

**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-000917**Date Inspected:** 27-Nov-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 1400**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2300**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Lee Chan Woo, Yi Yong Jun**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:** Caltrans Mock-Up**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Ken Jobses, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, to randomly monitor welding and Quality Control (QC) functions. While on site, the QA Inspector observed and/or discovered the following:

The Caltrans QA Inspector observed welding on Skin Plate Sub-Assembly E on the 89M Mock-Up. The Drawing No. is MUSB-MA38A/B, Rev. 0. The weld was identified as MUSB-A38A/B-10 and is a complete joint penetration (CJP) groove weld welded in the flat (1G) welding position with the skin plate vertical and the stiffener perpendicular to it. The welder was Li Shugiang (Welder I.D. No. 053609). Welding Procedure Specification (WPS) B-T-2231-TC-U5(1G)-F for Flux Cored Arc Welding (FCAW) was used for this weld. The Member ID. is MUSB-MA38- mp543-1. ZPMC CWI, Yi Yong Jun (CWI No. 07031461) was present during the above welding. The QA Inspector verified amperage at 300 and voltage at 31.4 using a calibrated Fluke Amp/Volt meter. The QA Inspector also observed that ZPMC's documentation of welding parameters for the first two passes were within the ranges of the WPS.

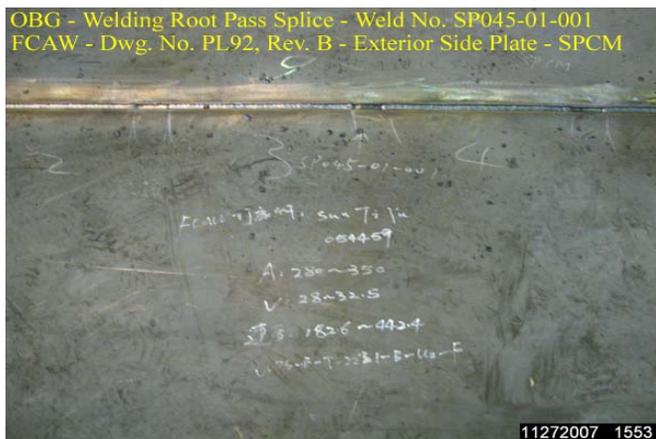
The QA Inspector observed the FCAW welding of the root pass on OBG Exterior Side Plate PL92A/B splice, Weld Nos. SP045-01-001 and SP069-01-001. The Drawing No. is PL92, Rev. B. The base material is 16 mm thick ASTM A709 345T2, which is subject to the requirements for Seismic Performance Critical Members (SPCM). The welding procedure used was WPS-T-B-2231-B-U2-F and the welder for both welds was Sun Ti Yu (Welder I. D. No. 054459). CWI Lee Chan Woo, representing ZPMC was present during this welding and was observed documenting the actual welding parameters. The QA Inspector verified amperage at 305-310 and voltage at 29.2-29.4 during welding of one of the root passes using a calibrated Fluke amp/volt meter. The QA

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Inspector also observed that ZPMC's documentation of welding parameters were within the ranges shown on the WPS for minimum preheat/interpass temperature, amperage, voltage, travel speed and gas flow rate.

The QA Inspector observed the tack welding of RS16A stiffeners to PL104 deck plate. The Drawing No. was SP69, Rev. 1 with supporting Drawing. Nos. PL104, Rev. D; and RS16A, Rev. 2. There were a total of six being tacked by Sun Ti Yu (Welder I. D. No. 054459). The Heat No. marked on the deck plate was 700615-1-2 and the welding procedure being used was WPS-B-T-2132-1 for FCAW.



## Summary of Conversations:

As identified within the contents of this report.

## 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:** Jobses, Kenneth

Quality Assurance Inspector

**Reviewed By:** Cochran, Jim

QA Reviewer