

**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-000460**Date Inspected:** 13-Sep-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Lu Jian Ping**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:** Mock Up, Welder Performance Quals**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector Charlie Franco was present at the time requested to randomly observe welding being performed for welder qualification. The QA Inspector observed the flux cored arc welding (FCAW) process being used in the 1G position with ceramic backing strips attached. The QA Inspector observed several welders placing root passes in their test pieces utilizing the FCAW process with ZPMC approved weld procedure specification WPS-B-T-2231-T. The QA Inspector observed QA/QC Engineer Jiang Weifeng of 3rd party inspection agency Moody International, inspecting the root passes of the test pieces. Mr. Jiang rejected 5 out of the first 6 test samples for cracks and other poor workmanship issues in the face and root sides of the root passes of the test weldments. The QA Inspector was called to go observe work being performed for the Mock Up, and did not observe any further welder performance qualifications. The attached photograph provides additional detail.

Elevation 114:

Caltrans Quality Assurance (QA) Inspector Charlie Franco was present at the time requested to randomly observe welding being performed for the fabrication of the Mock Up at elevation 114. The QA Inspector randomly observed ZPMC qualified welders Wu Xian Jian and Liu Guo Xian, utilizing the Flux Cored Arc Welding (FCAW) process to weld longitudinal stiffener MP1003-1 to sub assembly MA112 Face B at Weld Joint (WJ) numbers 5 and 6. Both welders were utilizing ZPMC weld procedure specification WPS-B-T-2332-TC-P5-F-1. The QA Inspector observed ZPMC CWI Lu Jian Ping monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters and documented them as follows: welding amperage 288 amps, welding voltage 31.5 volts, a travel speed of 300 millimeters per minute for Mr. Wu, and 290 amps, 31.5

# WELDING INSPECTION REPORT

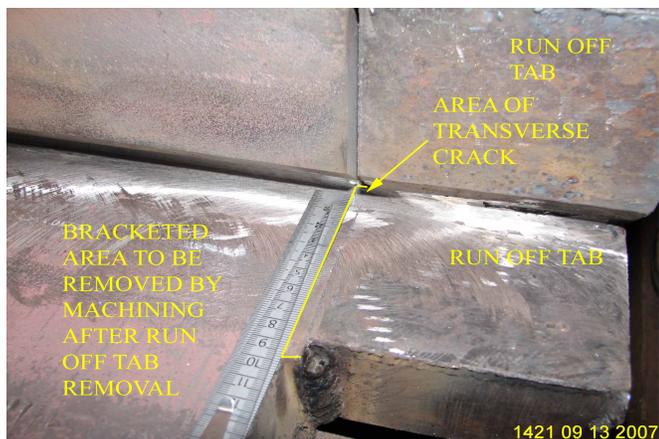
( Continued Page 2 of 3 )

volts with a travel speed of 292 millimeters per minute for Mr. Liu. Weld parameters appeared to comply with the above approved ZPMC weld procedure specification (WPS).



## Summary of Conversations:

As the QA Inspector was awaiting transportation at the end of the shift, he was informed by ZPMC QA Representative Li Xin Yang that a crack had been found at the very beginning of Magnetic Particle Testing of WJ's 5 and 6 on sub assembly MA112. Mr. Li informed the QA Inspector that the crack was in the run off tab and would be removed once the weld was completed. Mr. Li asked the QA Inspector if it would be alright to continue the MT inspection and if no other defects were found, continue with the welding. The QA Inspector walked over to sub assembly MA112 and looked at the area of concern. The QA Inspector observed a transverse crack beginning at the junction of the run off tab attached to skin plate C, progressing toward the longitudinal stiffener and then tailing into the skin plate. The area on the skin plate that the crack entered, was a small area that extended past the edge of skin plate C and was to be removed by machining after welding of the joint was completed. The QA Inspector informed Mr. Li that although the crack was now in an area to be removed later, it would not necessarily stay in that area. The QA Inspector informed Mr. Li that the crack could propagate into the skin plate if it was to remain as is. Mr. Li informed the QA Inspector that the crack would be removed and the area rewelded prior to continuing with the MT inspection. The following photograph provides additional detail of the location only.



---

---

# WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

---

---

## 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.

---

<b>Inspected By:</b>	Franco,Charlie	Quality Assurance Inspector
----------------------	----------------	-----------------------------

---

<b>Reviewed By:</b>	Cochran,Jim	QA Reviewer
---------------------	-------------	-------------