-001-049. The QA Inspector observed a welding current of approximately 290 amps and 30.6 volts and the base material appears to have been being preheated by a torch prior to welding. Items observed by this QA Inspector appear to be progressing in compliance with project specifications.

This QA Inspector observed an unidentified ZPMC worker is using shielded metal arc welding process to weld temporary alignment plates on either side of OBG segments 7DW and 7EW top plate butt weld. This QA Inspector observed the base material adjacent to where the temporary weld had just been deposited feels warm near the weld but the adjacent base material does not feel as if it had been preheated prior to welding. This QA Inspector did not observe any operable acetylene torch or another heating source in the area where this welding had taken place. This QA Inspector asked the person that had been performing this weld if he had a ZPMC welder identification card and after this QA Inspector took a digital photograph of this welder, he commenced to rapidly walk to the edge of the OBG where he promptly climbed over the counterweight edge of the OBG and he disappeared from view. This QA Inspector requested ZPMC QC Inspector Mr. Wang Zhu and ZPMC CWI Mr. Wu Zhi Cheng to come to this location in order to discuss this welding. Mr. Wu Zhi Cheng said he did not know why the person that had been welding left the area but that he will ensure a qualified welder is assigned to perform welding of the other temporary alignment plates. Items observed on this date do not appear to fully comply with applicable contract documents. See the photograph below for additional information.

ABF issued "Inspection Notification Sheet" number 04292010-2 item #1 informing QA that on 4-30-2010 at 20:30 hours ABF Inspectors will be performing ultrasonic (UT) inspections of repaired welds OBE7A-007, OBE7A-008 and OBE7A-009 which joins the deck plate between OBG segments 7DE and 7EE. These welds are located at the Trial Assembly area. This QA Inspector observed ABF has marked UT rejection areas in welds -007 and -008 and weld -009 appears to have been ultrasonically accepted by ABF Inspectors. This QA Inspector performed ultrasonic inspections of the weld repair locations as listed on the UT report data sheets for detection of longitudinal and planar transverse indications utilizing scanning patterns A, B, C and D (AWS D1.5 Fig 6.7) and no additional unacceptable indications were noted. Note: These inspections are being documented and tracked on "Verification Witness Request" documents and no TL-6027 UT report was issued for these inspections.

At around 2130 hours this QA Inspector observed ZPMC radiography personnel positioning an X-ray machine

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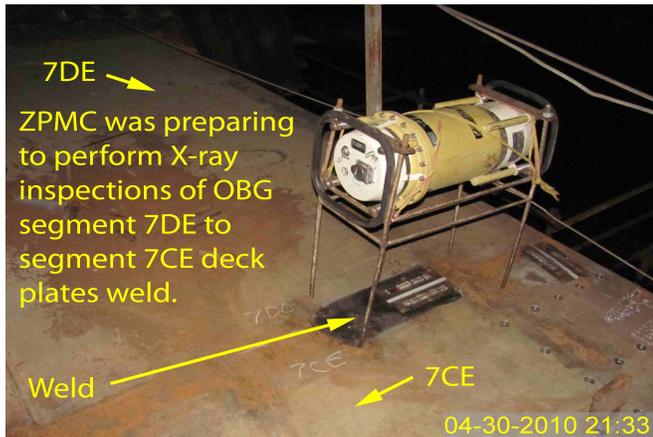
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over the top deck plate butt weld that joins OBG segments 7CE with 7DE. See the photograph below for additional information.



### 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

**Reviewed By:** Carreon,Albert

QA Reviewer

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