

**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-002616**Date Inspected:** 19-May-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 1330**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2230**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** 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:** Tower and OBG Fabrication**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. The QA Inspector observed the following:

CWI Inspector: Mr Hu Weiqing and Mr Zhang Baobei

Orthotropic Box Girder (OBG) Fabrication:

Bay 7

The QA Inspector observed ZPMC welder Mr. Zhang Wei stencil 66399 is using welding procedure specification WPS-B-T-2132-3 to make flux cored floor beam fillet weld FB003-027-036 on OBG deck plate weld DP139-001-010 closed ribs. The QA Inspector observed a welding current of approximately 325 amps and 30.5 volts. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC ultrasonic Inspector Mr. Xue Hairong performing ultrasonic inspection of weld SSD20-PP025-137 and floor beam FB035-001-080. When Mr. Hairong measured the angle of the 70 degree (nominal) ultrasonic transducer he determined the transducer had a shear wave angle of 67 degrees. AWS D1.5 requires when 70 degree (nominal) transducers are used they must have an angle between 68 degrees and 72 degrees. The QA Inspector observed this transducer is not of the proper angle and it does not appear to have any

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# WELDING INSPECTION REPORT

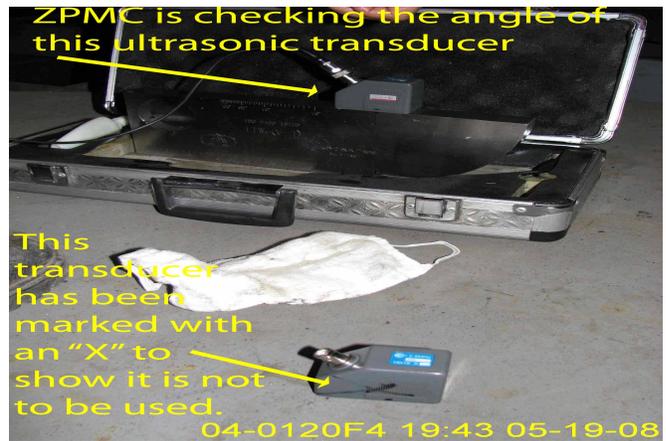
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specific serial number or other markings to identify this transducer from the other transducers. Mr. Hairong informed the QA Inspector that he has marked an "X" on this transducer to indicate it will not be used for additional ultrasonic inspections. See the photograph below showing this transducer. Mr. Hairong informed the QA Inspector the welds that he inspected are acceptable.

The QA Inspector observed ZPMC welder Mr. Chen Chaun Zong stencil 44824 is using welding procedure specification WPS-B-T-2231-TC-U4B-F using the flux cored welding process to complete a groove weld of longitudinal shear pin weld LD008-002-012. The QA Inspector observed the groove where Mr. Zong is preparing to weld has been previously welded on the opposite side of the plate and then it had been backgouged and ground. The QA Inspector observed localized areas where the grinding of the weld groove had not fully ground to obtain a bright metal condition and there are areas where the air carbon arc surface has not been removed. The QA Inspector showed this area to American Bridge representative Mr. Wang Heng and Mr. Heng said he will have ZPMC grind this area prior to commencing the welding of this weld joint. The QA Inspector later observed Mr. Zong grinding the weld groove in the areas that had been marked by Mr. Heng. Prior to welding the QA Inspector observed the weld groove appears to have a bright metal surface. The QA Inspector observed Mr. Zong is using the flux cored welding process with a welding current of approximately 300 amps, 30.2 volts. See the photograph below showing where Mr. Heng has marked "G" on areas of the weld groove that had not been ground to a bright metal condition.



### Summary of Conversations:

See above.

### 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 Patrick Lowry (858) 344-2712, who represents the Office of Structural Materials for your project.

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**Inspected By:** Dawson, Paul

Quality Assurance Inspector

**Reviewed By:** Carreon, Albert

QA Reviewer