

**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-000968**Date Inspected:** 03-Dec-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 73**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1500**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:** 89M Tower Mock Up & OBG**Summary of Items Observed:**

The Caltrans Quality Assurance (QA) Inspector Charlie Franco was present at the time requested to randomly observe welding and associated operations being performed for the Tower Mock Up and the Orthotropic Box Girders (OBG).

Bay 2:

89M Mock Up:

The QA Inspector randomly observed ZPMC welders Liu Xie and Zhang Xiang Yong, utilizing the Flux Cored Arc Welding (FCAW) Process with gantry mounted automatic welding apparatus and approved ZPMC Weld Procedure Specification (WPS) WPS-B-P-2232-TC-P5-F in the 2F position, to weld the fill and cover passes on Weld Joint (WJ) Numbers MUSB-MA22A/B-1 and 2 attaching Longitudinal Stiffener mp538a/538b/540 to 89M Skin Plate D, Sub-Assembly MA22. The QA Inspector observed ZPMC CWI Sha Zhi monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters and documented them as follows: welding amperage 310 amps, welding voltage 30.2 volts with a travel speed of 307 millimeters (mm) per minute for Mr. Zhang and 302 amps, 31.1 volts with a travel speed of 286 mm. Weld parameters appeared to comply with the above approved ZPMC WPS. The QA Inspector also randomly observed several areas of wormhole porosity in the completed welds from a minimum visible length of 15mm to a maximum length of 45mm in WJ's BP011-15, 16, 17, 21, 23 and 24. The QA Inspector randomly observed ZPMC Quality Control (QC) Personnel visually inspecting the welds and marking up the areas for rework. The attached photographs provide additional detail.

# WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

Bay 3:

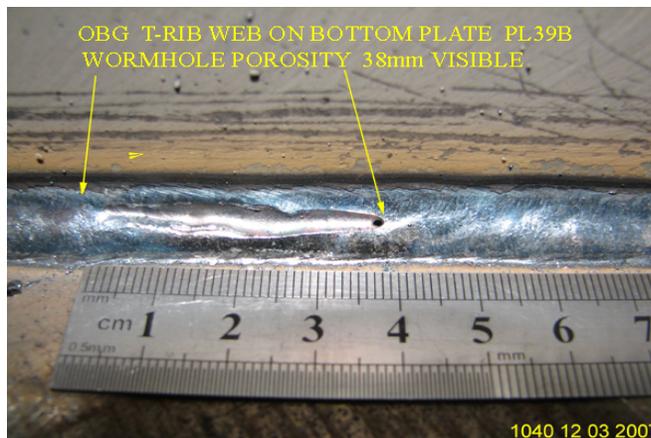
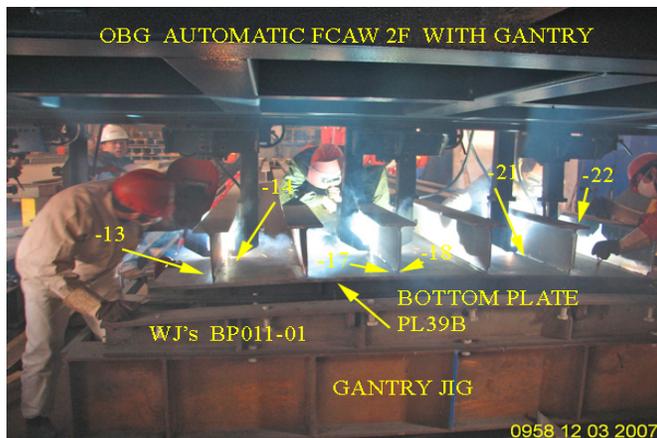
OBG:

The QA Inspector randomly observed ZPMC welders Li Zhaoqian ID Number 048810, Xin Meng ID Number 053742 and Li Shuliang ID Number 048801, utilizing the FCAW Process with gantry mounted welding apparatus and approved ZPMC WPS WPS-B-T-2132-1 in the 2F position, to weld T-Ribs to Bottom Plate 39B at WJ's BP011-01-13 through 24. The QA Inspector observed ZPMC CWI Xu Xianping monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters and documented them. The following parameter values are average values: welding amperage 294 amps, welding voltage 28.2 volts for Mr. Li, 294 amps, 29.2 volts for Mr. Xin and 304.5 amps, 28.2 volts. The average travel speed was 447mm per minute. Weld parameters appeared to comply with the above approved ZPMC WPS. The attached photographs provide additional detail.

Bay 7:

OBG:

The QA Inspector randomly observed ZPMC welder Wang Min ID Number 048296, utilizing the Submerged Arc Welding (SAW) Process with approved ZPMC WPS WPS-B-P-2221-B-L2c-S-1 in the IG position to weld the fill and cover passes on WJ FB026-01-080. The QA Inspector observed ZPMC CWI Li Zhijiang monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters and documented them as follows: welding amperage 530 amps, welding voltage 30.8 volts with a travel speed of 429 millimeters per minute. Weld parameters appeared to comply with the above approved ZPMC WPS. The attached photograph provides additional detail.



---

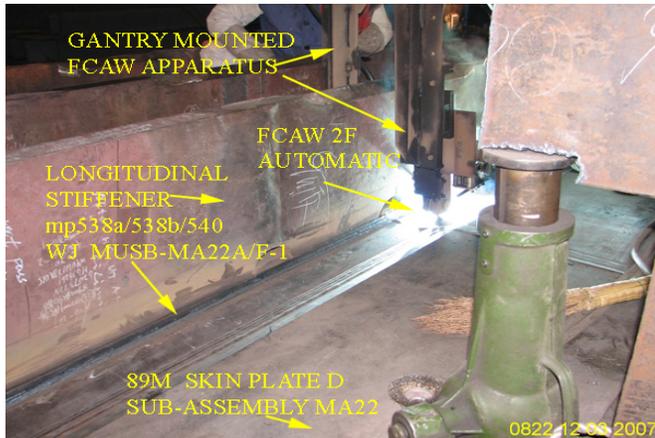
---

# WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

---

---



## Summary of Conversations:

There were no relevant 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.

---

**Inspected By:** Franco,Charlie

Quality Assurance Inspector

---

**Reviewed By:** Cochran,Jim

QA Reviewer