

**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-001265**Date Inspected:** 11-Dec-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:** Shanghai, China**CWI Name:** ZPMC- Huang Li**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:** Bay 2 operations**Summary of Items Observed:**

On this date, the Caltrans Quality Assurance (QA) representative, John P. Tracy, conducted assessments while on site at Zhenhua Port Machinery Company (ZPMC) for Caltrans Project 04-0120F4-SAS. The following is the detailed review of the following observations:

**Bay 2:**

114m mock-up-lower section was being set up for Submerged Arc Weld (SAW) process on MUC-MA106 C/C-1A under Welding Procedure Specification (WPS) number WPS-B-T-2221-C-U2b-S by ZPMC welder Xu Yan (052917). The track was being moved into position, being set with a U-shaped, hand made, wire jig. The Caltrans representative observed the welder, while moving the welding unit, touched the electrode tip to the component thus causing an uncontrolled arc in that area. The discontinuity was 8 X 24mm. This is the second time, in two days, that the same incident has occurred but on a different weld. The ZPMC Certified Welding Inspector (CWI), Huang Li, was present along with Bureau Veritas (BV) representative, Huo Jing Yao. American Bridge Fabricator (ABF) representative, Mr. Kevin Carpenter, was notified via the BV representative.

Mr. Carpenter stated that ZPMC workers were to carbon arc gouge and grind the area to bright metal with a mechanical grinder. Dry Magnetic Particle (DMT) inspection was to follow since the area of excavation went out of the bevel area and into the parent metal.

\*\*\*NOTE\*\*\* Conversations with Mr. Carpenter took place in regards to the similar incident on reporting date 12/10/2007.

89m plate MUSB-MA23, skin C, has heat straightening operation under Heat Straightening Report (HSR) number HSR1-CT-165.

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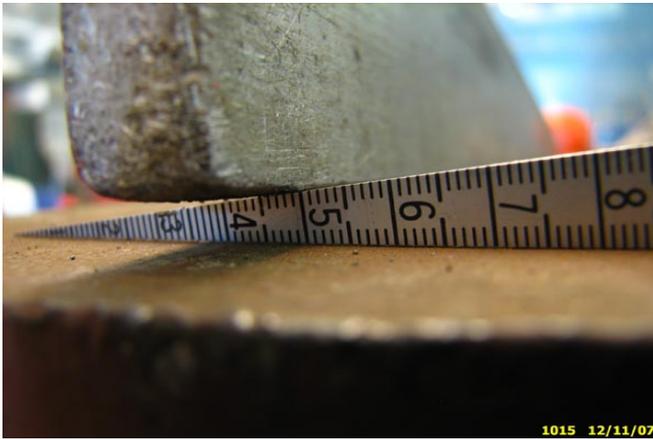
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\*\*\*NOTE\*\*\* There is a significant amount of tower mock-up plates being prepared for heat straightening operations. It appears to the Caltrans representative that heat straightening operations are to be a normal part of production fabrication.

Dimensional verification was performed for HSR-CT-023. The report states that a correction of "about 8mm" is being pursued for the component. X and Y axis verification showed that there was a 4 to 8 mm span of correction needed.

77m plate MUSA-MA21, Skin A, had clean up mechanical grinding ongoing for longitudinal stiffener to plate attachment welds. ZPMC informed the Caltrans representative that DMT inspection was going to be performed on this component later during off shift. No inspection was observed.

Included below are digital pictures that support the observations recorded within this report.



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## Summary of Conversations:

At the completion of the above stated operations, the ZPMC Certified Welding Inspectors, Lee Chen Woo and Sha Zhi, reported that the parameters followed and their noted results were found to be in accordance with the criteria set forth within the contractual documents.

Conversations with ABF representative, Mr. Kevin Carpenter, stated that he was aware of the similar welding incident on the 114m lower section mock-up for reporting date 12/10/2007. He stated that he was aware that ZPMC did not DMT inspect the excavated area after mechanical grinding and that they did not repair the area with weld metal prior to normal SAW operations for that joint. He stated two items to the Caltrans representative: 1) DMT inspection was not really necessary due to the fact that the area of interest is entirely in the bevel area which will see normal welding operations anyway and 2) that they should have repaired the area prior to normal welding operations but it would see extra attention during the course of the fill passes. He would council them on their actions for future reference.

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

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