

**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-001180**Date Inspected:** 06-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 - Lee Chan Woo**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- #3 Observations**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 3: Plates 90A and 87A were readdressed. Broken tack welds, as noted on reporting date 12/01/2007, do not have a resolution. The Caltrans representative has been tasked with following up with an American Bridge Fabricator (ABF) representative for the purpose of disposition. The Caltrans representative met with ZPMC Quality Control (QC) envoy, Fu Yu Hong, to ascertain ZPMC's position on these plates. Further action is pending. The Caltrans representative, upon visual observations, noted the following:

Plate 90A had 52 out of the 180 made tack welds failed due to longitudinal and/or transverse cracking. Many welds have a combination of both types.

Plate 87A had 36 out of the 180 made tack welds failed due to longitudinal and/or transverse cracking. Many welds have a combination of both types.

There was no visibly detectable signs of damage or thermal stressing on any of the tack weld Heat Affected Zones (HAZ). The Caltrans representative, Mr. Charlie Franco, stated that his conversations with ZPMC personnel revealed that a uniform course of preheating was not followed throughout the fabrication process. Simply stated some welds were preheated and some welds were not.

Plate 36A was in the process of having 75mm tacks in order to secure tee stiffeners into position for BP004-01-30 thru -33 under Welding Procedure Specification (WPS) number WPS-B-T-2132-1. ZPMC QC Tao Cumgang was present to monitor thermal and welding parameters. Oxy/fuel torch was utilized to administer preheat. The

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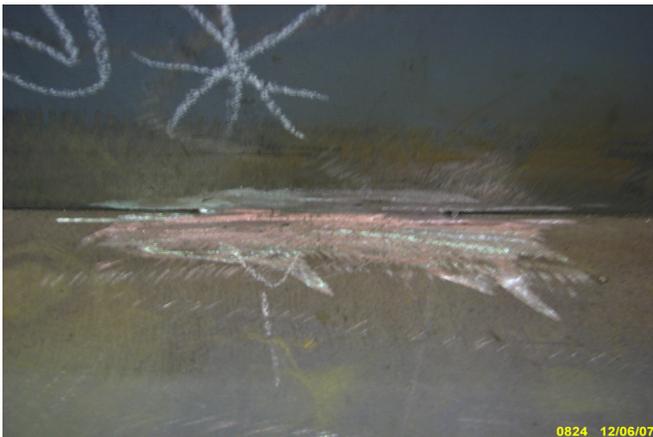
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Caltrans representative performed random checks on the 20mm plate with a 63 degree centigrade Tempilstik brand temperature indicator. A weight was applied to the tee stiffener while preheat and tack welding operations were in process. Randomly observed tack welds were free from objectionable discontinuities and the observed parameters appeared to be in accordance with the criteria set forth within contractual documents.

The Flux Core Arc Weld (FCAW) gantry welder was being set-up to weld on 22mm, non Seismic Performance Critical Member (SPCM) plate for weld numbers SP022-01-13 thru -24 per WPS-B-T-2132-2. No welding was observed during the Caltrans observations.

\*\*\*NOTE\*\*\* Travel speed for this welder is gauged from a non calibrated controller on the welding unit. It provides a digital readout of a setting that has been established. The number of the setting is then looked up on a chart which is not posted on the welder but instead is a QC office. ZPMC Certified Welding Inspector (CWI) Lee Chan Woo was asked to provide this chart. The Caltrans representative asked if it was necessary to have the travel speed controller calibrated since travel speed is an essential variable in welding. He did not know. Further action on this issue is pending.

Electrode Storage Room- The weld issue logs are still written in Chinese characters after several attempts to rectify them. Temperatures appear to be within manufacturer's recommended parameters for storage. As of this date, baking operations, for flux or consumable SMAW electrodes, have not been witnessed.



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## Summary of Conversations:

At the completion of the above stated operations, the ZPMC Certified Welding Inspector, Lee Chan Woo, and ZPMC QC inspector, Tao Cumgang, reported that the parameters followed and their noted results were found to be in accordance with the criteria set forth within the contractual documents.

## 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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