

**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:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-001034**Date Inspected:** 17-Dec-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Guo Yang Wei, Fu Gruogang**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:** Tower Fabrication**Summary of Items Observed:**

Caltrans 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. The QA Inspector observed the following:

Orthotropic Box Girder (OBG) and Tower Mock Up:

Bay 3:

The QA Inspector observed ZPMC welders had recently completed flux cored fillet welds on OBG side plate 069 stiffener welds SP069-01-02 through SP069-013. The QA Inspector observed ZPMC Quality Control Inspectors have recorded the welding currents and voltages for each of the welders, Mr. Lisau Liang stencil 48801, Mr. Xin Meng stencil 53742 and Mr. Dong Jin Bao stencil 49775. The welding parameters that were recorded appears to comply with welding procedure specification WPS-B-T-2132-3. The QA Inspector observed QPMC CWI Inspector Mr. Guo Yang Wei using a bridge cam gage to measure the size of the fillet welds that had recently been completed. The construction drawing indicates these fillet welds are required to have a minimum size of 6mm. The QA Inspector asked Mr. Guo Yang Wei if he had fillet weld gages to measure the sizes of these fillet welds and Mr. Wei said he did not have any fillet weld gages. Items observed by the QA Inspector appear to comply with project specifications.

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Bay 2:

The QA Inspector observed ZPMC welder Mr. Du Henshua stencil 37779 is using welding procedure WPS-B-T-4312-TC-4P-2 to make shielded metal partial penetration arc welds on MUB-MA21 weld B/J4. The QA Inspector observed arc E7018 5.0 mm diameter electrodes and a welding current of approximately 210 amps and a minimum base material preheat temperature of 160° C. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC welder Mr. Fu Janjie stencil 66268 is using welding procedure WPS-B-T-4312-TC-4P-2 to make shielded metal arc partial penetration groove welds on MUB-MA21 weld B/J1. The QA Inspector observed arc E7018 5.0 mm diameter electrodes and a welding current of approximately 220 amps and a minimum base material preheat temperature of 160° C. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC welder Mr. Tan Xiangbo stencil 66489 is using welding procedure WPS-B-T-4312-TC-4P-2 to make shielded metal arc partial penetration groove welds on MUB-MA21 weld B/J2. The QA Inspector observed arc E7018 5.0 mm diameter electrodes and a welding current of approximately 235 amps and a minimum base material preheat temperature of 160° C. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC welder Mr. Ge Hong stencil 37780 is using welding procedure WPS-B-T-4312-TC-4P-2 to make shielded metal arc partial penetration groove welds on MUB-MA21 weld B/J3. The QA Inspector observed arc E7018 5.0 mm diameter electrodes and a welding current of approximately 210 amps and a minimum base material preheat temperature of 160° C. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC welder Mr. Han Xian Feng stencil 54467 is using welding procedure WPS-B-T-3212-TC-U5b to make a shielded metal arc groove weld on MSUB-MA25 weld 19A. The QA Inspector observed arc E9018 5.0 mm diameter electrodes and a welding current of approximately 250 amps and a minimum base material preheat temperature of 160° C. Items observed by the QA Inspector appear to comply with project specifications.

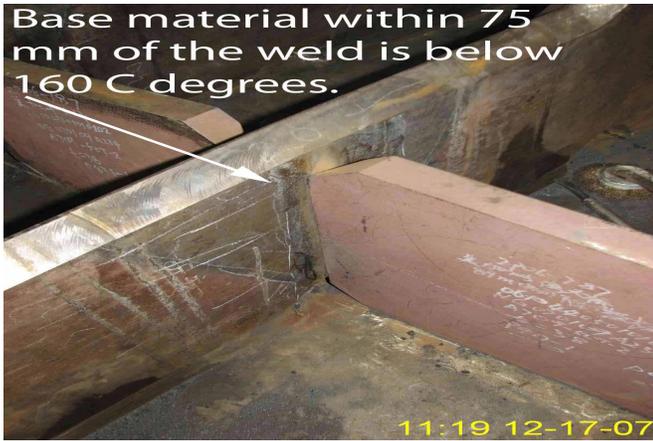
The QA Inspector observed ZPMC Quality Control Inspector Mr. Fu Gruogang is using a straight edge to measure the alignment of various MUSB-MA22 stiffener plates prior to their being tacked in place. ZPMC welder Mr. Ge Hong stencil 37780 is using welding procedure WPS-B-P-2313-TC-4P to make shielded metal arc partial penetration groove tack welds on MUB-MA21 A120-1 stiffener plates. The QA Inspector observed arc E7018 4.0 mm diameter electrodes and a welding current of approximately 165 amps. The base material where Mr. Hong was welding appears to have a minimum base material preheat temperature of 160° C, but the base material approximately 30 mm from where the tack weld was made is below the minimum preheat temperature of 160°C. The QA Inspector informed Mr. Fu Gruogang that the base material within 75 mm in all directions of the weld zone needs to be preheated. Mr. Gruogang stopped tack welding until the base material for a minimum distance of 75 mm from the weld zone had been properly preheated. Items observed by the QA Inspector do not appear to fully comply with project specifications.

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## Summary of Conversations:

See above for summary of conversations.

## 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 Mazen Wahbeh, (818) 292-0659, 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>	Cochran,Jim	QA Reviewer

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