

**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-002477**Date Inspected:** 19-Mar-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**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>	Zhao Chen Sun and See Below			<b>CWI Present:</b>	<b>Yes</b>	<b>No</b>	
<b>Inspected CWI report:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Rod Oven in Use:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Electrode to specification:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Weld Procedures Followed:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Qualified Welders:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Verified Joint Fit-up:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Approved Drawings:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Approved WPS:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
				<b>Delayed / Cancelled:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Bridge No:</b>	34-0006			<b>Component:</b>	See Below		

**Summary of Items Observed:**

The Caltrans Quality Assurance (QA) Inspector, M. Paul Stovall, was present at Zhenhua Port Machinery Company (ZPMC) on Changxing Island, Shanghai, China for the purpose of monitoring Quality Control (QC) functions during the fabrication of the Self Anchored Suspension (SAS) section of the San Francisco/Oakland Bay Bridge.

**New Tower Shop**

The QA Inspector observed that ZPMC personnel have welded one (1) lug onto the 89-meter Mock-Up, on Skin B, at Diaphragm plate number P213. Notification to Caltrans that this work was going to start was not forthcoming. They have placed heaters onto the Diaphragm plate and the stiffener plate, and are using dogs to hold the lug tight against the Diaphragm plate, in preparation of welding the second lug plate, this is in accordance with the agreed upon fabrication procedure. This is a Flux Core Arc Weld (FCAW). The weld joint numbers are MUB-MA21-G/J-25 and MUB-MA21-G/J-26.

The QA Inspector observed ZPMC personnel Heat Straightening various Skin plates and machining bevels on Skin plates at the horizontal mill.

**Bay 3**

The QA Inspector observed ZPMC personnel fitting and tack welding WT stiffeners to Bottom Plates (BP), and Side Plates (SP) BP031-001, BP112-001, BP031-001, BP058-001, and SP091-001. Welding personnel Liang

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## WELDING INSPECTION REPORT

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Yanhai, ID #066457, Zhang Feng, ID #049769, performed the tack welding. The work observed appeared to comply with WPS-B-T-2132-3.

The QA Inspector observed ZPMC personnel welding Complete Joint Penetration (CJP) splices on W21 x 57's. Welder Xin Meng, ID 0537421 and Li Zhaoqian, ID 048810, performed the welding.

The QA Inspector observed ZPMC welding personnel Gu Caihong, ID #053748 performing Submerged Arc Weld (SAW) on Complete Joint Penetration (CJP) splices on the plate for SP091-001.

Bay 4

The QA Inspector observed that ZPMC personnel had turned over Internal Tower Diaphragm plate from the "B" side onto the "A" side. The weld number on this piece is SSD1-SA335-1A. The ZPMC Certified Welding Inspector (CWI) Zhao Chen Sun was observed monitoring the weld preheat and interpass temperatures so that the material does not get too hot or too cold. The Submerged Arc Welding (SAW) Welding Procedure Specification (WPS) used is WPS-B-T-3221-B-U3c-5-1.

The QA Inspector observed ZPMC personnel back gouging using the carbon arc process on the "B" side of Internal Tower Diaphragm plate weld number ESD1-SA335-1A. ZPMC personnel ground the groove angle to prepare for welding.

The QA Inspector observed Various Internal Tower Diaphragm Plates being Heat Straightened.

### Summary of Conversations:

The QA Inspector had ongoing conversations with ABF QC Inspector C. K. Chan and other ABF QC personnel in regards to the improvements that some ZPMC CWI's are having in their efforts to maintain weld joint preheat and interpass temperature during welding.

### 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>	Stovall,Paul	Quality Assurance Inspector
<b>Reviewed By:</b>	Hager,Craig	QA Reviewer

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