

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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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-001053**Date Inspected:** 16-Dec-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 1300**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2330**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Zhang Lei**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 and Tower Mockups**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector Joe Lanz arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China to periodically monitor welding and Quality Control (QC) functions during second shift. While on site the QA Inspector observed and/or discovered the following.

**Bay 2**

89 Meter Mockup Subassembly, Face D, Drawing MUSB-MA22B/B:

The QA Inspector randomly observed ZPMC welding personnel tack welding floor plate MP513 to stiffeners P897, P917 and P872, weld joint #'s 4, 5, 6, 7, 8, 9, 10, 11 and 12. The welding was performed in the 2F (horizontal) and 3F (vertical) positions utilizing a shielded metal arc welding (SMAW) process with a 4.0mm diameter electrode, filler metal appeared to be E7018, brand name TL-508. The QA Inspector observed the ZPMC QC Inspector Zhang Lei verifying that the welding parameters and the minimum pre-heat of 110 Centigrade were in accordance with the Welding Procedure Specification WPS-B-P-2312-Tc-P4 for the 2G and WPS-B-P-2313-Tc-P4 for the 3G. The QA Inspector observed that the preheat and welding parameters of 167 amps measured by the QC CWI Inspector appeared to be within the WPS ranges of 140 to 180 amps, 20 to 27 volts and 48 to 194mm per minuet travel speed. The welding parameters and work observed by QA Inspector appear to meet the minimum requirements in accordance with the WPS and contract documents.

**Bay 7**

Floor plates

The QA inspector performed ultrasonic verification testing of floor plate complete joint penetration welds. The ultrasonic testing (UT) was performed to verify the weld meets the requirements of the contract documents and

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AWS D1.5-2002. The weld and base metal were scanned utilizing a Krautkramer Branson USN 60 for the following scans. The base metal lamination check was performed with a 1.0" dia. round 2.25 MHz transducer. The bottom quarter and middle half shear wave scan was performed with a 0.75" x 0.625" 2.25 MHz transducer on a 70 degree angle wedge from face A and B. The top quarter shear wave scan was performed with a 0.75" x 0.625" 2.25 MHz transducer on a 70 degree angle wedge from face A. Scanning patterns A, B, C, and E were utilized. Following is a list of welds examined and acceptance in accordance with AWS D1.5- 2002 table 6.3 and the contract documents.

- a) FB017-01-108, 12mm thick, Y=0mm Length=250mm.
- b) FB017-02-108, 12mm thick, Y=1,200mm Length=250mm.
- c) FB018-01-108, 12mm thick, Y=0mm Length=250mm.
- d) FB022-01-108, 12mm thick, Y=1,500mm Length=250mm.
- e) FB026-01-108, 12mm thick, Y=1,200mm Length=250mm.

The QA inspector concurred with the NDT level II technician's assessment. An Ultrasonic Test Report (TL-6027) for the welds that were tested was generated for this date.

The following digital photograph below illustrates observation of the activities being performed.



### Summary of Conversations:

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.

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<b>Inspected By:</b>	Lanz,Joe	Quality Assurance Inspector
<b>Reviewed By:</b>	Cochran,Jim	QA Reviewer

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