

**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-002472**Date Inspected:** 29-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 ZPMC personnel performing Submerged Arc Welding (SAW) on Tower Skin Plate weld number SSD1-SA16-F/G-88B using Welding Procedure Specification (WPS) WPS-B-T-2221-B-U3c-S-1. The QA Inspector observed the welding parameters as 704 amperes and 33.7 volts. The QA Inspector observed that ZPMC had placed a 10-ton counterweight 180 millimeters (mm) from weld joint. ZPMC QC personnel informed the QA Inspector that thirty (30) percent of Side "A" had been welded and that this weight was being used on side "B" to control distortion.

The QA Inspector observed ZPMC personnel fitting and tack welding three Tower Skin Plates together consisting of plates P14 to P117 to SA15.

The QA Inspector observed ZPMC welding personnel Chang Chuancang, ID #053870 and Bai Wenming, ID #040434 performing Flux Cored Arc Welding (FCAW) on Internal Tower Splice Connection plate weld number MUB-MA21-A/J-38 using Welding Procedure Specification (WPS) WPS-B-P-2211-B-U2-FCM. This is a replacement piece for the 114 Meter Mock Up.

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## WELDING INSPECTION REPORT

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### Bay 2

The QA Inspector observed ZPMC personnel drilling boltholes in diagonal tube steel braces for the Orthotropic Box Girder (OBG) Floor Beams (FB).

The QA Inspector observed ZPMC personnel cut macroetch samples form coupons from the 77-Meter Mock-Up at Skin C.

### Bay 3

The QA Inspector observed ZPMC welding personnel Zhang Feng, ID #049769, and Li Wenguo, ID #066261 performing the fit up and tacking of WT stiffeners on Bottom Plates (BP): BP111-001 and BP138-001.

ZPMC welder Li Sheqiang, ID #053605 and Li Zhaoqian, ID #048810, were observed by the QA Inspector welding Complete Joint Penetration (CJP) welds on W21 x 57's which will later be cut into WT stiffeners.

### Bay 4

The QA Inspector observed ZPMC personnel completed fit up on an Internal Tower Diaphragm plate weld number ESD1-SA317-3A and 4A. ZPMC welding personnel Lv Peng, ID #048617 was observed performing Submerged Arc Welding (SAW) using WPS-B-T-3221-B-U3c-5-1. ZPMC Certified Welding Inspector (CWI) Zhao Chen Sun was observed monitoring preheat and interpass temperatures throughout the shift.

The QA Inspector observed ZPMC personnel heat straightening various Internal Tower Diaphragm Plates.

The QA Inspector observed that ZPMC QC had started Ultrasonic Testing (UT) on Internal Tower Diaphragm plate splice SSD1-SA287-3A, 4A and 3B, and 4B but the UT inspection was not completed during this shift.

#### **Summary of Conversations:**

The QA Inspector had conversations with ABF QC personnel in regards to the improvements that ZPMC is showing in regards to weld joint preheat and interpass temperatures and them being able to maintain it by aggressively monitoring the material temperature.

#### **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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