

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

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-000942**Date Inspected:** 28-Nov-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Changxing Island

<b>CWI Name:</b>	Sha Zhi			<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, 89 & 114		

**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Larry Viars was present to perform observations of Magnetic Particle Testing (MT) and fabricating operations of 89.00, 114 meter mock-up and visual observations of Orthotropic Box Girder (OBG), for the San Francisco Oakland Bay Self Anchored Suspension Bridge, at Zhenhua Port Machinery Company (ZPMC) facility on Changxing Island.

Caltrans QA Inspector Viars observed ZPMC QC Mr. Sha Zhi monitoring welding operations of 89 meter mock-up Skin Plate A sub assembly MA21 weld # 11 ZPMC certified welder Mr. Lei Li Chao was observed performing Flux Cored Arc Welding (FCAW) of the above mentioned weld joint. Welding was performed in 1G position and performed in accordance with the following Welding Procedure Specifications, WPS-B-T-2231-TC-U5-F. The following welding parameters were recorded by The Caltrans QA Inspector, amperage 308, voltage 31.8, travel speed of 313 with a heat input of 1.87 kj/mm.

Caltrans QA Inspector Viars performed MT of 114.00 Meter Mock-up Skin A Lower Partial Joint Penetration (PJP) weld # 11 cover pass. No relevant indications were noted.

Caltrans QA Inspector Viars performed visual inspection of 89.00 Meter Mock-up strut p209-1 to mp516 complete joint penetration weld. An area of insufficient throat (underfill) measuring 45 mm in length with a depth of 0.6 mm was observed which does not appear to meet the requirements of AWS D1.5 2002 section 3.6.2 (figure 3.3D).

Caltrans QA Inspector Viars observed an area of the OBG deck plate trial that appeared to be warped at the 1.7 Meter section (left end) at U-rib U06 and U07. A weight was located on the backside of deck plate as well as hydraulic jacks under backing strip on the on the 1.7 meter section of the deck plate trial. Caltrans QA Inspector

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## WELDING INSPECTION REPORT

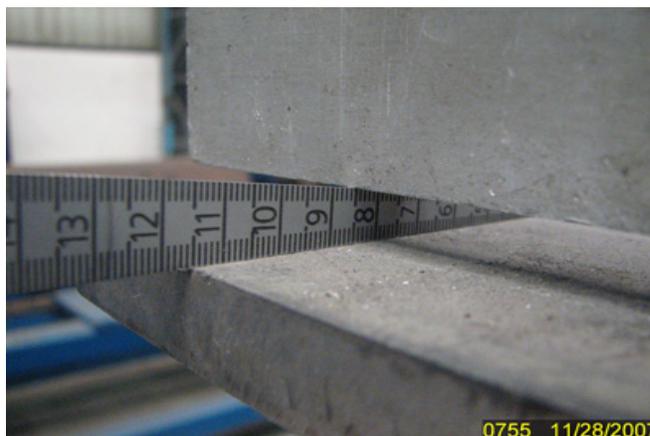
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Viars performed random flatness measurements of 1.7 meter panel section with a 1 meter straight edge rule. A transverse measurement of 8.5 mm was taken on the 1.7 meter section. Please see the attached photos below of OBG deck plate trial.

Caltrans QA Inspector Viars observed that the above mentioned welding and performed MT on 114.00 Meter Skin plate A. Welding and testing appeared to be conformance with AWS D1.5 requirements. See MT report TL6038 on this date for further information.



### Summary of Conversations:

As identified within the contents of this report.

### 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>	Viars,Larry	Quality Assurance Inspector
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<b>Reviewed By:</b>	Cuellar,Robert	QA Reviewer
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