

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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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-002471**Date Inspected:** 24-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**CWI Name:** Zhao Chen Sun and See Below**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:** 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 rotated the 89-meter Mock-Up to the "C" side and welded a new lug adjacent to the stiffener and onto the Diaphragm Plate. The welds are identified as MUB-MA21-A/J-29 & 30.

The QA Inspector witnessed ABF QC personnel do a preliminary Magnetic Particle Test (MT), on previously welded lug plates. These welds appeared to meet the contract documents. After seventy-two (72) hours, ZPMC will complete the final MT of the weld.

The QA Inspector observed that ZPMC personnel are heat straightening various Skin plates and cutting bevels using a tracked oxy-acetylene torch.

**Bay 2**

ZPMC personnel were observed by the QA Inspector drilling bolt holes in diagonal tube steel (TS) braces that will be used on the Orthotropic Box Girder (OBG), specifically on the Floor Beams (FB).

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## WELDING INSPECTION REPORT

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### Bay 3

The QA Inspector observed ZPMC fitting and tack welding WT stiffeners onto Bottom Plates (BP) and Side Plates (SP): BP029-001, SP359-001, and BP137-001. The welders doing this work are Zhang Feng, ID #049769, Sun Tiyu, #054459, and Li Shuliang, ID #048800.

The QA Inspector observed ZPMC welding personnel Xin Meng, ID #053742 performing production on SP562-001.

The QA Inspector observed ZPMC personnel cutting bevels on W21x 57's for Complete Joint Penetration (CJP) welds. ZPMC personnel are cutting W21 x 57's to length to be used as WT stiffeners and drilling bolt holes in the flanges.

The QA Inspector observed ZPMC QC perform Magnetic Particle Testing and reject the tack welds of WT stiffeners on BP056-001. The crack were observed at BP056-001-010 (one cracked tack weld) and BP056-001-013(two cracked tack welds). Please note that these cracks appeared to extend into the base material and that ZPMC informed the QA Inspector a Critical Weld Repair (CWR will be submitted for the repairs.

### Bay 4

The QA Inspector observed ZPMC personnel using the Submerged Arc Welding (SAW) process on Internal Tower Diaphragm plate weld number ESD1-SA287-3A (4A). The WPS used was WPS-B-T-3221-B-U3c-S-1 and the QA Inspector verified the welding parameters at two (2) separate times as 624 amps, 30.8 volts and 638 amps, 30.8 volts. The work appears to comply with the contract documents.

The QA Inspector observed ZPMC personnel were by Heat Straightening various Internal Tower Diaphragm Plates.

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

The QA Inspector had conversations with ABF C. K. Chan in regards to the improvements that some ZPMC QC personnel have made in regards to the monitoring of preheat on the Diaphragm Plate splice welds.

#### **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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