

**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-001553**Date Inspected:** 07-Mar-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 600**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China

<b>CWI Name:</b>	Zhang Zhong	<b>CWI Present:</b>	Yes	No
<b>Inspected CWI report:</b>	Yes No N/A	<b>Rod Oven in Use:</b>	Yes No N/A	
<b>Electrode to specification:</b>	Yes No N/A	<b>Weld Procedures Followed:</b>	Yes No N/A	
<b>Qualified Welders:</b>	Yes No N/A	<b>Verified Joint Fit-up:</b>	Yes No N/A	
<b>Approved Drawings:</b>	Yes No N/A	<b>Approved WPS:</b>	Yes No N/A	
		<b>Delayed / Cancelled:</b>	Yes No N/A	
<b>Bridge No:</b>	34-0006	<b>Component:</b>	OBG	

**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector Tim McClendon 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. While on site the QA Inspector observed and/or discovered the following.

Caltrans QA Inspector McClendon observed the Production Monitoring Test (PMT) for Production Panel DP029-001, closed rib welds in Bay #1. ZPMC welding personnel performed Gantry Machine Gas Metal Arc Welding (GMAW) for the root pass and Submerged Arc Welding (SAW) for the final pass, on gantry machine number 2. Dual process WPS-B-T-2342-U1 (U-rib)-3 was posted as the Welding Procedure Specification (WPS) for closed rib welding. The following weld joint and welder were recorded for the PMT, weld joint (wj) # 1 Mr. Gao Xin Dong, wj # 2 Mr. Jang Ting Guang, wj # 3 Mr. Xu Guo Yin, wj # 4 Mr. Song Yin Shu. Welding operator was Mr. Li Xi De for GMAW and Zhang Xian Long for SAW. The following welding variables of the PMT were recorded, amperage 344 to 394, voltage 30.2 to 30.7 with a travel speed of 529 mm/min for GMAW and amperage 674 to 685, voltage 25.0 to 25.3 with a travel speed of 505 mm/min for SAW. All three closed ribs were welded simultaneously.

The ambient temperature in bay # 1 was recorded at 11 degrees Celsius with the production panel temperature recorded at 14 degrees Celsius prior to welding.

After completion of the PMT GMAW pass and SAW pass, ZPMC personnel performed the SAW pass on Production Panel DP29-001, GMAW pass was welded on a previous date. The following welders were observed welding production deck plate u-ribs welds, wj # 1 Mr. Gao Xin Dong, wj # 2 Mr. Jang Ting Guang, wj # 3 Mr.

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Xu Guo Yin, wj # 4 Mr. Song Yin Shu, wj # 5 Mr. Xu Guo Yin and wj # 6 Mr. Song Yin Shu. The following welding variables of production panel U-ribs was recorded, amperage 672 to 685, voltage 24.8 to 25.2 with a travel speed of 505 mm/min.

Caltrans representatives observed tears and fins on weld joints prior to GMAW welding. Areas were shown to ZPMC personnel prior to welding.

The QA inspector completed visual weld inspection of the following welds on production panel DP-041-001, weld # 1 and weld # 2 on rib # U113, weld # 3 and weld 4 on rib # U105, weld # 5 and weld #6 on rib # U94. The results of this visual inspection are as follows.

Weld # 1 - twenty (20) total indications, eleven (11) incomplete fusion, four (4) underfill, two (2) overlap and three (3) oversize.

Weld #2 - five (5) total indications, three (3) incomplete fusion, one (1) oversize and one (1) underfill.

Weld #3 - five (5) total indications, two (2) underfill and three (3) incomplete fusion.

Weld #4 - three (3) total indications, two (2) underfill and one (1) overlap.

Weld #5 - eleven (11) total indications, six (6) underfill, three (3) oversize, one (1) incomplete fusion and one (1) undercut.

Weld # 6 - fifteen (15) total indications, two (2) incomplete fusion, ten (10) underfill, three (3) overlap and three.

Visual Tracking Record is being maintained on site for reference and has been forwarded to the assistant structural materials representative Mr. Ady Velasco.

### **Summary of Conversations:**

No relevant conversations spoken on this date.

### **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>	McClendon, Timothy	Quality Assurance Inspector
<b>Reviewed By:</b>	Cuellar, Robert	QA Reviewer

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